Right dislocation, defocus, and variations in syntax-prosody mapping

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ABSTRACT. This study bridges the notion of (de)focus with the prosodic phrasing of right dislocation (RD) and its variations. We show that RD in Cantonese and Mandarin displays a syntax-prosody mismatch: while having a biclausal structure (2 CPs), RD consists of only one intonational phrase (1 ι). We propose a novel Optimality-Theoretic analysis and attribute the mismatch to the obligatory defocus/anti-focus nature of the RD elements, which cannot receive head prominence and fail to be mapped onto another ι, triggering prosodic rephrasing with the preceding main chunks. It represents a view where the prosodic role of defocus is distinguished from that of focus. The proposed view further predicts a factorial typology of the syntax-prosody mapping of RD, which may be always mismatched (e.g., Cantonese or Mandarin), always isomorphic (e.g., French or Catalan), or dependent on the (de)focus status of RD elements (e.g., Japanese or Mongolian).[*]

Keywords: defocus rephrasing, right dislocation, syntax-prosody mapping, intonational phrase

1. Introduction

Focus is known to have prosodic effects such as focal prominence and postfocal compression (PFC), around which the literature has debated on whether these effects should be analyzed as prosodic rephrasing (e.g. Truckenbrodt 1995) or not (e.g. Féry & Ishihara 2010; Ishihara 2011). However, little attention has been paid to the prosodic role of the *structural absence/resistance* of focus, i.e., **defocus** (=anti-focus; Molnárfi 2002; Zeller 2008; Lee 2020). This study addresses the prosodic role of defocus through the lens of right dislocation (RD).

RD refers to displacement of elements to the right of a sentence, which may leave a gap or a correlate in the preceding main chunk (Tanaka 2001, Cheung 2009, Ott & de Vries 2016, *i.a.*). An example of gapped RD and an example of gapless RD are given in (2)-(3) respectively. As extensively discussed in Cheung (2009, 2015), Lee (2017, 2020, 2023), and Lai (2019), the RD chunks in Cantonese and Mandarin resist focus interpretation and manifest defocus.

(1)   [main chunk … {$\_i$ / XP$_i$} … SFP] [RD chunk XP$_i$]   (SFP=sentence-final particle)

(2)   <u>Gapped RD</u>   [Cantonese]

    [$\_i$ Heoi-zo   Meigwok laa3] **Aaming$_i$**

       go-PFV   US   SFP   Ming

    Lit.: 'Went to the US, Ming.'

(3)   <u>Gapless RD</u>   [Mandarin]

    [Ta$_i$/ Zhangsan$_i$ hui   qu Meiguo a] **Zhangsan$_i$**

     3SG Zhangsan$_i$ will go US   SFP Zhangsan

    Lit.: 'He/Zhangsan will go to the US, Zhangsan.'

On the one hand, RD is biclausal (Cheung 2015, Yip 2024) but reported to have only one intonational phrase in Cantonese and Mandarin (Yip 2020, Zhang 2022), constituting a case of syntax-prosody mismatch:

(4)   [CP1 … {$\_i$ / XP$_i$} … SFP] [CP2 XP$_i$]   Syntax: 2 CPs

    (   )ι_1 Prosody: 1 ι

On the other hand, RD chunks in languages like French and Catalan must be prosodically ***dis***integrated from the main chunks (Ladd 1996, Feldhausen 2010), or display some flexibility in the integration as in Japanese and Mongolian (as will be shown). As far as we know, there is no systematic study that addresses the variations in the syntax-prosody mapping in RD.

In this paper, we motivate a novel Defocus Rephrasing view that distinguishes the role of defocus from focus. First, we propose that the syntax-prosody mismatch in Cantonese and Mandarin RD is due to a constraint that defocus cannot receive prosodic head prominence, as opposed to focus. To avoid forming an illegitimate headless ι, RD chunks are rephrased with the main chunk to form a whole ι. Importantly, focus rephrasing effects are *absent* elsewhere in both languages (Wu and Xu 2010, Zhang et al. 2021), so defocus arguably triggers the mismatch independently. Second, we demonstrate that this view predicts a factorial prosodic typology of RD, varying in (i) a syntactic parameter on whether defocus always projects in RD, and (ii) a phonological parameter on whether defocus receives head prominence.

The rest of the paper is organized as follows. Sect. 2 motivates the presence of a syntactic defocus projection in RD. Sect. 3 justifies the biclausal structure and Sect. 4 shows the one-ι phrasing in RD. Sect. 5 proposes the defocus rephrasing account which derives the syntax-prosody mismatch. Sect. 6 explores the consequences of this view on the prosodic typology of RD cross-linguistically. Sect. 7 concludes the paper.

2. Right dislocation as a defocus device

2.1 The ban on alternative focus

To begin with, we follow Rooth (1992) and Krifka (2008) and conceive of "focus" as triggering alternatives in focus semantics, given in (5). Examples include contrastive focus, *wh*-question-answer pairs, focus particles (e.g., 'only') with their associates.[1]

(5)   Focus triggers a set of alternatives.

RD elements in Cantonese and Mandarin systematically resist alternative-based focus interpretation. First, both gapped and gapless RD resist contrastive stress in RD chunks (Cheung 2015; Lee 2017, 2023), as illustrated in Cantonese in (6):

(6)   <u>Contrastive focus (stress)</u>   [Cantonese, same in Mandarin]

    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]

       3SG   will   go   concert   SFP

               {*KEOI$_F$ wui/ *keoi WUI$_F$/ *KEOI WUI$_F$/ ^{OK}keoi wui}.

                  3SG   will   3SG will   3SG   will   3SG will

       Lit.: 'He will go to the concert, *HE will/*he WILL/*HE WILL/he will.'

                                 (gapless RD, Cheung 2015:261)

Second, RD chunks cannot be *wh*-words, or answers to *wh*-constituent questions (Cheung 2009; Chiang 2017; Lee 2017, 2020, 2023), both of which trigger alternatives (following Rooth 1992; Beck 2006), as illustrated in Mandarin in (7)-(8):

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[1] There is another conception of "focus" based on information status (see Kratzer and Selkirk 2020 for how to distinguish the two conceptions), to which we will return at the end of Sect. 2.2.

(7)   *Wh*-words   [Mandarin, same in Cantonese]

    *[Zuotian { _ / **shei**} lai-le   a] **shei**?

     yesterday   who   come-PFV SFP who

    Lit.: '(Who) came yesterday, who?' (Int.: 'Who came yesterday?')

(8)   Answers to *wh*-questions   [Mandarin, same in Cantonese]

    [Q: Who came yesterday?]

    *[Zuotian { _ / **Lisi**} lai-le   a] **Lisi**.

     yesterday   Lisi come-PFV SFP Lisi

    Lit.: '(Lisi) came yesterday, Lisi.'

Third, RD chunks also cannot accommodate focus particles with their associates, such as cleft focus with copulas, exclusive focus with 'only', additive focus with 'also', scalar focus with 'even', etc. (Chiang 2017, 2022, Lee 2020, 2023). Two examples are given in (9)-(10).

(9)   Exclusive focus with 'only'   [Cantonese, same in Mandarin]

    ??[{ _ /**Zinghai ngoF**}   maai-zo ni-bun syu zaa3] **zinghai ngoF**

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

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

(10)   Scalar focus with 'even'   [Mandarin, same in Cantonese]

    *[{ _ / **Lian shiF**} ta ye   chi   a] **lian shiF**!

        even   shit   3SG also eat   SFP even shit

    Int.: 'It even eats shit!'

2.2 Defocus as a syntactic projection

To capture the correlation between defocus and RD, we follow Lee (2017, 2020) and posit a syntactic projection DeFocP in Cantonese and Mandarin RD, as in (11). As opposed to FocP which hosts [+Foc] elements, DeFocP attracts movement of [-Foc] elements. Non-focus (i.e., neither focused nor defocused) simply lacks [±Foc] features.

(11) a. ***Defocus*** 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 Cantonese and Mandarin.

The notion of defocus, sometimes called anti-focus, is not novel. It has been proposed to capture similar resistance to focus in various constructions across languages, including P-movement/scrambling in Spanish & Italian (Zubizarreta 1998), scrambling in West Germanic

(Molnárfi 2002), object clitic doubling in Albanian and Greek (Kallulli 2000), subject/anti-focus markers in Bantu languages (Zeller 2008), and the "no-pause-type" RD in Japanese (Takano 2014). Defocus is thus a cross-linguistically valid syntactic projection.

Note that RD does not always project DeFocP in other languages. It has been reported that (alternative-based) focus is indeed acceptable in Japanese RD (with pauses), Korean RD, and Mongolian RD (Lee 2023). The syntactic variations will play a major role in the prosodic typology of RD, which will be discussed in Sect. 6.

Before ending this section, we emphasize that the notion of defocus is different from givenness. When the sentence receives a broad focus, such as (12) where the whole proposition is the answer to a question, the materials in RD chunks may accommodate new information like "his mum". Similar points have also been made for French RD (de Cat 2007). In other words, RD projects DeFocP instead of GivenP in Cantonese and Mandarin (against Lai 2019).[2]

(12) [Q: Why was Ming so mad yesterday?]

    a. [{ _ / **keoi aamaa**} dalaan-zo   keoi   zik   zip   lo1] **keoi Aamaa**.   [Cantonese]

             3SG   mum   break-PFV   3SG   CL   plate   SFP   3SG   mum

    b. [{ _ / **ta mama**} dapo-le   ta-de   diezi   a] **ta mama**.   [Mandarin]

            3SG mum   break-PFV   3SG   plate   SFP   3SG mum

    (a-b): '(His mum) broke his plate, his mum.'

3. The syntax of right dislocation: two clauses

In the following, we show that RD underlyingly has two CPs, following the biclausal proposals by Cheung (2015), Tang (2015, 2018), Chan (2016), Chen (2016), and most recently by Yip (2024). As shown in (13), CP2 undergoes defocus movement and sluicing-like deletion. Gapped RD and gapless RD only differ in the use of empty categories in the main chunk.

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[2] There is a sense that the RD chunk, though being discourse-new, is still less important than the main chunk (i.e., what made Ming mad was the plate-breaking event but not his mum). We suggest that the RD chunk carries not-at-issue information, whereas the main chunk carries at-issue information. If one objects to (12), the most natural continuation is to challenge the plate-breaking event instead of the identity of the agent. "Hey wait a minute" would be preferred for challenging the RD chunk.

    (i)   No, {[OK]his *bowl* got broken/ [OK]his *plate* got *stolen*/ #his *dad* broke his plate.}

    (ii)   Hey wait a minute! It was his dad who broke his plate, not his mum.

This (not-)at-issue requirement seems to hold cross-linguistically (even for languages allowing focus in RD like Japanese) and draw the distinction between RD and afterthoughts (cf. Ott & de Vries 2016).

(13) The biclausal structure of RD

main chunk   *RD chunk*

[CP1 … {e_i / XP$_i$} … SFP]   [CP2 [DeFocP XP[-Foc]i [… t_{XP} …]]]   (*e* = empty category)

Crucially, we argue against the monoclausal approach (e.g., Cheung 2009; Chiang 2017; Lee 2017, 2021; Lai 2019; Yip 2020), where movement leaves a deleted (as in gapped RD) or pronounced (as in gapless RD) lower copy in the main chunk:[3]

(14) A hypothetical monoclausal structure of RD *(to be rejected)*

[CP1 [… {t_i / <XP>$_i$} … SFP] <XP>$_i$]   (< > = pronounced movement copies)

Below, we first provide a typological argument, and then reproduce two language-internal arguments from Yip (2024), one for gapped RD, another for gapless RD.

Cross-linguistically, there is a correlation between the availability of empty categories and the type of gapped RD. Specifically, languages that disallow null arguments (subjects and objects) also disallow argumental gaps in RD, such as Germanic languages like English, Dutch, and German (Ott & de Vries 2016). In those languages, a pronoun correlate is required in the main chunk, forming gapless RD, as in (15)-(16).

(15) Apparently **(he)** is very nice, **John**.   (*gapless* subject RD)   [English]

(16) Ik heb **('m)** gezien, **die man**.   (*gapless* object RD)   [Dutch]

    I   have him   seen   that man

    'I saw him, that man.'   (Ott & de Vries 2016:656)

On the other hand, in languages where null arguments are allowed, RD also allows argumental gaps, as in Chinese (Yip 2024), Japanese (Tanaka 2001), and Korean (Park and Kim 2009). Two examples are given in (17)-(18) (see also (2)-(3) for subject RD in Chinese):

(17) [_ Masao-ni hon-o   ageta yo] **Ken-ga**.   (*gapped* subject RD)   [Japanese]

      Masao-DAT book-ACC gave PRT Ken-NOM

    'Ken gave a book to Masao.'   (Takano 2014:139)

(18) [Keoi jau-mou   maai _ aa3] **gaa ce**?   (*gapped* object RD)   [Cantonese]

     3SG   have-not.have buy   SFP CL car

    'Has s/he bought the car?'   (Lee 2017:60)

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[3] Most monoclausal proposals involve leftward movement. For expository purposes, we illustrate (14) with rightward movement but nothing hinges on that.

In languages where subjects may be *pro*-dropped but objects may not, including most Romance languages like Catalan and Spanish (except French), only gapped subject RD is allowed (=(19)). Object RD requires a doubled clitic in the main chunk (=(20)), even for clitics that are optional in non-RD environments (Fernández-Sánchez 2017).

(19) { _ / ***ell**}   és   molt   maco, **en Joan**.   (*gapped* subject RD)   [Catalan]
             he   is   very   nice   the Joan
       'He is very nice, Joan.'   (Fernández-Sánchez 2017:91)

(20) ***(Lo)**   hemos   visto, **a Guille**.   (*gapless* object RD)   [Spanish]
           him   have   seen   to Guille
       'We've seen Guille.'   (adapted from Fernández-Sánchez 2017:93)

It is now clear that whether a language allows gapped subject/object RD depends on its inventory of empty categories like subject and/or object *pro*. This naturally leads to the conclusion in (21) in support of the biclausal approach.[4]

(21) <u>A cross-linguistic generalization on gapped RD</u>
       The argumental gaps in RD are empty categories instead of movement traces.

There are also language-internal arguments for the biclausal approach. Yip (2024) offers a series of arguments that the RD chunks cannot be reconstructed back to the gap position. One evidence comes from RD of negation. To begin with, modals independently can be right-dislocated as in (22). However, negated modals cannot undergo RD and leave a (negation) gap. The negated modals must be also present in the main chunk, as shown in (23).

(22) <u>Modals can be right-dislocated</u>
       a. [Keoi { _ / **wui**} heoi Meigwok gaa3] **wui**   [Cantonese]
       b. [Ta   { _ / **hui**} qu   Meiguo   a] **hui**   [Mandarin]
              3SG   will go   US   SFP   will
       (a-b): Lit.: 'S/he (will) go to the US, will.' (i.e., 'S/he will go to the US.')

(23) <u>Negated modals cannot be right-dislocated with a (negation) gap</u>
       a. [Keoi { *_ /*wui/^{OK}<u>**m-wui**</u>} heoi Meigwok gaa3] <u>**m-wui**</u>   [Cantonese]
       b. [Ta   { *_ /**hui**/ ^{OK}<u>**bu-hui**</u>} qu   Meiguo   a] <u>**bu-hui**</u>   [Mandarin]
              3SG   will   not-will   go   US   SFP   not-will
       (a-b): Int.: 'S/he won't go to the US.'

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[4] Adjunct RD can be gapped across languages, which follows from the general optionality of adjuncts.

The above contrast directly follows from the biclausal approach: the affirmative proposition in CP1 contradicts with the negative one in CP1 (i.e., p & ¬p), resulting in a contradiction like (24). The monoclausal approach, however, predicts that the negation can be reconstructed back to the main chunk with the modals, and the whole sentence unproblematically denotes a negative proposition, contrary to the facts.

(24)   #[CP1 S/he (**will**) go(es) to the US.] [CP2 S/he **won't** go to the US.]

Turning to gapless RD, Yip (2024) argues that some "imperfect copying" cases (in Cheung's 2015 terms) can only be analyzed as two clauses, such as (25)a where the co-referential subjects in the two chunks are different in form, including the noun and the classifier. We add a similar example in Mandarin in (25)b.

(25)   Imperfect copying lacks a monoclausal source

    a. [**Go-tou** dou hou ging gaa] **go-bou hei**.   [Cantonese]
       that-CL also very awesome SFP that-CL movie
       'The movie is also awesome.'   (Cheung 2015:272)

    b. [**Na-ge** ye hen lihai a] **na-bu dianying**.   [Mandarin]
       that-CL also very impressive SFP that-CL movie
       'That movie is also very impressive.'

Under a biclausal approach, two different subjects are base-generated in the two CPs:

(26)   [CP1 **that-CL1** e_i is also awesome] [CP2 **that-CL2 movie**$_i$ [~~_ is also awesome~~]]

In contrast, such cases cannot be handled by a monoclausal approach to gapless RD (Lai 2019, Lee 2021). Even if we assume that the lower copy in the main chunk can be pronounced partially to capture the absence of the nouns, the difference in classifiers cannot be derived similarly, since a nominal cannot take two classifiers at the same time in Chinese.

(27)   a. *Go-{**tou-bou/-bou-tou**} hei   Int.: 'That movie'   [Cantonese]
      b. *Na-{**ge-bu/bu-ge**} dianying   Int.: 'That movie'   [Mandarin]

Summarizing, both cross-linguistic and language-specific arguments in Cantonese and Mandarin show that gapped and gapless RD are biclausal. Next, we turn to the prosody of RD.

4. The prosody of right dislocation: one intonational phrase

We argue that the prosodic phrasing of RD in Cantonese and Mandarin only consists of one intonational phrase (ι). Hence, we see a syntax-prosodic mismatch in RD: 2 CPs but 1 ι.

(28) The prosodic phrasing of RD (only *ι* shown)

[CP1 [main chunk] SFP] [CP2 [DefocusP RD chunk]]   (shaded=mismatched boundaries)

(   )*ι*

The above one-*ι* phrasing receives experimental support from Yip (2020) for both languages and Zhang (2022) for Cantonese. They show that none of *ι*'s acoustic cues (including pitch reset, pauses, and final lengthening) is found in-between the main chunk and the RD chunk in gapped RD. Put differently, the RD chunk is phonetically integrated with the main chunk: neither the former nor the latter form their own *ι*. Below, we offer two additional pieces of phonological evidence that applies to both gapped and gapless RD.

4.1 Placement of boundary tones in Cantonese

To begin with, Cantonese has a rich set of boundary tones, as given in (29) using C-ToBi. These boundary tones can only occur at the right edges of intonational phrases, and there is no left boundary tone in Cantonese (Wong, Chan & Beckman 2005).

(29) The inventory of boundary tones in C-ToBi   (Wong et al. 2005:287)

No.	Tone	Description
1	L%	fall from the final lexical tone
2	H%	rise from the final lexical tone
3	H:%	rise from the final lexical tone, with a short plateau at the end
4	HL%	final rise and then fall from the final lexical tone
5	%	phrase-end with no extra tone
6	-%	truncated rise of the final lexical tone

Take the boundary tone H% to illustrate. It realizes as local F0 rising on the last syllable to indicate a yes-no question (Wong et al. 2005; Xu & Mok 2011; Zhang 2014). In (30), the mid-level tone *gwok* [kʷɔk³³] is pronounced with a high rising boundary tone like [kʷɔk³⁵].

(30) (Keoi   wui   heoi   Mei**gwok**)*ι*^**H%**?   (*gwok* pronounced as [kʷɔk³⁵])

   3SG   will   go   US

   'Will s/he go to the US?'   [Cantonese]

It is, however, degraded to place H% in RD like (31), as observed by Yip (2020). A yes-no question with RD can only be formed using the question SFP *aa4* as in (32). The contrast shows that there is no (right) *ι* boundary at the end of main chunk.

(31) H% question intonation cannot occur at the end of main chunks in Cantonese RD

    *[{ _ / Keoi}   wui heoi   Mei**gwok**$^{H\%}$]   keoi?   (*gwok* pronounced as [kʷɔk^{35}])

        3SG   will go   US   3SG

    Int.: 'Will s/he go to the US?'

(32) Yes-no question SFP *aa4* is allowed at the end of main chunks in Cantonese RD

    [{ _ / Keoi}   wui heoi   Meigwok **aa4**]   keoi?   (*gwok* pronounced as [kʷɔk^{33}])

        3SG   will go   US   SFP   3SG

    'Will s/he go to the US?'

Additional support comes from the placement of HL% (see Ki 2019 for a comprehensive study). It may occur at the end of adverbial/subordinate clauses that form non-maximal *ι*, as in (33). Yet, it is again banned at the end of main chunks in RD, as exemplified in (34).

(33) HL% intonation may occur at the end of adverbial clauses   (*gwok* as [kʷɔk^{353}])

    ((Seoijin keoi   wui heoi   Mei**gwok**)$_{ι}$$^{HL\%}$, (daan keoi   mei   jau   zimzing)$_{ι2}$)$_{ι3\text{-}max}$

     although 3SG   will go   US   but   3SG   not.yet have   visa

    'Although s/he will go to the US, but s/he hasn't had a visa yet.'

(34) HL% intonation cannot occur at the end of main chunks in Cantonese RD

    *[{ _ / Keoi}   wui heoi   Mei**gwok**$^{HL\%}$] keoi   (*gwok* pronounced as [kʷɔk^{353}])

        3SG   will go   US   3SG

    '(Of course) s/he will go to the US.'

In short, the failure to apply *ι*-level phonology (boundary tone placement) in Cantonese RD supports the one-*ι* phrasing of RD. In other words, the main chunk does not form a separate *ι* excluding the RD chunk, but an *ι* together with the RD chunk.[5]

(35) The prosodic phrasing of RD in Cantonese

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

    (   )ι̶ (̶   )ι

                ✘ boundary tones

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[5] Note that boundary tones also cannot occur at the end of RD chunks (e.g., on the final *keoi* in (31)). If boundary tones are segmentless SFPs in Cantonese (Tang 2006, Zhang 2014), this fact is not surprising since SFPs also only occur at the end of main chunks in RD. See Yip (2020) for a hybrid syntactio-prosodic account for the ban on boundary tones in Cantonese RD.

4.2 Third tone sandhi in Mandarin

Mandarin offers another type of phonological evidence: third tone sandhi (T3 sandhi). It applies to consecutive T3 syllables, where the first one changes from a low tone to a rising tone, similar to the contour of T2 syllables (Shih 1986, 1997; Chen 2000, i.a.), as in (36).

(36) Third tone sandhi in Mandarin

a. T3-T3	$\rightarrow$	**sT2**-T3	b. jiu3-gui3	$\rightarrow$	**jiu2**-gui3
[21-21]	$\rightarrow$	**[35]**-[21]	[21-21]	$\rightarrow$	**[35]**-[21]
L-L	$\rightarrow$	**LH**-L	'alcoholic, lit. wine-ghost'		

As can be seen in the contrast in (37)-(38), while T3 sandhi may apply across phonological phrase ϕ boundaries, such as a subject-VP juncture, but it *cannot* across ι boundaries, such as a clausal juncture between adverbial and main clauses.

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

Zuotian   (na-xiang   shao**jiu3**$^{[21>35]}$)$_{\phi1}$ (**shao3**$^{[21]}$-le   yi-ping)$_{\phi2}$.

yesterday   that-box   Soju   miss-PFV   one-bottle

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

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

((Laowang   shuo yao jintian **zou3**$^{[21/*35]}$)$_{\iota1}$,   (**ke3**$^{[21]}$shi mei   zou-cheng)$_{\iota2}$)$_{\iota3\text{-}max}$

  Laowang   say   want today leave   but   not.PFV   leave succeed

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

Crucially, T3 sandhi is allowed between main chunks and RD chunks in Mandarin RD in (39):

(39) Tone 3 sandhi can apply between the two chunks in Mandarin RD

[{ _ / Laowang} xihuan he   **jiu3**$^{[21>35]}$] **Lao3**$^{[21]}$wang.

     Laowang   like   drink   wine   Laowang

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

The juncture between the two chunks in RD is thus not an ι juncture. The application of sub-ι-level phonology (T3 sandhi) in Mandarin provides *positive* evidence for the absence of both *left* and *right* ι boundaries before the RD chunk, again supporting the one-ι phrasing of RD.

(40) The prosodic phrasing of RD in Mandarin

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

(   )̵ (   )$_{\iota}$

                ✔T3 sandhi

In short, RD in both Cantonese and Mandarin displays a syntax-prosody mismatch, where two CPs are mapped onto only one *ɩ*. This contrasts with the canonical cases where two CPs are mapped onto two *ɩ*, like the complex sentence cases above (e.g., (33) and (38)).

5. Proposal: Defocus Rephrasing

We propose that ***defocus*** is the (indirect) source of syntax-prosody mismatch in RD. The leading idea is the following. The RD chunk, being defocused, cannot bear head prominence, which leads to an illegitimate ***headless*** *ɩ*. To avoid headless prosodic constituents, the RD chunk is parsed with the main chunk as one *ɩ*, deriving the mismatch.

(41) Defocus elements ➔ No prominence ➔ Headless *ɩ* ➔ Rephrasing

(➔ indicates causal relationship)

The proposal crucially separates the role of defocus from that of focus in prosody. Focus is well-known to affect prosody. The prominent view is that focus must be the unique prosodic head (at the edge of) a prosodic domain, manifested phonetically as focal prominence and post-focal compression (PFC) (e.g., Pierrehumbert & Beckman 1988; Truckenbrodt 1995; Selkirk 2008). When focus is misaligned with edges, prosodic rephrasing is triggered. We call this the *Rephrasing view*. Focus in Cantonese and Mandarin, however, does not trigger prosodic rephrasing. In Cantonese, there is no PFC (Wu and Xu 2010), suggesting that focus is not able to trigger rephrasing and integrate the post-focal elements prosodically. In Mandarin, despite the presence of PFC, the phrasing effects on f0 peak and duration are retained in post-focal fields (Zhang et al. 2021; Yuan 2022). Indeed, focus in other languages has also been argued to trigger *no* rephrasing (Féry and Ishihara 2010; Féry 2013), such as in Japanese where focus does not block downstepping (Ishihara 2011, 2016) and in English where boundaries are retained in post-focal fields (Wu 2021). We call this the *No-rephrasing view*.

Since focus in Cantonese and Mandarin does not trigger rephrasing elsewhere, the syntax-prosody mismatch in RD cannot be attributed to the potential focus carried by the main chunk. Instead, we argue for a novel *Defocus Rephrasing view* where defocus independently triggers rephrasing via the interaction between three OT constraints. Concretely, first, we propose that defocus, unlike focus, must ***not*** receive *head* prominence, as formulated in (42).

(42) D̲E̲F̲O̲C̲(U̲S̲) (Head prominence-based)

Let Df be a defocus element (with [-Foc]) 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.

DEFOC is a mirror constraint to Truckenbrodt (1995)'s FOCUS and Féry (2013)'s ALIGN-focus, both of which say that focus should be the prosodic head and aligned to the edges. Note that DEFOC is not the same as the constraints that deaccent given phrases (e.g., Féry 2013's DESTRESS-GIVEN or Kratzer and Selkirk 2020's DEPHRASEGIVEN), since we have shown that defocus is a different notion from givenness, both syntactically and semantically.

Second, we assume that every ι must be headed as in (43) (*cf.* Selkirk 1996; Elordieta and Selkirk 2018). This is independently argued for by Feng (2019) for Chinese.

(43)   IntonationalPhrase:Head (ι:HEAD)

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

Third, we also assume Selkirk's (2011) MATCH constraints on syntax-prosody mapping. Specifically, we assume that every CP should be mapped onto an ι.

(44)   Match(CP,ι)

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.

To capture the mismatch, we propose that DEFOCUS and ι:HEAD are ranked higher than MATCH(CP,ι) in Cantonese and Mandarin, as in (45). Crucially, MATCH(CP,ι) is ranked higher than the constraints responsible for focus rephrasing effects like Féry (2013)'s ALIGN-focus.

(45)   The proposed constraint ranking in Cantonese and Mandarin

Defocus triggers rephrasing

$\{\iota$:HEAD, DEFOCUS$\}$ » MATCH(CP,ι) » ALIGN-focus

Focus does **not** trigger rephrasing

With the proposed ranking, output candidates of a RD sentence that have syntax-prosody mismatches win over those without mismatches, as illustrated in the tableau (46) below:

(46)   Defocus Rephrasing triggered by headless ι

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

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

If CP2 is mapped onto a ι_j without any daughter constituent assigned as the head, as in (a), ι:H is violated. If the head is assigned to the only overt material in CP2 ZP, as in (b), the higher-

ranked DEFOCis violated. It is because the PDf ϕ_k corresponding to the defocus, ZP, now heads a higher prosodic category ι_j. To avoid violating ι-headedness and defocus's non-head requirement, the syntax-prosody mapping "compromises". In candidate (c), there is only one ι, and there is no ι corresponding to both CP1 and CP2 respectively, violating the lowered-ranked MATCH(CP,ι) twice. Yet, it does not violate ι:H and DEFOC: the ι has a head, which is the rightmost recursive ϕ_{max}; moreover, the heads of both ι and ϕ_{max} are not assigned to the defocus (i.e. the PDf ϕ_k). Since it is less costly to violate the mapping constraint (i.e., less costly to have syntactic-prosody mismatches), candidate (c) is chosen. This captures the attested syntax-prosody mismatches in RD.

Notice that there are different ways to integrate the RD chunk into the main chunk. The attested phrasing like (47)a represents "deep integration", where the RD chunk is rephrased with a ϕ in the main chunk, forming recursive ϕ. Yet, one could also propose a recursive ι structure like (47)b. We need to rule out this candidate since it is unattested (see Sect. 4).

(47) a. Recusrive ϕ: ((ZP)ϕ ((YP)ϕ (ZP$_{RD}$)ϕ)ϕ_{max})ι (attested)

  b. Recusrive ι: *(((ZP)ϕ (YP)ϕ)ι (ZP$_{RD}$)ϕ)ι_{max} (illicit)

We propose that (47)b can be ruled out by assuming right-headedness of ι in Chinese as in (48), which is ranked higher than MATCH(CP,ι). This constraint receives empirical support from boundary tones in Cantonese which always occur at right edges but not the left (Wong et al. 2005), as well as the nuclear stress assignment to the rightmost ϕ in Mandarin (Feng 2019).

(48) a. ALIGN(ι,RIGHT,HEAD(ι),RIGHT), abbsteatviated 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)

With (48), we can rule out ι recursion as shown in the tableau (49):

(49) 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)$_\phi$ <u>(YP)$_\phi$</u>)$_{\iota i}$ (ZP)$_{\phi k}$)$_{\iota.max}$	*!				*
c. ((((ZP)$_\phi$ <u>(YP)$_\phi$</u>)$_{\iota i}$ (ZP)$_{\phi k}$)$_{\iota.max}$		*!			*
d. ((((ZP)$_\phi$ <u>(YP)$_\phi$</u>)$_{\iota i}$ (ZP)$_{\phi k}$)$_{\iota.max}$				*!	*

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

If ϕ_k is not the head of ι_{max} as in (b), it yields a fatal ι:H violation. If ι_{max} is right-headed and ϕ_k is the head as in (c) (i.e., the PDf heads a higher prosodic category), a fatal DEFOCUS violation

arises. If the ι_{max} is left-headed with ι_i as the head (which in turn has YP as the head) as in (d), AL-ι-R is violated. Despite that (d) has less MATCH(CP,ι) violations than (a), the ranking of AL-ι-R » MATCH(CP,ι) chooses (a) as the optimal candidate, the attested one.

Taking stock, we have proposed an Optimality-Theoretic analysis that derives the syntax-prosody mismatches in DC by stressing the role of defocus, distinguished from focus. In the next section, we zoom out to the prosodic typology of RD across languages.

6. Variations in syntax-prosody mapping

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

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

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

The two parameters determine whether the RD chunk in a language (i) *may*, (ii) *must*, or (iii) *must not* be integrated into the main chunk. We illustrate the variations in (50)b with French and Catalan in Sect. 6.1, and (50)a with Japanese and Mongolian in Sect. 6.2.

6.1 Variations in the phonological parameter: French and Catalan

On the one hand, RD in French and Catalan manifests defocus. French RD chunks resist contrastive focus as well as focus particles like 'only', 'even', and 'too' (dubbed as "anti-topics" in Lambrecht 1981; but see de Cat 2007:163), as in (51) with 'even'. Catalan RD chunks are also claimed to only contain defocused or backgrounded information (Vallduví 1994, Mayol 2007), and cannot be contrastive or answers to *wh*-questions like (52). We thus assume that French/Catalan RD also projects DeFocP, like Cantonese and Mandarin.

(51) <u>'Even' focus in RD</u>   [French]

 ***I**-l-ont   abandonné,   **même   ses amis**.

  they-him-have abandoned   even   his friends

 Int.: 'They abandoned him, even his friends.'   (adapted from Lambrecht 1981:91)

(52) <u>Answer to *wh*-questions in RD</u>   [Catalan]

 Q: On   el   tens,   el   gos?

   where the 2SG.have the dog   'Where's your dog?'

 A: #**L'hi**$_i$ vaig   PRENDRE,   **a Eivissa**$_i$.

   there 1SG.go take   to Iviza

   Int.: 'I took it to Iviza.'   (adapted from Vallduví 1994:593)

On the other hand, French and Catalan RD chunks are prosodically ***disintegrated*** from the main chunks. In French, boundary tones (both H% and L%) may be "copied" at the end of both main and RD chunks as in (53) (Ladd 1996:121, Delais-Roussarie, Doetjes & Sleeman 2004), indicating that the two RD chunks each form their own ι. Similar prosodic phrasing is also experimentally confirmed for Catalan (branching) RD (Feldhausen 2010). Moreover, RD chunks with more than three prosodic words have a higher contour than the boundary tone in the main chunk, indicating a separate ι phrasing, as shown in (54).[6]

(53) Boundary tones occur at the end of both chunks in French RD

      (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'
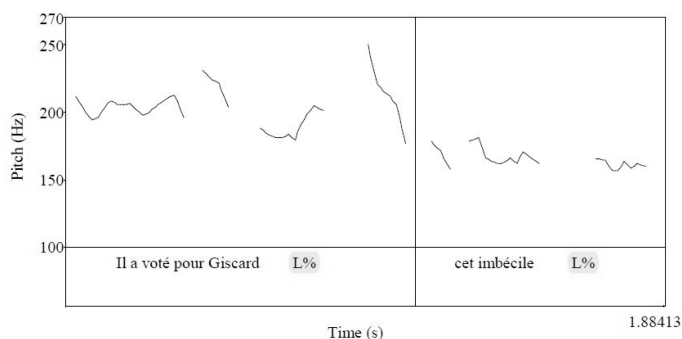
                                         (Delais-Roussarie et al. 2010:520,523)

(54) Higher pitch contour of RD chunks in Catalan RD

      Els volen robar l'aigua, als veïns catalans de l'altre costat de l'Ebre.

      'They want to steal the water, from the neighbors of the other side of the river Ebre'
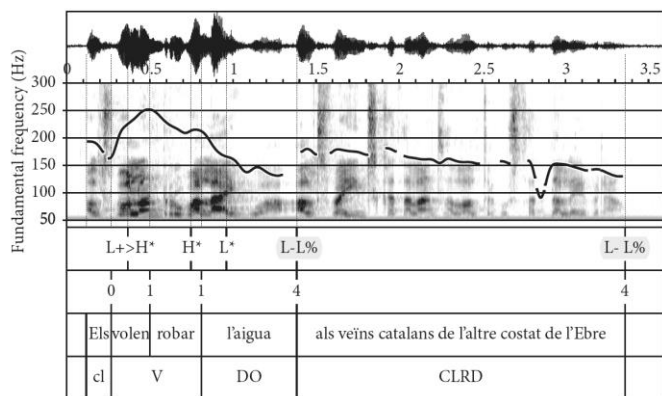
                                              (Feldhausen 2010:168)

We can now conclude that there is no syntax-prosody mismatch in RD in French and Catalan. RD is biclausal in both languages (Fernández-Sánchez 2017), and the two chunks, underlying two CPs, are mapped onto two ι:

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[6] Feldhausen (2010:173) reports that for non-branching RD, in 67% cases the RD chunks are preceded by iP (intermediate phrase) boundaries.

(55) [$_{CP1}$ [main chunk]]   [$_{CP2}$ [$_{DefocusP}$ RD chunk]]   (French & Catalan)

(   )ι_1 (   )ι_2

We propose that (55) can be captured by assuming a higher ranking of MATCH(CP,ι) over DEFOCUS. In effect, defocus may receive head prominence in order to maintain syntax-prosody isomorphism on the clausal/ι level. The syntactic parameter of defocus remains the same as Cantonese/Mandarin: DeFocP always projects in RD. The parameter settings are given in (56).

(56) RD in French and Catalan

    a. Syntactic projection: only DeFocP ([-Foc])

    b. Prosodic constraint ranking: ι:H » MATCH(CP,ι) » DEFOC

6.2 Variations in the syntactic parameter: Japanese and Mongolian

Not all languages ban focus in RD, and Japanese is one such example. While Takano (2014) suggests that Japanese RD (for the "no-pause" type) projects defocus, other authors have reported that focus is indeed allowed, including specificational focus (Abe 2019) as well as contrastive and exclusive focus (Yamashita 2011; Takita 2011). Focus particles with their associates may also be right-dislocated, as in (57) with 'only' and (58) with 'even'. Note that these cases are still RD rather than afterthoughts, since the RD chunks show case connectivity with the gap position in the main chunk, as can be seen from the nominative *ga* and dative *ni* in (57)-(58) (see Ott & de Vries for the case difference between RD and afterthoughts).

(57) 'Only' focus (subject/nominative) in RD   [Japanese]

    [_ Tanaka-ni   hon-o   age-ta   yo] **watashi-dake-<u>ga</u>**.

      Tanaka-DAT   book-ACC give-PST PRT   1SG-ONLY-NOM

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

(58) 'Even' focus (indirect object/dative) in RD   [Japanese]

    [Watashi-ga _ hon-o   age-ta   yo] **Tanaka-<u>ni</u>-mo**.

    1SG-NOM   book-ACC give-PST PRT 1SG-DAT-EVEN

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

Alasha Mongolian also allows alternative-based focus in RD chunks, as convincingly shown by Lee (2023) with comprehensive tests. (59) shows one example with contrastive stress.

(59) Contrastive stress in RD   [Alasha Mongolian]

    [Baatar _   jav-san] **SORGOOLI-d**.

    Baatar   go-PST   school-DAT

    'Baatar went to SCHOOL (not other places).'   (Lee 2023, ex. 11b)

Thus, we can conclude that Japanese and Mongolian RD may either project FocP (with [+Foc] RD chunks) or DeFocP (with [-Foc]), and defocus is not always present.

Turning to the prosodic phrasing, Nakagawa, Asao, and Nagaya (2008) point out that RD chunks with new information tend to be disintegrated from the main chunks as opposed to those with old information. Similar differences can be also observed with alternative-based focus. As shown in (60), pauses between the two chunks are highly preferred when the RD chunk contains 'only' focus, but it is not the case when focus is absent.[7] This is in line with Takano's (2014) proposal that the "no-pause" type RD is defocused. Similar contrasts in the degree of integration are also observable in Mongolian: pauses are preferred with focus in RD, as shown in (61) (Tommy Tsz-Ming Lee p.c.).

(60) a. <u>No pause with defocus in RD chunks</u>   [Japanese]

     [Tanaka-ni   hon-o   age-ta   yo]   **watashi-wa**.

     Tanaka-DAT   book-ACC give-PST PRT 1SG-ONLY-NOM

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

    b. <u>Pause (//) preferred with focus in RD chunks</u>   [Japanese]

     [Tanaka-ni   hon-o   age-ta   yo] **// watashi-dake-ga**.

     Tanaka-DAT   book-ACC give-PST PRT   1SG-ONLY-NOM

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

(61) <u>Contrasts in pause with defocus vs. focus in RD chunks</u>   [Alasha Mongolian]
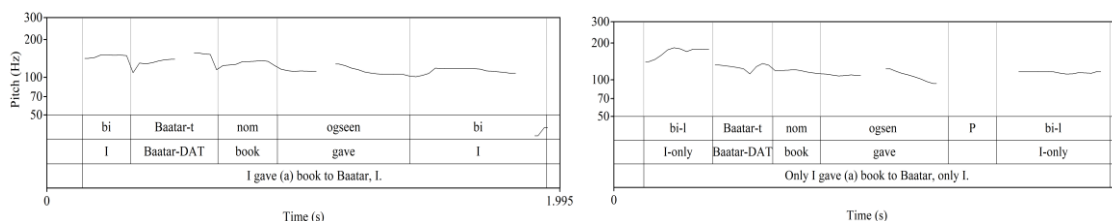
From the above, we may safely say that focused RD in both languages has separate ι phrasing. Yet, whether the defocused RD involves Cantonese/Mandarin-type "deep integration" is less clear. Unlike Cantonese, Japanese allows boundary tones placed at the end of main chunks, such as the rising L%H% in questions in (62). Importantly, it is impossible to "copy" L%H% at the end of RD chunks, unlike French/Catalan.[8] This suggests that there is an ι

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[7] The contrast is confirmed with 6 native speakers of Japanese.

[8] Putting L%H% only at the end of RD chunks is unacceptable (i.e., unlike Mongolian), whereas putting L%H% at the end of both chunks would force RD becoming two independent sentences with separate question force. We thank Yoshiki Fujiwara and Shigeto Kamano for pointing this out.

boundary after main chunks, but RD chunks do not form a separate ι. Put differently, the RD chunk is integrated into the main chunk, forming recursive ι, as in (63).

(62) Boundary tones are only allowed at the end of main chunks in Japanese
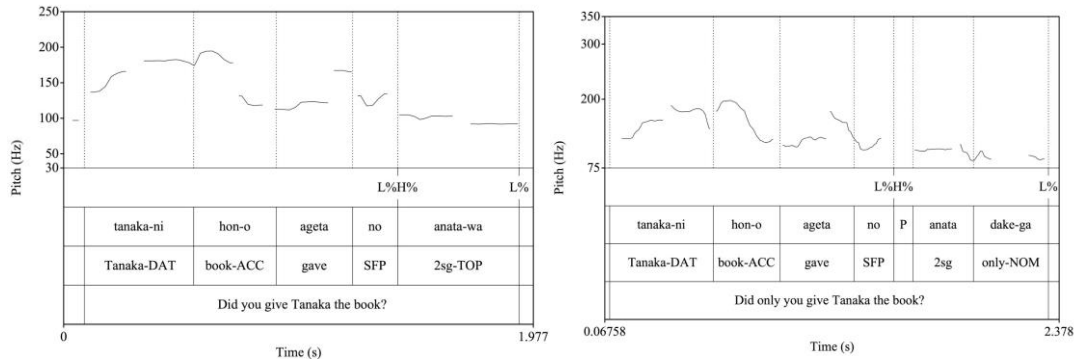
(63) The prosodic phrasing of RD in Japanese
   a. Separate ι: ((XP)ϕ (YP)ϕ)ι_1 (($ZP_{RD[+\mathbf{Foc}]})\phi$)ι_2 (focused RD)
   b. Recursive ι: ((((XP)ϕ (YP)ϕ)ι ($ZP_{RD[-\mathbf{Foc}]})\phi$)ι_{max} (defocused RD)

Note that Mongolian is quite different from Japanese in placing the boundary tone at the end of RD chunks (i.e., the whole sentence) rather than main chunks, such as rising H% in questions like (64). We thus suggest that Mongolian employs "deep integration" in defocused RD.

(64) Boundary tones at the end of RD chunks in Alasha Mongolian
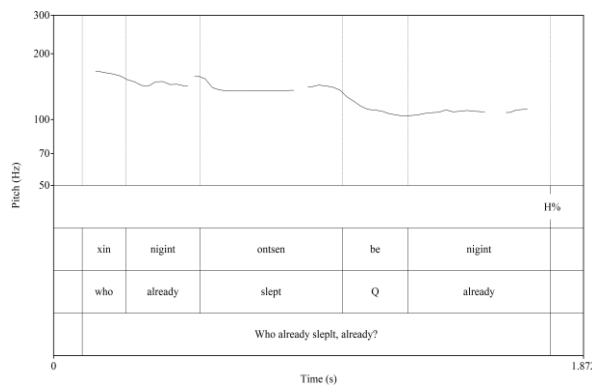
(65) The prosodic phrasing of RD in Alasha Mongolian
   a. Separate ι: ((XP)ϕ (YP)ϕ)ι_1 (($ZP_{RD[+\mathbf{Foc}]}$)ϕ)ι_2 (focused RD)
   b. Recursive ϕ: ((XP)ϕ ((YP)ϕ ($ZP_{RD[-\mathbf{Foc}]})\phi)\phi_{max}$)ι (defocused RD)

   Japanese and Mongolian RD are also biclausal (Tanaka 2001; Yamashita 2011; Abe 2019; Lee 2023). They hence constitute a case of syntax-prosody mismatches only in defocused RD but not in focused RD. It is important to note that focus does not trigger rephrasing in Japanese despite its phonetic effects, as forcefully argued for by Ishihara (2011, 2016) who

shows that focus does not block downstepping (and thus does not insert boundaries, *contra.* Truckenbrodt 1995).[9] The mismatches should then be attributed to defocus instead of focus, which we propose to result from a ranking {ι:H, DEFOC} » MATCH(CP,ι) » AL-FOCUS. We also propose that DeFocP is optional in both languages, capturing the variability in phrasing.

(66) RD in Japanese and Mongolian

    a. Syntactic projection: either DeFocP ([-Foc]) or **FocP ([+Foc])**

    b. Prosodic constraint ranking: {ι:H, DEFOC} » MATCH(CP,ι) » AL-FOCUS

To explain why Japanese adopts recursive ι instead of "deep integration", we further suggest that AL-ι-R is ranked lower than MATCH(CP,ι), unlike Cantonese/Mandarin and presumably Mongolian. The lower ranking of AL-ι-R is also evidenced by the existence of left boundary tones in Japanese. Therefore, $\iota.max$ can be left-headed by the main chunk's ι.

(67) MATCH(CP,ι) » AL-ι-R   (Japanese)

7. Conclusion

To conclude this paper, we have argued for a novel Defocus Rephrasing view where defocus cannot receive head prominence (DEFOCUS) and triggers prosodic integration when it is ranked higher than MATCH(CP,ι), motivated primarily by RD in Cantonese and Mandarin. The rephrasing leads to a syntax-prosody mismatch in RD, where two syntactic clauses (CPs) are mapped onto one intonational phrase (ι). The view crucially separates the role of defocus from focus, deriving the *presence* of defocus rephrasing and the *lack* of focus rephrasing effects in both languages. The view further predicts a factorial typology in the syntax-prosody mapping of RD across languages. The syntactic parameter of DeFocP and the phonological parameter of the ranking of DEFOC determine whether the RD chunks may, must, or must not be integrated with the main chunks, as given in (68). This study enables a principled investigation in other languages concerning RD and other constructions with defocus, and moreover adds another dimension onto how the *lack* of focus affects prosody.

(68) The prosodic typology of right dislocation

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

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[9] Unfortunately, there is no enough data on focus (non-)rephrasing in Alasha Mongolian.

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