Focus and minimality

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Introduction
Crain, Philip, Drozd, Roeper, and Matsuoka (1992); Crain, Ni, and Conway (1994):

(1) a. Only the cat is holding a flag.
   Adults: false; children: true for many 3–6 year olds;
   b. The cat is only holding a flag.
       Adults: true; children: true

Subsequent work has shown the same effect in child Mandarin (Yang, 2002; Zhou and Crain, 2009, 2010; Notley, Zhou, Crain, and Thornton, 2009).

(2) Zhīyǒu māo xiǎoshèng chǐ-le húluóbo.
   only cat mister eat-PREP carrot
   a. * Only [Mr. Cat] eats the carrot.
   b. * Mr. Cat only eats [the carrot].

...but most children 4.5–4.10 have the (b) interpretation.

Today
In both English and Mandarin, pre-subject only cannot associate with the VP or VP-internal material.

1. I investigate the nature of this restriction in (adult) Mandarin Chinese and Vietnamese.
   1 a. I argue that Mandarin zhī(yǒu) (and shì) and Vietnamese chi are all uniformly sentential modifiers.
      - Sentential focus particles must be as low as possible while being interpretable, within their phase.
      - This requirement is a strict syntactic constraint.
      - This constraint forms a new argument for cyclic structure-building by phase (Chomsky, 2000, 2001).

1 Background

Operators such as only, even, and also are “focus-sensitive,” as their interpretation depends on the placement of focus elsewhere in the utterance.

(3) Based on Beaver and Clark (2008):
   a. David will only wear a bow tie when TEACHING.
   b. David will only wear a Bow Tie when teaching.

Focus triggers the computation of alternatives which vary in the focused position and focus-sensitive operators quantify over these alternatives (Rooth, 1985, 1992).

The semantics of focus requires that the focused constituent—the “associate”—be c-commanded by the operator (Jackendoff, 1972; Tancredi, 1990; Aoun and Li, 1993; Erlewine, 2014).1

(4) * DAVID will only wear a bow tie when teaching.
   Intended: ‘Only [David] will wear a bow tie when teaching.’

I will refer to this as the c-command requirement.

(5) Two types of focus particles in English:
   a. The cat is only holding [a flag].
   b. The cat is holding only [a flag].

If presubject only is unambiguously a constituent only, this naturally explains the unavailability of VP association:

(6) a. [Only [the cat]] is holding a flag.
   b. * [Only the cat] is holding [a flag]. violates the c-command requirement!

Zhou and Crain (2009, 2010) propose that adult English and Mandarin presubject only are necessarily constituent onlys; there is no presubject sentential only.

If the latter structure were available, the c-command requirement alone would predict that only can associate with any constituent in the sentence, contrary to fact (for adults). But children begin by analyzing all only as sentential modifiers. (I do not make a claim regarding the status of English presubject only.)

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1 Semantically, what is motivated is a requirement for the focus to be in the scope of the operator. But I follow the literature on constituent focus particles here and assume that strict c-command (alternatives generated within the first argument of the focus particle) is necessary.
2 Mandarin Chinese

In Mandarin, I will look at two focus-sensitive operators: zhí 言 and shí 言.

(7) zhí 言:
• semantics of only (Tsai, 2004); glossed here as only
• In some positions, appears as zhįyôu 言言.

(8) shí 言:
• “focus marker” (Teng, 1979, a.o.): indicates narrow/contrastive focus, often translated as a cleft—see Erlewine (2015b) for its semantics;
• glossed here as shí;
• homophonous/homographous with the copular verb
Ν: Here I do not discuss the shi...de construction.

☞ I argue that zhí / zhįyôu and shí are always sentential particles, not constituent-adjoined.

2.1 Zhįyôu vs zhí

only appears in some positions as zhįyôu instead of zhí, most notably in pre-subject position.

We might imagine that zhįyôu is a constituent only, unlike zhí which is a sentential only. But if that is the case, zhįyôu is very restricted:

(9) Zhįyôu is not constituent-marking:

a. * Zhángsān hē zhįyôu hón̄gjǐjù. Zhàngsān drinks zhίyou wine
   Intended: ‘Zhàngsān drinks only [wine].’

   Intended: ‘Zhàngsān threw a ball at only [Lǐsī].’

☞ Instead, I analyze zhįyôu as an allomorph of zhí.2

A couple arguments for this position:

• The choice of zhįyôu vs zhí is determined by the presence or absence of an adjacent functional head.

(10) ...{zhí, ‘zhįyôu} zài jiālǐ...
    only at home

(11) ...{zhí, ‘zhįyôu} zúotiān...
    only yesterday

• In pre-subject position, only generally must be realized as zhįyôu. However, when the only is preceded by negation, it is realized as bū-zhí ‘neg-only,’ and the extra yětū is not necessary and in fact impossible.

(12) [‘Zhí, ‘zhįyôu] [Zhàngsān] lǎi-le. only Zhàngsān come-perf
   ‘Only [Zhàngsān] came.’

(13) [‘Bū-zhí, ‘bū-zhįyôu] [Zhàngsān] lǎi-le.
    neg-only Zhàngsān come-perf
    ‘Not only [Zhàngsān] came.’

(14) Contextual allomorphy of zhí vs zhįyôu:

only ↔ \[
\begin{align*}
\text{zhí} & \quad \text{if linearly adjacent to a verb,} \\
\text{zhįyôu} & \quad \text{otherwise}
\end{align*}
\]

(15) Allomorphy can be sensitive to adjacent syntactic category:

a. Lively is an adjective:
   • more lively, ‘livelier

b. Slowly is an adverb:
   • more slowly, ‘slowlier

(16) ...but only within the same syntactic domain:

[‘Zhí, ‘Zhįyôu] [dài yānǐng] de rén lǎi-le.
    only wear glasses de person come-perf
    ‘Only people who [wear glasses] came.’

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2Although, as noted by Lîu (1989), there are also clear cases of zhįyôu that are an adverb zhí modifying the main verb yětū. The discussion here is on cases of zhįyôu where yětū is clearly not the main verb of the clause.
2.2 Zhǐ and shì are sentential focus particles

(17) Zhǐ and shì cannot be postverbal:

Zhāngsān zhǐ/shì [CP hē *zhǐ/shì [hóngjū]].
Zhāngsān only/shì drinks *only/shì wine

‘Zhāngsān only drinks [wine].’

(18) Zhǐ and shì cannot be inside PPs:

Zhāngsān zhǐ/shì [CP duì *zhǐ/shì [Lìsī]].
Zhāngsān only/shì to *only/shì Lìsī hour [PERF ball]

‘Zhāngsān (only) throw a ball at [Lìsī].’

English sentential only can associate with multiple foci, but constituent only cannot:

a. ‘I only saw [the children] to ask [the adults] to be quiet.
   b. *I saw only [the children] to ask [the adults] to be quiet.
   c. *Only [the children] asked [the adults] to be quiet.

Mandarin zhǐ and shì can associate with multiple foci:

(20) Multiple focus with shì (Cheng, 2008):
Shì [erzǐ]: jiāo [dàrén]: bié chāo, bù shì [dàrén]: jiāo [érzǐ]: bié chāo.
shì son adult not noisy  shì adult ask son not noisy
‘The son asked the adult not to make noise, not the other way around.’

2.3 The position of zhǐ/shì

(21) A simplex clause:

Zhāngsān

zhǐ

zài jiālǐ

zhǐ only

at home (zhǐ only) [home]

chī shālā

eat salad (zhǐ only) [eat salad]

[zhǐ only] [eat salad] or [eat] or [salad]

2.4 Generalization (first):

Sentential focus particles must be in the lowest position possible while taking their associate in their scope.

Zhǐ/shì can also associate down from a higher clause, long-distance.

(23) Zhǐ (and shì) can associate long-distance:

a. ‘Zhāngsān zhǐ shūo [CP Zhāngsān hē [chá]].’
   Lìsī only say that Zhāngsān drinks [tea].’
   ‘Lìsī only said that Zhāngsān drinks [tea].’

b. ‘Zhāngsān zhǐ hē [chá].’
   Lìsī shūo [CP Zhāngsān zhǐ hē [chá]].
   Lìsī say that Zhāngsān only drinks [tea].’
   ‘Lìsī said that Zhāngsān only drinks [tea].’

For long-distance association, shì/shí must be at the vP edge: (cf 23a)

(24) a. *Zhiyōu Lìsī shūo [CP Zhāngsān hē [chá]].
   Lìsī only Lìsī say that Zhāngsān drinks [tea].’
   ‘Lìsī only yesterday say-PAST Zhāngsān drink tea
   (ungrammatical with the intended association)

(25) Generalization (revised):

Sentential focus particles must be in the lowest position possible while taking their associate in their scope, within a given clause (CP).

Finally, evidence from verbs with nonfinite embeddings shows that domain over which the ‘as low as possible’ condition holds must be smaller than CP.

(26) Zhǐ before and after the control verb xiǎng ‘want’:

a. ‘Zhāngsān zhǐ [CP xiǎng [CP chī [shūcāi]].
   Zhāngsān only want eat vegetables.
   ‘Zhāngsān only wants to eat vegetables.’

b. ‘Zhāngsān xiǎng zhǐ [CP chī [shūcāi]].’
   Zhāngsān want only eat vegetables.
   ‘Zhāngsān wants to only eat vegetables.’

Both positions are possible because they are lowest within their respective phases.

(27) Generalization (final):

Sentential focus particles must be in the lowest position possible while taking their associate in their scope, relative to a particular phase.

This behavior parallels the behavior of German, as described by Jacobs (1983, 1986) and Büring and Hartmann (2001), although their characterization has been controversial (see e.g. Reis, 2005). (See Appendix.)

*See Grano (2012) for evidence that the complement of control verbs such as xiǎng is not a full CP but rather a vP.
3 Vietnamese (Erlewine, to appear)

3.1 Chi is a sentential focus particle

(28) Two onlys in Vietnamese: Hole (2013) argues:
   a. * chi is a sentential only;* (glossed here as onlysnt)
   b. mōi is a constituent only.

(29) Nam (chi) mua (mōi) [củơn sách].
   Nam onlysent buy onlyconst book
   ‘Nam bought only [the book].’

(30) Chi vs mōi associating into a preverbal PP:
   a. Tôi chi [PP θ [trường]] học tiếng anh.
      I onlysent at school study English
      I at onlysent school study English
   c. Tōi [PP θ mōi [trường]] học tiếng anh.
      I at onlysent school study English
   ‘I only study English at [school].’

With preverbal foci, chi, mōi, or both can occur, but only in chi-mōi order.

(31) Stacking the two onlys on the subject:
   a. ‘Mōi [Nam] only sent mua cuốn sách. b. ‘Chi [Nam] only sent.
      onlyconst Nam bought cl book onlysent Nam
      ‘Only [Nam] only bought the book.’
   c. ‘Chi mōi [Nam]... d. * Mōi chi [Nam]...
      onlyconst onlyconst Nam onlysent Nam

This is what is predicted by Hole and Löbe’s (2013) analysis of chi as sentential only and mōi as constituent only: the sentential modifier is necessarily linearly outside of the constituent only.

(32) The structure of (31c):

[PP Chi [PP [CP mōi [CP Nam]] mua cuốn sách]]
onlysent onlyconst Nam buy cl book

Some examples will also have a preverbal mōi (not to be confused with onlyconst, which is mōi) and clause-final thit, which I gloss as cart here. For mōi, see Nguyen (2013); Hole (2013). For thit, see Hole (2014).

*Chi is Sino-Vietnamese, written 他 in Chinese, the Chinese script no longer actively used for Vietnamese. None of my non-linguist Vietnamese consultants speak any Mandarin Chinese or knew that this cognate existed in Chinese.

3.2 The position of chi

Here I use sentences with a temporal adjunct. (Note that the unmarked, base order is different than in Mandarin.)

(33) Hôm qua yesterday Nam Nam mua cuốn sách (thời).
   bought cl book (rett)
   \[ \chi \quad \text{only sent} \quad \Leftrightarrow \quad \text{[bought book]} \quad \text{or} \quad \text{[bought]} \quad \text{or} \quad \text{[book]} \]
   \[ \chi \quad \text{only sent} \quad \Leftrightarrow \quad \text{[yesterday]} \quad \text{or entire proposition focus} \]

Chi can associate long-distance, into a lower clause, but when it does, it must be in immediately preverbal position:

    only sent I only sent say that Nam like Ngan (rett)
    ‘I only said Nam likes [Ngan].’

    I say that onlysent only sent Nam only sent like Ngan (rett)
    ‘I said Nam only likes [Ngan].’

Chi can be above or below the negator không, which is formally a verb embedding a v/VP (or a reduced clause) (Trinh, 2005).

(36) Tôi chi [CP không [CP đọc cuốn sách [này]].
    only sent neg read cl book this
    ‘I only didn’t read [this book].’ ⇒ I read all other books.

(37) Tôi [CP không chi [CP đọc cuốn sách [này]].
    neg only sent read cl book this
    ‘I didn’t only read [this book].’ ⇒ I read (some) other books too.

The “as low as possible” requirement is again relative to each phase.

 Vietnamese shows us a case where we can clearly distinguish between sentential and constituent onlysnt, and we see that onlysent follows the generalization in (27), repeated:

(38) Generalization: (27)

Sentential focus particles must be in the lowest position possible while taking their associate in their scope, relative to a particular phase.
4 A semantically-sensitive hypothesis

We might imagine that shi/zhí/chi must be as low as possible (within a particular domain) unless it being in a higher position introduces a truth-conditional difference. Similar semantically-sensitive constraints have been proposed previously:

(39) Scope Economy (Fox, 2000, p. 3):
Scope-shifting operations cannot be semantically vacuous.

(40) Subject quantifier baseline:
Mèi-ge kérèn dòu zhí [ʃí hē [chá]j].
Every-cl guest all only drink tea
* ‘Every guest is such that they only drink [tea].’ every > only
* ‘Tea is the only thing that every guest drinks.’ only > every

What if zhí moves in front of the subject but keeps associating with “tea”?

(41) Zhí cannot be higher, even if it would lead to a different reading:
* Zhí(yǒu) mèi-ge kérèn dòu hē [ʃí].
only every-cl guest all drink tea
Intended: ‘Only [tea] is such that, every guest drinks it.’

This reading can of course be expressed, but it requires fronting the associate:

(42) Fronting can be used to force zhí to scope higher, above every:
Zhi(yǒu) [chá]j mèi-ge kérèn dòu hē [ʃí].
only tea every guest all drink tea
‘Only [tea] is such that, every guest drinks it.’ only > every

The argument against this purely semantic hypothesis also applies to Vietnamese:

(43) Chì can’t be higher, even if it changes the meaning:

who also only buy cl book
‘Everyone only sent bought [the book].’ ‘every > only, only > every
only sent who also buy cl book
Int: ‘Only [the book] is such that, everyone bought it.’ only > every

c. Chí (mòi) [cuôn sách]j ai cùng (mòi) mua [cuôn sách]j.
only sent (only sent) cl book who also (per) buy
‘Only [the book] is such that, everyone bought it.’ only > every

The “as low as possible” behavior cannot be the result of a semantically-sensitive condition à la Scope Economy (39).

There must be syntactic constraints, not just semantic interface requirements, governing the position of sentential modifiers (cf Ernst 2002).

5 Proposal

The requirement to take the associate in its scope in (27) follows from the semantics of focus (Rooth, 1985). However, the requirement to be as low as possible, within a particular domain, is not explained by the semantics alone.

The “as low as possible” requirement is due to the syntax of sentential-modifier placement.

I propose that this behavior reflects a general principle governing local derivational choices. (See Erlewine 2015a for alternatives.)

A famous example of this form is Merge over Move. See (44) from Chomsky (2000):

(44) Based on Chomsky (2000, p. 104):*

a. There is likely to be [a proof] discovered.

b. * There is likely [a proof] to be discovered.

Roughly: if the expletive there is going to be used, it must be Merged in as soon as it can, blocking movement of the subject.

At the same time, Merge over Move does not hold over the entire structure:

(45) Based on Chomsky (2000, p. 103):
There is a possibility [CP that [a proof] will be discovered].

Chomsky proposes that, while building the embedded CP, we do not yet “know” that the expletive there will be chosen for use in the matrix clause. These “chunks” of structure-building are called phases, traditionally CP and nP (here simply VP).

These same architectural assumptions allow us to straightforwardly model the “as low as possible” behavior here:

(46) Adjoin As Soon As Possible:
Adjuncts should be adjoined as soon as they will be interpretable.7

...or, in top-down/left-to-right structure-building, Adjoin As Late As Possible.8

* The fact that the passive VP surfaces in (4b) as a proof discovered, rather than discovered a proof with a proof in its base position, is attributed to a separate, language-specific process, dubbed the “reification/extracton rule” in Chomsky (2001, p. 20). This is the source of the first/lowest movement step of a proof in structures in (44).

** In the case of focus particles, “being interpretable” here translates into the c-command requirement on focus particles: focus particles must c-command their intended focus associate. Here is one way this could be formalized. The “intended associate” can be checked by adopting the view that F-marked constituents bear a focus index F. (Kecskes, 1991; Wold, 1996; Erlewine, 2014). If the complement of the focus particle is a constant function across different assignments for the relevant focus-index, we know immediately that the focus particle’s semantics will be unaffected.

(47) Derivation of a VP phase with object focus:
   a. LA₁ = \{buy, [DP cl book]\}
   b. \{VP buy DP\}

(48) Derivation of the CP phase, following (47):
   a. LA₂ = \{C, T, VP (47), only\textsubscript{sent}, [DP Nam]\}
   b. i. Adjoin only\textsubscript{sent} to VP \quad [VP only\textsubscript{sent} VP ]
      ii. Merge T and (i) \quad [ T [VP only\textsubscript{sent} VP ] ]
      iii. Merge subject with (ii) \quad [TP DP [ T [VP only\textsubscript{sent} VP ] ]]
      iv. Merge C with (iii) \quad [CP C [TP only\textsubscript{sent} [TP DP [ T [VP only\textsubscript{sent} VP ] ]]]]
      ⇒ “Nam only bought [cl book]” (33)

(49) Derivation of a VP phase with no focus:
   a. LA₁ = \{buy, [DP cl book]\}
   b. \{VP buy DP\}

(50) Derivation of the CP phase with subject focus:
   a. LA₂ = \{C, T, VP (49), only\textsubscript{sent}, [DP Nam]\}
   b. i. Merge T and VP \quad [ T VP ]
      ii. Merge subject with (i) \quad [TP DP [ T VP ] ]
      iii. Adjoin only\textsubscript{sent} to TP (ii) \quad [TP only\textsubscript{sent} [TP DP [ T VP ] ]]
      iv. Merge C with (iii) \quad [CP C [TP only\textsubscript{sent} [TP DP [ T VP ] ]]]
      ⇒ “Nam only bought cl book” (33)

(Ask me about VP-internal subjects.)

The higher and lower adjunction positions in (48/50) “block” each other, because only is introduced in the same phase in these derivations.

⇒ This “blocking” of higher positions by lower positions will only apply within the same phase. The introduction of only in a higher phase is not blocked by a lower phase.

This accounts for the possibility of optionality in only placement in examples with clausal embeddings and embedded foci:

(51) Matrix and embedded positions for chi, given embedded focus, repeated from (34–35):
   a. \[CP₁ Tōi chi \quad [VP₁ nói \quad [CP₂ là \quad Nam \quad [VP₂ thích [Ngân].\textsubscript{f}.
      \quad \text{only}\textsubscript{sent} \quad \text{say that Nam like Nguyễn}
      \quad ‘I only said Nam likes [Ngân].\textsubscript{f}.’\]
   b. \[CP₁ Tōi \quad [VP₁ nói \quad [CP₂ là \quad Nam chi \quad [VP₂ thích [Ngân].\textsubscript{f}.
      \quad \text{only}\textsubscript{sent} \quad \text{say that Nam like Nguyễn}
      \quad ‘I said Nam only likes [Ngan].\textsubscript{f}.’\]

6 Conclusion

Today I discussed the distribution and syntax of (exhaustive) focus particles in Mandarin Chinese and Vietnamese.

- I argue that Mandarin zhī(yōu) and shì and Vietnamese chi are always sentential focus particles, adjoining to the clausal spine, and not constituent focus particles.
  - This is tricky to see in Mandarin, but particularly clear in Vietnamese, where there is a separate, constituent only: môì.
- This requires a new explanation for the inability of presupposition particles to associate with or into the VP.

⇒ Sentential focus particles must adjoin as low as possible in their phase, while associating with their intended associate.
- The fact that this “blocking”/“competition” behavior is only observed within each phase is a new type of evidence for phase-based, cyclic conception of structure-building (Chomsky, 2000, 2001).

Back to the acquisition of focus particle behavior in Mandarin Chinese (Yang, 2002; Zhou and Crain, 2009, 2010; Notley et al., 2009):

- Recall the proposal that (preverbal) zhī(yōu) is a constituent only in the adult grammar of Mandarin, which children displace as a sentential modifier.
- This cannot be the difference between child and adult Mandarin.
- Instead, such children are not yet aware of or not correctly utilizing the “as low as possible” constraint to identify the correct focus associate, at least in comprehension.


References


Lü, Shuxiang. 1980. 現代漢語八百詞 [800 words in Modern Chinese], Shanghai yin.


Tancredi, Chris. 1990. Not only EVEN, but even ONLY. Manuscript, Massachusetts Institute of Technology.


Appendix: The German Closeness debate

In some cases, it is hard to distinguish between an adverb or constituent-marking.

(52) Two hypotheses for German focus operators: (Büring and Hartmann, 2001)

Ich habe nur [einen ROMANleuten] gelesen.

I have only a novel read

a. Nur as adverb:

Ich habe [einen Roman] [leuten] gelesen]

b. Nur as constituent-marking:

Ich habe [einen Roman] [leuten] gelesen]

Jacobs (1983, 1986); Büiring and Hartmann (2001): German focus particles are always adverbs. The lack of constituent-marking focus operators explains the ungrammaticality of certain focus operator placement:

(53) * [VP mit [nur [eine Hände]]]

(54) * [der Bruder [nur des Grafen]]

with only Hans

the brother only the-GEN count-GEN

In many (but not all) cases, focus operators must be adjacent to their associate:

(55) a. *Gestern hat Rufus sogar dem [mädchens] Blumen geschenkt. yesterday has Rufus even the.DAT girl flowers given

b. *Gestern hat sogar Rufus dem [mädchens] Blumen geschenkt. yesterday has even Rufus the.DAT girl flowers given

(56) Closeness (informal): (Büring and Hartmann 2001; following Jacobs 1983, 1986)

Focus particles are as close to the focus as possible.9

However, the Closeness constraint has been criticized as “spurious” and “more than doubtful” (Reis, 2005).10

The behavior of Mandarin Chinese and Vietnamese presented here shows that Closeness-type behavior is attested in other, unrelated languages.

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9In the formal version, the “closeness” only applies between different adjunction sites on the same extended (verbal) projection, making Büiring and Hartmann (2001): Many of Reis’s (2005) criticisms are most given B&Hb’s formal version.

10In addition to conceptual or minor distributional questions, a major question is the structure of German clauses with nur preceding a constituent in the prefield, which apparently violates V2. I will not discuss this here.