

Anti-pied-piping

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1 Introduction

In many languages, dedicated morphosyntactic processes target focused phrases:

- for example, moving a focused phrase to a dedicated position, or
- placing a particle on a focused phrase.

We refer to such behaviors as morpho-syntactic focus (**MSF**) marking.

- Today we discuss mismatches between the logical focus (the locus of variation across alternatives) and the target of MSF marking.

A familiar fact: *wh*/focus-sensitive movement operations may target either the logically focused element, (1a), or a phrase containing the logically focused element, (1b). Ross (1967) termed this phenomenon ‘pied-piping.’

(1) **Pied-piping in *wh* movement**

- a. [Who]_{MSF} did you talk to?
 b. [Whose book]_{MSF} did you read?

(2) **Pied-piping in focus movement**

- a. It’s [John]_{MSF/F} that I talked to.
 b. It’s [John_F’s book]_{MSF} that I read.

This isn’t true just of movement operations. Focus particles may attach directly to the logically focused element, as in (3a), or to a phrase containing that element, as in (3b).

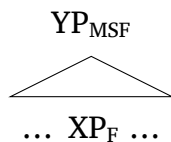
(3) **Pied-piping in focus particle placement**

In addition to releasing something else... (Kotani, 2008: 10)

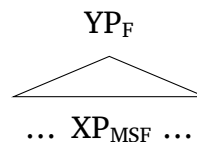
- a. *ano kin-medarisuto-wa [uta]_{MSF/F}-[sae] dasi-ta.*
 that gold-medalist-TOP song-even release-PST
 ‘That gold-medalist even released a song.’
- b. *ano kin-medarisuto-wa [_{VP} [uta]_{F-O} dasi]_{MSF} -[sae] si-ta.*
 that gold-medalist-TOP song-ACC release -even do-PST
 ‘That gold-medalist even released a song.’

Schematically, in pied-piping as in (2–3), an MSF process targets a constituent that properly contains the logical focus; see (4). We might wonder if the inverse is attested, where *MSF targets a constituent properly contained within the logical focus* (5).

(4) **Pied-piping**



(5) **Anti-pied-piping**



In Miyara Yaeyaman (Ryukyuan), the particle = *du* is used to mark answer focus (Davis, 2013, 2014). Interestingly, = *du* appears on the subject not only in responses to subject *wh*-questions (6a), but also in response to broad focus *wh*-questions (6b).

(6) **Subject = *du* for subject answer focus and broad answer focus:**

- a. Q: *Who hit Jiro?* (subject focus)

[*Hajasi-san*]_{MSF/F} = ***du*** *ziroo = ba bari*.

Hayashi-san = DU Jiro = ACC hit

‘Hayashi-san hit Jiro.’

- b. Q: *What happened?* (broad focus)

[_{TP} [*Hajasi-san*]_{MSF} = ***du*** *ziroo = ba bari*]_F.

Hayashi-san = DU Jiro = ACC hit

‘Hayashi-san hit Jiro.’

(Davis, 2013: 33)

Focus at the VP level works in much the same way. In (7a) we see that = *du* appears on the object in a response to an object *wh*-question; (7b) shows us that = *du* also appears on the object in response to a ‘what did X do’ question.

(7) **Object = *du* for object answer focus and VP answer focus:**

- a. Q: *What did that woman eat?* (object focus)

Kunu midun-pito = o [*izi = ba*]_{MSF/F} = ***du*** *fai*.

this female-person = TOP fish = ACC = DU ate

‘This woman ate fish.’

- b. Q: *What did that woman do?* (VP focus)

Kunu midun-pito = o [_{VP} [*izi = ba*]_{MSF} = ***du*** *fai*]_F.

this female-person = TOP fish = ACC = DU ate

‘This woman ate fish.’

(Davis, 2013: 33)

- (6b) and (7b) illustrate *anti-pied-piping*¹: MSF targeting a proper subconstituent of the logical focus.

Roadmap:

- Anti-pied-piping cross-linguistically
- A first, post-syntactic theory, which is incorrect
- Anti-pied-piping and movement
- A proposal

¹In Aoyagi 1998 terms, *association with wide focus* or, in Tancredi’s (p.c.) terms, *association from within*.

2 Characteristics of anti-pied-piping

We begin with a survey of anti-pied-piping patterns in a diverse range of languages, and observe some commonalities in their behaviors.

2.1 More anti-pied-piping with focus particles

Focus particles in many languages allow the anti-pied-piping pattern in their placement. VP focus with object particle placement is rather common:

- (8) **Japanese** (Aoyagi, 1999: 28)
(Kare-wa) sushi-sae tabe-ta.
 he-TOP sushi-even eat-PST
 ‘He even ate sushi.’
- (9) **Korean** (Kotani, 2009: 65)
Ben-un kheyikhu-kkaci mandul-ess-ta.
 Ben-TOP cake-even make-PST-M
 ‘Ben even made a cake.’
- (10) **Telugu** (Kotani, 2008: 16)
Karthik Sean-ni goda kott-ee-du.
 KarthikSean-ACCeven hit-PST-3sg
 ‘Karthik even hit Sean.’
- (11) **Imbabura Quechua** (Kwon, 2013)
Q: What did Pepe do?
A: Pirkuti-ta-mi wanyuchi-rka Pepe.
 rat-ACC-PRT kill-PST Pepe
 ‘Pepe killed the rat.’
- (12) **Tibetan** (Erlewine notes)
Tshe.ring deb-yang ’bri-’dug.
 Tsering book-also write-AUX
 ‘Tsering also wrote a book.’
- (13) **Masalit** (Leffel, 2011: 31–32)
Hawa mada de ta-ŋg-e.
 Hawa mada only 3sg-drink-PRS
 ‘Hawa only drinks mada.’
- (14) **Turkish** (Kotani, 2008: 16)
Ozge Karthik-’a bile var-du.
 Ozge Karthik-DAT even hit-PST
 ‘Ozge even hit Karthik.’
- (15) **Ishkashimi** (Karvovskaya, 2013: 81)
Salima kulča-məs pacu
 Salima kulcha-also bake.3SG
 ‘Salima also bakes kulcha.’

Anti-pied-piping is not limited to head-final languages. Object particle placement can express VP focus in SVO languages as well:

- (16) **Dagbani** (Fiedler & Schwarz, 2005: 9)
ɔ̀ bɔ̀l lá George.
 3sg call FM George
 ‘She called George.’
- (17) **Bùlì** (Fiedler & Schwarz, 2005: 7)
Wà chèŋ kà Sándēm.
 3sg go FM Sandema
 ‘He went to Sandema.’
- (18) **Awing**
 (Fominyam & Šimík, 2017: 23, 25)
- a. *A-pe’-náŋnə tsó’ə ŋgəsáŋjə.*
 SM-CP1-cook only maize
 ‘He cooked only maize’
- b. *A-tá-ndzí’ə tsó’ə alí’ə.*
 SM-PROG-till only farm
 ‘She is only tilling the farm.’

Broad focus with subject particle placement — which we saw in Miyara Yaeyaman in (6b) — is also attested in other languages:

(19) **Japanese** (Aoyagi, 1999: 32–33)

(At yesterday’s party, not only did Mary dance, but...)

John-mo piano-o hii-ta.

John-also piano-ACC play-PST

‘John played piano, too.’

(20) **Ishkashimi** (Karvovskaya, 2013: 82)

Wai mol-mas xi dust-o-i zanayu isu.

DEM husband-also REFL hand-PL-OBJ wash.3SG come.3SG

‘Her husband goes to wash his hands, too.’

(21) **Konkomba** (Schwarz, 2007: 23, 24) (22) **Dagbani** (Issah, 2008: 10)

àjúá lé !ɲmán ɲítùùn.

A. FM chew beans

‘Ajua ate beans.’

Ama n da bua.

Ama FM buy goat

‘Ama bought a goat.’

In addition, as the following examples show, we can find other sorts of mismatches:

(23) **English** (McCawley, 1970: 296)

The judge only sent you to prison; your wife didn’t leave you too.

‘It’s only that the judge sent you to prison...’

(24) **Southern Tiwa** (Dawson, 2017: 1)

a. *lí thái-do = sê*

go AUX-IPFV = FOC

b. *lí = sê thái-do*

go = FOC AUX-IPFV

‘He is still going’

(25) **Navajo** (Perkins, 1978: 26)

[*Jáan hanii chidí yiyúłtchọ’-go*] *t’áani’ naashá.*

John NEG.FOC car 3SS.3SO.P.wreck-C afoot 1.P.walk

‘It’s not because John wrecked the car that I’m on foot.’

(26) **Tagalog** (Richards, 2019: 6)

Q: What’s your job like, as a professor? What do you do?

Binabasa =ko lang ang mga libro-ng ito buo-ng araw.

PV.read 1sg only NOM PL book-LI this whole-LI day

‘I just read these books all day.’

- ▶ Anti-pied-piping is not limited to head-final languages, to languages with complex verbal morphology, or to VP-level focus.

2.2 Anti-pied-piping is not a repair

Q: What causes anti-pied-piping?

A: Maybe it's a repair, e.g. to avoid illicit particle placement.

Consider the case of VP focus. Suppose we want to place a pre-focal particle on a head-initial VP (27a) or post-focal particle on a head-final VP (27b), and *focus particles cannot attach to the verb*, or doing so interrupts a relationship between V and T:

- (27) a. [O V]_F = PRT ⇒ [O = PRT V]_F
 b. PRT = [V O]_F ⇒ [V PRT = O]_F

► This can't be the (entire) answer.

Japanese and Tibetan, for instance, allow focus particles to appear between the verb and tense.

- | | |
|--|---|
| <p>(28) Japanese (Aoyagi, 1999: 28) cf (8)
 <i>(Kare-wa) sushi-o tabe-sae si-ta.</i>
 he-TOP sushi-ACC eat-even do-PST
 'He even <u>ate sushi.</u>'</p> | <p>(29) Tibetan (Erlewine notes)
 <i>bsTan.'dzin deb 'tshong-gi-yang 'dug.</i>
 Tenzin book sell-IMPV-also EVID
 'Tenzin also <u>sells books.</u>'</p> |
|--|---|

In particular, note that (28) expresses a meaning which can also be expressed with *sae* on the object, via anti-pied-piping in (8) above.

The Navajo example in (25) above likewise has a non-anti-pied-piping variant, where the particle is next to the verbal complex.

- (30) **Navajo** (Perkins, 1978: 32a) cf (25)
 [*Jáan chidí yiyíłtchọ'go*] hanii *t'áani' naashá*
 John car 3SS.3SO.P.wreck.comp NEG.FOC afoot 1.P.walk
 'It's not because John wrecked the car that I'm on foot.'

Recall also the Southern Tiwa facts, which show optionality in anti-pied-piping:

- (31) **Southern Tiwa** (Dawson, 2017: 1) = (24)
 a. *lí thái-do = sê*
 go AUX-IPFV = FOC
 b. *lí = sê thái-do*
 go = FOC AUX-IPFV
 'He is still going'

► Anti-pied-piping cannot (generally) be a response to a problem with MSF marking on the logical focus, for example due to some morphological requirements on the verbal complex.

2.3 A left edge preference/requirement

Q: In anti-pied-piping, which subpart of the logical focus is treated as the MSF?

A: For many languages, it's often the *leftmost* constituent in the logical focus.

Recall the Miyara Yaeyaman pattern from the introduction:

(32) **Miyara Yaeyaman = *du* placement, from Davis 2013, 2014:**

- a. Broad focus: [S O V]_F ⇒ ✓ S = *du* O V *S O = *du* V
- b. VP focus: S [O V]_F ⇒ *S = *du* O V ✓ S O = *du* V

“In some circumstances *du* can attach to material that is strictly within its associated focus domain; in such cases, it attaches to the leftmost element within its focus domain.” Davis 2013: 40

The same pattern is observed in Ishkashimi:

(33) **Ishkashimi = *məs* placement, from Karvovskaya 2013:**

- a. Broad focus: [S O V]_F ⇒ ✓ S = *məs* O V *S O = *məs* V
- b. VP focus: S [O V]_F ⇒ *S = *məs* O V² ✓ S O = *məs* V

A similar *preference* is observed between the arguments of ditransitives in Tibetan:

(34) **Tibetan VP focus** (Erlewine notes)

Kunga's a very good person. She walks around the temple every day.

a. *Kun.dga' khyi-la-yang kha.lag sprad-gi-'dug.*

Kunga dog-DAT-also food give-IMPF-EVID
 'Kunga also gives food to dogs.'

b. ?*Kun.dga' khyi-la kha.lag-yang sprad-gi-'dug.*

Kunga dog-DAT food-also give-IMPF-EVID
 'Kunga also gives food to dogs.'

- The leftmost requirement (or preference) suggests that MSF placement in anti-pied-piping must take place after linear order has been determined.

²Karvovskaya (2013) gives one example where subject placement of = *məs* is possible, with a pronominal subject (p. 85), although in other examples this is not available (p. 81), which is noted as a puzzle (pp. 84–85).

3 A PF theory and interactions with movement

(35) **Proposal:** (ultimately wrong)

- a. During narrow syntax, place your (focus) particle in a position where it can be interpreted: i.e. taking its intended focus particle in its scope.
- b. At PF, *at the end of the derivation*, allow particles to lower. This does not affect LF.

Historical note: This is essentially a modern version of Kuroda 1965's *attachment transformation* theory, where a focus particle is base-generated in Deep Structure but regularly lowered at Surface Structure, all at the end of the derivation.

Waiting until PF allows for anti-pied-piping ("lowering" in 35a) to make reference to linear order to determine the optimal particle placement.

- For Yaeyaman/Ishkashimi: choose the *leftmost* phrase in the logical focus.
- See e.g. Kaufman 2010 on post-syntactic second-position clitic placement.

(36) **Ishkashimi example (20) via PF lowering**

- a. LF: [TP *Wai mol xi dust-o-i zəṇayu isu*]_F = *məs*
 DEM husband REFL hand-PL-OBJ wash.3SG come.3SG
- b. PF: [*Wai mol*]-*məs* *xi dust-o-i zəṇayu isu*.
 DEM husband-also REFL hand-PL-OBJ wash.3SG come.3SG
 ‘Her husband goes to wash his hands, too.’

► But anti-pied-piping *feeds* movement! This is true in two ways:

1. Particle placement interacts opaquely with other movements.
2. Focus movement also exhibits anti-pied-piping: i.e. a subpart of the logical focus can be targeted for focus movement.

So anti-pied-piping cannot be completely post-syntactic!

3.1 Opacity effects

Recall that Ishkashimi anti-pied-piping targets the *leftmost* phrase in the logical focus. But scrambling of the object does not affect anti-pied-piping particle placement:

(37) **Scrambling doesn't bleed anti-pied-piping in Ishkashimi**

(Karvovskaya, 2013: 88) cf (20)

- [*Xi dust-o-i*] [*wai mol*-*məs* _____ *zəṇayu isu*]_F.
 REFL hand-PL-OBJ DEM husband-also wash.3SG come.3SG
 ‘Her husband goes to wash his hands, too.’

► If anti-pied-piping chose the leftmost subconstituent of the logical focus *at PF* for particle placement (36), we might expect =*məs* on the *object* in (37).

Scrambling can also take the particle-marked constituent out of the logical focus:³

(38) **Scrambling doesn't bleed anti-pied-piping in Japanese** (Kotani, 2008: 46)

In addition to being on TV and dating an actress...

- a. *ano kin-medarisuto-wa* [_{VP} *uta-sae*] *dasi-*]_F *-ta*
 that gold-medalist-TOP song-even release- -PST
 'that gold-medalist even released a song.'
- b. *uta-sae* *ano kin-medarisuto-wa* [_{VP} ____ *dasi-*]_F *-ta*
 song-even that gold-medalist-TOP release- -PST
 'that gold-medalist even released a song.'

- Again, if anti-pied-piping targets a subconstituent for particle placement *at PF*, we would not expect *uta* 'song' to continue to bear = *sae* in (38b).

3.2 Anti-pied-piping in focus movement

Just as we observe pied-piping in focus particle placement and focus movement, we also observe anti-pied-piping in focus movement:

- (39) **Yoruba** (Manfredi, 2004: 39a) (40) **Finnish** (Fanselow, 2008: 17)
- Èmù* *ni Àràbá rà* ____.
 palmwine Σ A. buy
 'Mr. A bought palmwine.'
- Talon-sa-(han)* *hän my-i* ____.
 house-his-PRT he sold
 'He sold his house.'
- (41) **Hungarian** (Kenesei, 1998: 74)
- Péter* *a Hamletet* *olvasta fel* ____ *Marinak, míg János...*
 Peter the Hamlet-ACC read up Mary-DAT while John
 'Peter was reading out Hamlet to Mary, while John was...'

We see here a real parallel with pied-piping: movement and particle placement both participate in both pied-piping and anti-pied-piping.

- Assuming targets of (\bar{A} -)movement bear "Q"-particles (Cable, 2010) suggests a unification: If Q-particles also participate in anti-pied-piping, *prior to movement*, we can reduce the problem of anti-pied-piping in focus movement to focus particle anti-pied-piping, above.

3.3 Towards a proposal

The intuition: Place/lower particles *at cyclic Spell-Out by phase* (Chomsky, 2000, 2001; a.o.), so anti-pied-piping can feed syntactic operations in higher phases.

- But maintaining the correct interpreting position for the focus particle can be tricky under this view...

³The grammaticality of (38b) with its intended interpretation seems to go against the predictions of Aoyagi 1998 §4.3.3.

4 Proposal

Background: There are two types of focus particles — sentential particles and constituent particles — and they can cooccur:

(42) **Vietnamese** (Erlewine, 2017: 331)

Nam $\boxed{ch\dot{i}}$ $[_{VP}$ mua $\boxed{m\ddot{o}i}$ $[_{CL}$ sách] $]_F$].

Nam ONLY_{OP} buy ONLY_{PRT} CL book

‘Nam only bought [the book]_F.’

But in many languages, only one or the other part is pronounced (at a time). Suppose:

- Sentential particles (OP) actually bear the contentful focus particle semantics, as a one-place operator that associates with focus (Rooth, 1985).
 - The entire logical focus must be in the scope of OP.
- Constituent particles (PRT) are semantically inert.
- (Some link is necessary to ensure that PRT and OP are paired up.)
- ▶ Constituent particles are late adjoined during *cyclic Spell-Out by phase*.

(43) **Building the VP (vP) phase with object focus**

Narrow syntax: $[_{VP}$ DP_F V]

At Spell-Out of VP phase:

a. $[_{VP}$ DP_F = $\boxed{\text{PRT}}$ V] ⇒ (44a)

b. $[_{VP}$ DP_F V] = $\boxed{\text{PRT}}$ e.g. pied-piping ⇒ (44b)

- This captures the fact that focus particle placement never disrupts selection.
- The resulting projection should “project both” (Citko, 2008; Kotek, 2014), in that it should be visible as the projection of PRT but also retain its DP category.
- Particle placement on a focus-containing phrase results in pied-piping, e.g. (44b).

(44) a. *Ano kin-medarisuto-wa [uta]_F- \boxed{sae} dasi-ta.* = (3)

that gold-medalist-TOP song-even release-PST
‘That gold-medalist even released a song.’

b. *Ano kin-medarisuto-wa $[_{VP}$ [uta]_{F-o} dasi] - \boxed{sae} si-ta.*

that gold-medalist-TOP song-ACC release -even do-PST
‘That gold-medalist even released a song.’

(45) **Building the VP (vP) phase with VP focus**

Narrow syntax: [VP DP V]_F

At Spell-Out of VP phase:

a. [VP DP V]_F = [PRT]

b. [VP DP = [PRT] V]_F e.g. anti-pied-piping ⇒ (46)

(46) *Ano kin-medarisuto-wa* [VP *uta-sae* *dasi-*]_F *-ta*
that gold-medalist-TOP song-even release -PST
'That gold medalist even released a song' = (38a)

- For some languages, such anti-pied-piping (45b) is obligatory, while in many others, it is optional.
- For some languages, such anti-pied-piping has a leftmost requirement/preference. In cyclic Spell-Out, the contents of the phase are linearized and prosodified. Particle placement for (anti)-pied-piping can make reference to such information.

The result of Spell-Out — e.g. (45a) or (45b) — will be part of the input for the higher phase. Once PRT is placed in a lower phase, it can be the target of focus movement.

- ▶ This gives us anti-pied-piping in focus movement (§3.2). The PRT can be null (as in Cable's Q theory).

The resulting phrase (DP) can also be moved independently in a higher phase — e.g. scrambled — without disrupting the anti-pied-piping interpretation:

(47) *Uta-sae* *ano kin-medarisuto-wa* [VP ____ *dasi-*]_F *-ta*
song-even that gold-medalist-TOP release -PST
'That gold medalist even released a song' = (38b)

Note that the MSF (*sae*-marked phrase) is no longer leftmost in the focus; in fact, it's not even in the logical focus anymore. This is possible.

5 Conclusion

- We've identified *anti-pied-piping* — the targeting of a proper *sub*-part of the logical focus as the target of focus morphosyntax — as well attested across a wide range of languages.
- Anti-pied-piping parallels pied-piping in:
 - a applying to both particle placement and movement, which can be unified by adopting Cable's Q theory of \bar{A} -movement targets; and

- b commonly reflecting a leftmost requirement or preference; see e.g. Heck 2008 and Kotek & Erlewine 2016 on leftmost preferences in *wh* pied-piping.
- We developed an analysis involving focus particle placement during *cyclic Spell-Out by phase*.
- In future work, we hope to better understand the factors that determine the availability of (anti)pied-piping for different languages and particles.

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