

A Phase-based and Cartographic Analysis of Japanese Additive Focus Particle *-Mo**

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1. Introduction

This paper addresses an additive focus particle, *-mo* ‘also/too,’ in Japanese and analyzes it from theoretical and typological viewpoints. The particle appears in various types of utterances, such as *okane-mo hoshii* ‘want money, too,’ to imply that something unspoken is also true.¹⁾ Though it may appear trivial, *-mo* serves as a hub of morpho-syntactic, prosodic, semantic/pragmatic information at the linguistic interface of a clause structure. This feature is clarified in Section 2 by analyzing the unique focus spread over *-mo*-attached phrases as well as its theoretical background.

Exploring *-mo* provides an analytical tool to distinguish the unclear structural differences between complements and adjuncts in Japanese. In the English VP *read a book in the library*, for example, *a book* is a complement of the verb *read*, while *in the library* is an adjunct modifying the event. As Ishii (2017) points out, the complement-adjunct distinction is found more easily in English, as *do so* substitution shows in (1), but such a division is rarely or not clearly made in Japanese. Analyzing the focus behaviors of *-mo* may shed light on a different perspective of the verbal domain that can deal with the above distinction.

- (1) John read a book in the library, and
Mary *did so* (*a magazine) in the playground.

(Ishii 2017: 3)

In the following sections, *-mo* is compared with similar constructs in various languages. The languages include not only English but also Aghem and Finnish, which are typologically different from Japanese. Section 3 compares Japanese *-mo* and Finnish *-kin*. This comparison will lead to the cartographic aspects of *-mo* in the CP domain. As the main issue of Section 2 is semantics and the vP domain, Section 3 is an attempt to reveal the mechanism behind *-mo*-related focus phenomena.

The remainder of this paper is organized as follows. Section 2 introduces a focus phenomenon called anti-pied-piping and investigates how asymmetry with *-mo* can be accounted for. Branan and Erlewine's (to appear) operator-particle theory is examined closely. In Section 3, the morphosyntactic characteristics of *-mo* are examined through a comparison with the Finnish focus particle *-kin*. Finally, Section 4 summarizes the study and discusses remaining problems.

2. Anti-pied-piping

2.1 Complement-adjunct asymmetry

When someone says “*hon-mo/-dake katta*” in Japanese (Glossed: book-also/-only bought), the utterance implies that the person bought something/nothing else other than books. Particles such as *-mo* and *-dake* are focus-sensitive because they invoke pragmatic inferences regarding what they attach to. In the simple case above, the particles' target and logical focus overlap: the target noun *hon* ‘book(s)’ is exactly what is focused by *-mo/-dake* in the utterance.

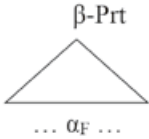
Unlike the focus overlap observed above, there are some cases showing an information-structural mismatch between the logical focus and the target of focus-sensitive particles. In (2), for example, *-mo* appears to attach to two verb phrases, *hon-o kai* ‘buy books’ and *pasokon-o kai* ‘buy a computer,’ respectively, but the focus is narrowed onto each object, *hon* and *pasokon*. This narrowing pattern of focus assignment is called *pied-piping*.²⁾

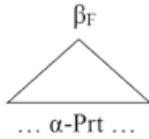
- (2) Musuko-wa [[hon]_F-o kai]-*mo* si, [[pasokon]_F-o kai]-*mo* sita.
 son-TOP book-ACC buy-also do computer-ACC buy-also did
 ‘My son bought [books]_F and also bought [a computer]_F.’

Another type of mismatch, called *anti-pied-piping*, is shown in utterance (3), which can be taken as a reply to an ex-colleague's greeting “How has your family been?” Here, attaching *-mo* to the subjects does not presuppose anyone else has entered college or gotten married. Instead, it results in focus spreading over each proposition containing a verb phrase. Focus spreading is not a phenomenon exclusively observed in the Japanese language. According to Branan and Erlewine's (to appear) survey, this is attested in tens of typologically diverse languages.

- (3) [Musuko-*mo* daigaku-ni hairi]_F, [musume-*mo* yome-ni ita]_F-ta.
 son-also college-DAT enter daughter-also bride-DAT go-Past
 ‘[The son entered college]_F, and [the daughter got married]_F, too.’
 (Erlewine 2020: 22)

Semantically speaking, pied-piping is theoretically predictable because the focus is naturally thought to fall within the focus particle’s sister (Rooth 1985). In contrast, anti-pied-piping is a theoretical challenge because it is exactly the inverse of the pied-piping pattern in that the phrase that a focus particle attaches to is part of a broader, focused phrase/clause. Given an expression or phrase α contained in another phrase β , the anti-pied-piping pattern is schematized in (4b) in comparison with the pied-piping counterpart in (4a).

- (4) a. Pied-piping b. Anti-pied-piping
- 



Interestingly, as Branan and Erlewine (to appear) mention, an asymmetric pattern between complements and adjuncts is observed in anti-pied-piping. As the following pair shows, whether *-mo* attaches to an object *kusuri* ‘medicine’ or to an adverbial expression *ichi-nichi san-kai* ‘three times a day’ seems to differentiate possible interpretations: (5a) allows both narrow and widened focus readings, while (5b) allows only the narrow focus reading.

- (5) a. Ichi-nichi san-kai [kusuri]-*mo* non-da.
 one-day three-times medicine-also drink-PAST
 i. ‘(He) also took [medicine]_F three times a day.’
 ii. ‘(He) also [took medicine three times a day]_F.’
- b. [Ichi-nichi san-kai]-*mo* kusuri-o non-da.
 one-day three-times-also medicine-ACC drink-PAST
 i. ‘(He) even took medicine [three times a day]_F.’
 ii. * ‘(He) also [took medicine three times a day]_F.’
 (Aoyagi 1998: 175, cited in Branan and Erlewine, to appear: 42)

Along the same lines of complement-adjunct asymmetry, focus marking in Aghem, a Bantu language spoken in a region of Cameroon, should also be noted. In Aghem, focused phrases occupy a specified slot *immediately after* verbs (abbreviated the IAV position). For example, in (6), *ki-bé* ‘(the) fufu’ and *né* ‘today’ appear in the focus position (i.e., the position after *zì* ‘eat’). The difference between the pairs is that the focus spreading over the verb phrase is allowed with the object in the focused position and not with the adjunct.

- (6) a. *Tí-bvú* *tì-bìghà* *mɔ* *zì* *kí-bé* *né*
 dogs two PAST eat fufu today
 ‘The two dogs ate [fufu]_F / [ate fufu]_F today.’
 b. *Tí-bvú* *tì-bìghà* *mɔ* *zì* *né* *bé kɔ*.
 dogs two PAST eat today fufu D.OBJ
 ‘The two dogs ate fufu [today]_F.’

(Hyman and Polinsky 2010: 206-7)

As the Aghem IAV position can be filled with either a noun or an adverbial, the words before the verb in (5) are flexibly arranged—for example, either *kusuri-o ichi-nichi san kai* or *ichi-nichi san kai kusuri-o*—preserving the same complement-adjunct focus asymmetry. This fact indicates that the likeliness of anti-pied-piping observed so far is not relevant to surface closeness to a verb but, rather, to some structural necessities within the verbal domains.

2.2 Operator-particle theory

How can anti-pied-piping and its complement-adjunct asymmetry be accounted for? Branan and Erlewine (to appear) proposed the particle syntax under the operator-particle theory, in which semantically inert particles (Prt) serve as morphosyntactic flags that signal the presence of corresponding abstract operators (Op). This proposal is correctly reflected in the scope flexibility of *only* in (7) and its underlying LF structure in (9). As the contrast between (7) and (8) shows, *only* adjoining a constituent *Spanish* can take scope over *know* and allow the inverse scope reading, while *only* being placed before *knew* and *learned* only allows the former and latter readings, respectively.³⁾ This implies the existence of the operators for *only* in two

distinct preverbal positions in (9). Note that in English, either the operator or particle for *only* has to be morphologically realized.

- (7) I knew (that) he had learned only [Spanish]_F.
only>know, know>only
- (8) a. I only knew (that) he had learned [Spanish]_F.
only>know, *know>only
b. I knew (that) he had only learned [Spanish]_F.
*only>know, know>only
- (9) a. I Op_{only} knew [that he had learned [Prt_{only} [Spanish]_F]].
b. I knew [that he had Op_{only} learned [Prt_{only} [Spanish]_F]].
(Erlewine 2020: 14-15; based on Taglicht 1984: 150)

I believe that Branan and Erlewine's proposal applies to Japanese cases of anti-pied-piping, such as in (5). Following their theory, consider *-mo* as a semantically inert particle with its focus range fixed according to the operator whose presence is signaled by *-mo*. Consider example (10), which reports on a jewelry store robbery. In (10a), *-mo* attaching to the complement *toosoosya* 'getaway car' allows not only a narrow focus but also a wide focus on the parking of a getaway car. In the latter sense, (10a) can be rephrased as (10b), in which *-mo* attaching to a verb *tomete* 'park' takes scope on the whole VP.

- (10) a. Tenpo waki-ni toosoosya-*mo* tomete ita.
store beside-at getaway car-also park be.PAST
'(The robbers) [parked a getaway car beside the store].'
b. Tenpo waki-ni toosoosya-o tomete-*mo* ita.
store beside-at getaway car-ACC park-also be.PAST

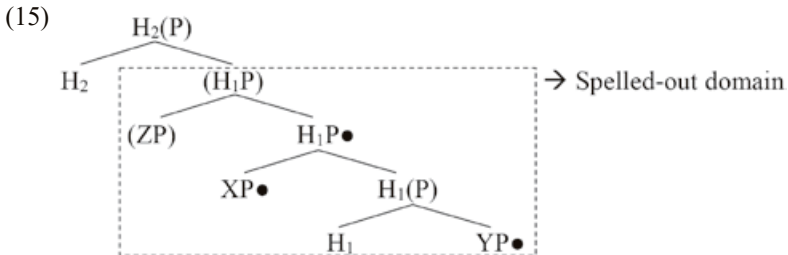
The interpretive similarity between (10a) and (10b) is captured by assuming their underlying LF structure (11) in parallel with that of *only* in (9). Pr_{also} stands for *-mo* as in (10a), and because it signals the presence of a remote-focus operator, Op_{also} is located in a post-verbal position. Note that, as is the case with English *only* in (9), either Pr_{also} or Op_{also} —but not both—is necessarily realized as *-mo*; for example, (10b) is obtained if Op_{also} selectively becomes morphologically overt.

- (13) At yesterday's party, not only did Hanako dance a dance, but ...
 a. [Taro]_{MSF}-*mo* piano-o hiita. b. %Taro-ga [piano]_{MSF}-*mo* hiita.
 Taro-also piano-ACC played Taro-NOM piano-also played
 '[Taro played piano]_F, too.'
 (Branan and Erlewine, to appear: 22; based on Aoyagi 2006: 123)

Branan and Erlewine propose that both pied-piping and anti-pied-piping as shown above can be uniformly accounted for by assuming a phase-based structural marking of syntax-prosody information relevant to focus phenomena and phrasal stress. Their proposal is ●-marking (a dot read as 'bullet') following strategy (14), by which ● is properly assigned to a given phrase so that it can receive stress. Note that in (14), H is a phasal head, and the bracketed phrases correspond to the extended projection of a phase.

Suppose that a complete phase, rather than only a phasal complement, is transferred when the next phasal head is merged (see Bošković 2016); (14) seems to state that ● is exclusively assigned to one phrase in the specifier and another in the complement position (shown as XP and YP in a tentative tree diagram (15)) as well as to a whole phrase as a phase itself (H₁P) rather than to the extended projections adjoined to the complete phase.⁵⁾

- (14) ●-assignment: At phasal spell-out, assign a ● to each phrase that is not a part of the extended projection that contains the phase head.
 (Branan and Erlewine, to appear: 53)



Branan and Erlewine further propose that focus particles are Late Adjoined to ●-left-aligned phrases during phasal spell-out. Again considering (13) following their proposal, (13) can be derived in the two steps in (16). When C is merged, ● is assigned to *Taro* in the vP specifier. After linearizing the

phrases therein, Prt is adjoined to the ●-left-aligned phrase in the vP, namely *Taro*. A focus operator (Op), signaled by Prt, adjoins a propositional phrase, resulting in anti-pied-piping, with a focus on the vP event description.

- (16) a. [CP C ... [vP Taro● [vP piano play]]] (●-assignment)
 Spelled-Out domain
 b. [Op [vP Taro-Prt piano play]_F] (Particle adjunction)

2.4 Late adjunction

To test the leftmost effect more carefully, I examine the anti-pied-piping effect of the predicate focus. In languages with a dominant (S)OV order, such as Japanese, objects are leftmost within the VP, and they must thus become particle (or accented) phrases. In regard to an Adv(erbial)-OV order in which VP modifiers appear to be at the left edge, a similar case cited from Aoyagi (1998) was shown in (5); however, I consider an additional case, (17), below.

- (17) Okada was an excellent French chef, but when asked, ...
 a. paatii-de sushi-mo nigitta.
 party-at sushi-also made
 b. %paatii-de-mo sushi-o nigitta.
 party-at-also sushi-ACC made
 ‘(he) also/even [made sushi at a party]_F.

Examples (17) and (5) indicate the complement-adjunct asymmetry of anti-pied-piping. It seems that the object particle phrase *sushi-mo* allows predicate focus in (17a), while the adjunct particle phrase *paatii-de-mo* is more likely to occur with constituent focus in (17), meaning that the French chef had been asked to make sushi on some occasions, and he did so even at parties. It appears that adjuncts can be disregarded for anti-pied-piping even when they occur at the left edge.

Branan and Erlewine’s theory correctly predicts a gap in anti-pied-piping between objects and adjuncts within a VP. They adopt an approach that allows Late Adjunction proposed by Lebeaux (1991), through which adjuncts are introduced later into the structure built during cyclic spell-out. Consider (17) as an example. When a vP phase is made up of a head *v*, its

(20) What did John do?

- a. John _φ(remáined in the tent)_φ.
- b. John _φ(smóked)_φ (in the tént)_φ.

(Gussenhoven 1992: 94)

This section has shown that complement-adjunct asymmetry in anti-pied-piping in Japanese can be explained by the operator-particle theory. The focus particle *-mo* is adjoined to its target at phasal spell-out, and adopting such an approach enables us to account for the interpretive and phonological asymmetry between complements and adjuncts. In the next section, the (morpho-)syntax of *-mo* is analyzed from comparative viewpoints of the Finnish focus particle *-kin*.

3. The Finnish additive particle *-kin*

3.1 *-kin* and focus

Finnish has an enclitic particle *-kin* ‘also,’ as in *Minä-kin olen hankkinut auton* ‘I, too, have got a car’ (Glossed: I-too have got car), and it is realized on the surface with some variation. For example, it has the form *-kaan/-kään* ‘(not) either’ in the scope of negation; thus, if the sentence above is changed into a negative statement, it begins with *Minä-kään* ‘Neither have I ...’. The Japanese equivalent *-mo* is different in this respect because the same form occurs in either a positive or negative context.^{6,7)}

-Kin attaches to its target in a manner similar to *-mo*. In a simple case such as *Jussi rakastaa Marjaa* ‘Jussi loves Marja,’ for example, there are three words that *-kin* can attach to, as shown in (21). Note that the meaning of *-kin* in (21c) is different from that in (21a) and (21b). When *-kin* attaches to a verb, it expresses surprise, an unexpected consequence, or the speaker’s change of mind.

- (21) a. Jussi-*kin* rakastaa Marjaa.
Jussi-too love Marja
‘Jussi, too, loves Marja.’
- b. Jussi rakastaa Marja-*kin*.
‘Jussi loves Marja, too.’
- c. Jussi rakastaa-*kin* Marjaa.
‘(I thought he didn’t, but) Jussi does love Marja after all.’

Holmberg (2014) reported the distribution of the question-focus particle *-ko*. It attaches to a constituent and is moved to the CP domain to form a yes-no question with narrow focus, as in (22a). Alternatively, it attaches to a finite verb and moves to C to form a neutral yes-no question, as in (22b). His interesting finding was that the particles *-kin* and *-ko* have similar distributions. For example, (21b) and (21c) correspond to (22a) and (22b), respectively, except that *XP-kin* does not move into the CP domain.

- (22) a. Marjaa-*ko* Jussi rakastaa?
 ‘Is it Marja that Jussi loves?’
 b. Rakastaa-*ko* Jussi Marjaa?
 ‘Does Jussi love Marja?’

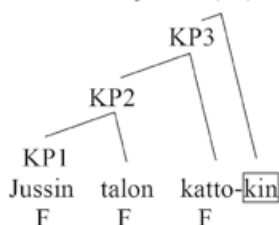
Now, I consider the pattern that includes the possessive nouns Holmberg (p.c.) has discovered. According to Holmberg, (23) has at least three readings, depending on which constituent is focused by stress. For example, if *katto* ‘roof’ is stressed, it means ‘The roof, too, of Jussi’s house is old,’ as in (23i). In a similar way, two other readings as shown in (ii) and (iii) are available when *talon* ‘house’s’ and *Jussin* ‘Jussi’s’ are stressed.

- (23) Jussi-n talo-n katto-*kin* on vanha.
 Jussi-of house-of roof-too is old
 i. ‘The *roof*, too, of Jussi’s house is old (not just the wall).’
 ii. ‘The roof of Jussi’s *house*, too, is old (not just that of his shed).’
 iii. ‘The roof of *Jussi*’s house, too, is old (not just that of his neighbor’s house).’

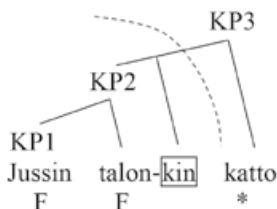
Consider another pattern. (24a) can mean either that the roof of Jussi’s house, not just that of his shed, is old if *talon* ‘house’s’ is stressed or that the roof of Jussi’s house, not just that of his neighbor’s house, is old if *Jussin* ‘Jussi’s’ is stressed. In contrast, in (24b), it is ungrammatical to use *katto* to mean that the roof, not just the wall, is old. According to Holmberg (p.c.), based on his own paper in 2014, the generalization is that the focus particle *-kin* must c-command focused elements, just as the interrogative marker *-ko* does. Suppose that (25a) and (25b) show the structure of possessive nouns in (23) and (24), respectively. In (25a), the three KPs c-commanded by *-kin* can be focused, whereas in (25b), KP3 cannot because it is not c-commanded by *-kin*.⁸⁾

- (24) a. Jussin talon-*kin* katto on vanha.
 b. *Jussin talon-*kin* KATTO on vanha.

(25) a. The subject of (23)



b. The subject of (24)



3.2 V-attachment of *-mo/-kin*

How, then, are the morphosyntax and interpretation of Finnish *-kin* different from or similar to those of Japanese *-mo*? The Finnish examples (21a) and (21b), in which a target constituent is focused by *-kin* attaching to it, can be analyzed in a manner similar to the Japanese *-mo*. For example, (21a) *Jussi-kin rakastaa Marjaa* ‘Jussi, too, loves Marja’ can be directly translatable in the Japanese SVO word order as *Jun-mo Mari-o aisite.iru* (Glossed: Jun-too Mari-ACC love.be).

(21c) (repeated as (26)) differs from its Japanese counterpart (27) in meaning. The *-kin* attached to *rakastaa* ‘love’ in (26) does not mean ‘too/also’ but, rather, expresses the speaker’s emotion toward Jussi’s surprising love of Marja. (27) has a constituent focus reading only: the *-mo* attached to *aisi* ‘love’ invokes some other feelings/actions toward *Mari*, such as hate, envy, respect, or taking care of her.

- (26) Jussi rakastaa-*kin* Marjaa.
 ‘Jussi does love Marja after all.’
 (27) Jun-wa Mari-o aisi-*mo*-site.iru.
 Jun-TOP Mari-ACC love-too-do.be
 ‘Jun does love Mari (e.g., He hates/respects her, though).’

Taking a closer look at how particles attach to verbs, the attachment of Japanese *-mo* seems morphologically more complex than that of Finnish *-kin*. Simply attaching *-mo* to the verb stem results in an ungrammatical

slightly modified translation in (30c) as the Japanese correspondence. It can have the same two interpretations as in Finnish by stressing either *ie* ‘house’ or *Jun*.

- (30) a. Jun-no ie-no yane-mo hurui.
 Jun-POS house-POS roof-too old
 i. ‘The *roof*, too, of Jun’s house is old (not just the wall).’
 ii. ‘The roof of Jun’s *house*, too, is old (not just that of his shed).’
 iii. ‘The roof of *Jun*’s house, too, is old (not just that of his neighbor’s house).’
 b. *Jun-no ie-no-mo yane-ga hurui.
 Jun-POS house-POS-too roof-NOM old
 c. Jun-no ie-mo yane-ga hurui.
 Jun-POS house-too roof-NOM old
 i. Stress *ie* ‘house’: the same as (29ii)
 ii. Stress *Jun* ‘Jun’: the same as (29iii)

In addition to the similarities observed thus far, there is a notable difference found through a comparison of the last piece of the Finnish-Japanese dataset. (31) is a Japanese example corresponding to the Finnish sample in (24b), repeated as (32) below. Recall that in (32), *katto* ‘roof’ outside the domain of *-kin* cannot be focused with prosodic prominence. In contrast, it seems that (31) has no such restriction.⁹⁾ To understand its focus interpretation, imagine the following scenario: A group of carpenters are talking about some house repairs they have recently undertaken. One remembers Mari’s house and describes the old walls that they have repaired. Another carpenter might say (31), meaning ‘Talking of the houses to be repaired, Jun’s house, too, has an old roof, not a wall.’ In other words, (31) is a message about Jun’s house as one of the houses in need of repair, and its roof is focused among other parts of the house.

- (31) Jun-no ie-mo YANE-ga hurui.
 Jun-POS house-too roof-NOM old
 Intended: ‘Of Jun’s house, too, its roof is old (not its wall).’
 (32) *Jussin talon-kin KATTO on vanha.
 Jussi-of house.of-too roof is old

The particle phrase *Jun-no ie-mo* ‘Jun’s house, too,...’ in (31) can be

analyzed as a hanging topic. Hanging topics are found in various Romance languages. As shown in a typical example in Italian (33), a topic phrase appears in sentence-initial position, and within the following sentence, it is frequently resumed by elements such as pronouns.

- (33) Mario, non ne parla più nessuno.
 Mario not of-him talks anymore nobody
 ‘Mario, nobody talks of him anymore.’
 (Benincà and Poletto 2004: 64)

Some facts about (31) suggest the possibility of hanging topic analysis: the fronted *Jun-no ie-mo* can be rephrased as *Jun-no ie-wa* using a topic marker without changing the speaker’s intention. An intonational break is also available between the phrase and the rest of the sentence. Moreover, the phrase in question can be naturally included in the dialog in (34) between two people talking about someone’s house, from which the music sound often leaks. Both *Mari-no ie* and *Jun-no ie-mo* can occupy the sentence-initial position and can be resumed optionally by *soko-kara* ‘from there,’ which makes the dialog sound more natural if it is not pronounced.

- (34) A: Mari-no ie, yoku (soko-kara) piano-ga kikoeru ne.
 Mary’s house often there-from piano-NOM hear sfp
 ‘As for Mary’s house, the piano sound often leaks from there.’
 B: Jun-no ie-mo, gitaa-ga yoku (soko-kara) kikoeru yo.
 Jun’s house-too guitar-NOM often there-from hear sfp
 ‘As for Jun’s house, too, the guitar sound often leaks from there.’

If this analysis is correct, B’s reply in (34) can ideally fit into a layered functional structure known as cartography. Given that the split CP structure basically applies to the Japanese CP domain (Rizzi and Bocci 2017, Saito 2010) and that topic and focus phrases (TopP and FocP) are activated to host/license the relevant constituents, *Jun-no ie-mo* (as well as *Mari-no ie* in (34A)) is base-generated in TopP as a hanging topic is usually assumed to do, and the focused *gitaa-ga* ‘guitar_{NOM}’ moves to FocP after it is assigned a nominative case in the TP. (35) shows the structure of this derivation.

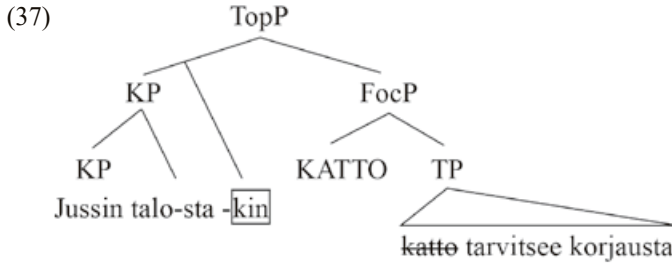
- (35) [CP [TopP Jun's house-*mo* [FocP guitar_{NOM} [TP guitar_{NOM} ...]]]]

Finally, consider a Finnish example that appears to correspond to the Japanese example in (31). According to Holmberg (p.c.), even though the focused *katto* 'roof' is ruled out in (24b/32), it seems to be acceptable in a modified sentence such as (36) with the same speaker intention as in (31). Now, the second word has an elative case ending, *-sta*, rather than the genitive-*n*. The elative case is widely used in Finnish, and its core meaning is 'out from inside.'

- (36) Jussin talo-*sta-kin* KATTO tarvitsee korjausta.
 Jussi's house-from-too roof needs repair
 'In the case of Jussi's house, too, the roof needs repair (not necessarily the walls).'

Unlike (24b/32), it seems that *Jussin talo-*sta-kin* katto* does not form a nominal constituent or at least that the morphological bond between *Jussin talo-*sta-kin** and *katto* is much weaker than that of the possessive nominal structure *Jussin talo-*n(-kin)* katto*. Based on this observation and the interpretive similarity to (31) and (34 B), I split *Jussin talo-*sta-kin** and the accented *katto* into topic and focus layers in the CP domain, respectively, in the same fashion as (35).

Equation (37) is the structure of (36). An advantage of this analysis is that the structure correctly predicts that *katto* is permitted to be focused because it falls within the c-commanding domain of *-kin*. Recall that in Finnish, focused elements must be c-commanded by *-kin*; otherwise, they remain unlicensed, as in (24b). Contrary to such an undesirable scenario, in (37), the *-kin* phrase occupies the specifier of TopP; thus, it can c-command FocP, to which the focused *katto* moves to become licensed.



In summary, this section first shows that *-kin* and *-mo* attach to a word/stem in different manners, following the morphosyntactic restrictions of each language. Possessive nominal phrases with *-kin* and tensed verbs with *-mo* supported by dummy verbs were observed. Then, through the comparison of the sentence-initial ‘XP-*mo/-kin* YP_F,’ it was also shown that a cartographic approach will allow us to analyze the sequence as split topic and focus, uniformly maintaining the c-command requirement specific to Finnish.

4. Conclusion

This paper analyzed the Japanese focus particle *-mo* from both a theoretical and typological perspective. Section 2 was theory-oriented and focused on anti-pied-piping. Anti-pied-piping in Japanese exhibits asymmetry between complements and adjuncts when a particle attaches to either. The point is that it can adjoin to subjects and objects at a phasal spell-out but not to adjuncts because they are adjoined to the structure at a later time.

In Section 3, Finnish *-kin* and Japanese *-mo* were compared in terms of morpho-syntactic structures. The most remarkable difference between the two particles lies in the focus within the possessive nominal phrase ‘KP1’s KP2’s KP3.’ A similar structure, ‘XP’s YP-Prt(,) ZP_F,’ in Finnish and Japanese can be uniformly analyzed by splitting the structure into the higher topic and lower focus layers, adopting a cartographic approach.

However, certain issues remain unresolved. Although the operator-particle theory is well evidenced, the structural/derivational premises underlying particle placement seem to be refined. The current approach based on the leftmost requirement cannot explain how the verbs are chosen for the particle to attach to. Verbs are not at the left edge in the VP of (S)OV languages, but they appear with the particle and present an anti-pied-piping effect.¹⁰⁾

The verb-attaching *-kin* in (21c) might be analyzed along the above research lines because the focus spreads over the entire sentence with the loss of the additivity of *-kin*. Holmberg's generalization of focused elements falling within the domain of particles is essential in explaining Finnish focus phenomena; however, the extent to which it applies to Japanese remains unexplored because of the limited range of compared samples caused by the different word formation patterns of the two languages. These issues should be investigated in future studies.

Notes

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¹⁾ This paper does not deal with *-mo* used as a negative polarity particle, as shown in (i).

- (i) Mari-wa nani-*mo* hoshiku nakatta.
 Mari-TOP what-*mo* want NEG.PAST
 'Mari didn't want anything.'

²⁾ In the data hereafter, the logical focus is marked with a subscript F added to a bracketed focused element, as in the notation [...]_F.

³⁾ To be precise, the former (only>know) and the latter (know>only) readings are paraphrased as 'I did not know he had learned any other language' and 'I knew he had not learned any other language,' respectively.

⁴⁾ MSF found in the data (13) is an abbreviation for *morpho-syntactic focus*.

⁵⁾ There are two theoretical views of phasal spell-out: what is sent to spell-out are phasal complements or full phases. The former view is based on the Phase Impenetrability Condition (PIC; Chomsky 2000), which proposes that phasal complements are transferred immediately at the merger of a phase head. The latter view, on the other hand, supported, for example, by Bošković's (2016) modified PIC, assumes that PIC is in effect only when a next-higher-phase head is merged.

⁶⁾ If it is not omitted, the negative statement with *-kaan* resembles that in (ii), cited from König (1991:18).

- (ii) Minä-kään en ole hankkinut auto-a.
 I-either NEG.1SG have.NEG got car-PART
 'Neither have I got a car.'

⁷⁾ To confirm and understand Finnish grammar, I followed Anders Holmberg's brief and helpful explanation of his Finnish examples and referred to Karlsson (1999) for grammatical concepts.

- ⁸⁾ KP is short for Kase Phrase, the heads (Kase) of which are considered case markers and selects DPs.
- ⁹⁾ Note that the structure of (31) is not precisely the same as (32) because the possessive nominal structure in Japanese rejects the word-internal attachment of *-mo*, unlike *talon-kin* in Finnish. See (30b) and its morphological description.
- ¹⁰⁾ (iii) shows an example of anti-pied-piping triggered by *-mo* attaching to a verb *homeru* ‘praise’.
- (iii) (Jun is a good teacher. He teaches math well, and...)
- (Jun-wa) seeto-o yoku home-*mo*-sur-u.
- Jun-TOP students-ACC often praise-too-do-PRES
- ‘(he) [often praise students]_F, too.’

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