2025. Proc Ling Soc Amer 10(1). 5986. https://doi.org/10.3765/plsa.v10i1.5986.

Taiwanese complementizer *kóng*, sentence-final particles, and the final-over-final condition

Samuel Kennedy*

Abstract. Recent research (Paul 2014, Erlewine 2017) has found Mandarin sentence-final particles (SFPs) to be C heads, as per Rizzi (1997). This apparently violates the proposed universal Final-over-Final Condition (FOFC; Sheehan et. al. 2017), which prohibits the projection of any head-final phrase over a head-initial one. This paper brings this issue into Taiwanese, which has the added complexity of a head-initial complementizer *kóng*. I use co-occurrence restrictions to argue that Taiwanese SFPs occupy multiple head positions, and show that only one of these can be embedded. The result is argued to support the generalization from Richards (2016) and Erlewine (2017) that FOFC applies only within individual phases.

Keywords. Taiwanese; sentence-final particles; Final-over-Final Condition

1. Introduction. Taiwanese Southern Min (henceforth Taiwanese) is like Mandarin in being predominantly a head-initial language, which also has a variety of sentence-final particles (SFPs). These SFPs hold a range of aspectual, clause-typing, and discourse functions. Some can appear in embedded clauses while others cannot, but all surface clause-finally. If these SFPs are taken to be heads (Lee 1986, Paul 2014, Erlewine 2017), then this appearance above the head-initial TP is potentially problematic for the proposed syntactic universal Final-over-Final Condition (FOFC; Sheehan et al. 2017), which prohibits a head-final projection from dominating a head-initial projection. This condition, however, is generally assumed to hold only within a particular domain. For Biberauer et al. (2014), that domain is defined relative to the extended projection, while for Richards (2016) and Erlewine (2017), it is the phase.

This paper has three primary purposes. First, I use facts of co-occurrence and linear ordering to argue that Taiwanese SFPs, like their Mandarin counterparts, instantiate multiple head projections high in the clausal structure. I also show that the innermost of these ('low' SFPs) can be embedded, while others ('high' SFPs) cannot. Second, I claim that Taiwanese's complementizer *kóng* occupies yet another clause-level head position, though it does so clause-initially. Finally, I argue that the phase-bounded conception of FOFC has the particular benefit of correctly ruling out the embeddability of high SFPs, while allowing for the embeddability of low SFPs.

2. FOFC and SFPs. The proposed syntactic universal Final-over-Final Condition (Sheehan et al. 2017) prohibits any head-final phrase from dominating a head-initial phrase. Thus (within some particular domain), (1) is ruled out for any alpha, beta, or gamma.

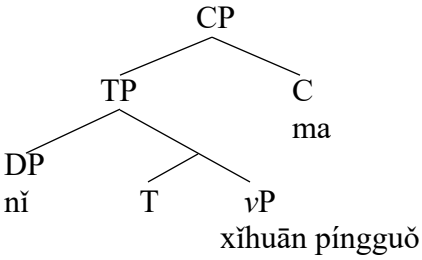
(1) *[$_{\alpha P}$ [$_{\beta P}$ β γP] α]

The claim that SFPs are C heads poses a challenge to FOFC, unless these C heads are somehow outside of the domain in which FOFC applies. In the Mandarin structure below, for example, head-final CP dominates head-initial TP, so FOFC must somehow be formulated to allow this.

* Many thanks to Hooi Ling Soh, Claire Halpert, Diti Bhadra, and the audience at the University of Minnesota Colloquium for their many helpful comments and suggestions. Thank you also to all those who provided me with data, especially Ifeng Hsu. Author: Samuel Kennedy, University of Minnesota (kenn0799@umn.edu).

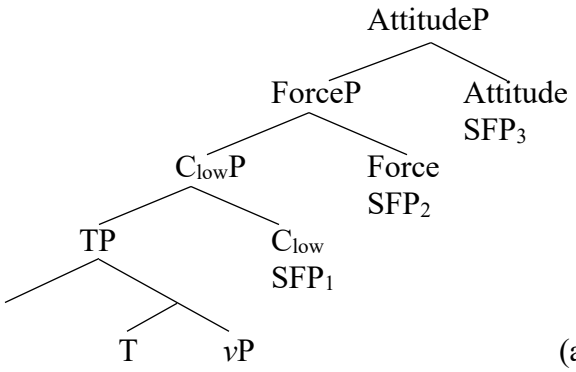
(2) nǐ xǐhuān píngguǒ ma?
you like apples Q
'Do you like apples?'

(3)



At the same time, it has long been known that multiple SFPs can appear in the same sentence, and that they observe a strict linear order when they do so. Following earlier work dividing Mandarin SFPs into three classes on this basis (Chao 1968, Zhu 1982), combined with the assumption that SFPs are C-level heads (Lee 1986, a.o.), Paul (2014) assigns each SFP class to a dedicated head in the split CP system of Rizzi (1997). I will refer to these as SFP_1, SFP_2, and SFP_3, respectively, both in Mandarin and Taiwanese.

(4)



(adapted from Paul's (35))

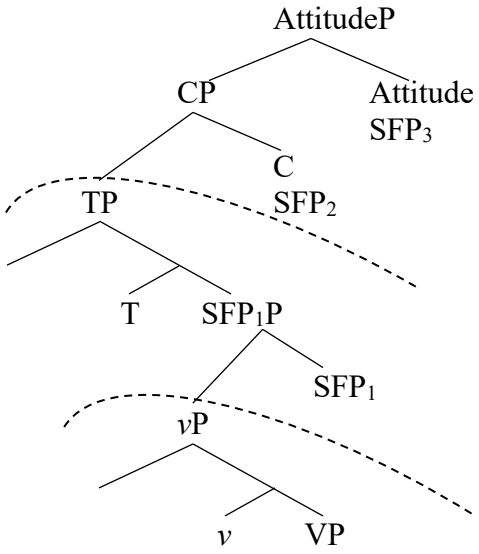
Erlewine (2017) follows this division, but argues that the innermost SFP class occupies a lower position, between TP and *v*P. He bases that position on the scopal behavior of SFP_1s with respect to certain clause-medial operators. Data such as these are argued by Soh & Gao (2006) to show that the SFP *le* scopes below the 'metalinguistic' negation *búshì*, but above the regular negation *bù*.

(5) a. wǒ bù xiǎng jiā le LE > NEG
I NEG miss home change-of-state
'I don't miss home anymore.'

b. wǒ búshì xiǎng jiā le NEG > LE
I NEG miss home change-of-state
'It is not the case that I now miss home.'

Erlewine attributes scope facts such as these to the low syntactic position of SFPs such as *le*. Furthermore, he explains the two apparent FOFC violations with an appeal to phases: FOFC does not apply across phase boundaries, a claim also made in Richards (2016). There are two places of apparent FOFC violation in (6): head-final CP dominates head-initial TP, and head-final SFP_1P dominates head-initial *v*P. For Erlewine, C^0 and $SFP_1{}^0$ are phase heads, and the complements of these heads (i.e. TP and *v*P) are the domains in which FOFC holds.

(6)



(adapted from Erlewine's (13))

It is this use of phases as the domain of FOFC that I argue for in the present paper, though I differ from Erlewine in two respects. First, I do not use the 'C' label for clause-typing SFPs, reserving it for Taiwanese's head-initial complementizer *kóng*. Second, I assume that CP and *v*P are phases (Chomsky 1999), and that FOFC is operative within the entirety of each of these projections (Hsieh & Sybesma 2011), not merely within the complements of their heads. I claim that a phase-bounded FOFC offers a simple explanation for the inability of any high SFPs to appear in embedded clauses: given that embedding Vs c-select for CP as their complements (and not for any SFP-headed projection), no high SFP projection can appear in an embedded clause without violating FOFC.

3. SFPs and *kóng* in Taiwanese. Like Mandarin, Taiwanese has a variety of mostly monosyllabic and mostly toneless particles appearing clause-finally. A selection of these is listed in Table 1, and several examples are given in (7). The use and distribution of these particles differs from Mandarin, but many of these have a rough equivalent in that language.

Taiwanese SFPs	Use[1]	Rough equivalent in Mandarin
矣 ah	anterior aspect (new or relevant situation)	了 le [SFP_1]
咧 leh	continuous aspect (holding a posture)	著 zhe [SFP_1]
爾爾 niā-niā	'only'	而已 éryǐ [SFP_1]
無 bô	question marker	嗎 ma [SFP_2]
嘛 mah	question marker	嗎 ma [SFP_2]
啊 ah	affirmation, approval	啊 a [SFP_3]
喔 oh	reminding, urging	喔 wo [SFP_3]
啦 lah	contentment or impatience	啦 la [SFP_3]

Table 1. Taiwanese sentence-final particles

[1] These descriptions, except for *niā-niā*, are all from Lin (2015). 矣 ah is glossed as 'ANT' in this paper.

(7) a. A-sìn sī Tâi-uân lâng ah
A-sìn be Taiwan person ANT
'A-sìn is (now) Taiwanese.'
b. A-sìn sī Tâi-uân lâng mah?
A-sìn be Taiwan person Q
'Is A-sìn Taiwanese?'
c. A-sìn sī Tâi-uân lâng oh
A-sìn be Taiwan person [reminding tone]
'[Let me remind you that] A-sìn is Taiwanese.'

Where Taiwanese differs from Mandarin (at least in Mandarin's standard form; not in all varieties) is in its overt complementizer 講 *kóng*. The basic meaning of *kóng* is 'to say,' but it has followed a common 'say'>'that' path of diachronic grammaticalization (Chappell 2008), and is now a complementizer that is able to follow a wide variety of matrix verbs.

(8) a. A-huī kám-kak (kóng) A-sìn sī Tâi-uân lâng
A-huī believe COMP A-sìn be Taiwan person
'A-huī believes (that) A-sìn is Taiwanese.'
b. A-huī tsai-iánn (kóng) A-sìn sī Tâi-uân lâng
A-huī know COMP A-sìn be Taiwan person
'A-huī knows (that) A-sìn is Taiwanese.'
c. Ū khó-lîng (kóng) A-sìn sī Tâi-uân lâng
have possibility COMP A-sìn be Taiwan person
'It's possible (that) A-sìn is Taiwanese.'

The complementizer use of *kóng* is always optional; it can be removed from the examples in (8), and from the examples in the rest of this paper, without effect on the meaning of the sentence.

It is not immediately obvious where *kóng* appears with respect to the split CP system proposed for Mandarin SFPs. I assume that *kóng* is some kind of C head, but adopting into Taiwanese the SFPs-as-C-heads proposals that have been made for Mandarin leaves no obvious left-peripheral C spot for *kóng* to show up in. (Erlewine, for example, uses the 'C' label for SFP_2s.) Therefore, I make no assumptions about the relative heights of *kóng* and high SFPs. In principle, it could be that *kóng* surfaces *below* high SFPs, *above* high SFPs, or *in between* multiple SFP projections. In Section 6, however, I find that FOFC predicts the first of these options.

4. Taiwanese SFPs as Heads. As discussed in Section 3, Taiwanese SFPs display a similar range of meanings and uses as Mandarin SFPs. In this section, I argue that they also display the same syntactic division; they can be divided into three classes based on co-occurrence and linear ordering.

Question particles, such as 無 *bô* and 嘛 *mah* cannot co-occur. Either *mah*, a general question-making particle, or *bô* (literally 'not have'), a question particle licensed by *ū* 'have,' is possible in this sentence. But having both is not possible—in either order.

(9) A-sìn ū tsheh {bô /mah /*bô mah /*mah bô}?
A-sìn have book {Q /Q / Q Q / Q Q}
'Does A-sìn have books?'

In principle, this restriction against two sentence-final question particles could have either a syntactic or a semantic basis (or both). On the one hand, this restriction would be explained if (as I argue) there is only one head position available for a question particle to occupy. On the other hand, since question particles generally must take declaratives as their complements, the restriction could be explained in terms of semantic mismatch: *mah* can follow the declarative *A-sìn ū tsheh*, but not the already-interrogative *A-sìn ū tsheh bô*.

However, the compatibility of *mah* and *bô* with *kám*-questions supports the syntactic explanation. 敢 *kám* is a question particle that appears lower in the structure, in immediately-pre-verbal position. Both *mah* and *bô* are able to follow a question formed with *kám*.

(10) a. A-sìn kám ū tsheh?
A-sìn Q have book
'Does A-sìn have books?'
b. A-sìn kám ū tsheh {bô/mah}?
A-sìn Q have book Q/ Q
'Does A-sìn have books?'

Because of the inability of question-marking SFPs to co-occur, and because this restriction is not easily attributable to their semantics, I argue that *bô* and *mah* must occupy the same head position, and that this accounts for the restriction against co-occurrence.

Preceding them linearly is the SFP_1 class. The particles 矣 *ah* and 咧 *leh* both mark aspect: *ah* marks a 'new or relevant situation (anterior aspect)' (Lin 2015), and *leh* marks 'holding a posture (continuous aspect).' They, as well as the adverbial-like 爾爾 *niā-niā* 'only' are all sentence-final elements, which cannot co-occur. In (11), *A-sìm ū tsa̍p khoo* can be followed by *niā-niā* or by *ah* (the latter giving a 'change of state' interpretation; it is presupposed that A-sìm previously did *not* have ten dollars). However, (12) shows that these two cannot both occur, despite the seeming compatibility of their semantics. This inability to co-occur can be attributed to their both occupying the same head position.

(11) A-sìm ū tsa̍p khoo {niā-niā/ah}.
A-sìm have ten dollar {only/ANT}
'A-sìm only/now has ten dollars.'
(12) *A-sìm ū tsa̍p khoo {ah niā-niā/niā-niā ah}
A-sìm have ten dollar {ANT only /only ANT}
Intended: 'A-sìm now has only ten dollars.'

When either of these SFPs occurs alongside *mah* or *bô*, they must precede those question particles: *ah* preceding *mah/bô* is possible, as in (13a), and *niā-niā* preceding *mah/bô* is potentially questionable, as in (13b), but it is preferable to *niā-niā* (or *ah*) following *mah/bô*, in (13c).

(13) a. A-sìm ū tsa̍p khoo ah {mah/bô}?
A-sìm have ten dollar ANT {Q /Q}
'Does A-sìm now have ten dollars?'
b. ?A-sìm ū tsa̍p khoo niā-niā {mah/bô}?
A-sìm have ten dollar only {Q /Q}
'Does A-sìm only have ten dollars?'

c. *A-sìm ū tsa̍p khoo {mah/bô} {ah /niā-niā}?
A-sìm have ten dollar {Q /Q} {ANT/only}
'Does A-sìm {now/only} have ten dollars?'

These facts are consistent with a structure in which the two groups of SFPs discussed so far (*ah*, *leh*, and *niā-niā* on the one hand, and *mah* and *bô* on the other) occupy two distinct head positions within the syntactic structure.

The location of *niā-niā* 'only' in a head position—and in the same position as certain aspect markers—is somewhat surprising, giving its adverbial-like and non-aspectual meaning. Once again, the facts in Taiwanese match those of Mandarin. Mandarin *éryǐ* 'only' is a sentence-final particle (Erlewine 2010), which similarly cannot co-occur with other Mandarin SFP_1s, such as *le*.

Moreover, Erlewine's (2017) justifications for putting SFP_1s in a 'low' position below TP apply to Taiwanese, just as well as Mandarin. The two examples below differ only in the form of negation used: the standard negation 毋 *m̄* or the higher, meta-linguistic negation 毋是 *m̄-sī*. The scope difference can be explained if *niā-niā* appears in a position above *m̄*, but below *m̄-sī* (a clause-medial position, below TP).

(14) a. guá m̄ siúnn tshù niā-niā ONLY>NEG
I NEG miss home only
'I only don't miss home.' (i.e., 'Home is the only thing I don't miss.')
b. guá m̄-sī siúnn tshù niā-niā NEG>ONLY
I NEG miss home only
'I don't only miss home.' (i.e., 'Home is not the only thing I miss.')

Finally, there also exist SFP discourse markers in Taiwanese. These include 啊 *ah*, indicating 'affirmation, approval,' 喔 *oh*, indicating a 'reminding, urging tone,' and 啦 *lah*, indicating 'contentment or impatience' (Lin 2015). When these co-occur with SFP_1s or SFP_2s, they always *follow* these other SFPs.

(15) Lí ū khì tôo-su-kuán bô lah /*lah bô?
You have go library Q [impatience]/*[impatience] Q
'[impatiently] Did you go to the library?

5. Embeddability of SFPs. In the previous section, I established that SFPs occupy several distinct head positions, and that one of these (SFP_1) is relatively low in the clausal structure. In this section, I argue that only this class of SFP can appear in embedded clauses. First, (16) shows that the SFP_3 *oh* 'reminding, urging tone' cannot be embedded, whether or not *kóng* is present.

(16) A-huī thong-ti guá (kóng) A-sìn sī Tâi-uân lâng oh
A-huī notify I COMP A-sìn be Taiwan person [reminding]
'[Let me remind you that] A-huī notified me that A-sìn is Taiwanese!'
NOT: 'A-huī notified me [, saying, let me remind you] that A-sìn is Taiwanese!'

It occurs at the right edge of *two* clauses, and thus could theoretically occur in the CP level of either clause, with expected ambiguity between the two readings. However, only one reading is in fact observed. This sentence must be interpreted as the *speaker* issuing a reminding/urging tone toward the *hearer*, and not that there existed a reminding/urging tone during the reported speech event by A-huī towards 'me.' This suggests that *oh* can only occur in one position: at the CP-level of the matrix clause.

The same lack of ambiguity can also be observed with an SFP_2. The question particle *mah* can only serve to form matrix questions, and not embedded questions.

(17) A-huī tsai-iánn (kóng) A-sìn sī Tâi-uân lâng mah?
A-huī know COMP A-sìn be Taiwan person Q
'Does A-huī know that A-sìn is Taiwanese?'
NOT: 'A-huī knows whether A-sìn is Taiwanese.'

Here, with differing truth conditions between the two readings, the lack of ambiguity is clearer: one might expect a reading in which the speaker is *stating* that A-huī knows the answer to this *question*, but instead the only available reading is that of the speaker *asking* whether A-huī knows a particular *fact*.

One possible objection with respect to the presence of *kóng* in (17) is that *kóng* might simply not be able to appear with an embedded question (as with English *that*, for instance). However, several other forms of questions *are* able to be embedded by *kóng*: polar questions using the question marker *kám*, polar A-not-A questions, and *wh*-questions.

(18) a. A-huī tsai-iánn kóng A-sìn kám sī Tâi-uân lâng
A-huī know COMP A-sìn Q be Taiwan person
'A-huī knows whether A-sìn is Taiwanese.'
b. A-huī tsai-iánn kóng A-sìn sī-m̄-sī Tâi-uân lâng
A-huī know COMP A-sìn be-NEG-be Taiwan person
'A-huī knows whether A-sìn is Taiwanese.'
c. A-huī tsai-iánn kóng A-sìn sī tó-uī lâng
A-huī know COMP A-sìn be where person
'A-huī knows where A-sìn is from.'

In each of these examples, a [+Q] TP is able to be embedded inside a clause headed by *kóng*. Common between all three of these sentences is that the question-forming element is low in the structure—below TP. This is in contrast to the failed reading of (17), in which the attempted embedded question is formed by the clause-level question marker *mah*. Since *kóng* is able to embed a question, its inability to embed *mah*-questions, as well as those formed by other SFP_2s, remains unexplained. I argue in Section 6 that this is due to a combination of c-selection and FOFC.

Finally, we can observe SFP_1s in the same sentence-final position as (16-17). In this case, the expected ambiguity *does* appear.

(19) a. A-huī tsai-iánn (kóng) A-sìn sī Tâi-uân lâng ah
A-huī know COMP A-sìn be Taiwan person ANT
'A-huī knows that A-sìn is [now] Taiwanese'
OR: 'A-huī [now] knows that A-sìn is Taiwanese.'
b. A-huī tsai-iánn (kóng) A-sìn ū tsa̍p khoo niā-niā
A-huī know COMP A-sìn have ten dollar only
'A-huī knows that A-sìn only has ten dollars.'
OR: 'Only A-huī knows that A-sìn has ten dollars.'

Once again, *ah* occurs at the right edge of *two* clauses: the matrix clause and the embedded clause. If it is in the embedded clause, then it asserts that A-sìn is Taiwanese and presupposes that at some time in the past, A-sìn was not Taiwanese. If it is in the matrix clause, it asserts that

A-huī knows whether A-sìn is Taiwanese, and presupposes that he previously did not know. In this case, both readings *are* possible.

This division between the embeddability of low SFPs (SFP_1) and the lack of embeddability of high SFPs (SFP_2 and SFP_3) is also visible with topicalization of the SFP-containing clauses. In (20) below, clauses containing SFPs are embedded into matrix clauses with which they do not share a right edge, and the result is that those examples containing high SFPs are ungrammatical.

(20) a. A-sìn sī Tâi-uân lâng ah sī A-huī sóo tsai-iánn ê
A-sìn be Taiwan person ANT be A-huī NMLZ know NMLZ
'That A-sìn is now Taiwanese is what A-huī knows.'

b. *A-sìn sī Tâi-uân lâng mah sī A-huī sóo tsai-iánn ê
A-sìn be Taiwan person Q be A-huī NMLZ know NMLZ
Intended: 'Whether A-sìn is Taiwanese is what A-huī knows.'

c. *A-sìn sī Tâi-uân lâng oh sī A-huī sóo tsai-iánn ê
A-sìn be Taiwan person [remind] be A-huī NMLZ know NMLZ
Intended: 'That A-sìn is Taiwanese is what A-huī knows.'

6. FOFC in Taiwanese. In the previous sections of this paper, I have argued that Taiwanese SFPs occupy several distinct head positions, and that one of these is significantly lower than the others. I have also shown that these low SFPs are the only ones that can appear in embedded clauses. In this section, I argue that the inability of high SFPs to be embedded can be explained by a phase-bounded version of FOFC.

There are several assumptions which are crucial to this claim. First, I assume that *kóng* is a C^0. This assumption is supported by *kóng*'s similarity to other complementizers cross-linguistically: just like English *that*, it introduces an embedded clause, while having little or no semantic content in itself.

Second, I assume that embedding verbs c-select for CP, and do so locally. Supporting this is the fact that not all Taiwanese embedding verbs allow for *kóng*:

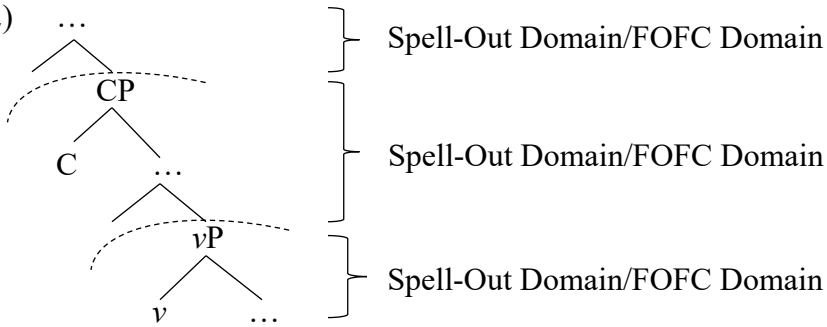
(21) A-huī khóo-khn̂g A-sìn (*kóng) kái hun
A-huī urge A-sìn COMP quit cigarette
'A-huī urged A-sìn to give up smoking.'

While certain verbs readily accept *kóng*, others (generally control verbs, and especially object control verbs) do not. In contrast, embedding verbs do not select for the presence or absence of any SFPs.

Third, I assume that C^0 and v^0 are (the only) phase heads (Chomsky 1999). And finally, I am adopting a version of FOFC which is operative within each phrase projected by a phase head (i.e. CP and *v*P). I am following Erlewine (2017) and Richards (2016) in equating the domain of FOFC to the domain of a cyclical Spell-Out, but I am following Hsieh & Sybesma (2011) in taking the full phrase projected by C^0 and v^0 to be the domain of Spell-Out, as opposed to the complements of these heads.[2] The result is that a head-final projection can only ever immediately dominate a head-initial projection if that head-initial projection is either CP or *v*P.

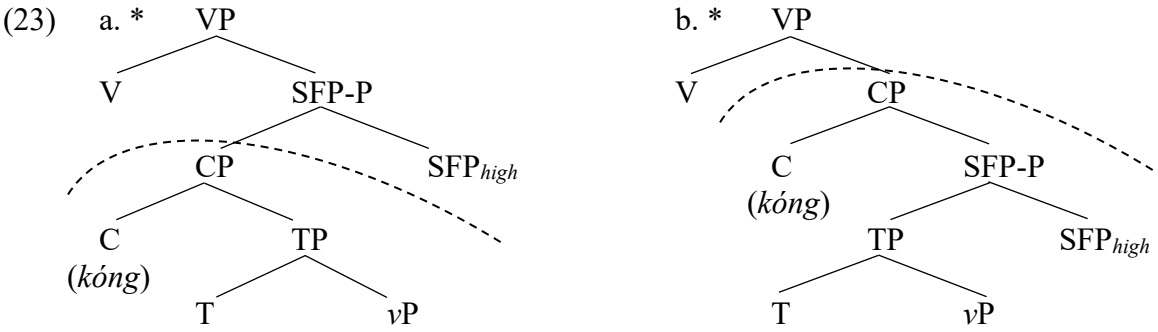
[2] An alternative analysis would be that both SFP_1 and SFP_2 are phase heads whose complements (CP and *v*P) are sent to Spell-Out, where FOFC applies. This would lose the cross-linguistic connection to CP/*v*P phasehood, however.

(22)



Given the assumptions laid out above, it follows that high (CP-level) SFPs can never appear in embedded clauses. There are two logically possible positions at which such an SFP might appear: above or below CP itself. Any position above CP, however, is not available due to the locality of selection: such a structure would require that V c-select for that SFP projection (23a).

(23)

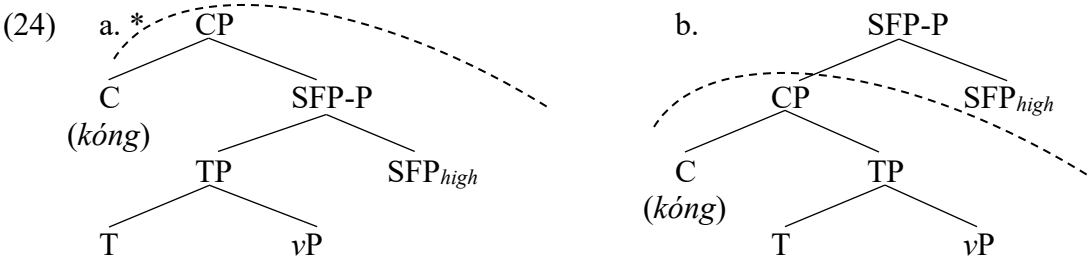


Conversely, a position below CP would be a violation of FOFC, as a head-final SFP phrase would dominate head-initial TP (23b).

Since these high SFP projections cannot appear above embedded CP and also cannot appear below it, they must not be present in the embedded clause at all. Thus, the fact that these SFPs cannot be embedded is a consequence of the combination of the locality of c-selection and FOFC.

The appearance of high SFPs in matrix clauses is not ruled out, however. While FOFC blocks these projections from appearing below CP,[3] their appearance above that CP is fine, as CP is not c-selected for by a higher V. This predicts that any and all clause-level SFPs can only appear in matrix clauses, and must be above CP when they do.[4]

(24)

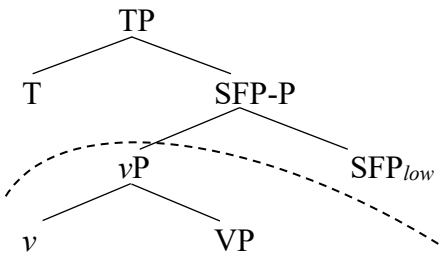


[3] Matrix-clause *kóng*, and thus matrix-clause CP, is found in exclamatives (Hsieh & Sybesma 2011). In such cases, both *kóng* and high SFPs can appear in the same clause. This also means that it is not the co-occurrence of these two elements that rules out (23a-b).

[4] Hsieh & Sybesma (2011) also arrive at the conclusion that SFPs appear above CP, for substantially different reasons.

Likewise, low SFPs are not ruled out from either matrix or embedded positions. Since they appear immediately above *v*P (not CP), they can surface in either clause.

(25)



This restriction on embeddability as a consequence of phase-bounded FOFC is potentially relevant even to languages that lack an equivalent to Taiwanese's complementizer *kóng*, such as most varieties of Mandarin. The SFP_2 *ma*, for example, cannot be embedded (Li & Thompson 1981:556-7), but the SFP_1 *le* can (Paul 2014:16). The argumentation above could be repeated for Mandarin, with the sole exception that C^0 is obligatorily null.

Finally, note that the matrix-only status of high SFPs is not predicted by a version of FOFC relativized to extended projections, as claimed by Biberauer et al. (2014). For Biberauer (2017), for example, SFPs are not true FOFC violations by virtue of their being 'acategorial': they lack the [+V] feature that would force them to align in head-directionality with the rest of the extended VP. On this view, then, it is not a high SFP's position above CP which allows it to appear head-finally, but rather its featural makeup. Therefore, for Biberauer, it is not FOFC that rules out (23b); instead, this structure must be ungrammatical for some other reason.

7. Conclusion. The relevance of sentence-final particles to the Final-over-Final Condition is a well-studied but unresolved issue. This paper is an effort to account for the facts of Taiwanese, in the hope that they shed light on the workings of FOFC. I have shown that Taiwanese SFPs display a strict linear order, consistent with being a series of functional heads. I have also shown that the innermost of these (SFP_1) is both lower than the others and also uniquely able to appear in embedded clauses. Finally, I have argued that a phase-bounded version of FOFC is able to account for both the appearance of SFPs at multiple places within the clause and for the restriction against high SFPs appearing in embedded clauses.

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