A Principled Account of Malagasy Deverbal Nouns

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1 Introduction [1]

In Malagasy, a prefix *f-* appears on deverbal nouns; this is exemplified in (1), where (1a'-b') are the nominal counterparts of the verbal forms in (1a-b). Given this pattern, it is not unreasonable to assume that *f-* is a nominalizing affix, as has been the case in past literature (cf. Paul 1996, Ntelitheos 2006, Ntelitheos 2007).

(1)

a. *manadina* m-an-adina TOP-v.CAU-question 'to ask'	b. *amonoana* an-vono-ana v.CAU-kill-TOP 'to kill'
a'. *fanadina* f-an-adina *f*-v.CAU-question 'questionnaire'	b'. *famonoana* f-an-vono-ana *f*-v.CAU-kill-TOP 'tool used for killing'

However, there is a problem with such an analysis in that there is a regular paradigmatic gap in the distribution of *f-*. Malagasy verbs have three forms, here referred to as Actor Topic (AT), Circumstantial Topic (CT), and Theme Topic (TT). Of the three forms, AT and CT freely accept *f-*nominalization (shown in 2a'-b'), whereas TT forms categorically disallow it.

(2)

Actor Topic	Circumstantial Topic	Theme Topic
a. *manadina* m-an-adina TOP-v.CAU-question 'to ask'	b. *anadinana* an-adina-ana v.CAU-question-TOP 'to ask'	c. *adinina* adina-ina question-TOP 'to ask'
a'. *fanadina* f-an-adina *f*-v.CAU-question 'questionnaire'	b'. *fanadinana* f-an-adina-ana *f*-v.CAU-question-TOP 'exam'	c'. *f-adina-ina/ana *f*-question-TOP —

I argue that the prefix *f-* that appears on deverbal nouns is not a nominalizer, but is rather part of the verbal complex, a functional head that cross-linguistically selects for little v. A candidate for the category of the head is Flav(or), a functional category proposed for Turkish by Key (2010) to encode the semantic 'flavor' of little v, in the sense of Folli and Harley (2005). When causative, it is Flav that introduces an external argument in its specifier.

The argument is presented as follows: Initially, section 2 presents an account of the Malagasy verbal complex based on Pearson (2004). I then present, in section 3, Key's (2010) motivation for Flav, and illustrate how this analysis can be extended to Malagasy verbs. In section 4, I present an account of the distribution of *f-* in Malagasy nouns and verbs.

[1] All Malagasy data were provided by Julia Andrianarisolotoandro, unless otherwise specified. Any errors in the presentation of data or in the presented analysis thereof are the exclusive fault of the author.

2 How Malagasy Verbs Work

Before addressing the role of *f*-, we must first look closely at the Malagasy verbal complex. Malagasy illustrates a voice-topic system, illustrated in (3), which is characteristic of Western Malayo-Polynesian languages. Depending on the affixes that appear on the verb, either the external argument (AT; 3a), internal argument (TT; 3b), or an oblique (CT; 3c) appears in the sentence-final topic position, here marked with a dotted underline.

(3) a. Actor Topic (AT)
m-an-vono akoho amin-'ny antsy ny mpamboly
TOP-v.CAU-kill chicken PREP-DET knife DET farmer
'The farmer kills chickens with the knife'

b. Theme Topic (TT)
vono-in(a)-'ny mpamboly amin-'ny antsy ny akoho
kill-TOP-LNK.DET farmer PREP-DET knife DET chicken
'The chickens, the farmer kills (them) with the knife'

c. Circumstantial Topic (CT)
an-vono-an(a)-'ny mpamboly akoho ny antsy
v.CAU-kill-LNK.DET farmer chicken DET knife
'The knife, the farmer kills chickens (with it)' (adapted from Pearson 2001: 47)

Malagasy verbal affixes can be classified into two different categories, illustrated in the following sections 2.1 and 2.2. The first category is identifiable as little v. The second category, affixes which directly interact with clause structure, I will refer to collectively as topic affixes.

2.1 Affixes: little v

The prefixes of the forms *i*-, *a*n-, and *a*- function as verbalizers (v°) when attached to a root. The variant *i*- appears on intransitive verbs, and can be taken to make the semantic contribution of DO, as shown in (4). The variant *a*n-, as seen in (5), functions as a causative; as a causative, *a*n- functions as a transitivizer, and introduces a causer argument. The third form of v is *a*-, examples of which are presented in (6); this functions as a stative affix, so is glossed here as BE.

(4) a. *mihira*
m-i-hira
TOP-v.DO-song
'to sing'

b. *mipetraka*
m-i-petraka
TOP-v.DO-sit
'to sit'

(5) a. *mameno*
m-an-feno
TOP-v.CAU-full
'to fill'

b. *mametraka*
m-an-petraka
TOP-v.CAU-sit
'to put/place'

(6) a. *marary*
m-a-rary
TOP-v.BE-sick
'be sick'

b. *mazoto*
m-a-zoto
TOP-V.BE-ZEAL
'be motivated'

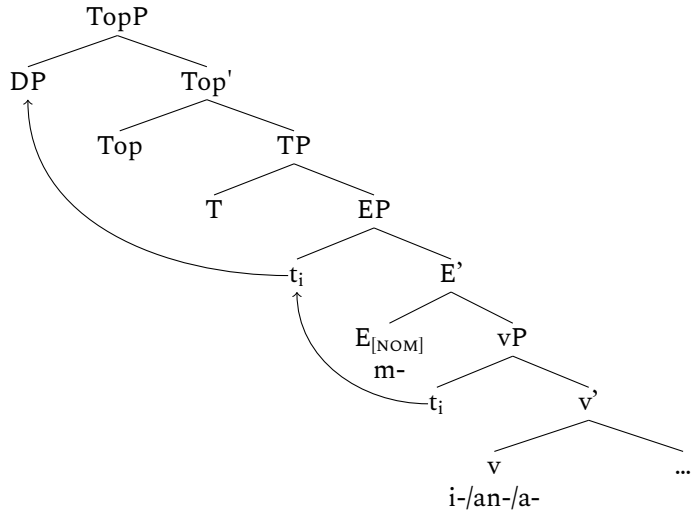
2.2 Topic Affixes

For the second set of affixes, *m-*, *-ina*, and *-ana* above, I follow Pearson's (2004) analysis of these as Case-checking affixes that affect the surface order of elements. Under a simplified version of Pearson's account, the sentence-final position is not a subject, but is rather an A' position in the specifier of TopicP.

2.2.1 Actor Topic

The AT morpheme, which Pearson labels as the head of an Event Phrase (EP), checks nominative case, and has two possible realizations. The first of which, *m-*, which appears in AT clauses such as (3a) above, projects a specifier, allowing the external argument to raise for case and continue to the topic position, as illustrated in (7).

(7)



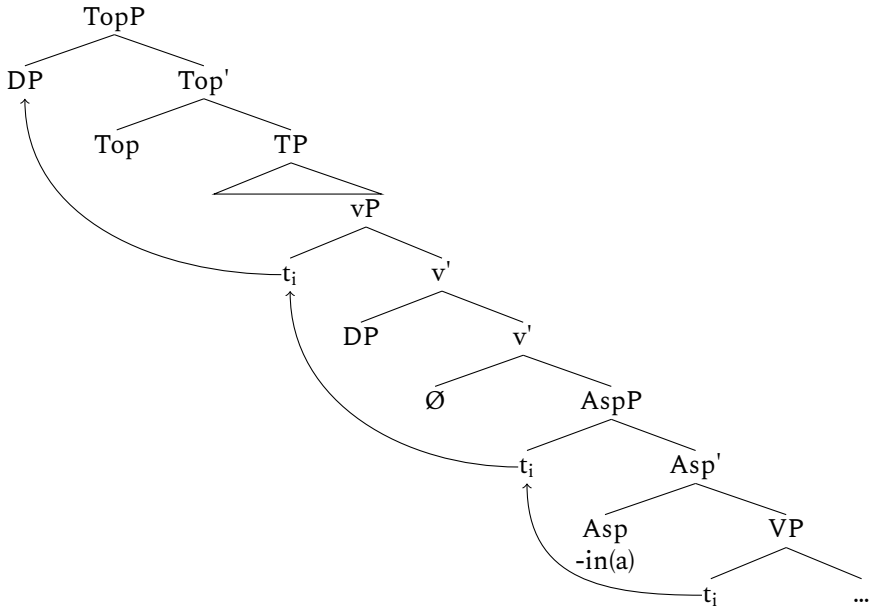
adapted from Pearson (2004: 236)

The other form, -ny, does not project a specifier, and the external argument remains low in the clause.

2.2.2 Theme Topic

In the same way that the AT morphemes check case on the external argument, the TT morpheme *-in(a)*, which Pearson labels as the head of AspP, checks case on the internal argument. The structure of a TT clause is shown in (8); the internal argument raises into the specifier of AspP for case, and continues up into the topic position.

(8)



adapted from Pearson (2004: 236)

In non-TT clauses, the internal argument still necessariy moves to the specifier of AspP, yet the Asp head does not appear overtly. To account for this, Pearson appeals to the generalized doubly-filled COMP filter of Koopman and Szabolcsi (2000) and Sportiche (1992) defined in (9):

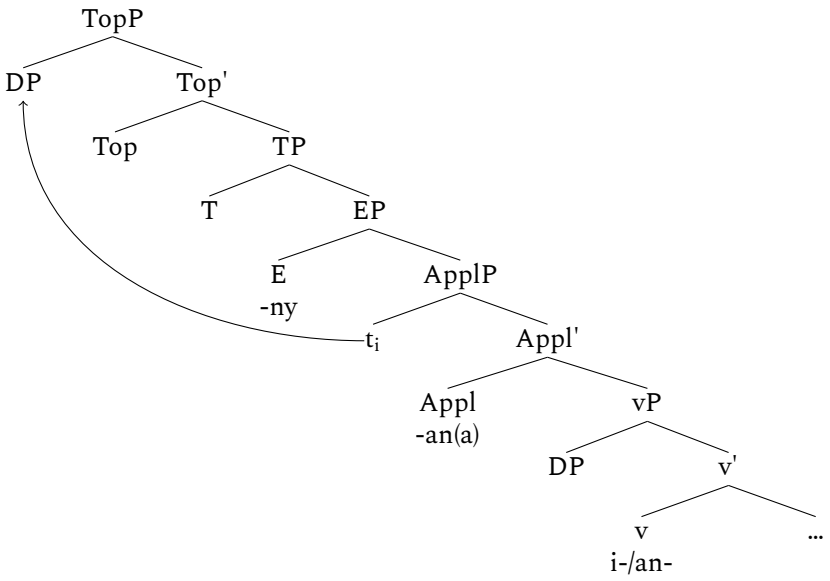
(9) *Generalized Doubly-filled* COMP *filter:*
If H is a head containing some feature F, *[HP XP [H' H° ...]] when XP and H both overtly encode F.

As such, in non-TT clauses, the internal argument occupies the specifier of AspP, and Asp itself is unpronounced to satisfy the doubly-filled COMP filter.

2.2.3 Circumstantial Topic

Finally, there is the affix *-an(a)* that appears on CT forms, as well as on some TT forms. Pearson analyses this as the head of an applicative head situated outside of vP, which is expected if it licenses oblique elements. In the same way as the affixes addressed above, this morpheme is overt in the event that a DP raises out of its specifier. The derivation of a CT clause, then, is illustrated in (10); the oblique element raises out of Spec, ApplP, and thus Appl is realized overtly.

(10)



adapted from Pearson (2004: 241)

The structure of (10) gives rise to a problem in the face of the doubly-filled COMP filter, however, in that the vP has a DP in its specifier while v is also overt, thereby violating the filter. Pearson ultimately speculates that the doubly-filled COMP filter applies cyclically and is not violated if the head of a phrase and its specifier are spelled out separately. Pearson also first considers (before dismissing) the possibility that there is some additional functional category providing a specifier position that holds the DP, whereby there is no violation of the filter. I argue for this latter case and that this extra functional category is Flav, presented in the next section.

3 The extra functional category: Flav

In Malagasy, there appears an intermediate affix *f-* (that is, the same form of the *f-* seen on deverbal nouns) when a causative is added to a lower verb. This can be seen in (11a') with a lower causative, and in (11b') where the lower verb is intransitive:

(11)

a.	*mametraka*	b. *miady*
	m-an-petraka	m-i-ady
	TOP-v.CAU-sit	TOP-v.DO-fight
	'Y put/place X'	'X fight'
a'.	*mampametraka*	b'. *mampiady*
	m-an-f-an-petraka	m-an-f-i-ady
	TOP-v.CAU-*f*-CAU-question	TOP-v.CAU-*f*-DO-fight
	'Z make Y put X'	'Y make X fight'

A similar pattern is seen in many languages that exhibit overt causative morphology, examples of which are provided in the chart in (12); the outer causative affix in these languages is often taken to contain all of the material of the lower causative, with some extra phonetic material, marked in bold:

(12)

	Inner	Outer
Kitakara	-i	-**ith**i
Hindi	-aa	-**v**aa
Nivkh	-u	-**g**u
Amharic	a-	a**s**-
Turkish	-ır	-**D**ır
Malagasy	an-	an-**f**-

(from Key and Nelson 2010, with data from Svenonius 2005)

I propose that this extra phonetic material is the realization of a Flav head, based on Key (2010) for Turkish, addressed below.

3.1 Flav in Turkish and Malagasy

The form of this element in Turkish is -t, as can be seen in (13b), where it appears between the inner and outer causative affixes. What is notable is that -t can appear without the outer causative without changing the meaning, as in (13c), indicating that it is not part of the outer causative.

(13) a. *yap-tır-*
do-CAU
'cause to do'

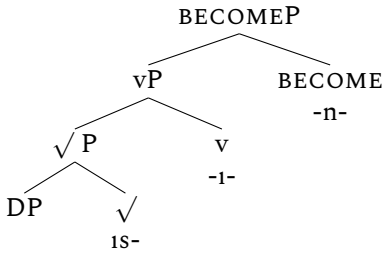
b. *yap-tır-t-tır*
do-CAU-**t**-CAU
'cause to cause to do'

c. *yap-tır-t*
do-CAU-**t**
'cause to do'

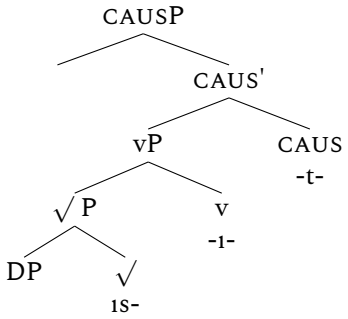
(Greg Key, p.c.)

Key's (2010) claim is that Turkish -t is the head of FlavP, which selects for and contributes flavor to little v. The verbs in (14a-b) provide evidence for this analysis; the transitive and intransitive variants of the Turkish verb 'to heat up' differ only in the form of the Flavor morpheme.

(14) a. ısın 'to heat up (intr.)'



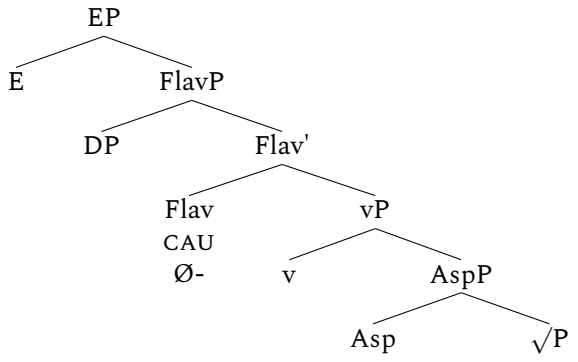
b. ısıt 'to heat up (tr.)'



Key (2010)

Extending Key's analysis of Flavor to Malagasy, verbs have the structure in (15), in which the external argument is introduced in FlavP.

(15)



If this is correct, then it necessarily follows that the form of v is dependent on Flav above it. This dependency can be expressed with a DM-style vocabulary-insertion rule such as that in (16):

(16) Vocabulary Insertion of v:
/an/ ⟷ FLAVP[CAU vP[__ X]]
/i/ ⟷ FLAVP[DO vP[__ X]]
/a/ ⟷ Elsewhere

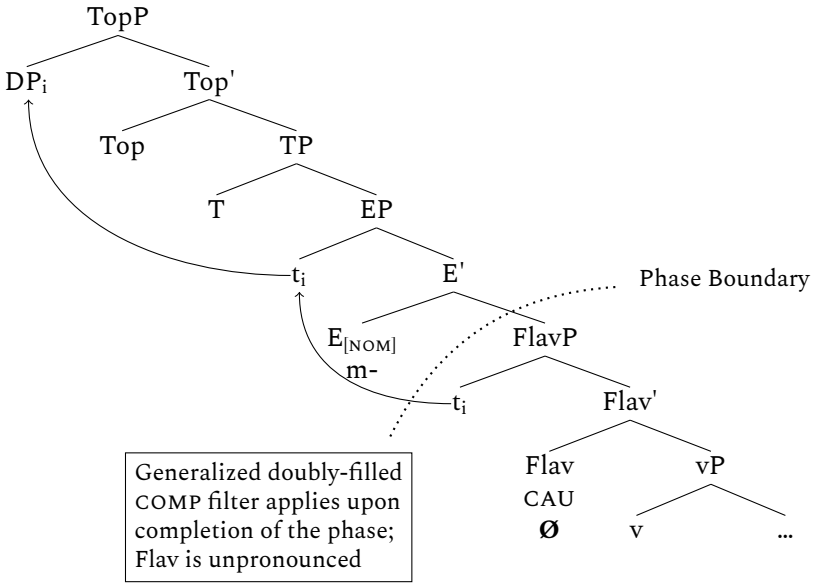
Secondly, we need an explanation for why Flav is left unpronounced when there is no higher causative. The following section proposes a solution to this problem.

4 The realization of Flav in Malagasy verbs

I propose that the mechanism that causes Flav to be unpronounced on verbs is the doubly-filled COMP filter. Suppose that the doubly-filled COMP filter applies cyclically, as suggested by Pearson, but to all structure within the phase.

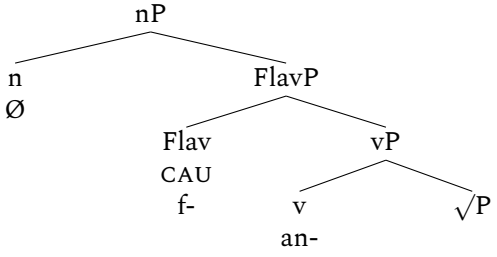
Momentarily assuming that FlavP is a phase, then at the stage in the derivation that FlavP is completed, the external argument is still in Spec, FlavP; the external argument and the Flav head violate the filter, and Flav is rendered unpronounced, as illustrated in (17):

(17)



In the case of nominals, argument structure is impoverished; thus, the doubly-filled COMP filter does not apply and Flav is pronounced:

(18)



In addition, under the characterization of *f-* as Flav, the impossibility of TT f-nominals is predicted; Flav selects for v, and it does not appear when v is not present. It should follow, then, that TT forms, in lacking

v, should not be interpreted as verbs. This prediction is borne out; TT forms in isolation are interpreted as nouns, as seen in (19):

(19)

a. *vonoina*	b. *orohana*
vono-in(a)	oroka-an(a)
kill-TOP	kiss-TOP
'thing killed'	'thing kissed'

4.1 FlavP as a phase

The question remains of a motivation for identifying FlavP as a phase. Under the assumption that idiosyncrasies are characteristic of phases at the word level, evidence for FlavP as a phase boundary can be seen in phonological and morphological idiosyncrasies below Flav.

4.1.1 Idiosyncracy in the lower domain

Travis (2000) identifies differences in phonological alternations between causatives and general phonological rules. Within the phase, sequences of nasals followed by obstruents fuse into a single segment, seen in (20):

(20) N+C sequenecs in the lower domanin

n + p ⟶ /m/	m-a**n**-**p**etraka	ma**m**etraka	
		'to put'	
n + s ⟶ /n/	m-a**n**-**s**itrika	ma**n**itrika	
		'to hide'	Travis (2000: 175)

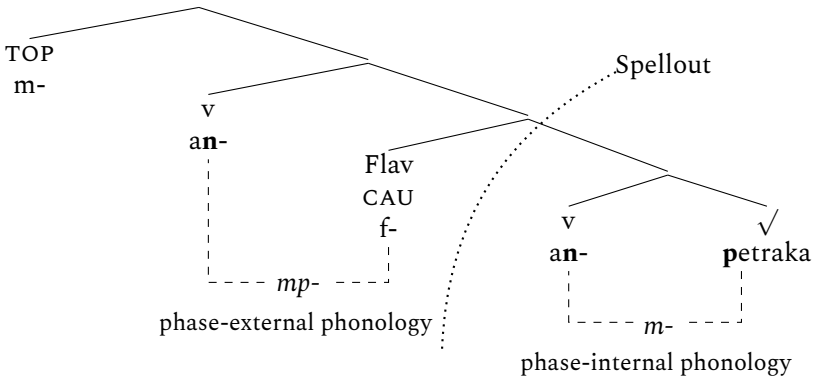
By contrast, the same sequences in post-lexical processes such as reduplication and compounding result in assimilation on the nasal consonant:

(21) N+C sequenecs in the higher domain

n + p ⟶ /mp/	pentso**na**+**p**entsona	pentso**mp**entsona	
		'to chatter'	
n + s ⟶ /n/	m-an-sampo**na**+**s**ampona	manampo**nts**ampona	
		'to stop'	Travis (2000: 174)
n + f ⟶ /mp/	fivarota**na**+**f**anafody	fivarota**mp**anafod	
	'store+medicine'	'pharmacy'	

Extending Travis' observation to the concept of phases, separate phonological rules apply within and without the lower phase. If *f*- is a phase head, material below *f*- is spelled out separately. With material below *f*- being spelled out in the lower phase, the consonants fuse, as in (20). The affix *f*- itself is subject to alternations of the higher phase, and thus when a higher causative is added, extra-phasal phonology generates a prenasalized stop, as in (21). An example is presented and schematized in (22):

(22) *ma**mp**a**m**etraka*
m-a**n**-**f**-[a**n**-**p**etraka]
TOP-v.CAU-f-[v.CAU-sit]



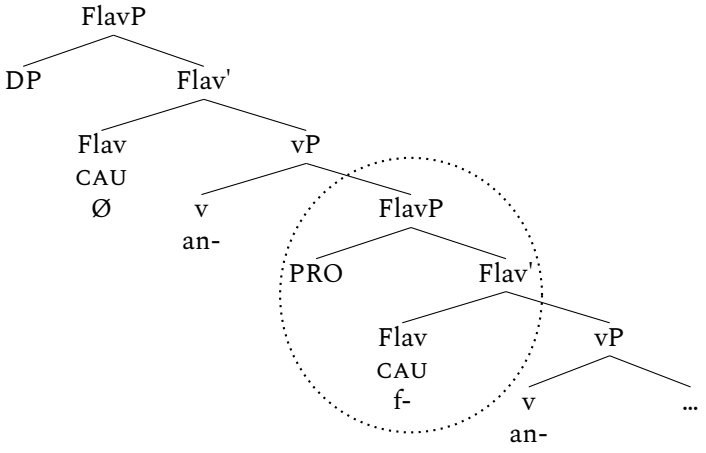
4.2 Flav's introduction of an argument

Then, if FlavP is indeed a phase, and the doubly-filled COMP filter applies cyclically, as assumed, then the presented analysis can also account for the appearance of *f-* between causatives. In Malagasy, verbs that contain a productive causative, such as that in (23a), have an implicit causee, but it is not possible to specify that causee within the sentence. To illustrate this, an impossible candidate is presented in (23b).

(23) a. *Mampsambotran'i* *Ony* *i* *Vero*
m-Ø-an-f-i-sambotra-n'i Ony i Vero
TOP-CAU-v-CAU-v-captive-LNK.DET Ony DET Vero
'Vero is having someone catch Ony'

b. **Mampsambotran'i* *Ony* *i* *amin'i* *Faly* *Vero*
m-Ø-an-f-i-sambotra-n'i Ony amin'i Faly i Vero
TOP-CAU-v-CAU-v-captive-LNK.DET Ony PREP-DET Faly DET Vero

Thus, in verbs with a productive causative, the lower causative does not contribute to the argument structure of the verb. This being the case, there is never an overt element in the specifier of the lower FlavP (though there may be some PRO-like element, corresponding to the implied causee); thus the doubly-filled COMP filter has no effect, and Flav is overt. This is illustrated in (24):

(24)


5 Concluding remarks

I have proposed a principled explanation for what has previously been a problematic paradigmatic gap in Malagasy: the distribution of the *f-* affix. I have argued, appealing to the doubly-filled COMP filter, that *f-* is part of the verbal complex of Malagasy verbs, appealing to Key's (2010) Flav head as a candidate for this category. If FlavP holds credence as a phase boundary, as proposed, this seems to suggest that classifying categorizing heads as phase heads (à la Marantz 2007) may need to be re-examined.

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