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Predicate Focus in Krachi: 2 Probes, 1 Goal, 3 PFs

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1. Introduction

In many languages with predicate fronting, either the verb (1a) or VP (1b) occurs at the left edge of the clause, with a copy of the verb in the TP domain.

- (1) Spanish (Vicente 2009)
- a. [Comprar], Juan ha comprado un libro (aunque luego no lo ha leído).
buy.INF Juan has bought a book but later not CL has read
'As for buying, Juan has bought a book (although he didn't read it later).'
- b. [Comprar un libro], Juan lo ha comprado.
buy.INF a book Juan CL has bought
'As for buying a book, Juan has bought it.'

In this paper, we analyze verb fronting constructions in Krachi¹, an endangered language of eastern Ghana, with basic SVO word order (2a). Krachi has verb focusing constructions that involve a verb (2b) or VP (2c) in the left periphery of the clause with a second instance of the verb in TP. However, in Krachi there is a third verb fronting strategy, one that involves VP movement with object-verb inversion and distinct semantics (2d):

- (2) a. $\text{\textcircled{a}ky\text{\textcircled{t}} w\text{\textcircled{v}} \text{\textcircled{\epsilon}}\text{-d\text{\textcircled{t}}k\text{\textcircled{\epsilon}} i\text{-gyo.}$
woman the PST-cook PL-yam
'The woman cooked yams.'
- b. Contrastive/Exhaustive Predicate Focus
 $\text{K\text{\textcircled{\epsilon}}- [d\text{\textcircled{t}}k\text{\textcircled{\epsilon}}] y\text{\textcircled{t}} \text{\textcircled{a}ky\text{\textcircled{t}} w\text{\textcircled{v}} \text{\textcircled{\epsilon}}\text{-d\text{\textcircled{t}}k\text{\textcircled{\epsilon}} i\text{-gyo.}$
NOM cook FOC woman the PST-cook PL-yam
'It was COOKING that the woman did to yams (not, say, eating).'
- c. Exhaustive Predicate Phrase Focus
 $\text{K\text{\textcircled{\epsilon}}- [d\text{\textcircled{t}}k\text{\textcircled{\epsilon}} i\text{-gyo}] y\text{\textcircled{t}} \text{\textcircled{a}ky\text{\textcircled{t}} w\text{\textcircled{v}} \text{\textcircled{\epsilon}}\text{-d\text{\textcircled{t}}k\text{\textcircled{\epsilon}}.}$
NOM cook PL-yam FOC woman the PST-cook
'The woman only cooked yams (i.e. she did nothing else).'

* Jason Kandybowicz, The Graduate Center, City University of New York, jkandybowicz@gc.cuny.edu. Harold Torrence, University of California, Los Angeles, torrence@humnet.ucla.edu. The data presented in this paper come exclusively from fieldwork and are presented in the official Krachi orthography developed by the Ghana Institute for Linguistics, Literacy & Bible Translation (Dundaa 2007). Because the orthography does not mark tone, tone marking has been omitted from the examples. We extend our sincere thanks to our native speaker consultants Mark Nsekou Denteh, Matthew Donkor, and Joseph Agyei Korboe, as well as to Mark Dundaa and the Ghana Institute for Linguistics, Literacy & Bible Translation for logistical, material and scholarly support.

¹ Krachi is a North Guang language of the Tano phylum of Kwa languages and is spoken by approximately 50,000 speakers in the region surrounding the town of Kete-Krachi in the Volta region of eastern Ghana.

d. Contrastive Predicate Phrase Focus

Kε- [i-gyo dɪkɛ] yɪ ɔkyɪ wɔ ε-dɪkɛ.

NOM PL-yam cook FOC woman the PST-cook

‘It was COOKING YAMS that the woman did (not, say, eating rice).’

We propose that all instances of predicate focus with verb doubling in Krachi involve the formation of identical parallel chains (Chomsky 2008), namely, $V^0 \rightarrow v^0 \rightarrow T^0$ and $vP \rightarrow \text{Spec, FocP}$. These parallel chains arise because different probes (Foc^0 & T^0) target the same goal (v^0). Moreover, we propose that differences in the PF interpretation of the two vP copies account for the surface differences between the predicate focus constructions in the language. Krachi predicate focus thus provides additional support for analyses like Kandybowicz 2008 and Aboh & Dyakonova 2009 that attempt to derive verb doubling from narrow syntactic mechanisms like parallel chain formation rather than multiple copy spell-out at PF.

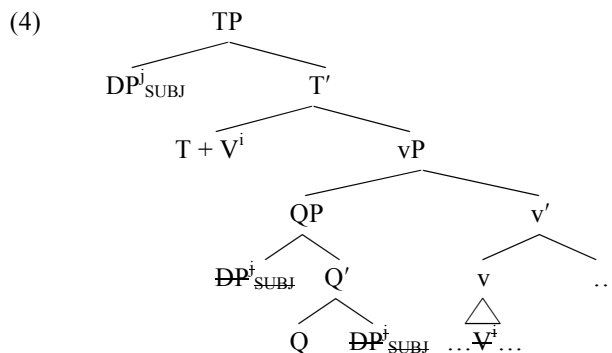
2. Assumptions about Krachi clause structure

This section introduces aspects of basic Krachi clausal syntax. Specifically, we investigate verb movement and the structure of vP. The analytical conclusions in this section form the basis of the analysis of the verb fronting constructions to come.

We consider first the distribution of subject-oriented floated quantifiers. In (3a), the subject *a-kyɪ* ‘women’ is accompanied by the quantifier *kpatii* ‘few’. (3b) shows that it is possible for the quantifier to follow the tense-marked verb.

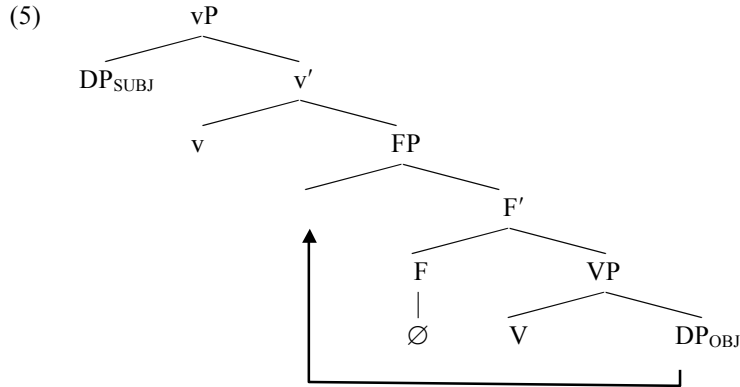
- (3) a. A-kyɪ kpatii kε-dɪkɛ i-gyo.
 PL-women few FUT-cook PL-yam
 ‘Few women will cook yams.’
- b. A-kyɪ kε-dɪkɛ kpatii i-gyo.
 PL-women FUT-cook few PL-yam
 ‘Few women will cook yams.’
 Not: ‘Women will cook few yams.’

Assuming the VP-Internal Subject Hypothesis, (3b) arises when the subject raises to Spec,TP, stranding the quantifier in its base position, and the verb raises to T^0 . This yields a surface configuration in which the verb intervenes between the subject and quantifier. (3a) results when the DP subject pied-pipes its containing QP:



We conclude that Krachi is V^0 -to- T^0 language.

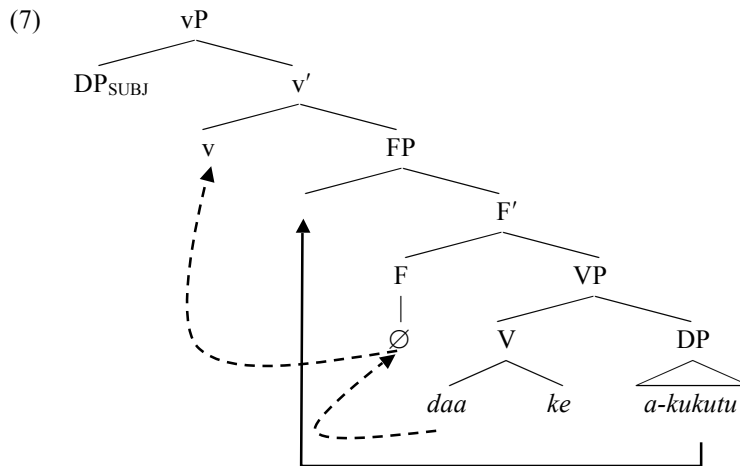
We turn next to the structure of vP. We argue that Krachi vP contains an intermediate functional projection (“FP”) hosting the object (Travis 1991, 2010; Koizumi 1995; Kandybowicz & Baker 2003, etc.):



Evidence for the analysis in (5) comes from word order in “split V” constructions. Krachi has a number of lexical verbs that consist of two distinct “pieces”, such as the verb *daa...ke* ‘taste’ (6a). In the split V construction, the pieces of the verb are obligatorily separated by the direct object (6a vs. 6b):

- (6)
- a. Ama ε-daa a-kukutu ke.
 Ama PST-taste PL-orange *ke*
 ‘Ama tasted oranges.’
- b. *Ama ε-daa ke a-kukutu.
 Ama PST-taste *ke* PL-orange

For (6a), the object, *a-kukutu* ‘oranges’ originates in the complement position of the verb *daa...ke* ‘taste’, which we analyze as a complex lexical V^0 head, as shown in (7) below. The direct object raises to a position higher than V^0 (Spec,FP in (7)). Only the first piece of the complex verb raises to v^0 (and ultimately T^0), just as verbs ordinarily do in the language. This is why the verb surfaces in two discontinuous pieces.



Support for the analysis in (7) comes from Q-float facts, which show that objects originate lower than the second particle in the split V construction. In (8a) the object *a-kukutu* ‘oranges’ and its quantifier *kpatii* surface between the two pieces of the split verb, as expected. However, (8b) shows that it is also possible for the quantifier to surface to the right of the *ke*, the second piece of the split verb. This suggests that the entire object QP originates to the right of the split verb and subsequently raises:

- (8) a. Ama ε-daa [_{QP} a-kukutu kpatii] ke.
 Ama PST-taste PL-orange few *ke*
 ‘Ama tasted few oranges.’
- b. Ama ε-daa a-kukutu ke [_{QP} ___ kpatii].
 Ama PST-taste PL-orange *ke* few
 ‘Ama tasted few oranges.’

Having examined basic Krachi verbal syntax, in the next section we lay out the core properties of its verb fronting constructions that an analysis must account for.

3. Core properties of Krachi predicate focus

In all of the constructions we examine, the verb has a bi-locational distribution. That is, as (9) shows, two instances of the verb must occur. In addition, one instance of the verb must be in T⁰ and the other in the left periphery, not in its base position (as (9) shows).

- (9) Kε-dkε yɪ ɔkyɪ wɪ ε-(dkε) i-gyo (*dkε).
 NOM-cook FOC woman the PST-cook PL-yam cook
 ‘It was COOKING that the woman did to yams.’

A second property is that the peripheral predicate is nominalized via the nominalizer *kε-*. In (10) below, the nominalized verb *watu* ‘pound’ can be modified by the adjective *tuma* ‘good’, which modifies nominals in other cases.

- (10) Kε- [watu tuma] yɪ ɔkyɪ wɪ ε-watu i-gyo.
 NOM pound good FOC woman the PST-pound PL-yam
 ‘It was a GOOD POUNDING that the woman did to yams.’

Crucially, the dependency between occurrences of the verb is A'-like because it is unbounded. In (11), for example, there are two CP boundaries between the nominalized verb and the inflected verb in T⁰ in the most embedded clause.

- (11) Kε-watu yɪ Gifty ε-gyɛnt [fɛɛ Kofi e-nu [fɛɛ Ama ε-watu i-gyo]].
 NOM-pound FOC Gifty PST-think COMP Kofi PST-hear COMP Ama PST-pound PL-yam
 ‘It was POUNDING that Gifty thought that Kofi heard that Ama did to yams.’

Another clue that verb fronting involves A'-movement is that the two instances of the verb cannot be separated by an island boundary. This is the case for both strong islands (12a-b) and weak islands (12c).

- (12) a. *Kε-dkε yɪ Kofi ε-dt [ansaŋ Ama ε-dkε mwe]. Adjunct Island
 NOM-cook FOC Kofi PST-sleep before Ama PST-cook rice
 Intended: ‘Kofi slept before Ama COOKED rice.’
- b. *Kε-watu yɪ Kofi e-gyi [i-gyo kε Ama ε-watu]. Complex NP Island
 NOM-pound FOC Kofi PST-eat PL-yam REL Ama PST-pound
 Intended: ‘Kofi ate the yams that Ama POUNDED.’
- c. *Kε-watu yɪ mɪ e-bise fɛɛ [nse yɪ ɔ-watu i-gyo]. *Wh*-Island
 NOM-pound FOC 1ST.SG PST-ask COMP who FOC 3RD.SG-pound.PST PL-yam
 Intended: ‘I asked who POUNDED yams.’

Additional facts suggest that simple verb focus involves phrasal movement. For example, stranded object quantifiers (13b) and low manner adverbs (13c) may accompany the fronted predicate.

- (13) a. Ama ε-fe a-kyυη kpatii.
 Ama PST-sell PL-fowl few
 ‘Ama sold few fowls.’
- b. Kε- [fε kpatii] yι Ama ε-fe a-kyυη.
 NOM sell few FOC Ama PST-sell PL-fowl
 ‘It was SELLING that Ama did to FEW fowls.’
 NOT: ‘It was FEW SELLINGS that Ama did to fowls.’
- c. Kε- [mσ bireη/damrase] yι Kofi ε-mσ a-kyυη.
 NOM- kill quickly/well FOC Kofi PST-kill PL-fowl
 ‘It was SLAUGHTERING QUICKLY/WELL that Kofi did to fowls.’

At the same time, neither tense markers nor negation may accompany the peripheral predicate, even though the second instance of the verb may appear with tense morphology and/or negation.

- (14) *Kε- [ε/κε-n-dtke] yι σkyι wυ ε/κε-n-dtke i-gyo.
 NOM PST/FUT-NEG-cook FOC woman the PST/FUT-NEG-cook PL-yam

Furthermore, structurally higher speaker-oriented adverbs such as *kesυηtyη* ‘truly’ cannot accompany the focused predicate.

- (15) *Kε- [mσ kesυηtyη] yι Kofi ε-mσ a-kyυη.
 NOM-kill truly FOC Kofi PST-kill PL-fowl
 Intended: ‘It was TRULY SLAUGHTERING that Kofi did to fowls.’

Taken together, the data in (13-15) indicate that the fronted phrasal constituent originates lower than TP and higher adverbs.

4. Analyzing predicate fronting in Krachi

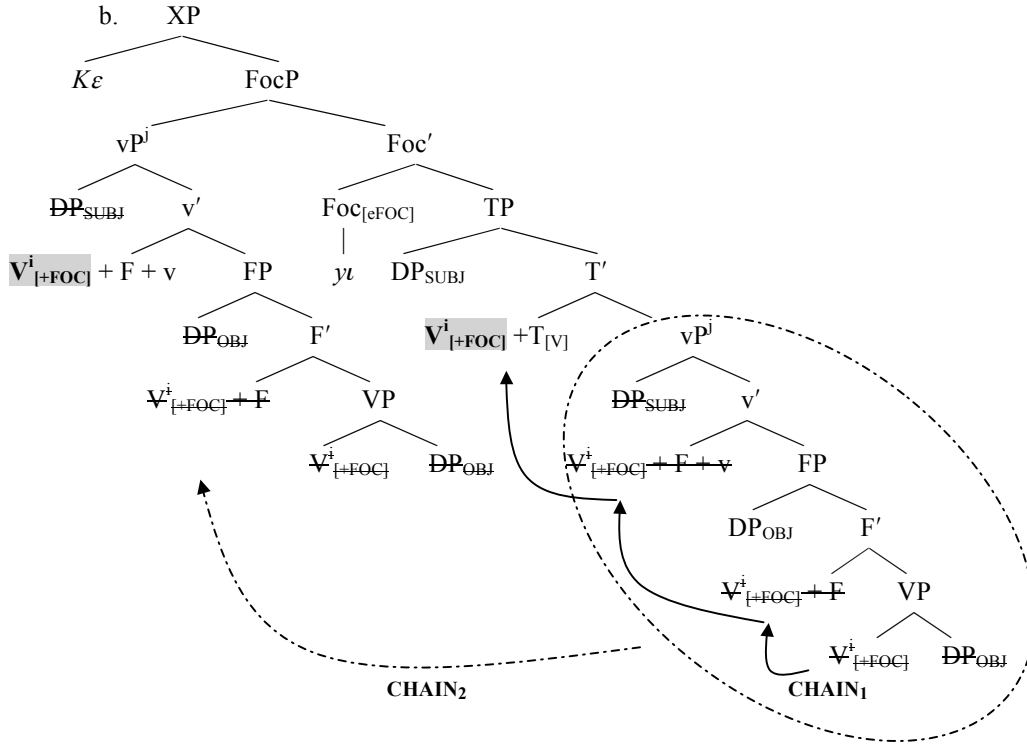
The analysis of predicate focus in Krachi must account for the fact that (i) an instance of the verb is in T^0 while a second instance of the verb is in the left periphery; (ii) predicate focus involves A'-movement; and (iii) the moved phrase is smaller than TP/NegP, but larger than just a verb head.

To account for this constellation of facts, we posit that two independent parallel V chains are formed in the derivation of simple V focus (Kandybowicz 2008, Aboh & Dyakonova 2009). As the name implies, parallel chains arise when two distinct probes simultaneously target a single goal. As a result, the goal undergoes movement to two distinct positions in parallel. We argue that all instances of predicate focus with verb doubling in Krachi involve the formation of identical parallel chains: $V^0 \rightarrow v^0 \rightarrow T^0$ and $vP \rightarrow \text{Spec,FocP}$. Thus, the parallel chains involve head movement of V^0 and phrasal movement of vP . Overall, differences in the PF interpretation of the two vP copies (one in the base vP position and the copy in Spec,FocP), we claim, account for the surface differences between the three predicate focus constructions in the language.

4.1. Analysis of simple verb focus

Under a parallel chains analysis, simple verb focus is analyzed as in (16b).

- (16) a. Kε- [dtke] yι σkyι wυ ε-dtke i-gyo.
 NOM cook FOC woman the PST-cook PL-yam
 ‘It was COOKING/only cooking that the woman did to yams (not, say, eating).’



We assume that only phase heads trigger movement operations and that A'-chains are triggered by edge features (Chomsky 2008). We also posit that Foc^0 is a phase head that bears a +Foc edge feature [eFoc] and that T^0 inherits its [V] feature from Foc^0 . When V^0 enters the derivation with an interpretable focus feature, it is targeted by both Foc^0 & T^0 , giving rise to the formation of two independent chains ($\text{V}^0 \rightarrow \text{v}^0 \rightarrow \text{T}^0$ & $\text{vP} \rightarrow \text{Spec, FocP}$.) Under the analysis in (16b), the bi-locational distribution of the predicate is derived in an unremarkable way: only the heads of the two chains are phonetically realized, the default chain resolution strategy. Chain₁ involves head movement to T^0 . Chain₂ involves vP pied-piping to Spec,FocP. In this derivation of simple verb focus, the only peripheral vP -internal material that survives at PF is the highest copy of V. In the lower vP , the only copy that survives is the shifted object in Spec,FP.

Several empirical consequences follow from this analysis. The focused predicate's inability to appear with tense markers (14) is a consequence of the fact that it is part of a different chain than the independent $\text{V}^0 \rightarrow \text{v}^0 \rightarrow \text{T}^0$ chain. The focused predicate's ability to appear with floated quantifiers (13b) and low adverbs (13c) is a consequence of the fact that chain₂ involves a (remnant) vP (Nishiyama & Cho 1998; Koopman 1999; Cho & Nishiyama 2000; Abels 2001; Nunes 2003, 2004; Hiraiwa 2005; Landau 2006, among others). The A'-properties of the focused predicate (unbounded movement and island sensitivity) stem from the fact that a phrase is moving, not a head.

4.2. Analysis of VO focus

In this section, we extend the parallel chains analysis to the VO focus construction:

- (17) $K\epsilon$ - [dʌkε i-gyo] yʌ ɔkyʌ wʌ ε-dʌkε.
 NOM cook PL-yam FOC woman the PST-cook
 'The woman only cooked yams (i.e. she did nothing else).'

In VO focus, not only direct objects (17), but a variety of verbal complements and adjuncts can accompany the fronted verb. These include objects of ditransitive verbs (18a), objects and instrumental PPs (18b), complement CPs (18c), and lower manner adverbs (18d).

- (18) a. Kε- [kyυηε Kofi owore] yι Ama ε-kyυηε.
 NOM send Kofi book FOC Ama PST-send
 ‘Ama only sent Kofi a book.’
- b. Kε- [tιη i-gyo ye ɔsukan] yι Ama ε-tιη (*i-gyo) (*ye ɔsukan).
 NOM- cut PL-yam with knife FOC Ama PST-cut PL-yam with knife
 ‘Ama only cut yams with a knife.’
- c. Kε- [bise fεε nse yι ɔ-dtke i-gyo] yι Kofi e-bise.
 NOM- ask COMP who FOC 3RD.SG-cook PL-yam FOC Kofi PST-ask
 ‘Kofi only asked who cooked yams.’
- d. Kε- [dtke i-gyo bireη/damrase] yι ɔkyι wυ ε-dtke.
 NOM- cook PL-yam quickly/well FOC woman the PST-cook
 ‘The woman only cooked yams quickly/well.’

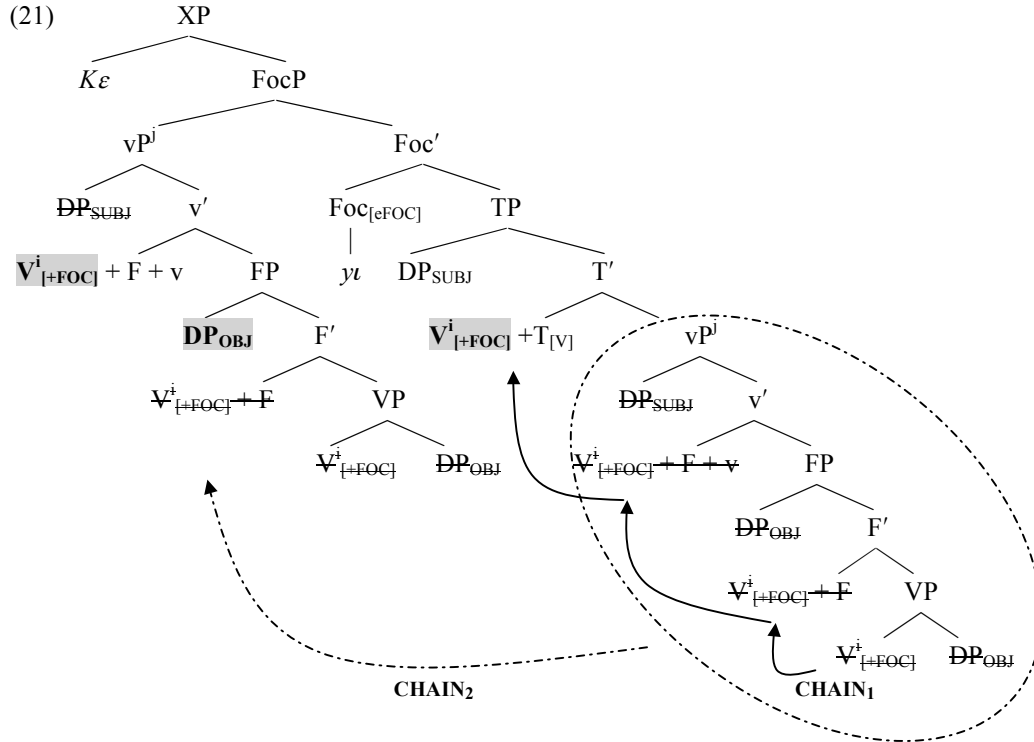
Neither tense (19a) nor negation (19b) can appear on the focused predicate, though it may appear on the lower copy (19c).

- (19) a. *Kε- [ε/ke-dtke i-gyo] yι ɔkyι wυ ε/ke -dtke.
 NOM PST/FUT-cook PL-yam FOC woman the PST/FUT-cook
- b. *Kε- [m-mɔ a-kyυη] yι Kofi ε-(m-)mɔ.
 NOM NEG-kill PL-fowl FOC Kofi PST-NEG-kill
- c. Kε- [mɔ a-kyυη] yι Kofi ε-m-mɔ.
 NOM kill PL-fowl FOC Kofi PST-NEG-kill
 ‘Kofi did not only slaughter fowl.’

In addition, speaker-oriented adverbs like *paa* ‘certainly’ cannot accompany the focused verb.

- (20) *Kε- [dtke i-gyo paa] yι ɔkyι wυ ε-dtke.
 NOM cook PL-yam certainly FOC woman the PST-cook

This pattern of facts makes VO focus look very similar to the simple V focus construction. We analyze VO focus as involving the same parallel chains as in simple V focus:



In this derivation, the peripheral vP-internal copies that survive at PF are the highest copy of V and the highest copy of the shifted object. All material internal to the lower vP is deleted at PF.

4.3. Analysis of OV Focus

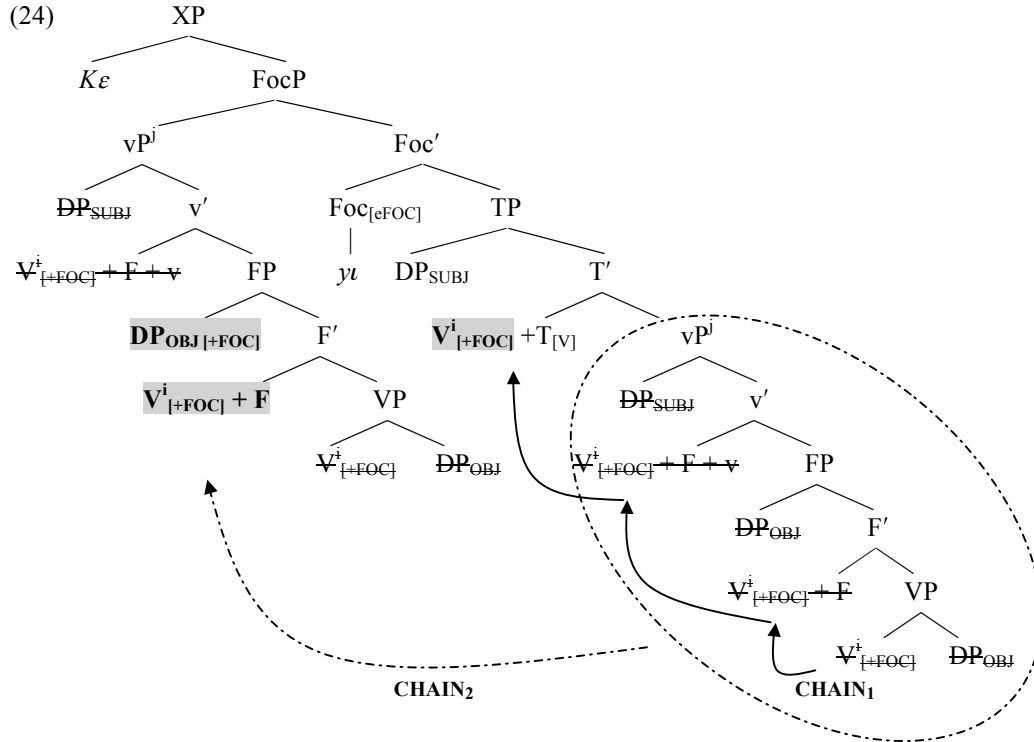
In this section, we address the OV focus construction. Recall that in this construction, the verb is copied, but the object and verb surface in an inverted order. This is shown in (22) below.

- (22) Ke- [i-gyo dɤkɛ] yɥ ɔkyɥ wɥ ɛ-dɤkɛ.
 NOM PL-yam cook FOC woman the PST-cook
 ‘It was COOKING YAMS that the woman did (not, say, eating rice).’

As in the other constructions, only the verb surfaces in two locations. The inverted object can only occur once:

- (23) Ke- [i-gyo dɤkɛ] yɥ ɔkyɥ wɥ (*i-gyo) ɛ-dɤkɛ (*i-gyo).
 NOM PL-yam cook FOC woman the PL-yam PST-cook PL-yam
 ‘It was COOKING YAMS that the woman did (not, say, eating rice).’

The parallel chains analysis also extends to the OV focus cases, as sketched below.



We claim that in OV focus derivations, the highest copy of the shifted object inside the peripheral vP survives at PF, but the highest vP-internal copy of V does not. For reasons that are currently unclear to us, a lower peripheral vP-internal copy of V is interpreted instead. As with VO focus, all material internal to the lower vP is deleted at PF.

5. Conclusion

We've proposed that all instances of predicate fronting with verb doubling in Krachi are characterized by the formation of identical parallel chains ($V^0 \rightarrow v^0 \rightarrow T^0$ & $vP \rightarrow \text{Spec, FocP}$) and that their surface differences stem from differences in the PF interpretation of the two vP copies.

There are several implications of our analysis. First, Krachi predicate focus provides additional support for the existence of parallel chain formation (Chomsky 2008) in Universal Grammar. Second, Krachi predicate focus provides additional support for analyses like Kandybowicz 2008 and Aboh & Dyakonova 2009 that attempt to derive verb doubling from narrow syntactic mechanisms like parallel chain formation rather than multiple copy spell-out at PF. Third, predicate focus in Krachi provides additional support for remnant phrase analyses of predicate cleft constructions (Nishiyama & Cho 1998; Koopman 1999; Cho & Nishiyama 2000; Abels 2001; Nunes 2003, 2004; Hiraiwa 2005; Landau 2006, among others). Finally, Krachi predicate focus provides additional support for the existence of head movement in narrow syntax.

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