

## **The Cartography of Focus and Interrogative Projections in Ñjò-Kóo**

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**Abstract:** Researches on cartography have made universal predictions on the hierarchies of functional projections in language. Based on this assumption, the structural maps established by Rizzi (1997, 2001b) for the left-peripheral elements suggest very strongly that Interrogative dominates Focus. Nevertheless, a straight-jacket adoption of this proposed hierarchical order to account for these left-peripheral projections in Ñjò-Kóo would be counterintuitive. Therefore, leaning on empirical and theoretical evidence, the paper calls to question the universality of the cartographers' claim, and argues that the opposite of the view is true of Ñjò-Kóo. The paper adopts fieldwork method for data elicitation and descriptive approach as well as minimalist program for analysis of data. Data used in this study were elicited from purposively selected native speakers based on language proficiency. Data were acquired with syntactic checklist and structured interviews, and were subjected to interlinear and qualitative analysis.

**Keywords:** cartography, functional projections, left-peripheral elements, focus and interrogative projections, Ñjò-Kóo

### **1. Introduction**

The cartographers such as Rizzi (1997, 2001, 2004), Beninca (2001, 2006), Beninca & Poletto (2004), Aboh (2004), Cruschina (2006), Franscarelli & Puglielli (2007), Frascarelli & Hinterholz (2007), Scott (2002), Cinque (1999) and Cinque & Rizzi (2010) have emplaced functional hierarchies to capture crosslinguistic linear orderings of various constituents in sentences in language. The attempt has been subjected to critical analysis by scholars because of the nature and mandate of the cartographic enterprise; that is, the question of what the right structural maps for natural language syntax are and the heuristic power of the approach (Rizzi, 2017, 2018; Quarezemin, 2020). For instance, Doherty (2016) examined how universal Rizzi's (1997) proposed linear ordering of the constituents within

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the left periphery is. Larson (2021) equally scrutinised the assumptions of the cartographers in relation to the hierarchies of functional projections related by functional selection, and identified three problems, namely, explanation problem, rigidity problem, and plenitude problem. In the same spirit, this paper attempts to evaluate the cartographers' cross-linguistic claim about linear orderings of the functional projections, focus and interrogative within the left periphery vis-à-vis the Ñjò-kóo language<sup>①</sup>. Rizzi (1997, 2001) claimed that crosslinguistically, Interrogative Phrase (InterP) is located in a position that is higher than Focus Phrase (FocP) in language. However, data from Ñjò-kóo posed an interesting challenge to this characterization. This is because FocP is situated in a position higher than InterP in the language. Rizzi's proposed hierarchical ordering of the left-peripheral projections and the one derived from Ñjò-Kóo are presented in (1a) and (1b) below.

- (1) a. FORCE>INTEROGATIVE>FOCUS>MOOD>FINITENESS>TENSE (Rizzi)  
b. FORCE> FOCUS> INTEROGATIVE> MOOD>FINITENESS>TENSE (Ñjò-Kóo)

The derived ordering of interrogative and focus in Ñjò-Kóo raises two salient questions that are begging urgently for answers: (1) Is it the case that the position of focus in relation to interrogative is subject to parametric variation? (2) Does each of the expressions where focus and interrogative co-occur a question or a focus construction, or does focus scope over interrogative or the contrary? In respect of the first question, the cartographers will presumably explain that, in line with the Borer-Chomsky hypothesis, parametric variation has been reduced to the properties of lexical items (Chomsky, 1995; Borer, 1984). That is, the assumption of parametric variation does not arise. The child will have to learn the property of focus as well as interrogative in his language. They would claim that information structural evidence requires that questions precede focus. This is because in question-answer pairs, questions give rise to focus. If this is the case, it is expected that interrogative occurs in a position above focus. The response to the second question would be that each expression is a question. If each of them is a question, it implies that interrogative scopes over focus. If interrogative force scopes over focus, it requires that the former dominates the latter. This being the case, interrogative phrase should dominate and c-command focus phrase. This is because dominance and c-command are requirements for scope. That is, any item or constituent that scopes over another must c-command and also dominate it. However, based on empirical evidence, this paper argues that, the opposite of the cartographers' claim is true of Ñjò-kóo. Consequent upon the fact of the language in question, the study proposes an alternative analysis where focus dominates interrogative

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<sup>①</sup> Ñjò-Kóo is the proposed name by Olaogun (2016) for a language spoken in the North-western part of Akoko in Ondo State, Nigeria. The language, Ñjò-Kóo is a compound name formed from *Ñjò o* and *Ñ Kó o* (or *Ñ ghó o* the variant of *Ñ kó o* used in Urò) which is a form of greeting, in all of the communities where the language is spoken, equivalent to *Pèlè o* in Standard Yoruba.

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after exploring the possibility of interrogative projection dominating focus projection and pointing out some of the theoretical and empirical problems that it may create.

The language is spoken in about nine communities by well over 250,000 people in the North-West Local Government of Akoko in Ondo State, Nigeria (Oluwadoro, 2014). These communities are: Oyín, Urò, Ìgá sí, Arigidi, Erú sù, and four quarters in Òkè àgbè; Àfá<sup>①</sup>, Ùdò, Ògè, and Àjè. The people who speak this language are mostly bilingual or trilingual in that, in addition to this language, each of them speaks Yoruba natively as a second language while the school-age people speak English which is the medium of instruction in schools. As reported by Oyètádé (2007) and Dada (1987), the use of Yoruba has gained dominance over Ñjò-kóo in particular and the languages spoken in Akoko in general among the younger generation.

The paper is organized as follows: section 2 presents the characteristics of focus constructions in the language. Section 3 explains the similarities between *wh*-questions and focus while section 4 undertakes a discussion on the common features between yes/no questions and focus constructions. In section 5, differences between yes/no questions and focus constructions are dealt with. Section 6 investigates the cartography of focus and interrogative projections in line with Rizzi's (1997) proposed hierarchical ordering and points out the inadequacies in such analysis based on empirical and theoretical facts and evidence from Ñjò-kóo. Section 7 proposes an alternative analysis that challenges the universality of the extant hierarchical order of focus and interrogative phrases, and concludes that such an analysis is better. Section 8 which is the last section, concludes the paper.

## **2. Characteristics of focus in Ñjò-kóo**

Focused expressions have a number of syntactic, semantic and phonological characteristics that differentiate them from other neutral sentences in the language. Consider, for instance, sentence (2b) which derives from (2a), where the focused subject immediately precedes the focus marker *úwò n* as well as a clause-final high tone that superimposes on the vowel *é* of the second syllable of the word that ends the sentence.

- (2) a. *Mòmó rọ ẹtẹ.*  
Mummy grind pepper  
'Mummy ground pepper.'
- b. *Mòmó úwò n rọ ẹtẹ é.*  
mummy Foc grind pepper Emph  
'MUMMY ground pepper.'

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<sup>①</sup> Àfá dialect is used as the representative of the Ñjò-kóo language, unless when explicitly mentioned.

(3a) is a neutral/ordinary sentence that exhibits the SVO word order and contains no focus marker while the sentence in (3b) is an example of a focus construction. There are three pieces of evidence that show this: (i) the subject *Mòmó* has moved leftward to the position immediately to the left of *úwòn* because *úwòn* is the focus marker in the language, (ii) the word order has also changed from SVO to S-*úwòn*-VO, (iii) the clause-final high tone morpheme shows up on the vowel of the second syllable of the last word in (3a) and the order becomes S-*úwòn*-VO-high tone. In (3c), the direct object *ẹtẹ* is raised to the left of *úwòn*, changing the word order to O-*úwòn*-SV-high tone. In both (3b) and (3c), the expressions receive a focus reading and the moved element is seen as salient.

- (3) a. *Mòmó rọ ẹtẹ.*  
 Mummy grind pepper  
 ‘Mummy ground pepper.’
- b. *Mòmó úwòn rọ ẹtẹ ẹ.*  
 mummy Foc grind pepper Emph  
 ‘MUMMY ground pepper.’
- c. *Ẹtẹ úwòn mòmó rọ ọ.*  
 Pepper Foc mummy grind Emph  
 ‘Mummy ground PEPPER.’

Also, in Ñjò-kóo, as shown by the ungrammatical example in (4a), the left adjacent position to *úwòn* must be reached at PF. The grammatical sentence in (4b) demonstrates that there could be leftward movement in the absence of the focus marker *úwòn* as long as the clause-final high tone, which is an indicator that something has been moved, is present. Lastly, the language does not allow multiple foci as exemplified by the ungrammatical sentence in (4d).

- (4) a. \**Úwòn mòmó rọ ẹtẹ ẹ.*  
 Foc mummy grind pepper Emph
- b. *Mòmó Ø rọ ẹtẹ ẹ.*  
 mummy Foc grind pepper Emph  
 ‘MUMMY ground pepper.’
- c. *Mòmó úwòn rọ ẹtẹ ẹ.*  
 mummy Foc grind pepper Emph  
 ‘MUMMY ground pepper.’
- d. \**Ájá úwòn mòmó úwòn rọ ẹtẹ ẹ.*  
 market Foc mummy Foc grind pepper Emph  
 ‘MUMMY ground pepper in the MARKET.’

Ñjò-kóo does not allow a focus in-situ strategy as the sentence in (5) below cannot receive focus interpretation.

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- (5) *Olú kan ilẹ̀kùn.*  
 Olu close door  
 ‘Olu closed the DOOR.’

Similarly, there is no focal stress focus strategy in Ñjò-kóo as is the case of English. For instance, in *JAMES hates rice*, the focused subject JAMES bears focal stress. This kind of focus strategy is absent in Ñjò-kóo. Therefore, focusing is ultimately realised in the language by the movement of the focused element to the left adjacent position to *úwòh* as demonstrated in previous example sentences.

**3. Parallel between *wh*-questions<sup>①</sup> and focus**

In Ñjò-kóo, *wh*-question formation and focusing are very similar in process in that both of them require a movement to the left-peripheral position, i.e., the Spec of FocP as exemplified in sentences in (6).

- (6) a. *Ko Ø Bólú yè ju?*  
 What Foc Bolu Inter eat  
 ‘WHAT did Bolu eat?’  
 b. *Konẹ Ø ẹ ju àju?*  
 Who Foc Inter eat yam  
 ‘WHO ate yam?’  
 c. *Kòfọn Ø Bólú yè da àju?*  
 When Foc Bolu Inter buy yam  
 ‘WHEN did Bolu buy yam?’  
 d. *\*Bólú yè da àju kòfọn?*  
 Bolu Inter buy yam when  
 ‘When did Bolu buy yam?’
- (7) a. *Ko Ø Bólá yè di ?*  
 What Foc Bola Inter steal  
 ‘WHAT did Bola steal?’  
 b. *Konẹ Ø ẹ mẹ ewó?*  
 Who Foc Inter borrow money  
 ‘WHO borrowed money?’  
 c. *Kòfọn Ø Adé yè hà?*  
 When Foc Adé Inter wake up

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<sup>①</sup> A detailed discussion of *wh*-questions goes beyond the scope of this paper. Its inclusion in this work is because its structure perfectly illustrates focus and interrogative projections which are the thrust of the paper. Thus, for detailed information about *Wh*-questions in the language, readers are referred to Olaogun (2018).

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‘WHEN did Ade wake up?’  
 d. *Kòsin*     $\emptyset$         *Adé*        *yè*        *ke*        *da*        *àju?*  
 Where    Foc        Adé        Inter      ADV      buy      yam

‘WHERE did Ade buy yam?’  
 e. *Kàwán*         $\emptyset$         *uwan*        *Şégun*        *yè*        *sí?*  
 How many      Foc        child      Segun      Inter      bear

‘HOW MANY children did Segun give birth to?’

Given the examples in (6) and (7), the question that readily comes to mind is why the Foc head *úwòṅ* is not realised to the right of the *wh*-element *ko*, *konè* and *kòfòṅ*, *kòsin* and *kàwán* in all of these examples. To put it differently, why is it that we compare *wh*-questions with focus constructions when the former lack focus markers and the emphatic marker? The obvious and immediate answer to this question is that as shown in the example (8a) below, there could be leftward movement without the presence of a focus marker *úwòṅ*. Apart from this, there is clause-structure as well as information-structure evidence that *wh*-questions and focus constructions are similar in process. This is shown in the fact that *wh*-in-situ strategy is disallowed in Ñjò-kóo as exemplified in (6d) and that *wh*-questions require a focus expression as a felicitous or appropriate answer/response as evident in the question-answer pair below.

- (8) a. *Ko*        *Títí*        *yè*        *bọ?*  
 What      Títí        Inter      drink  
 ‘WHAT did Títí drink?’  
 b. *Úji*        *úwòṅ*        *Títí*        *yè*        *bọ*        *ọ.*  
 water      Foc        Títí        Inter      drink      Emph  
 ‘Titi drank WATER.’

**4. Parallel between yes/no question and focus**

Focus and yes/no questions also have a number of common morphosyntactic features just like focus and *wh*-questions. Both of them feature a clause-final high tone morpheme. This high tone indicates that some constituent has been moved or displaced to the left-peripheral position as exemplified in the examples below.

- (9) a. *Olú*        *úwòṅ*        *da*        *bàtà*        *á.*  
 Olu        Foc        buy        shoe        Emph  
 ‘OLU bought a pair of shoes.’  
 b. *Olú*        *yè*        *da*        *bàtà*        *á?*  
 Olu        Inter      buy        shoe        Emph  
 ‘Did Olu buy a pair of shoes?’

The focused constituent and the constituent being questioned in yes/no question occur in

the clause-peripheral position. Precisely, they both occur at the specifiers of their respective heads. The former occurs at the specifiers of focus phrases while the latter occurs at the specifiers of interrogative phrases. Both of them involve A-bar movement/operator movement, i.e., the movement to the Specs of their respective heads. To induce interrogative force, the subject, i.e., the active probe within the TP, would be attracted by the active goal to the Spec, InterP. In the same vein, focus force is realised when the focused element, i.e., the active goal is moved from the IP-internal position to the Spec, FocP within the clausal left-peripheral position.

### 5. Difference between yes/no questions and focus

The main and noticeable difference between focus and yes/no question is that any constituent can be focused or moved to the Spec, FocP, i.e., the probe Foc can attract any constituent, i.e., an active probe, to its specifier position while only subject DP can be moved to the Spec, InterP, i.e., the probe Inter can only attract the subject DP to its specifier position as illustrated below.

- (10) a. *Şola da bàtà.*  
 Sola buy shoe  
 ‘Sola bought a pair of shoes.’
- bi. *Şólá úwòn da bàtà á.*  
 Şola Foc buy shoe Emph  
 ‘SOLA bought a pair of shoes.’
- bii. *Bàtà úwòn Şola dà á.*  
 shoe Foc Sola buy Emph  
 ‘Şola bought a pair of SHOES.’
- biii. *Àdà úwòn Şólá da bàtà á.*  
 buying Foc Sola buy shoe Emph  
 ‘Şola BOUGHT a pair of shoes.’
- (11) a. *Şólá yè da bàtà á?*  
 Sola Inter buy shoe Emph  
 ‘Did Şola buy a pair of shoes?’
- b. *\*Bàtà yè da Şólá?*  
 Shoe Inter buy Sola+Emph
- c. *\*Àdà yè Şola da bata á?*  
 Buying Inter Sola buy shoe Emph

As observed in examples (10bi-iii), all of the constituents in (10a) can be focused; in (10bi) subject DP is focused while in (10bii) and (10biii), the object DP and predicate are respectively focused, but only the subject DP in (10a) can be questioned as shown in (11a).

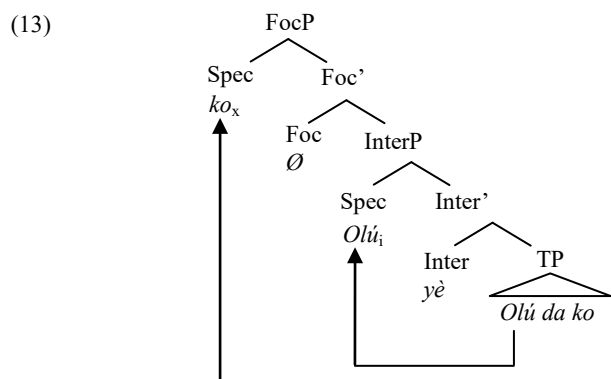
This accounts for the ungrammaticality in (11b) and (11c).

## 6. Analysis of focus and interrogative projections and the challenges to Rizzi's (1997) hierarchical order

### 6.1 Analysis of *wh*-questions

*Wh*-questions and yes/no questions share a number of significant morphosyntactic properties. Like yes/no questions, *wh*-questions involve the question particle *yè* (distinct from *wh*-phrase) that merges in Inter. For this reason, the paper argues that *wh*-questions are also headed by Inter<sup>o</sup> head and therefore analyses them in the same way as yes/no questions. As argued by Aboh & Pfau (2011), Olaogun (2016a-b, 2018) which is also reiterated below, the movement of the *wh*-phrase is not meant to license interrogation or instantiate interrogative force in *wh*-questions. The licensing of interrogatives takes place in overt syntax by the movement of the subject of the TP to the Spec of InterP. Thus, a *wh*-interrogative like (12) is derived as sketched in (13).

- (12) *Ko Olú yè dà?*  
 What Olu Inter buy  
 'What did Olu buy?'



As evident in the tree diagram above, the assumption upheld in this study is that each *wh*-question is comprised of interrogative projection as well as focus projection. The subject DP raises to the Spec, InterP in overt syntax so as to check the interrogative head feature while the *wh*-phrase moves to the Spec, FocP in covert syntax for interpretive purposes. The movement of the *wh*-phrase is anti-cyclic which is not subject to any Island constraint. Therefore, the Relativized Minimality Constraint of Rizzi (1990, 2001a) does not apply here because the expression violates it and is still grammatical.

The derivation in (13) suggests very apparently that the structural position of the FocP is quite different from what we have in Rizzi (1997). One possible explanation is that this variance is necessary because Rizzi's (1997) cartography cannot account for Ñjò-kóo



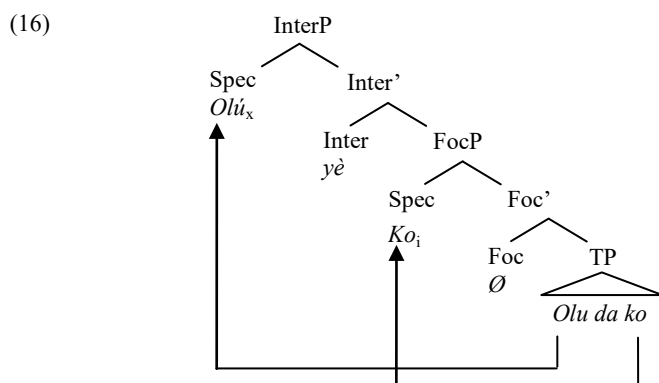
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*wh*-questions. As shown in (13), FocP dominates InterP in Njò-kóo, as opposed to InterP dominating FocP in Rizzi (1997). Specifically, the structural arrangement of FocP in relation to InterP is not the same as Rizzi (1997) as shown in (1a) and repeated here as (14) for ease of reference.

(14) FORCE>INTERROGATIVE>FOCUS>MOOD>FINITENESS>TENSE (Rizzi)

The reason for this is that the subject of the TP must move to the Spec, InterP for the purpose of licensing the interrogatives in the overt syntax before the movement of *wh*-phrase in the LF. If this is not done, the correct word order will not be achieved and the derivation is bound to crash as explained by the ungrammaticality of the structure in (15) as sketched in (16).

(15) \**Olu*      *yè*      *ko*      *dà?*  
           *Olu*      *Inter*      *what*      *buy*  
           ‘What did *Olu* buy?’

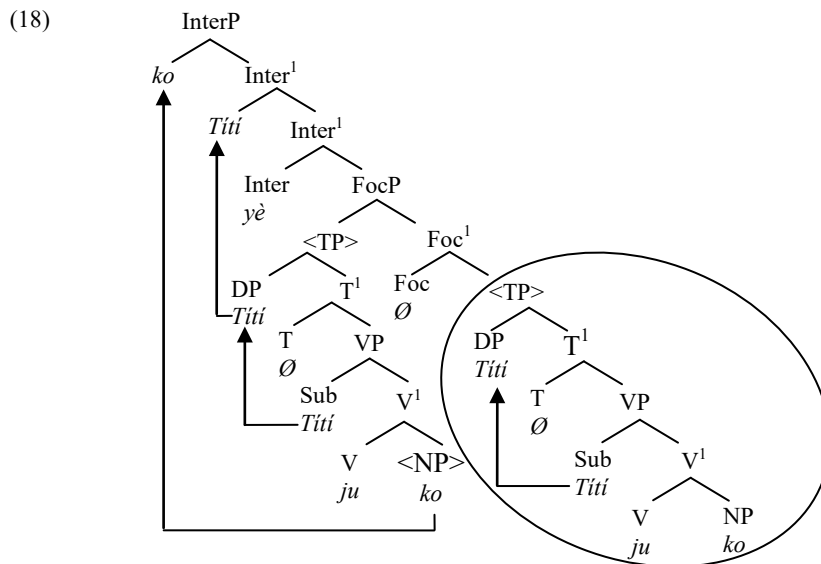
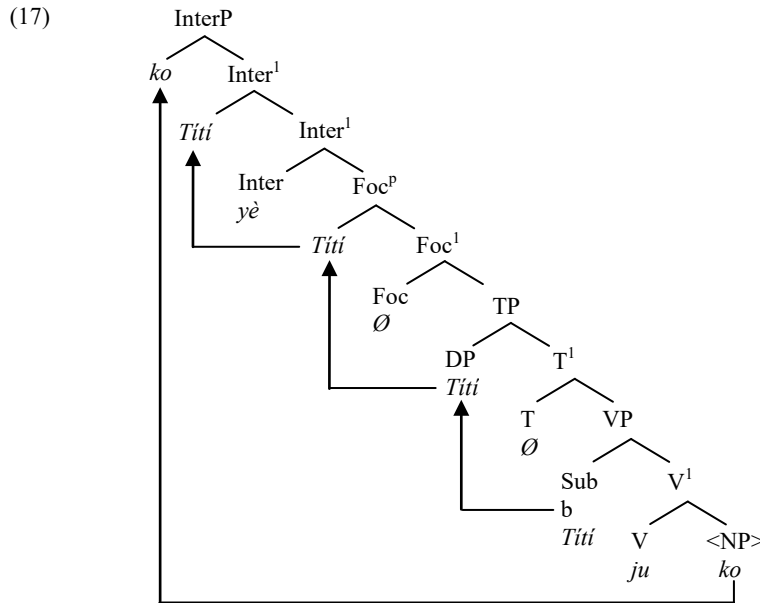


However, as claimed by cartographers, for reasons of scope and c-command, InterP must dominate FocP as opposed to the structural arrangement of these projections in (16). This being the case, a more theoretically robust derivation is required. To do this, the paper tries to introduce extra theoretic rules such as pied-piping analysis as well as multiple specifiers approach<sup>①</sup> as demonstrated in (17) and (18) below.

Unfortunately, this analysis also runs into a number of problems. As hinted earlier, *wh*-word is moved for focus purposes rather than clause typing. Based on this fact, the derivation in (17) fails to capture the fact that *wh*-phrase is focused or moved for reasons of focus rather than clause typing. Of course, we know that it is focused because the answer to this *wh*-question in Njò-kóo requires a focused constituent with a focus marker as well as the clause-final high tone dubbed Emph head in this study. Information-structure evidence

<sup>①</sup> This hypothesis/approach was advocated by Chomsky (1995, 2000) and some other scholars such as Lahne, 2009; Richards, 1999, 2001; Koizumi, 1995; Ura, 1996; Zwart, 1997; Doron & Heycock, 1999; Rezac, 2004.

demands that if it is focused, the answer contains a focused constituent but if it is not, it does not contain a focused constituent. This claim underscores Aboh's (2007) view that there is a dichotomy between focused and non-focused *wh*-phrases.



Another problem with this derivation is that it calls into question the unified analysis proposed for both yes/no and *wh*-questions in that the  $Inter^0$  head is merged with EmphP in yes/no questions while the same inter head that performs the same function is merged with

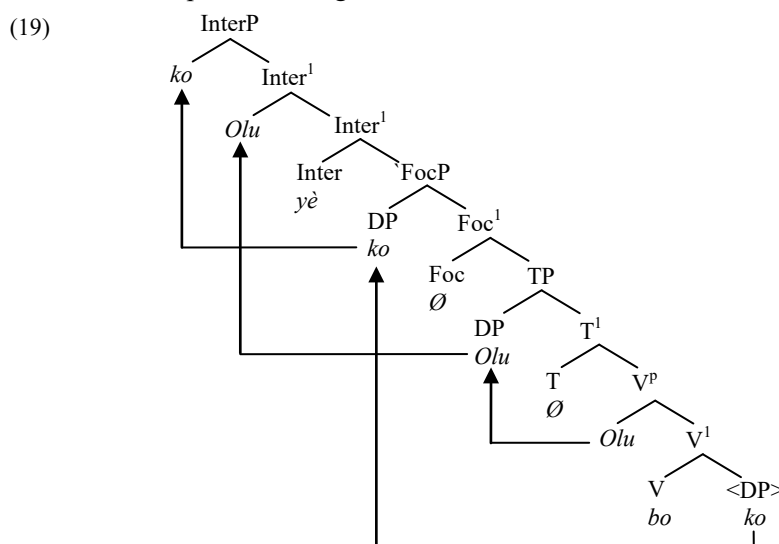
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FocP. This has a lot to be desired. In order to get around this problem, pied-piping analysis is employed as shown in (18) above.

The syntax of *wh*-questions in this language involves two probes: Inter and Foc, each of which can trigger displacement operation. To derive the *wh*-questions as indicated above, the *wh*-word *ko* moves to the Spec, FocP. Nevertheless, the *wh*-word does not move alone but rather pied-pipes the whole TP to the Spec, FocP. The reason for pied-piping the whole TP is that given the phase-based syntax of Chomsky (1995), if only the *wh*-word is moved or raised, the complement of the phase head will be inaccessible to any syntactic operation. This is because the domain of the phase head undergoes transfer to the PF component and the semantic component will be inaccessible to further syntactic operation (Radford, 2009). So, if only the *wh*-word *ko* moves to the Spec, FocP, the TP will undergo transfer and will no longer be accessible to the external probe *yè* which attracts the DP subject to its Spec position because of its EPP feature.

Also, in order to derive the surface form of the *wh*-questions in the language, the paper employs multiple specifier approach which states that a head may have more than one specifier to accommodate a *wh*-element. Given this, the paper proposes that the Inter head has [+EPP] and [wh] features which is why it has the DP subject, *Olu*, as its inner specifier while it attracts a *wh*-word *ko* ‘what’ to become its outer specifier.

However, curious readers may be inclined to ask what happens when the *wh*-element alone moves to the Spec, FocP as given below.



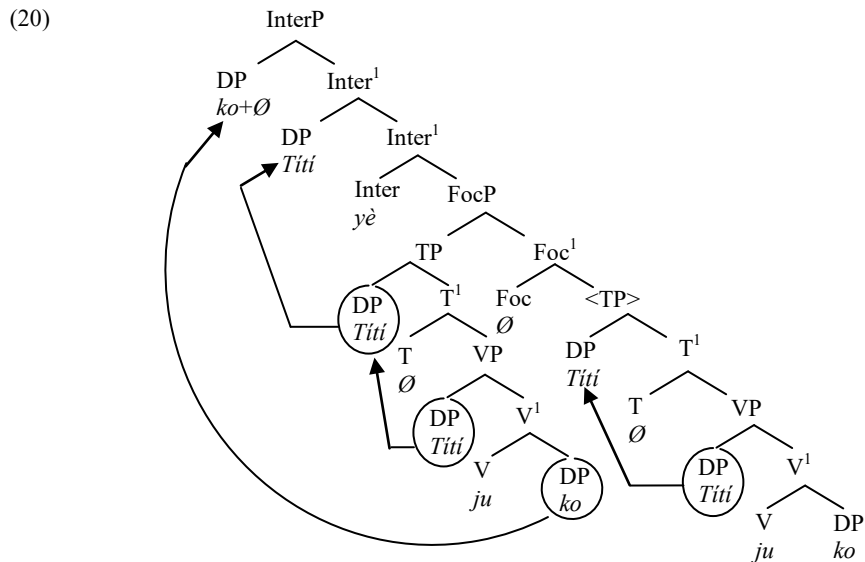
As shown above, it is observed that the pied-piping analysis that involves the movement of DP subject to the inner Spec position is more local than the non-pied-piping analysis. If, on the one hand, the principle of economy prefers the shortest movement (Minimal Link

Condition) to long-distance movement and, on the other hand, if the relationship between a probe and its goal must be local, then the pied-piping analysis is much better. Also, as soon as the *wh*-word *ko* is moved, the domain of the Foc head will be inaccessible for further syntactic and semantic operations. Therefore, the raising of the subject DP to the Spec, InterP to induce interrogative force will no longer be possible, thereby causing the derivation to crash at both PF and LF.

One other question that might be raised with regard to the pied-piping of TP is the rationale behind the *wh*-word taking along with itself the whole clause. The assumption is that there is no constraint to the length of constituents that *wh*-word can drag along, given the convergence principle that states that a moved *wh*-element takes along as many materials as enough to make the expression convergent (Radford, 2009; Olaogun, 2018, 2019).

The derivations proposed in (17-19) are inadequate as they fail to derive the correct surface word order. For example, provided the focus marker is not phonetically null in the above construction, there is no way a correct word order can be realised. In other words, the analysis would not be able to account for constructions that involve both focus and questions where focus markers are phonetically realised.

One other possible analysis is to assume that the *wh*-word and the focus marker form a constituent, and that when the *wh*-phrase moves to the outer Spec, InterP, it takes along the focus marker. On that assumption, the analysis of the *wh*-question will look like the one in (20).



The assumption that the focus edge of FocP forms a constituent as in the diagram above

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is justified by information-structure evidence in some languages. For example, in an indirect *wh*-question in Yorùbá<sup>①</sup>, when a *wh*-question such as (21) is asked, a speaker may choose to answer by simply saying (22) instead of (23).

(21) *Kí ni Adé rà?*  
 What Foc Ade buy

‘What did Ade buy?’

(22) *Ògèdè ni.*  
 banana Foc  
 ‘It was banana.’

(23) *Ògèdè ni Ade rà.*  
 Plantain Foc Ade buy

‘Ade bought PLANTAIN.’

However, it appears that the edge of FocP, i.e., the head and its specifier in Njò-kóo, does not form a constituent in indirect *wh*-questions. When a question, such as the one above, is asked in the language, the response is not *Ògèdè úwòn* as given in (24).

(24) *Ko Ø Adé yè dà Ø?*  
 what Foc Ade Inter buy Emph

‘WHAT did Ade eat?’

The shortened answer to this kind of question in Njò-kóo is *Ògèdè è*. This indirectly supports our earlier claim that the Foc head which is morphologically realised as *úwòn* may be null phonetically but the occurrence of the clause-final high tone is mandatory.

### 6.2 Analysis of focus and yes/no questions<sup>②</sup>

Similarly, in order to circumvent the challenge posed by Njò-kóo data to cartographers’ claim, the paper proposes head-to-head adjunction as well as multiple specifiers’ analyses, as shown in the tree diagrams below, each for the derivation of the example sentences in (25a-c).

(25) a. *Títí úwòn <Títí> yè ju ògèdè è?*  
 Titi FOC Titi Inter eat banana Emph

‘Is it TITI that ate a banana?’

b. *Ògèdè úwòn Títí yè ju <ògèdè> ú?*

<sup>①</sup> The Yoruba example sentences and their explanations clearly underscore why *wh*-word and focus marker cannot form a constituent in Njò-Kóo, thereby reinforcing the failure and impossibility of the analysis proposed in (20).

<sup>②</sup> The exclusion of discussions of *wh*-questions subject DP focus/object DP focus/verb focus in this section is because the aim of this paper is not to undertake a detailed analysis of *wh*-questions. As said in footnote 3, its inclusion in this work is because its structure features and perfectly illustrates focus and interrogative projections which are the thrust of the paper. Thus, for detailed information about *wh*-questions in the language in question, readers are referred to Olaogun (2016, 2018).

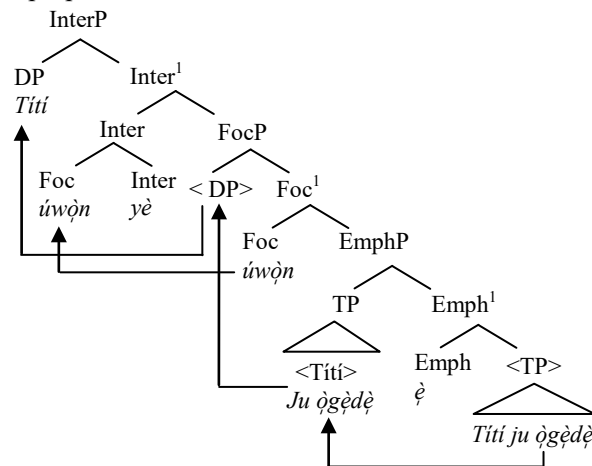
*Simeon Olaogun*

|                                 |             |             |           |           |              |            |
|---------------------------------|-------------|-------------|-----------|-----------|--------------|------------|
| banana                          | FOC         | Titi        | Inter     | eat       | banana       | Emph       |
| ‘Is it Titi that ate a BANANA?’ |             |             |           |           |              |            |
| c. <i>Àju</i>                   | <i>úwòn</i> | <i>Títí</i> | <i>yè</i> | <i>ju</i> | <i>ògèdè</i> | <i>ẹ̀?</i> |
| eating                          | FOC         | Titi        | Inter     | eat       | banana       | Emph       |
| ‘Is it Titi that ATE a banana?’ |             |             |           |           |              |            |

6.2.1 Yes/no question and subject DP focus

To derive the example sentence in (25a) above in (26) below, two syntactic processes are involved, namely, the head-to-head adjunction and the pied-piping of the whole TP to the Spec, EmphP. The pied-piping of the whole TP to the Spec of EmphP is to derive the surface form of the syntactic structure. There is a successive cyclic movement of the subject DP *Títí* from the subject of VP (given the internal subject-verb hypothesis) to the Spec, TP to check its nominative case and from there to the Spec, FocP for focus and also to Spec, InterP for the purpose of EPP.

(26)



There are a couple of problems with the derivation above. The first one is proposing extra rules such as head-to-head adjunction while the second has to do with the fact that the analysis cannot account for the comparable example sentences in (25b-c) where object DP and verb are focused as demonstrated in (27) and (28) below.

6.2.2 Yes/no question and object DP focus

The example in (25b) above, which is rewritten below as (27) for ease of reference, is derived as (28).

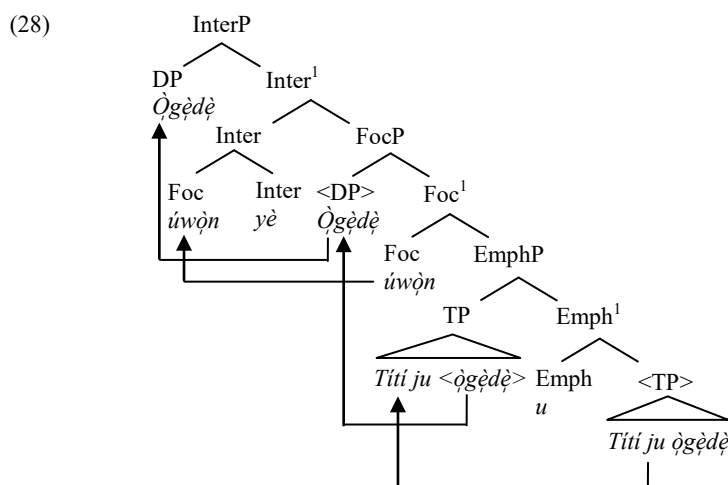
|                                 |             |             |           |           |                  |           |
|---------------------------------|-------------|-------------|-----------|-----------|------------------|-----------|
| (27) <i>Ògèdè</i>               | <i>úwòn</i> | <i>Títí</i> | <i>yè</i> | <i>ju</i> | < <i>ògèdè</i> > | <i>ú?</i> |
| banana                          | Foc         | Titi        | Inter     | eat       | banana           | Emph      |
| ‘Is it Titi that ate a BANANA?’ |             |             |           |           |                  |           |

The derivation in (28) below, as (26) above, involves two syntactic processes, namely, the head-to-head adjunction and the pied-piping of the entire TP to the Spec, EmphP. The

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pied-piping of the entire TP is to derive the surface structure of the expression. There is a successive cyclic movement of the object DP *Ògèdè* from the Spec, TP and from there to the Spec, FocP for focus and also to Spec, InterP for the purpose of EPP.

Similarly, there are two main problems with the derivation below. The first one is proposing extra rules such as head-to-head adjunction while the second is its failure to derive the correct word order which will in turn cause the derivation to crash at PF as there is no node in the tree diagram to house the DP subject *Títí* that occurs between the focus head *úwòn* and the interrogative head *yè* in the surface syntax.



Besides, the analysis in (28) suggests that Spec, InterP can house object DP to instantiate interrogative force as opposed to the earlier claim that while different constituents can be focused to the Spec, FocP, only the subject DP can be raised to the Spec, InterP to induce interrogative force. In other words, the deviation runs counter to the fact of the language. The fact of the language is that only the subject DP can be raised to the Spec, InterP to induce interrogative force.

6.2.3 Yes/no question and verb focus

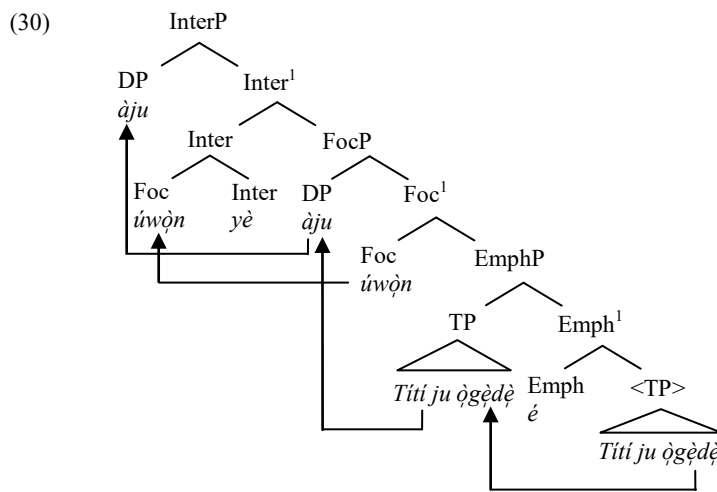
The example in (29) illustrates yes/no and verb focus and it is derived in (30).

- (29) *Àju úwòn Títí yè ju ògèdè è?*  
 eating Foc Titi Inter eat banana Emph  
 ‘Is it the case that Titi ATE a banana?’

To derive the structure in (30), the syntactic processes involved are twofold: the head-to-head adjunction and the pied-piping of the entire TP to the Spec, EmphP. The pied-piping of the entire TP and the head-to-head adjunction are employed to derive the surface structure of the expression. As evident in the other two examples above, if the lower head, focus, which is morphologically realised as *úwòn* is not adjoined to the higher

head, Inter, which is morphologically realized as *yè*, the correct word order will not be realised. The verb *ju* in the Spec, EmphP is copied and nominalised before raising to the Spec, FocP and then moving to Spec, InterP to fulfil its edge feature.

As hinted in Olaogun (2016, 2017), given Agree operation, following Ilori (2010) and Jackendoff (1977), it is believed that any goal that the probe Foc will attract to its specifier position in order to value the unvalued focus-EPP features and subsequently delete it must be [+N] or [-V] or possess [+Nom] feature as the case may be. This morphosyntactic requirement is fulfilled by nominalising the copied verb.



There are equally two main problems with the derivation above. The first one is proposing extra rules such as head-to-head adjunction while the second is its failure to derive the correct word order which will in turn cause the derivation to crash at PF as there is no node in the tree diagram to house the DP subject *Titi* that occurs between the focus head *úwòn* and the interrogative head *yè* in the surface syntax.

In the same vein, the analysis in (30) suggests that Spec, InterP can house focused verb to instantiate interrogative force as opposed to the earlier claim that while different constituents can be focused to the Spec, FocP, only the subject DP can be raised to the Spec, InterP to induce interrogative force.

### 7. An alternative analysis

Given the above state of affairs, there is a need for an analysis that is explanatorily adequate and intuitively inclined. This being the case, an analysis which assumes that FocP dominates InterP is more plausible than the one that suggests the opposite as shown in the tree diagrams below, each for the derivation of example sentences in (31a-d).



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|         |                                      |             |                 |           |            |                            |
|---------|--------------------------------------|-------------|-----------------|-----------|------------|----------------------------|
| (31) a. | <i>Ko</i>                            | $\emptyset$ | <i>Bólú</i>     | <i>yè</i> | <i>dà?</i> |                            |
|         | Bólú                                 | Foc         | Bólú            | Inter     | buy        |                            |
|         | ‘WHAT did Bólú buy?’                 |             |                 |           |            |                            |
| b.      | <i>Ògèdè</i>                         | <i>úwòn</i> | <i>Bólú</i>     | <i>yè</i> | <i>dà</i>  | < <i>ògèdè</i> > <i>á?</i> |
|         | banana                               | Foc         | Bólú            | Inter     | buy        | banana Emph                |
|         | ‘Is it the BANANA that Bólú bought?’ |             |                 |           |            |                            |
| c.      | <i>Bólú</i>                          | <i>úwòn</i> | < <i>Bólú</i> > | <i>yè</i> | <i>da</i>  | <i>àju</i> <i>ú?</i>       |
|         | Bólú                                 | Foc         | Bólú            | Inter     | buy        | yam Emph                   |
|         | ‘Is it BÓLÚ that bought the yam?’    |             |                 |           |            |                            |
| d.      | <i>Àdà</i>                           | <i>úwòn</i> | <i>Bólú</i>     | <i>yè</i> | <i>da</i>  | <i>àju</i> <i>ú?</i>       |
|         | buying                               | Foc         | Bólú            | Inter     | buy        | yam Emph                   |
|         | ‘Is it Bólú that BOUGHT the yam?’    |             |                 |           |            |                            |

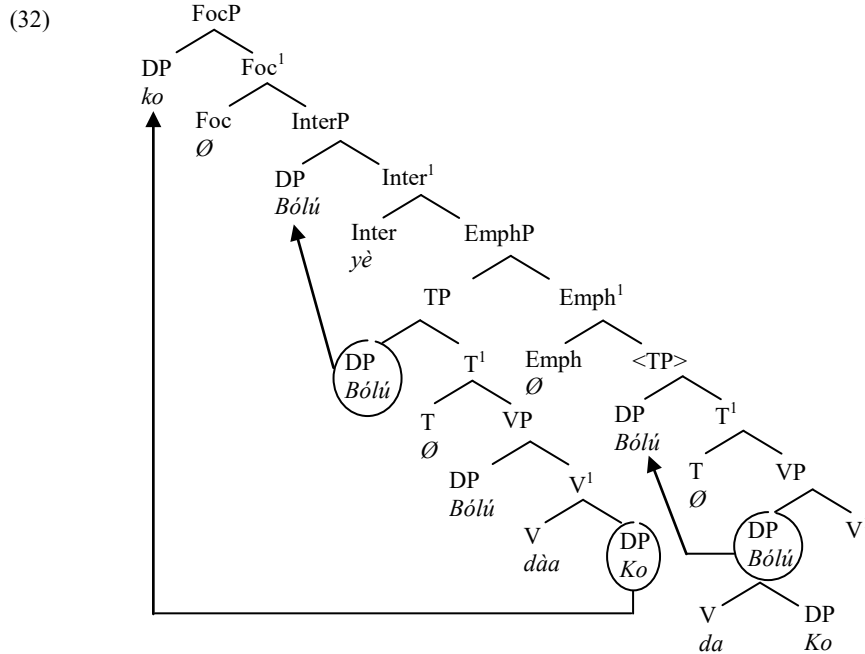
### 7.1 Analysis of *wh*-questions

The syntax of a *wh*-question in (31a) derived in (32) below involves three probes, each of which has the potential to trigger displacement operations. The derivation<sup>①</sup> goes as follows. The verb *dà* ‘to buy’ merges with *wh*-word *ko* ‘what’ to satisfy its c-selection condition while the DP subject *Bólú* is then merged in the Spec-VP (in line with VP Internal Subject Hypothesis) to satisfy the EPP demand of the head. Then, the T head is merged with the VP to project the T-bar. At this point, the T head becomes the probe which searches its c-command domain for a matching goal to attract it to the Spec-TP so as to value the unvalued/uninterpretable feature. The subject DP, *Bólú*, being the potential and active goal with an unvalued nominative case, is attracted to the Spec-TP and the unvalued case feature is valued and deleted.

Then the Emph head is externally merged with the TP to meet its c-selection condition. The whole TP pied-pipes to the Spec-EmphP also to fulfil the EPP feature of the Emph head that is morphologically realised as the clause-final high tone morpheme.

There is a theoretical reason why the pied-piping of the TP to the Spec-EmphP is required. Assuming phase impenetrability condition, if the probe *yè* is merged with the EmphP and later attracts the goal *Bólú* to the Spec-InterP, the phase domain of the Emph head will undergo transfer and will no longer be accessible for any syntactic operation, and this will block the movement of the *wh*-word to the Spec, FocP, thereby causing the derivation to crash. Similarly, if the *wh*-word *ko* is moved before the pied-piping, it will also block the movement of the subject DP *Bólú* to the Spec-InterP and bring about a non-convergent derivation. This being the case, the whole TP is first pied-piped to the Spec-EmphP and other syntactic operations will follow.

<sup>①</sup> The derivation and explanation of *wh*-questions here is similar to Olaogun (2018).



After the pied-piping, *yè* is externally merged with the EmphP to project Inter-bar. The Inter head now becomes the probe which searches its c-commanding domain for a goal to raise to its Spec. The subject DP, being the only active goal with [+Inter], then moves to the Spec-InterP to value and delete the [Inter-EPP] feature of the probe head.

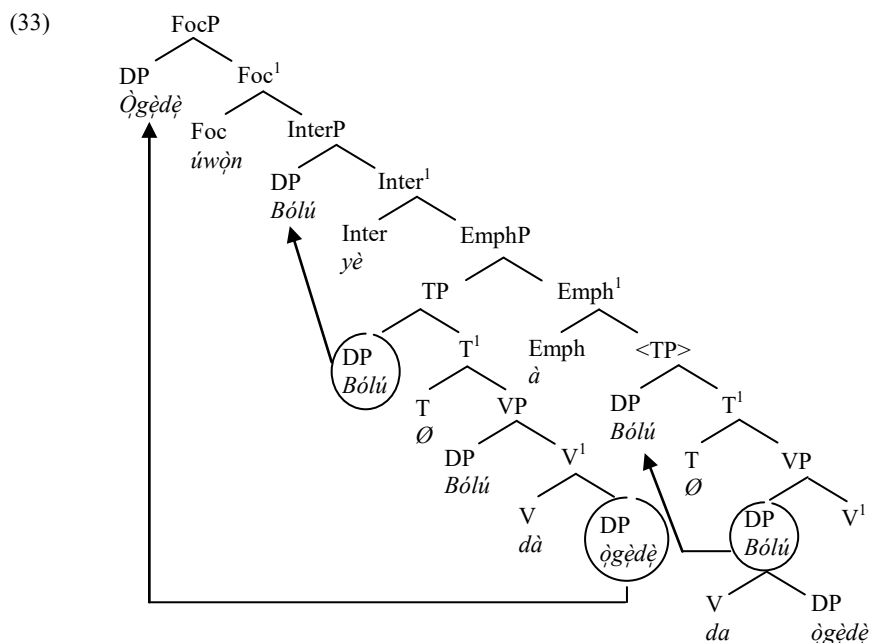
The derivation proceeds by externally merging null Foc head to InterP to project Foc-bar. The Foc head now becomes the probe being the highest head which begins to search its c-command domain for a matching goal. According to Chomsky, for a movement operation to take place, there must be an agreement relation between the probe and the goal. That is, the probe must have an unvalued/uninterpretable feature while the corresponding feature must be valued or [+interpretable] on the goal so that assuming feature valuation, the feature on the goal can be copied onto the probe. Given this, the probe has [focus-EPP] feature while the goal *ko* has [+Foc] feature, the requirement for movement to take place is fulfilled. Therefore, the goal moves to the Spec-FocP to value and delete the uninterpretable [Foc-EPP] feature that is not legible at LF which can cause the derivation not to converge at that interface level.

### 7.2 Analysis of yes/no question and object DP focus

The syntax of yes/no question and focus in (33) below has three probes, each of which can also trigger displacement operations. The derivations go as follows. The verb *dà* ‘to buy’ merges with DP object *ògèdè* to satisfy its c-selection condition while the DP subject *Bólú* is then merged in the Spec-VP to satisfy the EPP demand of the head. Then the T head

is merged with the VP to project the T-bar. At this point, the T head becomes the probe which searches its c-command domain for a matching goal to attract it to the Spec-TP so as to value the unvalued/uninterpretable feature. The subject DP, *Bólú*, being the potential and active goal with an unvalued nominative case, is attracted to the Spec-TP and the unvalued case feature is valued and deleted.

Then the Emph head is externally merged with the TP to fulfil its c-selection requirement. The whole TP pied-pipes to the Spec-EmphP also to fulfil the EPP feature of the Emph head that is morphologically realised as the clause-final high tone morpheme *á*. There is a word-order reason why the pied-piping of the whole TP to the Spec-EmphP is licensed in this structure.



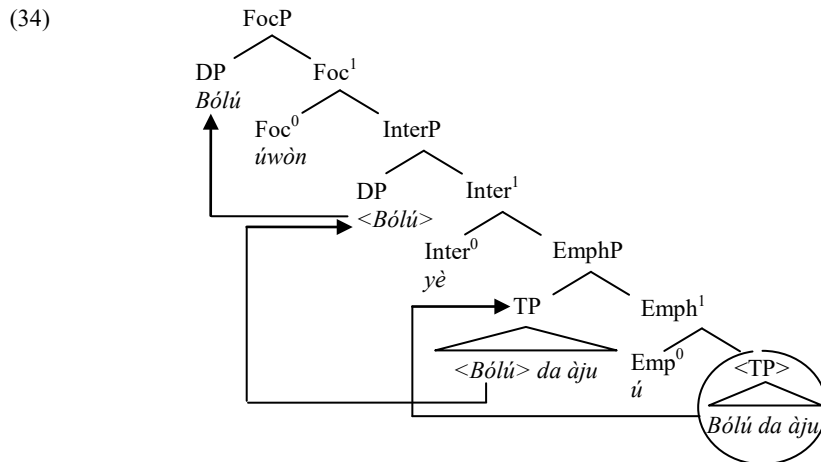
There is a theoretical reason why the pied-piping of the TP to the Spec-EmphP is necessary. Assuming phase impenetrability condition, if the probe *yè* is merged with the EmphP and later attracts the goal *Bólú* to the Spec-InterP, the phase domain of the Emph head will undergo transfer and will no longer be accessible for any syntactic operation, and this will block the movement of the DP object *ògèdè* to the Spec, FocP, thereby causing the derivation to crash.

After the pied-piping, *yè* is externally merged with the EmphP to project Inter-bar. The Inter head now becomes the probe which searches its c-commanding domain for a goal to raise to its Spec. The subject DP, being the only active goal with [+Inter], then moves to the Spec-InterP to value and delete the [Inter-EPP] feature of the probe head.

The derivation proceeds by externally merging Foc head *úwòṅ* to InterP to project Foc-bar. The Foc head now becomes the probe being the highest head which begins to search its c-command domain for a matching goal. The probe has [focus-EPP] feature while the goal DP object *ògèdè* has [+Foc] feature, the requirement for movement to take place is fulfilled. Therefore, the goal moves to the Spec-FocP to value and delete the uninterpretable [Foc-EPP] feature that is not legible at LF which can cause the derivation not to converge at that interface level.

### 7.3 Analysis of yes/no question and subject DP focus

The structure containing subject DP focus and yes/no question clause as in (34) below also consists of three probes and can be derived with much simplification as follows: The TP is pied-pied to the Spec-EmphP to satisfy the EPP condition of the head. The Foc head *úwòṅ* is merged externally to become the probe which searches its c-commanding domain for a matching goal. This is necessary because, according to Chomsky, for movement to take place, there must be an agreement between the probe and the goal, i.e., the probe must have an unvalued/uninterpretable feature while the corresponding feature on the goal must be valued/interpretable. Therefore, given feature valuation, the feature on the goal can be copied onto the probe. This being the case, the probe, i.e., the Foc head, which is morphologically realised as *úwòṅ*, has [Foc-EPP] feature while the goal *ògèdè* has [+focus] feature. So, the requirement for the movement to take place is thereby fulfilled. Then, the goal raises to the Spec-FocP to value and delete the Foc-EPP feature that is not legible at LF which can cause the derivation to crash.

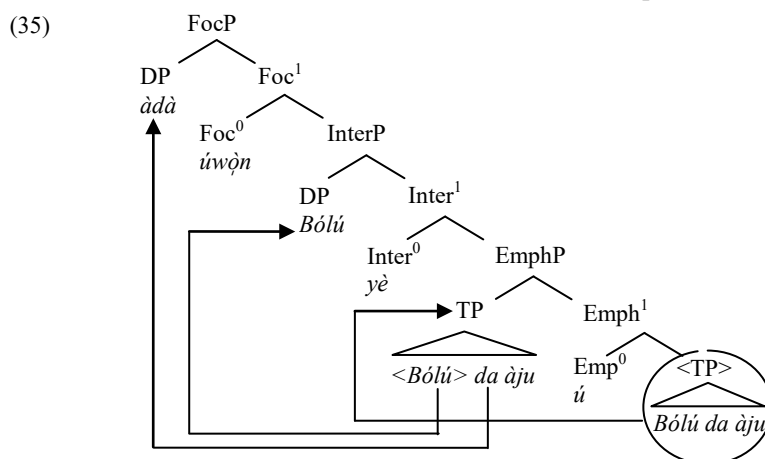


The derivation proceeds by externally merging the Inter head that is morphologically realised as *yè*. Being the highest head, it also becomes the probe which also searches its c-commanding domain for an active goal to move to its Spec. The only active goal is the subject DP, *Bólú*, because it is the only constituent that is licensed at the Spec-InterP. The

probe has the [Inter-EPP] feature which is valued and deleted by moving the goal, *Bólú*, to its specifier position.

#### 7.4 Analysis of yes/no question and verb focus

The structure in (35) is derived with much simplification as follows: The TP is pied-piped to the Spec-EmphP to fulfil the EPP feature of the Emph head. After the pied-piping, *yè* is externally merged with the EmphP to project Inter-bar. The Inter head now becomes the probe which searches its c-commanding domain for a goal to raise to its Spec. The subject DP, being the only active goal with [+Inter], then moves to the Spec-InterP to value and delete the [Inter-EPP] feature of the probe head.



The derivation proceeds by externally merging Foc head *úwòṅ* to InterP to project Foc-bar. The Foc head now becomes the probe being the highest head which begins to search its c-command domain for a matching goal. The probe has the [focus-EPP] feature while the goal, the copied and nominalised formed of the verb *àdà* has [+Foc] feature, and thus the requirement for movement to take place is fulfilled. Therefore, the goal moves to the Spec-FocP to value and delete the uninterpretable [Foc-EPP] feature that is not legible at LF which can cause the derivation not to converge at that interface level.

It is observed that the analyses in (32-35) which assume that FocP occurs higher up InterP are more plausible than the previous ones that claim otherwise in that, apart from the fact that the correct word order is realised, it also corroborates the unified analysis proposed by Olaogun (2016, 2018), which is also assumed in this study. The analysis specifically assumes that Inter head *yè* merges with EmphP in both yes/no and *wh*-questions. Also, we do not need to employ extra theoretic rules such as multiple specifiers and head-to-head adjunction rules as done in the previous analyses.

The analysis in (32) also assumes that *wh*-questions involve the occurrence of the clause-final high tone that does occur in yes/no and focus constructions as a mark of

emphasis. This claim can also be theoretically justified. If we do not assume the existence of the clause-final high tone for *wh*-questions, the unified analysis proposed for both yes/no questions and *wh*-questions would generate some questions. For instance, why is it that the Inter head *yè* in yes/no question selects EmphP but the same *yè* performing the same function in *wh*-questions merges with TP? But if we assume that a *wh*-question clause also has a clause-final high tone which is phonetically null, this asymmetry will disappear. And since we claim that *yè* licenses the existence of the clause-final high tone morpheme in yes/no questions, and it also occurs in *wh*-questions, there is no way we can claim otherwise. The plausible explanation we can offer is that it also occurs in *wh*-questions but is phonetically null or not morphologically realised.

### 8. Conclusion

The study has investigated the universality of hierarchies of functional projections employed in the cartographic program to capture the linear ordering of constituents within the left edge. It is discovered that cartographers' analysis which was pursued in Rizzi's (1997), which assumed that InterP dominates FocP, does not work for Ñjò-kóo data. In an attempt to extend the analysis to Ñjò-kóo, the study proposes extra theoretic rules such as multiple specifier approach and head-to-head adjunction. The result, at best, blatantly yields unacceptable and ill-formed structures. The only analysis that Ñjò-kóo data support is to claim that FocP dominates InterP. This being so, the paper, based on the fact from Ñjò-kóo, concludes that the universality of cartography of InterP and FocP is questionable.

### Abbreviations

|                    |                               |                |                      |
|--------------------|-------------------------------|----------------|----------------------|
| ADV                | Adverb                        | InterP         | Interrogative Phrase |
| DP                 | Determiner Phrase             | IP             | Inflectional Phrase  |
| Emph               | Emphasis                      | LF             | Logical Form         |
| Emph <sup>0</sup>  | Emph Head                     | NP             | Noun Phrase          |
| Emph <sup>1</sup>  | Emph-bar                      | PF             | Phonetic Form        |
| EmphP              | Emphatic Phrase               | Spec           | Specifier            |
| EPP                | Extended Projection Principle | Sub            | Subject              |
| Foc                | Focus                         | SVO            | Subject-Verb-Object  |
| Foc <sup>0</sup>   | Foc Head                      | T              | Tense                |
| Foc <sup>1</sup>   | Foc-bar                       | T <sup>1</sup> | T-bar                |
| FocP               | Focus Phrase                  | TP             | Tense Phrase         |
| Inter              | Interrogative                 | V              | Verb                 |
| Inter <sup>0</sup> | Inter Head                    | V <sup>1</sup> | Verb-bar             |
| Inter <sup>1</sup> | Inter-bar                     | VO             | Verb-Object          |

### References

- Aboh, E. 2004. Topic and Focus within D [J]. *Linguistics in the Netherlands*, 2(1):1-12.  
 Aboh, E. 2007. Focused versus Non-focused Wh-phrases [A]. In E. O. Aboh, H. Katharina & Z. Malte (eds.). *Focus and Grammar: The contribution of African languages* [C]. Berlin: De Gruyter Mouton,

*The Cartography of Focus and Interrogative Projections in Ñjò-Kóo*

- 287-314.
- Aboh, E. O. & R. Pfau. 2011. What's a Wh-word Got to Do with It? [A]. In P. Benincà & N. Munaro (eds.). *Mapping the Left Periphery, Volume 5: The cartography of syntactic structures* [C]. Oxford: Oxford University Press, 91-124.
- Benincà, P. 2001. The Position of Topic and Focus in the Left Periphery [A]. In G. Cinque & G. Salvi (eds.). *Current Studies in Italian Syntax. Essays Offered to Lorenzo Renzi* [C]. Amsterdam: North-Holland Publishing Co., 39-64.
- Benincà, P. & C. Poletto. 2004. Topic, Focus and V2: Defining the CP sublayers [A]. In L. Rizzi (ed.). *The Structure of CP and IP: The cartography of syntactic structures (2)* [C]. Oxford: Oxford University Press, 52-75.
- Benincà, P. 2006. A Detailed Map of the Left Periphery of Medieval Romance [A]. In R. Zanuttini, H. Campos, E. Herburger & P. Portner (eds.). *Crosslinguistic Research in Syntax and Semantics: Negation, tense and clausal architecture* [C]. Washington: Georgetown University Press, 53-86.
- Borer, H. 1984. *Parametric syntax: Case study in Semitic and Romance languages* [M]. Dordrecht: Foris Publications.
- Chomsky, N. 1995. *The Minimalist Program* [M]. Cambridge, MA: The MIT Press.
- Chomsky, N. 2000. Minimalist Inquires: The frame-work [A]. In D. Michaels & J. Uriagereka (eds.). *Step by Step: Essays on minimalist syntax in honor of Howard Lasnik* [C]. Cambridge, MA: The MIT Press, 89-155.
- Cinque, G. 1999. *Adverbs and Functional Heads: A cross-linguistic perspective* [M]. New York: Oxford University Press.
- Cinque, G. & L. Rizzi. 2010. The Cartography of Syntactic Structures [A]. In H. Bernd & N. Heiko (eds.). *The Oxford Handbook of Linguistic Analysis* [C]. Oxford: Oxford University Press, 65-78.
- Cruschina, S. 2006. Informational Focus in Sicilian and the Left Periphery [A]. In M. Frascarelli (ed.). *Phases of Interpretation* [C]. Berlin: Mouton de Gruyter, 363-385.
- Dada, S. A. 1987. *Aspects of the Morphology of Erúsú* [D]. MA Project. Ibadan: University of Ibadan.
- Doherty, J. 2016. Pieces of the periphery: A glance into the cartography of Ibibio's CP domain [J]. *Kansas working papers in Linguistics*, 37:42-58.
- Doron, E. & C. Heycock. 1999. Filling and Licensing Multiple Specifiers [A]. In D. Adger, S. Pintzuk, B. Plunkett & G. Tsoulas (eds.). *Specifiers: Minimalist perspectives* [C]. Oxford: Oxford University Press, 69-89.
- Frascarelli, M. & R. Hinterholz. 2007. Types of topic in German and Italian [A]. In S. Winkler & K. Schwabe (eds.). *On Information Structure, Meaning and Form* [C]. Amsterdam: John Benjamin's Publishing Company, 87-116.
- Frascarelli, M. & A. Puglielli. 2007. Focus in the Force-Fin System: Information structure in Cushitic languages [A]. In E. O. Aboh, H. Katharina & Z. Malte (eds.). *Focus and Grammar: The contribution of African languages* [C]. Berlin: De Gruyter Mouton, 1-24.
- Jackendoff, R. 1977. *X-Syntax: A study of phrase structure* [M]. Cambridge, MA: The MIT Press.
- Koizumi, M. 1995. *Phrase Structure in Minimalist Syntax* [D]. Doctoral Dissertation. Cambridge, MA: The MIT Press.
- Ilori, J. F. 2010. *Nominal Constructions in Igálà and Yorùbá* [D]. Doctoral Dissertation. Akungba-Akoko: Adekunle Ajasin University.
- Lahne, A. 2009. A Multiple Specifier Approach to Left-peripheral Architecture [J]. *Linguistic Analysis*, 35(1):73-108.
- Larson, R. K. 2021. Rethinking Cartography [J]. *Language*, 97(2):245-268.
- Olaogun, S. O. 2016a. *Information Structural Categories of the Ñjò-Kóo Language in Akoko North-West of Ondo State, Nigeria* [D]. Doctoral Dissertation. Ibadan: University of Ibadan.
- Olaogun, S. O. 2016b. Polar Questions in Ñjò-Kóo [J]. *IHAF: A Journal of African Studies*, 8(1):114-136.
- Olaogun, S. O. 2017. Predicate/Verb Focus in Afa [J]. *Inquiry in African Languages and Literatures*, (5):154-163.

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- Olaogun, S. O. 2018. Yes/No and Wh-questions in Ñjò-kóo: A unified analysis [J]. *Corela [En ligne]*, 16(1):1-16.
- Olaogun, S. O. 2019. Focus Constructions in Ñjò-kóo [J]. *American International Journal of Education and Linguistics Research*, 2(1):1-12.
- Oluwadoro, J. O. 2014. Re-Visiting the Status of North-West Akokoid in Relation to Yoruba [J]. *International Journal of Linguistics*, 6(5):109-131.
- Oyètádé, S. O. 2007. Language Endangerment in Nigeria: Perspectives on Àkókó languages of the southwest [J]. *International Journal of the Sociology of Language*, 184:169-184.
- Quarezemin, S. 2020. Cartography, Left Periphery and Criterial Positions: An interview with Luigi Rizzi [J]. *Documentação de Estudos em Lingüística Teórica e Aplicada*, 36(1):1-19.
- Radford, A. 2009. *An Introduction to English Sentence Structure* [M]. Cambridge: Cambridge University.
- Rezac, M. 2004. *Elements of Cyclic Syntax: Agree and Merge* [D]. Doctoral Dissertation. Toronto: University of Toronto.
- Richards, N. 1999. Featural Cyclicity and the Ordering of Multiple Specifiers [A]. In S. D. Epstein & N. Hornstein (eds). *Working Minimalism* [C]. Cambridge, MA: The MIT Press, 127-158.
- Richards, N. 2001. *Movement in Language: Interactions and architectures* [M]. Oxford: Oxford University Press.
- Rizzi, L. 1990. *Relativized Minimality* [M]. Cambridge, MA: The MIT Press.
- Rizzi, L. 1997. The Fine Structures of Left Periphery [A]. In L. Haegeman (ed.) *Elements of Grammar: Handbook in generative syntax* [C]. Dordrecht: Kluwer Academic Publishers, 281-337.
- Rizzi, L. 2001a. Relativized Minimality Effects [A]. In M. Baltin & C. Collins (eds.). *The Handbook of Contemporary Syntactic Theory* [C]. Oxford: Blackwell, 89-110.
- Rizzi, L. 2001b. On the Position of “Int(errogative)” in the Left Periphery of the Clause [A]. In G. Cinque & G. Salvi. (eds.) *Current Studies in Italian Syntax: Essays offered to Lorenzo Renzi* [C]. Amsterdam: North-Holland Publishing Co., 287-296.
- Rizzi, L. 2004. *The Cartography of Syntactic Structures* [M]. New York: Oxford University Press.
- Rizzi, L. 2017. *Cartography and Explanation* [R]. Paper Presented at the Second International Workshop on Syntactic Cartography, held at Beijing Language and Culture University.
- Rizzi, L. 2018. A Note on Left-peripheral Maps and Interface Properties [A]. In M. Grimaldi, R. Lai, L. Franco & B. Baldi (eds.). *Structuring Variation in Romance Linguistics and Beyond: In honour of Leonardo M. Savoia* [C]. Amsterdam: John Benjamin’s Publishing Company, 149-160.
- Scott, G.-J. 2002. Stacked Adjectival Modification and the Structure Of Nominal Phrases [A]. In G. Cinque (ed.). *Functional Structure in IP and DP* [C]. New York: Oxford University Press, 91-120.
- Ura, H. 1996. *Multiple Feature-Checking: A theory of grammatical function splitting* [D]. Doctoral Dissertation. Cambridge, MA: The MIT Press.
- Zwart, J.-W. 1997. Transitive Expletive Constructions and the Evidence Supporting the Multiple Specifier Hypothesis [A]. In W. Abraham & E. van Gelderen (eds). *German: Syntactic problems – problematic syntax* [C]. Niemeyer: Tübingen, 105-134.