

The Syntax of Sluicing in Yorùbá

Oye Taiwo

University of Ibadan, Ibadan

oyepaultaiwo@gmail.com

and

Nzewi Esther

Adekunle Ajasin University, Akungba Akoko

nzewi20104u@yahoo.com

Abstract

This paper examines sluicing as a phenomenon in Yorùbá syntax which interacts between ellipsis and wh-movement. The paper shows that the movement approach to sluicing is adequately appropriate to analyse sluiced expressions in Yoruba, as opposed to the non-movement approach. For our analysis, the Minimalist Program (MP) is adopted. Its basic operations are centred on economy and operations merge which target movement of features relevant for convergent computation. Our findings show that there is connectivity between the sluiced expression and the non-elliptical structure. These connectivity effects include feature matching of case and preposition-stranding parallelisms. These parallels in distribution are immediately and straightforwardly accounted for by the deletion theory of sluicing, since the grammatical constraints that regulate case on wh-phrases and the possibility of extracting a wh-phrase from a PP, will be operative uniformly in both elliptical and non-elliptical structures. This paper shows how that Wh-operator moves from the elliptical structure into the non-elliptical expression, obeying the *Shortest Move* constraint and consequently, demonstrates how ellipsis is achieved.

Keywords: *sluicing, ellipsis, wh-movement, preposition-stranding, MP.*

Introduction

Sluicing is an ellipsis phenomenon in which the sentential portion of a constituent question is elided, leaving only a wh-phrase remnant. This type of ellipsis occurs in both direct and indirect interrogative clauses. The ellipsis is introduced by a wh-expression, whereby in most cases, everything except the wh-expression is elided from the clause. Sluicing has been studied by scholars beginning with Ross (1969), and continuing with Lobeck (1990), Chung, Ladusaw, and McCloskey 1995, Lasnik 2001, and Merchant 2001, among several others and is therefore a relatively well understood type of ellipsis. Some of these works will be reviewed in section 1.2. In this study, our main concern shall be: (1) Can the movement approach adequately explain sluicing in Yoruba? (2) If it does, what is the connectivity between the elided expression and the non-elided structure? (3) How does the Wh-operator move from its VP internal position to the non-elided structure? (4) Under what condition does sluicing takes place? (5) How do we interpret the wh-operator, its copies and the copies of the elided expression at LF and PF? All these questions shall be addressed subsequently.

Theoretical Framework

This study adopts the Minimalist Program framework as proposed in Chomsky (1995, 1998 and 2002). This theoretical machinery is the most recent version of transformational generative grammar which employs fewer linguistic apparatus to construct syntactic structures. In the next section, we shall examine the derivational operations of the Minimalist Program.

Derivational operations

MP does not operate in a vacuum. There are linguistic apparatus that are minimal and economical which are employed for the derivation of syntactic structures. These apparatus are operations select, merge, and agree. Operation Select takes required word items from the lexicon and put them in the numeration to build syntactic structure. Numeration is a place where selected items needed for building syntactic structures are stored. The lexical items in the numeration are in turn put together by an operation dubbed merge. Operation Merge is a binary operation which combines two LIs to derive a Syntactic Object (SO). The by-product of merge operations is endocentric, such that when Merge groups two LIs, one of them project maximally. Like, if merge combines two elements X and Y, the resulting phrase takes its label from either X or Y (Collins, 2011) e.g. merge (X, Y) = {X, Y} = XP. Merge can be divided into two; internal and external merge. Internal merge is concerned with SOs that enter the derivation but have to undergo another merge operation. External merge only targets merger of SOs that enter the derivation from the Lexicon.

Agree is a formal mechanism for feature interpretability in the lexicon. It is an operation that establishes a relation between two distinct elements in the syntactic structure through which uninterpretable features are valued. In other words, given the appropriate domain for features valuation, Agree allots values to uninterpretable features in order to save the derivation from crashing at the LF. Crucially, Agree is the operation that establishes a relation between two different linguistic elements, probe and goal, in the syntactic structure through which feature values can be exchanged. A probe is a head with [-interpretable] features and a goal is an element with matching [+interpretable] features (Hornstein et al. 2005: 317).

1Previous Studies on Sluicing

Sluicing appears to be widespread cross-linguistically (unlike VP-ellipsis), and may in fact be found in some form or another in every language (like nominal ellipses, gapping, stripping, and fragment answers). The phenomenon appears to be situated at the intersection of two of the best studied and most intriguing areas of generative research, namely ellipsis and wh-movement. There are two general schools of analysis for sluicing: either the understood elided material is present at some level of syntactic structure or it is not.

Ross (1969) is the first examination of sluicing; he argued that sluicing involves regular wh-fronting followed by deletion of the sister constituent of the wh-phrase. This analysis has been expanded in greater detail in Merchant (2001), the most comprehensive treatise on sluicing to date. This is the first school of thought. They take sluicing to be a subspecies of ellipsis. The problem arising from Ross (1969) is that his analysis of sluicing appears not to respect islands: more accurately, that the wh-phrase in sluicing can be associated with (bind) a variable which corresponds in position to a correlate internal to an island in the antecedent TP.

A second kind of analysis is represented by Lobeck 1995 and Chung Ladusaw and McCloskey 1995. Others include Ginzburg and Sag (2000) and Culicover (1999), both of which present non-structural analyses of ellipsis. Their analyses posit no movement of the wh-remnant: it is base-generated in Spec-InterP and comes to bind a variable only at LF. They do not posit unpronounced elliptical material. They are of the opinion that a clausal node immediately and exhaustively dominates the wh-phrase. This analysis takes care of island effects; however, its primary explicandum is the connectivity effects.

Sluicing in Yoruba: A Descriptive Analysis

This section presents a descriptive analysis of sluiced expressions in Yoruba. It is our hope that a clear understanding of this adequate descriptive analysis would help readers follow up in the theoretical analysis. Sluicing is illustrated with the following examples. In each case, an embedded question is understood through only a question word or phrase.

Sluicing In Indirect Interrogatives

In an indirect interrogative clause, there are two clauses; usually a matrix clause and a subordinate clause, whereby the question phrase is embedded in the VP of the subordinate clause. Sluicing in an indirect interrogative involves eliding the entire question phrase leaving behind only the question words such as **èlòó** ‘how much’, **ta** ‘who’ **ibo** ‘where’ etc. Only the question word remains, and functions as the complement of the verb of the subordinate clause. However, we notice that the elided parts of the question phrase usually share striking resemblance with the matrix clause.

Consider the following examples where the intended interpretations of the question denoting elliptical clause are given in parentheses; parts of these are anaphoric to the boldface material in the antecedent.

1. **Bàbá rẹ ní kí o gba** owó, o ò sì bẹ̀rè èlòó <ni Bàbá rẹ ní kí o gbà>
Father PRN say COMP 2sg take money, 2sg neg yet ask how much<FOC father your say that you collect>
‘Your father told you to collect some money, yet you did not ask how much <your father asked you to collect>’
2. **O tún ti ẹ ohun tí mo ní o máà ẹ**, ó di è̀èkélòò <ti o ti ẹ ohun tí mo ní o máà se>
PRN again PST do thing COMP PRN say 3sg HAB-NEG do, 3sg become how many times
‘You have done what I asked that you stopped doing. That makes it how many times.’

Sluicing In Direct Interrogatives

In this case, unlike in the indirect interrogatives, the questions are not embedded. There is only one clause which is the interrogative clause. Sluicing in this case involves eliding the entire question phrase leaving behind only the question words such as **eloo** ‘how much’, **ta** ‘who’ **ibo** ‘where’ etc. However, it is possible that the speaker might have said something before the sluiced expression like we have in examples (3) and (6), or that a fellow interlocutor has said something which warranted the speaker’s use of the sluiced expression as in examples (4) and (5). We notice that the elided parts of the question phrase usually share striking resemblance with the clause in the previous utterance(s), as evident in the examples below:

3. O kí mi. Ní ìgbà wo <ni o kí mi>
PRN greet me. PREP time which <FOC PRN greet me >
‘You greeted me. When<did you greet me >?’
4. Speaker A: Ẹni kan wá sí ibí.
Person one come PREP here. ‘Someone came here.’

Speaker B: Ta ni <ó wá sí ibí>?
Who FOC <HTS come PREP here> ‘Who came here?’

5. Speaker A: Wón ń béèrè Adé.
 They PROG. ask Ade ‘They are asking about Ade.’
- Speaker B: Láti ibo <ni wón ń béèrè Adé>
 From where <FOC they PROG ask Adé> Where from<are they asking about Adé?’
6. O fẹ pa ara rẹ. Ni órí kí ni <o fẹ pa ara rẹ>?
 PRN want kill self PRN. On top what FOC<PRN want kill self PRN>?
 You want to kill yourself. Why <do you want to kill yourself>?

A Minimalist Derivation of Sluicing in Yoruba

We have adopted the movement approach to analyse sluicing in Yoruba. The reason for this will become evident as we proceed in our discussion. The non-movement approach seems to be associated with an irregularity and inconsistency of some kind. The approach posits that ellipses consist of a designated null category drawn from the lexicon which is replaced after Spell-Out by a phrase marker copied from the antecedent by LF. For an example like (3) which is repeated here as (7), would have the derivation contained in the structures (a) and (b), where the elliptical *e* in (7a) has been replaced by the boldface material in (7b).

7. O kí mi. Ní ìgbà wo
 a. At Spell-Out: O kí mi. [InterP Ní ìgbà wo [InterP⁰ [FocP *e* [TP *e*]]]]
 b. At LF: O kí mi. [InterP Ní ìgbà wo [InterP⁰ [FocP **ni** [TP **o kí mi**]]]]

These analyses posit no movement of the wh-remnant: it is base-generated in [Spec InterP] and comes to bind a variable only at LF. This does not seem logical, how does a null category from the numeration, which remains null even at the Spell-out come to be given a variable at LF? This looks like a violation of the inclusiveness condition. Hence, we employ the movement approach. The representation of the catena and its interpretation at LF and PF will be discussed in 1.5

The Movement Approach

As earlier stated, this approach involves the regular wh -fronting followed by deletion of the sister constituent of the wh -phrase.

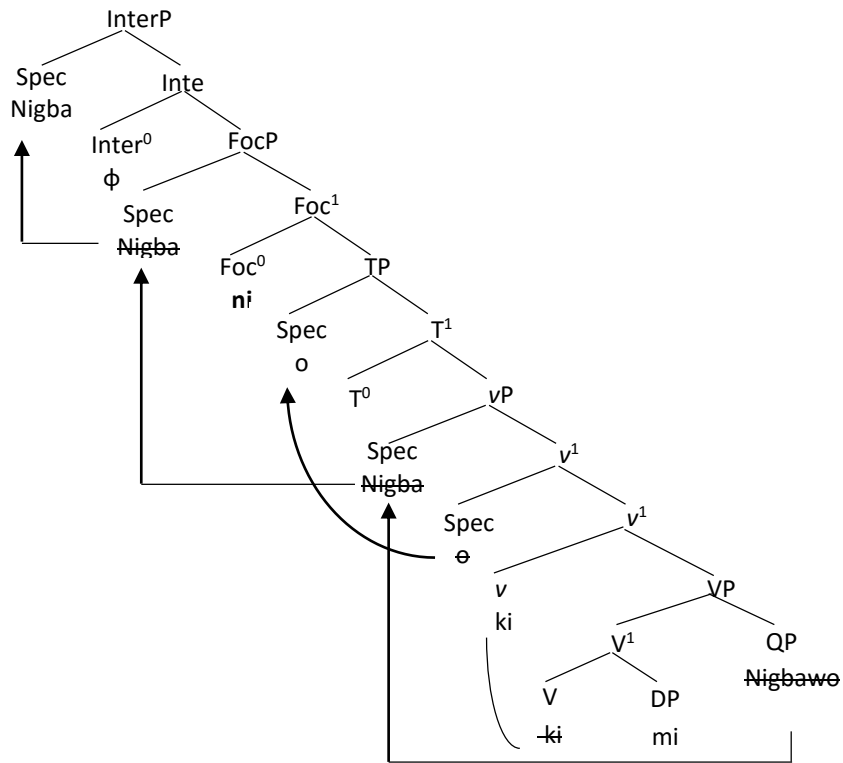
Analysing Sluicing in Direct Questions

I shall limit the phrase marking to the phrase containing the wh-word.

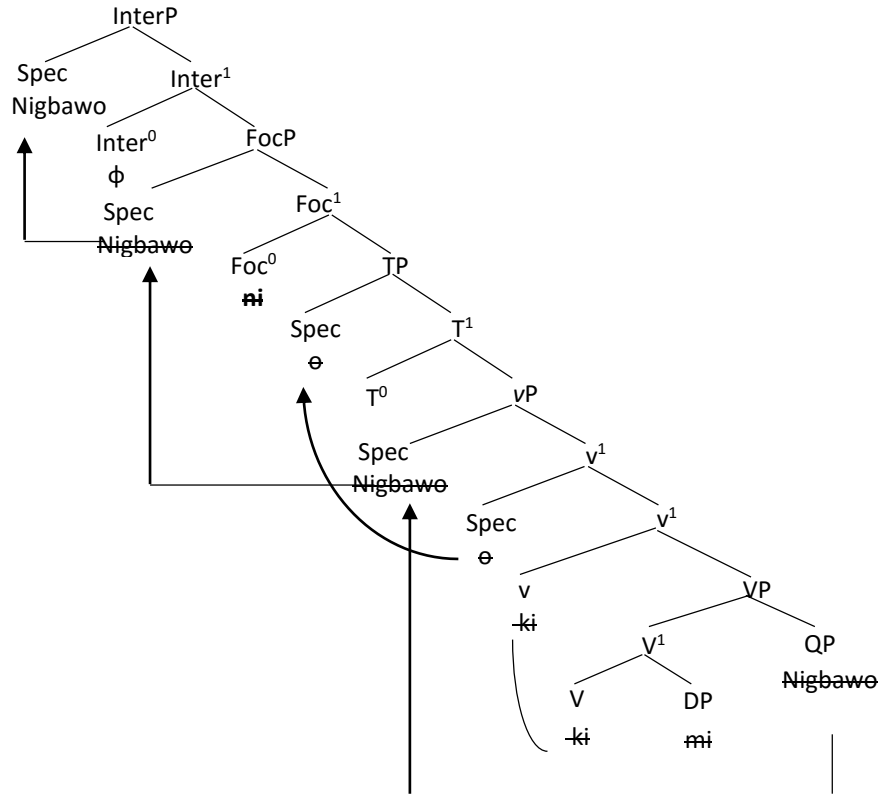
The sluiced expression in (7) is repeated in (8). It can be sketched and derived as given in (9) and (10) below.

8. O kí mi. Ní ìgbà wo <ni o kí mi>
 PRN greet me. PREP time which <FOC PRN greet me >
 ‘You greeted me. When <did you greet me >?’
9. [InterP Nígbàwo [InterP⁰ [FocP Nígbàwo [FOC ni] [TP O [T⁰ Φ] [VP nígbàwo [v_{kí} [VP kí minígbàwo]]]]]]]
 [InterP When [InterP⁰ [FocP when [FOC do] [TP you [T⁰ Φ] [VP when [v_{greet} [VP greet me when]]]]]]]
 When <did you greet me>?’
- b. [InterP Nígbàwo [InterP⁰ [FocP Nígbàwo [FOC ni] [TP O [T⁰ Φ] [VP nígbàwo [v_{kí} [VP kí minígbàwo]]]]]
 [InterP when [InterP⁰ [FocP when [FOC do] [TP you [T⁰ Φ] [VP when [v_{greet} [VP greet me when]]]]]]]
 When <did you greet me>?’

10a. Wh-movement



b. Ellipsis - Sluicing COMP and TP deletion



Yoruba language allows the wh- movement, hence, the Wh-operators in the above examples move from their base generated positions into [Spec FocP]. This follows from Rizzi (1997: 299) who argues that a preposed wh-operator expression ‘ends up in Spec of Foc in main questions’. We however notice that **ni** occupies the Foc⁰ in both constructions. The Wh-operator has strong [QF] and the Foc⁰ has an [+u-interpretable] feature of its own, which must be valued before reaching the covert syntax interface if not the derivation crashes at LF. Thus, preposing the wh-operator to spec-Foc values this [+uF] features on the Foc⁰. Assuming the Split-CP analysis, the question phrase cartographically is a projection of the functional head Inter⁰. Inter⁰ activates interrogative force through its edge features [EF] with which it attracts [+wh] operator from [Spec FocP] into its Spec to value its [Qf] features.

The derivation proceeds along this line. Taking (10a) for illustration, and assuming the PISH analysis (the hypothesis assumes that the subject is base generated from [Spec, vP] before raising to [Spec, TP]), first, the direct object *mi* ‘me’ is merged with the *ki* ‘greet’ to derive a V¹. the V¹ then merges with the wh-operator *nígbàwò* ‘when’ to form VP. Then the VP merges with the light verb *v* to form a v¹. The light verb values the accusative case of the object **mi** ‘me’. The lexical verb raises to v⁰ and adjoins with the null causative verb. Then the v¹ is merged with Spec *o* ‘you’ to form another v¹ and then, finally, the wh-operator merges with the v¹ to derive the vP.

O ‘you’ is assigned θ -role but has an unvalued case feature. The VP circle is ready and thus undergoes transfer to the interface i.e. it becomes frozen to a Probing head. And only the Edge and the head are available for further computation. Phase Impenetrability Condition (PIC) stated below in (11) is satisfied.

11. **Phase Impenetrability Condition/PIC**

The c-command domain of a phase head is impenetrable to an external probe (i.e. a goal which is c-commanded by the head of a phase is impenetrable to any probe c-commanding the phase)

The νP proceeds in the computation, it merges with T^0 which has some [Tns], [EPP] [uF] which must be assigned values if not the derivation will crash. T^0 probes into its domain and finds the subject DP *o* which is attracted to [Spec, TP] and the DP’s case is valued. The convergent TP is merged then with Foc^0 *ni*. The Foc^0 has [EPP] and [EF] which need to be valued. The Foc^0 probes into its c-commanding domain and sees an active goal which is the wh-operator at the outer [Spec νP]. The probe and the wh-operator goal enter an agree relation, the wh-word is attracted to [Spec, $FocP$]. The TP circle is now ready for transfer. It is frozen i.e. it becomes inactive and PIC is satisfied. Following Abimbola and Olaogun (2013), the derivation is then merged with $Inter^0$ the locus of illocutionary force marked as interrogative. The Foc^0 and its edge are still available for further computation. Thus, the $FocP$ is merged with $Inter^0$ which has [EF] that must be satisfied. The $Inter^0$ probes into its domain and finds the QP wh-operator *Nìgbàwó* at [Spec, Foc] with [QF], the probe $Inter^0$ attracts the QP and the features are valued. This is represented in (10) above. The crossed items are the *copies* of the moved items in the movement chains. After this, the Sluicing-COMP generalization stated in (12) below applies, followed by the TP ellipsis.

12. **The sluicing-COMP generalization**

In sluicing, no non-operator material may appear in COMP

The term ‘operator’ here refers to the phonological exponence of the wh-phrase itself, and ‘COMP’ denotes pre-subject position in clauses (‘the complementiser position’) which is typically occupied by a complementiser which here refers to the **InterP** and the **FocP**. The generalization in (10) rules out *ni* which occupies the Foc^0 position. Afterwards, the TP deletion follows and this sluices p-markers, leaving behind the wh-word *Nìgbàwó* ‘when’.

Analyzing Sluicing in Indirect Question

The sluiced expression in (1) is repeated here in (13). It can be sketched and derived as given in (14) and (15) below.

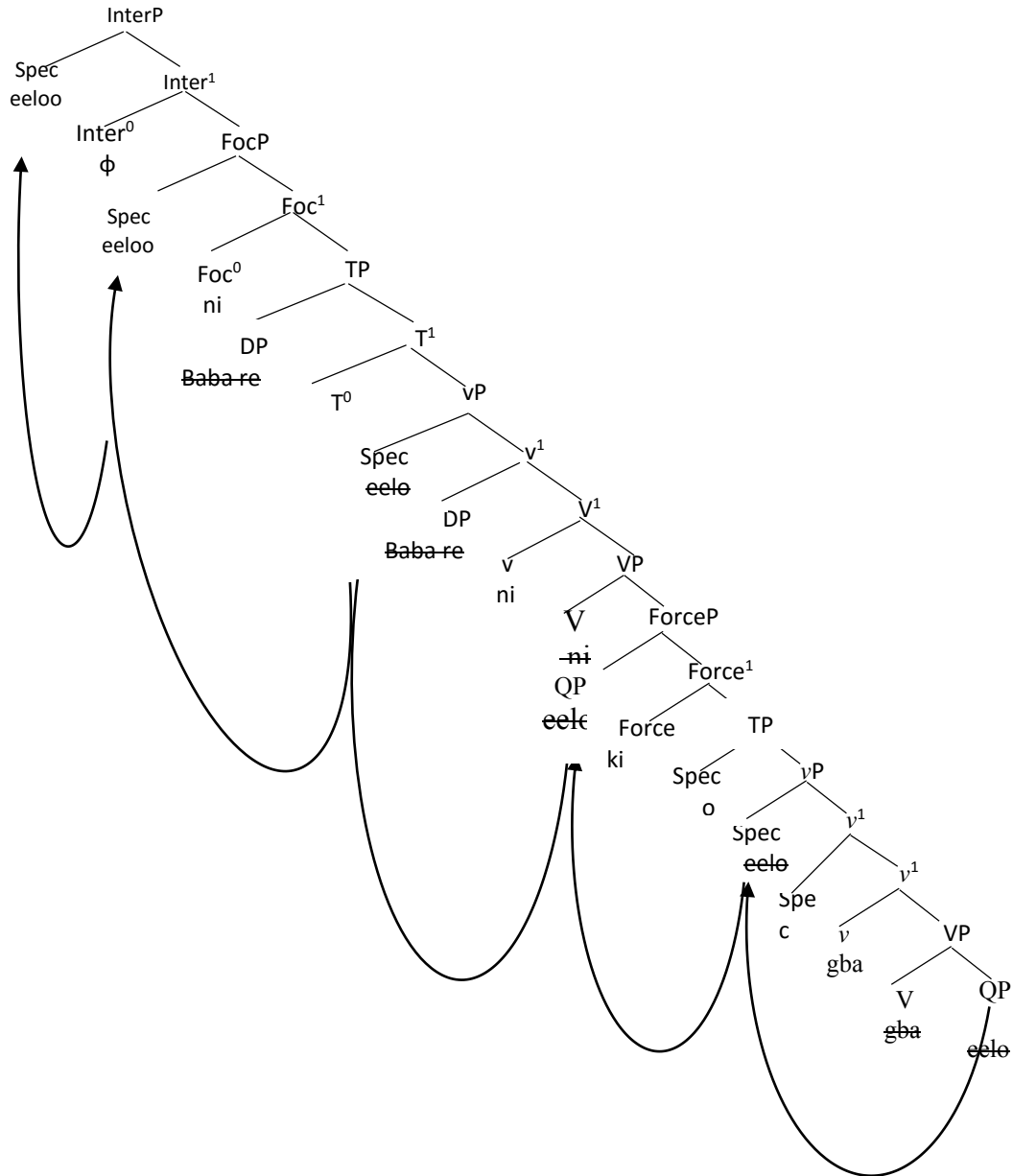
13. **Bàbá rẹ ní kí o gba** owó, o ò sì bèèrè èèlò < ni Bàbá rẹ ní kí o gba>
 Father PRN say COMP 2sg take money, 2sg neg yet ask how much<FOC father your say that you collect>
 ‘Your father told you to collect some money, yet you did not ask how much <your father asked you to collect>’

The analysis will be limited to the phrase that contains the wh-word since that is where sluicing occurs

- 14a. O ò sì bèèrè[Inter⁰èèlò [FocP [FOCni][TPbàbá rẹ[_T Φ][_{VP}èèlò[_{VP}ni [Forcep èèlò [Forcekí][TPo[_T Φ][_{VP}gba [VPgba èèlò]]]]]]]
 You NEG yet ask [_{FocP} how much [_{FOC} do][_{TP}your father [_T Φ][_{VP}how-much[_{VP}say [_{Forcep} how-much [_{Forcekí}][_{TP}you[_T Φ][_{VP}collect[_{VP} collect how much]]]]]]]
 ‘You did not ask how much <your father told you to collect>’

- b. O ò si béèrè<sub>[InterP éèlò_{[FocP [FOC ni]_{[TP bábá-ré_{[T Φ]]_{[VP éèlò_{[ni]_{[VP ní_{[ForceP éèlò_{[ForceP kí]_{[TP θ_{[T Φ]]_{[VP gba_{[VP gba}}}}}}}}}}}}
 éèlò]]]]]
 You NEG yet ask <sub>[FocP how much_{[FOC do]_{[TP your father_{[T Φ]]_{[VP how much_{[V say}}}}}
<sub>[VP say<sub>[ForceP how much<sub>[ForceP kí]<sub>[TP you<sub>[T Φ]]<sub>[VP collect_[VP collect how much]]]]]]]]
 'You did not ask how much <your father told you to collect>'</sub></sub></sub></sub></sub></sub></sub></sub>

15.



As obtained in direct questions, the derivation proceeds along thus: first, the wh- operator *èlò* ‘how much’ is merged with the verb *gba* ‘collect’ to derive a VP, the VP then merges with the light verb *v* to form a v^1 . The lexical verb raises to v^0 and adjoins with the null causative verb. Then the v^1 is merged with Spec *o* ‘you’ to form another v^1 and then, finally, the wh-operator merges with v^1 to derive the vP. *O* ‘you’ is assigned θ -role but still has an unvalued case feature. The VP circle is ready and thus undergoes transfer to the interface i.e. it becomes frozen to a probing head. And only the Edge and the head are available for further computation. Phase Impenetrability Condition (PIC) stated in (11) is satisfied. The vP proceeds in the computation, it merges with T^0 which has some [Tns], [EPP] [uF] which must be assigned values if not the derivation will crash. T^0 probes into its domain and finds the subject DP *o* ‘you’, which is attracted to [Spec, TP] and the DP’s case is valued. The convergent TP is merged then with Force⁰ *ki* to derive Force¹, thereby producing a outer specifier position which serves as an escape hatch for the wh-operator at the outer Spec-vP. The wh-word is moved into Spec-ForceP, this prevents it from getting frozen in the phase, as a result, it is still visible for further computation. The TP circle is ready and thus undergoes transfer to the interface levels.

The ForceP proceeds in the computation, it merges with the verb *ní* ‘say’ to form a VP, the VP in turn merges with a light verb to form a v^1 . The lexical is raised to adjoin with the light verb. The v^1 is then merged with the DP *bàbá rẹ* ‘your father’ to form a v^1 and then, the wh-operator is preposed to the [Spec vP] position, merged with the v^1 , it forms a vP. Again, the VP, alongside the ForceP undergoes transfer to the interface. The vP then proceeds to be merged with a T^0 which has some [Tns], [EPP] [uF] which must be assigned values if not the derivation will not converge. T^0 probes into its domain and finds the subject DP *bàbá rẹ* ‘your father’, which is attracted to [Spec, TP], the DP’s case is valued so are the features on T^0 . The emergent TP is merged then with Foc⁰ *ki*. The Foc⁰ has [EPP] and [EF] which need to be valued. The Foc⁰ probes into its c- commanding domain and see an active goal which is the the wh-operator *èlò* at [Spec vP]. The probe and the wh-operator goal enter an agree relation, the DP is attracted to [Spec, FocP]. Assuming the Split-CP analysis, the question phrase cartographically is a projection of the functional head Inter⁰. Inter⁰ which activates interrogative force is merged with FocP to form Inter¹. Because of the Inter⁰ edge features [EF], it attracts the wh-operator from [Spec FocP] into its Spec to value its [Qf] features.

The TP circle is now ready for transfer. It is frozen i.e. it becomes inactive and PIC is satisfied. It undergoes transfer. So does the InterP and FocP. This is the line with principle II of transfer which states that ‘At the end of the overall derivation, all remaining constituents undergo transfer’. The crossed items are the *trace copies* in the movement chains as illustrated in (15). After this, Sluicing COMP generalization applies and deletes all non-operators in the FocP. Subsequently TP deletion deletes all other items dominated by T

Our analysis of sluicing in Yoruba tilts towards the movement approach of Ross 1969 based on the connectivity between the elliptical expression and the non-elliptical structure. These connectivity effects include feature-matching effects of case and preposition- stranding parallelisms. First, as noted in Ross 1969, the sluiced wh-phrase must bear the case that its counterpart in a non-elided structure would bear. This is illustrated in the example 13 above, repeated in 16 below:

16. *Bàbá rẹ ní kí o gba owó, o ò dẹ bècèrè èlò*
 Father PRN say COMP 2sg take money.ACC, 2sg neg yet ask how much.ACC
 ‘Your father told you to collect some money, yet you did not ask how much’

Notice that the wh-operator *éèlò* ‘how much’ also bears the same case as *owo* ‘money’ in the example. Second, there is a correlation between the availability in a given language for preposition-stranding wh-movement and the possibility for sluicing a wh-phrase without a preposition which corresponds to a correlate marked by a preposition. In general, a language L will allow preposition stranding under sluicing if L allows preposition stranding under regular wh-movement. Consider the example below

- 17a. O fẹ se ara rẹ ni ese. Sí kí ni <o fẹ se ara rẹ ni ese >?
PRN want do self PRN PREP harm. PREP what FOC < PRN want do self PRN PREP harm >?
You want to harm yourself. For what <do you want to harm yourself>?’
- b. Kí ni o fẹ se ara rẹ ni ese si?
‘what do you want to harm yourself for?’

These parallels in distribution are immediately and straightforwardly accounted for by the deletion theory of sluicing, since the grammatical constraints that regulate case on wh-phrases and the possibility of extracting a wh-phrase from a PP, will be operative uniformly in both elliptical and non-elliptical structures.

Sluicing at the LF and PF Interface

Within MP tenets, it is assumed that Merge operations target root Syntactic Objects (SOs). As the wh-operator moves from VP internal position to [Spec InterP] and [Spec FocP] in direct and indirect interrogatives respectively, there is a copy left at every point of occurrence such that they form chains of occurrences. In line with the Copy theory of Movement, a constituent *α* moves from a position X to Y, both the *tail* and the *head* form a Chain by movement i.e. both X and Y contain a copy each before PF pronunciation and LF interpretation. By “Chain” we mean a set of constituents comprising an expression and any trace copies associated with it. A constituent which does not undergo movement would have only one copy. This is regulated by the Chain Uniformity Condition (CUC) which specifies that ‘all the links in a movement chain must have the same structural maximal projection’ as a result; the sluiced TP expression leaves only one copy.

Hence, only the highest occurrence of the wh-operator receives Spell-out because it contains elements which are legible at PF i.e. visible. And, visibility condition states ‘that only the highest copy in a movement chain is visible in the syntax’. The only maximal occurrence licensed under Wh-Attraction Condition is at [Spec, InterP]. Also, copies of the non-operator in the TP are linearized and are legible at the LF but not at the PF; as a result, they receive no spell-out.

Conclusion

We have so far explored the syntax of sluicing in Yoruba using the Minimalist Program. We observe that the movement approach posited by Ross 1969 explains sluicing in Yoruba exhaustively. We demonstrated the movement of the wh-operator from its VP internal position through [Spec vP] to [Spec FocP] to [Spec InterP]. Also we examined that case matching of the wh-phrases and the possibility of extracting a wh-phrase from a PP can be accounted for, by assuming the movement approach which accommodates elliptical and non-elliptical structures. We also observe that only the highest occurrence of the wh-operator receives Spell-out because it contains elements which are legible at PF i.e. visible. Finally, we noted that copies of the non-operator in the TP are linearized and are legible at the LF but not at the PF; as a result, they

receive no spell-out. This is not an exhaustive work on the syntax of sluicing in Yorùbá. We hope that our study will provoke scholars to research in this linguistically rich area.

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