Spell-out, Chains, and Long Distance *Wh*-movement in Seereer*

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1 Introduction

Since Chomsky (1977), it has come to be widely believed that long distance *wh*-movement proceeds in a series of short, local steps. This type of 'successive cyclic' movement is supported by a large body of empirical evidence from a number of different phenomena. Many languages exhibit morphological reflexes of successive cyclic *wh*-movement, such as a complementizer variation in Irish (McCloskey 2002) and Wolof (Martinović 2013), *wh*-agreement (or other extraction sensitive verbal morphology) in Chamorro (Chung 1994), Tagalog (Rackowski and Richards 2005), and Akɔɔse (Zentz 2012) and tonal downstep in Kikuyu (Sabel 2000). Other languages show syntactic effects of successive cyclic movement, such as embedded subject-auxiliary inversion in Belfast English (Henry 1995) or Spanish (Bakovic 1998) and quantifier float in West Ulster English (McCloskey 2000). A fifth type of evidence comes from the phonetic realization of multiple copies in *wh*-movement chains (Nunes 2004), such as *wh*-copying in German (Felser 2004). However, a central question remains unresolved in the literaure. Namely, what drives movement of the *wh*-phrase to intermediate positions?

In this paper, I examine novel data from Seereer (Atlantic, Senegal), a language that exhibits both extraction sensitive verbal morphology (henceforth 'extraction morphology) and repetition in *wh*-chains. To my knowledge, this makes Seereer unique by being the only language to show both of these properties, which can be seen in (1):[1]

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1. Abbreviations: 3SBJ = agreement; AUX = auxiliary; CL = class; DET = determiner; DV = default vowel; EXT = extraction suffix; FUT = future; IMPF = imperfective; INF = infinitive; LER = left edge resumptive; OBJ = object; PL = plural; PST = past; REFL = reflexive; REL = relative; SBJ = subject; SG = singular; 1 = first person; 2 = second person; 3 = third person..

(1) **xar**$_i$ foog-**o** [$_{CP}$ yee **ten**$_i$ Yande a lay-**u** [$_{CP}$ yee **ten**$_i$
what think-2SG.SBJ.EXT C 3SG Yande 3SBJ say-EXT C 3SG
Jegaan a ga'-**u** $\_i$]]
Jegaan 3SBJ see-EXT
'What do you think Yande said Jegaan saw _?'

In (1), each verb along the path of the *wh*-dependency displays the suffix *-u* (glossed EXT for 'extraction'), which is only present in cases of Ā-movement (see section 3). In addition to this special type of verbal morphology, there is a 3SG pronoun *ten* at the edge of each embedded clause. I show that these pronouns are the overtly spelled out copies of the moved *wh*-phrase. Unlike most other languages that exhibit repetition in Ā-chains, Seereer does not permit the embedded duplicate to be an identical copy of the matrix *wh*-phrase; only Dutch allows lower repetitions to be non-identical copies of the moved *wh*-phrase (Barbiers et al. 2009). This makes Seereer unique in the typology of *wh*-copying by being the only language that enforces obligatory non-identity between copies.

I argue that these two phenomena provide converging evidence that all movement to intermediate CP edges is motivated by checking/valuation of a feature on C^0, contra claims in the literature that only the final step of successive cyclic movement is triggered in this manner (i.e. Heck and Müller 2000; Bošković 2007; Boeckx 2006). I show that by assuming feature checking at CP edges we gain a unified account of both extraction morphology and *wh*-copying in Seereer. I show that the suffix *-u* spells out the feature that triggers movement to the CP edge. With regards to *wh*-copying, I argue that overt copies surface at the edge of the CP because they enter into a feature checking relationship there. Specifically, I argue for the principle in (2):

(2) *The Chain Head Principle:*
A copy in a chain is identified as the head of that chain if it is involved in the valuation of [uφ] or [uOP].

This principle dictates that each round of movement through a CP counts as its own chain, headed by a copy in Spec-CP. When combined with the independently motivated principle of spelling out the heads of chains (Nunes 2004), it motivates the spelling out of intermediate copies in Spec-CP in long distance movement chains, as those copies are involved in a feature valuation relationship.

Under this analysis, intermediate positions act simultaneously the head of one chain and the tail of another. This results in ambiguity in those positions, and I suggest that this ambiguity is not tolerated by the phonological component. I argue that the Chain Head principle is active in all languages, but that languages are parameterized in a way that obfuscates this fact. Namely, I propose the parameter in (3), which dictates how the ambiguity is resolved:

(3) *The Heads/Tails Parameter*

An item must be unambiguously identified as the head or tail of a chain at the point of spell-out. When an object is ambiguous as to head/tail status, languages resolve this difference in one of two ways:

i. That item is treated as the tail of a chain. (non-*wh*-copying languages)

ii. That item is treated as the head of a chain. (*wh*-copying languages)

I show that when taken together, (2) and (3) explain a range of problematic facts regarding the spell-out of intermediate *wh*-phrases. I further show that a theory that does not involve feature checking at CP edges has trouble explaining these facts satisfactorily.

The rest of the paper is structured as follows. In section 2, I review the problem of deriving intermediate steps in successive cyclic movement. Section 3 is a brief overview of Seereer clause structure, focusing on the position of the verb, the subject and the derivation of local *wh*-movement. Section 4 describes long distance *wh*-movement in Seereer. Section 5 argues that left edge resumptive pronouns are overtly spelled out copies of the moved *wh*-phrase. In section 6, I review the status of *wh*-copying in other languages, and discuss outstanding theoretical issues pertaining to this phenomenon. In section 7, I present my analysis of extraction morphology and multiple copy spell-out in Seereer. Section 8 returns to the issue of Ā-movement to embedded CP edges, while section 9 examines the issue of movement through the edge of vP. Section 10 concludes.

2 The Problem of Intermediate Steps in Succcessive Cyclic Movement

There is a large body of evidence that long distance *wh*-movement proceeds successive cyclically through the edge of each phase.[2] However, a central question remains unresolved in the literaure. Namely, what drives movement of the *wh*-phrase to intermediate positions? Consider the sentence in (4):

(4) What$_i$ did Mary think [$_{\text{CP}}$ t_i]]?

Here we are concerned with the movement of the *wh*-phrase to the Spec-CP of the embedded clause. This step of movement cannot be the result of a property of the matrix interrogative C^0. If movement was in response to some feature on the matrix C^0, we would expect the *wh*-phrase to move to the matrix Spec-CP and not the embedded Spec-CP. Second, assuming that derivations proceed from the bottom up, the matrix C^0 is not even present in the derivation at the point at which the *wh*-phrase moves to the embedded Spec-CP. Thus, it must be the case that some property in the lower clause drives movement of the *wh*-phrase to the embedded CP edge.

Much debate has been focused on what this property could be. There have been two general positions taken in the literature, which I call here the *probe based account* and the *mover based account*. They are contrasted in (5):

2. In this section, I will be concerned only with movement to intermediate CP phase edges. I turn to the issue of movement to the edge of the *v*P phase in section 9.

(5) a. *Probe based accounts:*
Movement to the matrix CP edge (the scopal position) and to intermediate CP edges are both driven by a feature on C^0 (interrogative and declarative). Examples include: Chomsky (2000); **?**); McCloskey (2002); **?**); Abels (2012); Rizzi (2006).

b. *Mover based accounts:*
Movement to the matrix CP edge is driven by a feature on the matrix C^0. Movement to intermediate CP edges is driven by a property of the moving *wh*-phrase. Examples include: Heck and Müller (2000); Boeckx (2006); Bošković (2007)

Let us first examine what I call the probe based accounts. The logic behind them is simple. They start with the assumption that movement to the scope position is taken to be derived by a feature on C^0 (consistent with the principle of Last Resort). Because the matrix C^0 cannot be involved in the triggering of movement in the lower clause, then movement of the *wh*-phrase must be driven by a similar feature on the embedded C^0.

These accounts are faced with two problems. First, the embedded clause in (4) is declarative, not interrogative. This is confirmed by the fact that the embedded clause is not interpreted as a question and by the fact that the English verb *think* does not embed interrogative complements. If the WH-feature is linked to the formation of interrogative interpretation, then it is problematic that it should show up on the declarative complementizer where it makes no such contribution. Because of this, many proponents of probe based accounts have been forced to posit two types of features that trigger Ā-movement: one type which derives the final step and another type that is present on embedded declarative C^0 to derive intermediate steps.[3] Abels (2012) takes a different approach, arguing that this problem is solved if we dissociate the interpretation of the *wh*-dependency from the feature that triggers movement to the edge of the CP phase. For Abels, it is movement to the terminal landing site that triggers interrogative interpretation, and not something inherent about the feature on C^0 itself.

A second problem for probe based accounts is the fact that not all declarative complementizers trigger movement. If we take the WH-feature on C^0 to be uninterpretable, then a crash will result if it is present in a derivation where there is no *wh*-phrase in its c-command domain. This leads both Chomsky (2000); **?** and McCloskey (2002) to propose that there are lexically distinct declarative C^0 in English and Irish, respectively: one that has the WH-feature and one which does not. McCloskey takes the behavior of the Irish complentizer system as evidence for this position. Irish has one declarative complementizer that appears when Ā-movement has taken place, and one which appears when there is no such movement. The difference, then, between Irish and English, he posits, is that Irish morphologically differentiates the two complementizers while English does not.

The family of mover based accounts has grown largely out of a response to the problems just discussed. These approaches diverge from the probe based accounts by arguing that feature checking only occurs in the matrix clause; movement to intermediate positions is triggered by a differ-

3. The terminology used to refer to this difference and the theoretical technology used to model it vary from author to author. Chomsky (2000); **?** calls the second type of feature 'defective'. McCloskey (2002) calls the them 'spurious'. For Rizzi (2006), the former type are 'criterial features' while the latter he calls '(purely) formal features'.

ent mechanism. Two examples of this type of approach are Heck and Müller (2000) and Bošković (2007). Heck and Müller develop a system based on the optimality theoretic device of violable constraints. Specifically, they propose a constraint Phase Balance as defined in (6):

(6) *Phase Balance:*

If P is a phase candidate, then for every feature F in the numeration there must be a distinct potentially available checker for F.

This constraint forces a check at the completion of each phase to see whether or not the derivation will be able to succeed or not. If there are unchecked features, the constraint attempts to pair them with checkers, which must be in accessible positions. With regards to *wh*-movement, this means that if a *wh*-phrase has moved to the edge of an embedded clause, it will be available in the next phase to check the WH-feature on the matrix C^0. Heck and Müller also argue Last Resort is a violable constraint, and that the latter outranks the former. Derivations with successive cyclic *wh*-movement violate Last Resort because there is no trigger for intermediate movement. However, since Phase Balance outranks Last Resort, these derivations converge.

Bošković (2007) also argues that there is no feature checking in intermediate positions. He formulates a system in which an uninterpretable feature [uF] on the moving *wh*-phrase forces movement to the edge of an embedded phase if it has not been checked. If it does not undergo such movement, it will be locked within that phase and [uF] on the *wh*-phrase will never be checked. This is because of the Phase Impenetrability condition (PIC; Chomsky 2000), which prohibits operations from outside a completed phase targeting elements within that phase. Thus, intermediate stages of movement account conforms to Last Resort, since an unchecked feature on the *wh*-phrase forces movement.

The core similarity between Bošković's (2007) and Heck and Müller's (2000) accounts is that it is a property of the mover that forces raising to intermediate positions. For Heck and Müller, it is the ability of the *wh*-phrase to check the WH-feature on a higher C^0 that allows it to move. For Bošković, it is the unchecked feature on the mover itself that forces it to move to the embedded CP edge. This accounts for why embedded declarative C^0 seem to trigger movement but are not interpreted as *wh*-questions: they are like any other declarative complementizer. This, in turn, circumvents a problem of look ahead present at the CP level in the probe based accounts. If there are two declarative C^0, one must be chosen at the point of merging the embedded complementizer. However, the information necessary for merging the correct embedded C^0, namely, whether the matrix C^0 is interrogative or not, is not present in the derivation. If there is only one declarative complementizer, as mover based accounts allow, then this problem disappears.[4]

However, the advantages of these accounts are also their weaknesses. As McCloskey (2002) notes, in all languages in which successive cyclic movement leaves a morphological signal in both

4. Bošković's (2007) system does not actually eliminate look ahead completely. To account for the fact English does not allow multiple *wh*-phrases to move overtly to Spec-CP, Bošković is forced to posit two flavors of *wh*-words, one which has the uninterpretable, movement triggering feature [uF] and one which does not. Consider the consequence of this move. Whenever a *wh*-phrase is merged, the computation must choose which version of the *wh*-word occurs: the one with [uF] or the one without such a feature. However, to choose correctly, information from further up in the structure is required, namely whether another *wh*-word will be merged or not. Thus Bošković's (2007) analysis creates exactly the same kind of look ahead problem that it putatively avoids.

matrix and intermediate clauses, that signal is always the same.[5] For example, in Irish, the declarative complementizer *aL* marks that Ā-movement has taken place out of its clause, regardless of whether or not that movement is a final step or an intermediate step (McCloskey 2002). As we will see below, this is also the case for Seereer. If movement to intermediate and final positions were truly triggered differently, then we would expect to find some languages in which this difference manifested itself overtly.

In this paper, I develop a probe based account of successive cyclic movement based on the analysis of long distance *wh*-movement sketched in Preminger (2011). A key component of Preminger's theory is that a failure of Agree does not induce ungrammaticality. This means that an unvalued WH-feature (or some other type of Ā-feature) can be present on all phase heads. This elegantly eliminates the look ahead problem, since there is no choice of which C^0 to merge before the matrix C^0 has entered the structure; any C^0 will suffice, because every C^0 bears a *wh*-probe. I show that this type of account, when combined with certain other assumptions, also provides a uniform account of extraction morphology the presence of overt copies of the moved *wh*-phrase at the edge of embedded CPs in Seereer.

3 Seereer Clause Structure

In this section, I present arguments for the clause structure I assume in the rest of the paper, focusing on the position of the verb and subject and the derivation of local *wh*-questions. Seereer exhibits SVO word order in neutral, affirmative clauses. The verb bears agreement for the person/number features of the subject. These characteristics are shown in (7):

(7) *Affirmative Clause*
Jegaan **a** jaw-'-**a** maalo fe
Jegaan 3SBJ cook-PST-DV rice DET
'Jegaan cooked rice.'

The (basic) word order is changed in cases of Ā-movement, such as *wh*-questions, in which the *wh*-phrase is fronted:

(8) *Object* Wh-*question*
xar$_i$ Jegaan a jaw-'-**u** $\_\_i$?
who Jegaan 3SBJ cook-PST-EXT
'What did Jegaan cook?'

Besides word order, the clauses in (7) and (8) differ in another important regard. In both sentences,

5. This statement, while correct, actually obfuscates variation. As shown by Georgi (2013), languages display three patterns of morphological reflexes: a marker that occurs along the entire path (type A); a marker that occurs only in the final clause (type B); and a marker that occurs only in intermediate clauses (type C). There are no languages that display morphology of *both* type B and type C without also displaying morphology of type A as well. In other words, there are no languages that have different morphological markers in intermediate and final clauses without also having a marker that appears in both types of clause as well.

the verb bears what I will name a *final suffix*. The final suffix is *-a* in the affirmative clause and *-u* in the *wh*-question. The two final suffixes are in complementary distribution; both cannot occur on the same verb, as shown in (9), regardless of ordering:

(9) *Complimentary distribution of final suffixes*

a. **V*-a-u

***xar**$_i$ Jegaan a jaw-'-**a**-**u** $\_\_i$?
who Jegaan 3SBJ cook-PST-DV-EXT
Intended: 'What did Jegaan cook?'

b. **V*-u-a

***xar**$_i$ Jegaan a jaw-'-**u**-**a** $\_\_i$?
who Jegaan 3SBJ cook-PST-EXT-DV
Intended: 'What did Jegaan cook?'

The suffix *-a* occurs in affirmative clauses, as shown in (7). The suffix *-u* occurs in all clauses out of which Ā-movement has occurred, such as focus clauses, as shown in (10a), and relative clauses, as shown in (10b):[6]

(10) *Final suffix* -u

a. *Focus fronting*

maalo$_{\text{FOC}}$ Mataar a jaw-**u** __.
rice Mataar 3SBJ cook-EXT
'Mataar cooked RICE$_{\text{FOC}}$.'

b. *Relative clause*

maalo fe [$_{\text{CP}}$ Mataar a ci'-**uu**-n-**a** __]
rice DET Mataar 3SBJ cook-EXT-3OBJ-REL
'the rice that Mataar gave him'

In this paper, I will refer to the final suffix *-a* as the *default vowel* (glossed DV). I will refer to the final suffix *-u* (glossed EXT) as *extraction morphology* or as the *extraction suffix* since it occurs exclusively under conditions where an element has extracted (that is, undergone Ā-movement) to the left periphery.[7]

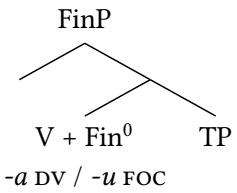
The fact that the two final suffixes cannot co-occur suggests they occupy the same syntactic position. In addition, the fact that the overt form of the suffix is conditioned by the presence of Ā-movement suggests that they occupy a high position in the clause, in the CP layer. Here, I argue that the final suffixes occupy Rizzi's (1997) Fin head, which encodes the finiteness of the clause. Fin^0 selects TP as its complement. I argue that in clauses where the lexical verb bears the finite

6. In (10b), *-u* is lengthened due to a regular morphophonological rule triggered by the relative suffix *-(n)a*.

7. Subject agreement may change the form the final suffix takes. The default vowel *-a* combines with 1SG subject agreement to yield *-aam*. The extraction suffix *-u* takes the form *-um* with 1SG subjects and the form *-o* with 2SG subjects.

suffix, the V^0 undergoes head movement to Fin^0.[8]

(11) *Final suffixes occupy Fin^0*



Evidence for the final suffixes being located in Fin^0 comes from their distribution. Final suffixes are blocked from appearing on the verb when the clause contains an auxiliary, as in (12a)–(12b), and in infinitive clauses, as in (12c):

(12) *Blocking of Tense Morphology/Final Vowel*

a. *Progressive construction*
Jegaan a-xe **ret-aa-(*a)** Dakar
Jegaan 3SBJ-AUX go-IMPF-DV Dakar
'Jegaan is going to Dakar.'

b. *Temporal Auxiliary*
Jegaan **xan** a **ret-(*a)** Dakar
Jegaan FUT 3SBJ go-DV Dakar
'Jegaan will go to Dakar.'

c. *Infinitive*
Jegaan a bug-a **o** **ret-(*a)** Dakar
Jegaan 3SBJ want-DV INF Dakar
'Jegaan wants to go to Dakar.'

The generalization is that these are cases where the lexical verb cannot raise to Fin^0. I assume infinitival clauses lack a FinP layer altogether, and therefore the structure to produce final suffixes is completely absent.[9] In clauses with an auxiliary, this element raises to Fin^0, and a final suffix on the lexical verb is therefore impossible.[10] This resembles languages where the highest verbal element must move to T, such as French; (Pollock 1997) or to C, such as German (den Besten 1983) or Dinka (van Urk and Richards 2015).

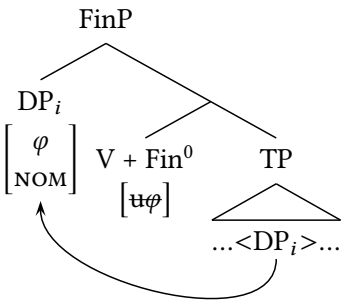
8. I assume that the verb undergoes successive head movement up the clausal spine from V^0 to Fin^0, and that this generates the observed ordering of suffixes on the verb in accordance with the Mirror Principle (Baker 1985). The clausal hierchary I assume is Force > Fin > T > Asp > v > V. Verbal movement terminates at Fin^0. For ease of exposition, I will write 'V' in structures where V^0 has undergone head movement instead of writing all the constituent heads.

9. An alternative would be to posit that the infinitive particle *o* spells out a 'defective' Fin^0. I will not explore this analysis here.

10. In clauses where an auxiliary moves to Fin^0, I assume that the verb raises as high as Asp^0, as evidenced for by the aspectual morphology present on the verb in (12a). I assume that Fin^0 is spelled out as a portmanteau with the auxiliary (although orthographically this is not represented in 12b).

Overt subject DPs must always precede the verb in Seereer, and thus, the subject must be higher than Fin^0. Therefore, I argue that the subject position is Spec-FinP in Seereer. Thus, Spec-TP is unemployed as an argument position. This movement is driven by unvalued φ-features on Fin^0 which probe into the clause and find the φ-features of the subject DP, which moves to Spec-FinP to value the probe and receive nominative case.[11] This is shown in (13):

(13) *Subject movement to Spec-FinP*



The idea that φ-features responsible for licensing of the subject DP are located on C-domain level head is consistent with the view of Phase Theory developed in Chomsky (2008) and Richards (2007), where φ-features start on C^0 and are later 'inherited' by T^0. Here, I follow **?**, who proposes that in some languages, Feature Inheritance does not hold between C^0 and T^0 in certain situations. I will therefore assume that it is possible for φ-features to stay on the complementizer where they are introduced, meaning that in Seereer the φ-probe stays on Fin^0. I also assume that Fin^0 is the CP-level phase head in Seereer.

As noted above, local *wh*-questions involve fronting of the *wh*-phrase and the presence of the extraction morphology on the verb instead of the default vowel *-a*. When a non-subject is questioned, it precedes the verb and the subject, as shown in (8), above, and (14):

(14) *Non-subject* wh-*questions*

a. *Object* wh-*question*
an$_i$ ga-**o** _$_i$?
who see-2SG.SBJ.EXT
'Who did you see?'

b. *Adjunct* wh-*question*
mban$_i$ Jegaan a ret-**u** Dakar _$_i$?
when Jegaan 3SBJ go-EXT Dakar
'When did Jegaan go to Dakar?'

11. I assume that subject agreement morphology spells out the valued φ-features on the Fin head. Supporting evidence for this conclusion comes from the fact that subject morphology interacts with the content of Fin^0, no matter what fills this head. However, a detailed examination of subject agreement morphology and its interaction with the content of Fin^0 is beyond the scope of the current paper.

In subject *wh*-questions, Ā-movement is string vacuous. However, if we take the final suffix *-u* to occur only when overt Ā-movement has taken place, then the subject must have undergone such movement in these examples. Another piece of evidence that *wh*-subjects undergo Ā-movement is the fact that regular person/number agreement on the verb is suppressed, as shown in (15):

(15) *Subject* wh*-questions*

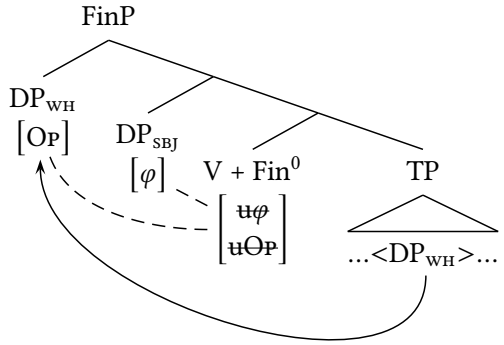
a. **an**$_i$ (*a) jaw-**u** maalo?
who 3SBJ cook-EXT rice
'Who cooked rice?'

b. **xar**$_i$ (*a) ref-**u** took ataabul ale?
who 3SBJ be-EXT on table DET
'What is on the table?'

Suppression of the subject agreement is characteristic of all subject Ā-movement in Seereer.[12] I take this effect to be an Anti-Agreement Effect (Ouhalla 1993).[13] In (15), presence of the suffix *-u* confirms that fronting has taken place in (15). Subject agreement is obligatory in non-subject *wh*-questions.

As argued above, the suffix *-u* is is located in Fin^0 and marks that Ā-movement has taken place in a clause. Therefore, I argue that this suffix spells out a valued *operator probe* on Fin^0 (uOP, following McCloskey 2002). This analysis is consistent with the assumption that Fin^0 is the CP-level phase head in Seereer. I assume that this feature triggers movement of *wh*-phrases and other Ā-operators. In the case of non-subject *wh*-questions, FinP will have two specifiers: the inner one occupied by the subject, and the outer one occupied by the *wh*-phrase. This is shown in (16):

(16) *Non-subject* wh*-movement to Spec-FinP*



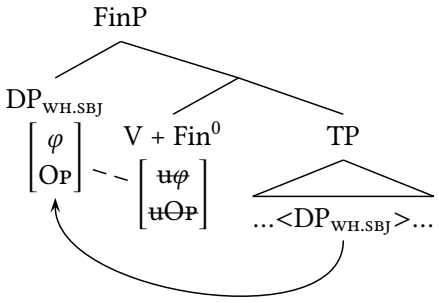
The *wh*-phrase must always precede an overt subject DP, and therefore, I argue that the subject moves to the inner Spec-FinP position, while the *wh*-phrase moves to the outer specifier of FinP. I assume that the subject moves first because it intervenes between the probes on Fin^0 and the object.

12. See Baier (2013, 2014) for a discussion of relevant data.
13. Anti-agreement is a distinctly local phenomenon in Seereer. It only occurs in the clause where an extracted subject originates. As this paper is concerned with the derivation of successive cyclic movement, I will not deal with it further here.

I further assume there is no 'tucking in' of an Ā-moved constituent behind an A-specifier. Thus, a non-subject *wh*-phrase will always occupy the outer Spec-FinP. In (16), dashed lines represent Agree relations between Fin^0 and the subject DP and the *wh*-phrase, each satisfying one probe. The *φ*-features of the subject DP satisfy Fin^0's *φ*-probe and the Op-feature on the *wh*-phrase satisfies Fin^0's Op-probe.

When a subject undergoes *wh*-movement, both probes on Fin^0 are valued by the same DP. Thus, in subject *wh*-questions, there is only one Spec-FinP position, as show in (17):

(17) *Subject* wh-*movement to Spec-FinP*



The idea that a single projection may host both A- and Ā-specifiers is consistent with theories which hold that a VP internal *wh*-phrase must undergo movement to Spec-*v*P in order to escape the *v*P phase (Rackowski and Richards 2005; Chomsky 2008; **?**). When such movement occurs, *v*P will have two specifiers: one that hosts the external argument (an A-position) and one that hosts the moving *wh*-phrase (an Ā-position). In my account, the same configuration holds at the CP level phase edge in the case of non-subject *wh*-questions. In the case of subject *wh*-questions, there is only one specifier position, and it functions as a hybrid A/Ā-position, in that the same DP moves for licensing and to satisfy the Op probe on Fin^0. This configuration may be responsible for the anti-agreement effect observed in this type of questions, though I will leave this idea to further discussion.[14]

My account of *wh*-subjects is similar to analyses of *wh*-subjects in West Ulster English by McCloskey (2000) and in Icelandic by Holmberg and Hróarsdóttir (2004). These authors conclude that *wh*-subjects move directly to Spec-CP, skipping Spec-TP altogether. Given these conclusions and that Spec-FinP is the normal licensing position for subjects in Seereer, it makes sense that Spec-FinP can be a hybrid A/Ā-position as problematic.

Having introduced my analysis of local *wh*-movement in Seereer, I now turn to the main concern of this paper, Seereer long distance *wh*-movement.

4 Long Distance *Wh*-movement in Seereer

In this section, I provide a description of Seereer long distance *wh*-questions, where the *wh*-phrase originates in an embedded clause. To begin, consider the two examples of long distance object *wh*-

14. See Baier (in prep) for an analysis of anti-agreement along these lines.

questions in (18):

(18) a. **xar**$_i$ xalaat-**o** [$_{CP}$ yee **ten**$_i$ Jegaan a ga'-**u** —$_i$]
what think-2SG.SBJ.EXT C 3SG Jegaan 3SBJ see-EXT
'What do you think Jegaan saw —?'

b. **xar**$_i$ xalaat-**o** [$_{CP}$ yee **ten**$_i$ Yande a lay-**u** [$_{CP}$ yee **ten**$_i$
what think-2SG.SBJ.EXT C 3SG Yande 3SBJ say-EXT C 3SG
Jegaan a jaw-**u** —$_i$]]
Jegaan 3SBJ cook-EXT
'What do you think Yande said Jegaan cooked —?'

In both sentences, the *wh*-phrase originates in the object position of the most embedded clause and moves to the edge of the matrix clause where it takes its scope. Fronting must be all the way to the matrix edge; partial *wh*-fronting interpreted with matrix scope is impossible in Seereer. Second, extraction morphology is found on each verb along the path of movement. In (18a), extraction morphology appears on the embedded verb *ga'* 'see' and on the matrix verb *xalaat* 'think'. In (18b), extraction morphology appears on the most embedded verb *jaw* 'cook', the verb in the intermediate embedded clause *lay* 'say', and the matrix verb *xalaat* 'think'. Extraction morphology is a *requirement* in lower clauses:

(19) a. *__xar__$_i$ xalaat-**o** [$_{CP}$ yee **ten**$_i$ Yande a lay-**u** [$_{CP}$ yee **ten**$_i$
what think-2SG.SBJ.EXT C 3SG Yande 3SBJ say-EXT C 3SG
Jegaan a jaw-**a** —$_i$]]
Jegaan 3SBJ cook-EXT
Intended: 'What do you think Yande said Jegaan cooked —?'

b. *__xar__$_i$ xalaat-**o** [$_{CP}$ yee **ten**$_i$ Yande a lay-**a** [$_{CP}$ yee **ten**$_i$
what think-2SG.SBJ.EXT C 3SG Yande 3SBJ say-EXT C 3SG
Jegaan a jaw-**u** —$_i$]]
Jegaan 3SBJ cook-EXT

c. *__xar__$_i$ xalaat-**o** [$_{CP}$ yee **ten**$_i$ Yande a lay-**a** [$_{CP}$ yee **ten**$_i$
what think-2SG.SBJ.EXT C 3SG Yande 3SBJ say-EXT C 3SG
Jegaan a jaw-**a** —$_i$]]
Jegaan 3SBJ cook-EXT

As shown by (19), the suffix *-u* cannot be replaced by the default vowel in the most embedded clause, (19a), the intermediate embedded clause, (19b), or both embedded clauses at the same time, (19c).

Finally, in both (18a) and (18b), there is a 3SG pronoun *ten* in the left periphery of each embedded clause. This pronoun is coreferential with the moved *wh*-phrase, and identical in form *ten* to the normal independent 3SG pronoun. Descriptively, I take these pronouns to be resumptive elements, and I will label them 'left edge resumptives' (LERS) based on their position. Like extrac-

tion morphology in embedded clauses, LERs are required in lower clauses. The judgements in (20) parrallel those in (19):

(20) a. *$\mathbf{xar}_i$ xalaat-**o** [$_{CP}$ yee $\mathbf{ten}_i$ Yande a lay-**u** [$_{CP}$ yee $\boxed{\emptyset}$
what think-2SG.SBJ.EXT C LER Yande 3SBJ say-EXT C Jegaan
Jegaan a jaw-**u** $\_\_i$]]
3SBJ cook-EXT
Intended: 'What do you think Yande said Jegaan cooked __?'

b. *$\mathbf{xar}_i$ xalaat-**o** [$_{CP}$ yee $\boxed{\emptyset}$ Yande a lay-**u** [$_{CP}$ yee $\mathbf{ten}_i$
what think-2SG.SBJ.EXT C Yande 3SBJ say-EXT C 3SG
Jegaan a jaw-**u** $\_\_i$]]
Jegaan 3SBJ cook-EXT

c. *$\mathbf{xar}_i$ xalaat-**o** [$_{CP}$ yee $\boxed{\emptyset}$ Yande a lay-**u** [$_{CP}$ yee $\boxed{\emptyset}$
what think-2SG.SBJ.EXT C Yande 3SBJ say-EXT C
Jegaan a jaw-**u** $\_\_i$]]
Jegaan 3SBJ cook-EXT

As shown by (20a), the *ten* cannot be ommitted in the most embedded clause, the intermediate embedded clause, (20b), or both embedded clauses at the same time, (20c). Thus, it seems that the LER and extraction morphology in an embedded clause go hand in hand. The surface pattern is summarized in (21):[15]

(21) *The Pattern of Long Distance* Wh-*movement*
[$_{CP}$ WH_i ... V-**u** ... [$_{CP}$ C LER_i ... V-**u** ...]]

4.1 Distribution of left edge resumptives with different *wh*-phrases

Left edge resumptives are required in lower clauses regardless of the type or function of the *wh*-phrase that is extracted. Above, we have seen cases where a LER 'duplicates' an extracted object. As shown in (22), a resumptive is also required in cases of subject extraction:

(22) $\mathbf{an}_i$ foog-**o** [$_{CP}$ yee *(**ten**$_i$) ret-**u** Dakar]?
who think-2SG.SBJ.EXT C LER go-EXT Dakar
'Who do you think went to Dakar?'

A LER is also required when a complex *wh*-phrase is extracted:

15. Other long distance Ā-dependencies are also characterized by the properties just discussed. Both long distance relativization and long distance focus involve extraction morphology along the entire path of the dependency and left edge resumptives.

(23) [**fañiik** **f-um**]$_i$ xalaat-**o** [$_{CP}$ yee *(**ten**$_i$) Jegaan a ga'-**u**
elephant CL-which think-2SG.SBJ.EXT C LER Jegaan 3SBJ see-EXT
—$_i$]?

'Which elephant do you think Jegaan saw?'

In (23), a complex *wh*-phrase formed with the *wh*-determiner *-um* 'which'[16] is extracted from the object position of the embedded clause. The LER is still required in the lower clause, and still has the form of the 3SG pronoun *ten*.

Wh-adjuncts also require resumption, as shown in (24):

(24) a. **mban**$_i$ a xalaat-**u** [$_{CP}$ yee *(**ten**$_i$) Jegaan a fon-**u** a Yande
when 3SBJ think-EXT C LER Jegaan 3SBJ kiss-EXT OBJ Yande
—$_i$]?

'When does he think Jegaan kissed Yande?'

b. **tam**$_i$ a xalaat-**u** [$_{CP}$ yee *(**maaga**$_i$) ret-**o** —$_i$]?
where 3SBJ think-EXT C LER go-2SG.SBJ.EXT
'Where does he think you went?'

c. **nam**$_i$ xalaat-**o** [$_{CP}$ yee *(**neen**$_i$) otew oxe a war-**u**
how think-2SG.SBJ.EXT C LER woman DET 3SBJ kill-2SG.SBJ.EXT
acek ale —$_i$]?
chicken DET
'How do you think the woman killed the chicken?'

All three *wh*-adjuncts in (24) require a LER. The temporal *wh*-word *mban* 'when' requires the 3SG pronoun *ten*. The locative *wh*-word *tam* 'where' and manner *wh*-word *nam* 'how' require different resumptives: the locative demonstrative *maaga* 'there yonder' and the manner demonstrative *neen* 'in that manner', respectively. The appearance of *maaga* with *tam* and *neen* with *nam* is consistent with the observation that the *φ*-features of the LER must match the *φ*-features of the extracted *wh*-phrase. This can be seen in (25), where the plural *wh*-word *aniin* 'who all' is extracted, and the resumptive in the embedded clause is the 3PL pronoun *den*.

(25) **aniin**$_i$ foog-**o** [$_{CP}$ yee *(**den**$_i$) ndet-**u** Dakar —$_i$]?
who.PL think-2SG.SBJ.EXT C LER.3PL go.PL-EXT Dakar
'Who all do you think when to Dakar?'

The demonstrative *maaga* is composed of a demonstrative stem *-aaga* and a locative noun class agreement prefix *m-*. The manner demonstrative *neen* is composed of the demonstrative stem *-een* and a manner noun class prefix *n-*. Because noun class can be reasonably assumed to be included

16. Like other determiners in Seereer, *-um* shows class concord with the noun it modifies. In (23), this is reflected by the class prefix *f-*.

in a nominal's φ-feature specification (Carstens 2010), I take the appearance of *maaga* and *neen* to straightforwardly follow from φ-feature matching requirements. Therefore, for the rest of this paper, I will treat the *maaga*/*neen* resumptives the same as any other LER.[17]

4.2 The Structural Position of Left Edge Resumptives

The position of LERs in embedded clauses is fixed. As seen in (26), they must always surface in the left periphery of the clause, following an overt complementizer if one is present[18]:

(26) a. **xar**$_i$ xalaat-**o** [$_{CP}$ yee **ten**$_i$ Jegaan a ga'-**u** —$_i$]?
what think-2SG.SBJ.EXT C LER Jegaan 3SBJ see-EXT
'What do you think Jegaan saw?'

b. *__xar__$_i$ xalaat-**o** [$_{CP}$ **ten**$_i$ yee Jegaan a ga'-**u** —$_i$]?
what think-2SG.SBJ.EXT LER C Jegaan 3SBJ see-EXT

c. *__xar__$_i$ xalaat-**o** [$_{CP}$ yee Jegaan a ga'-**u** **ten**$_i$]?
what think-2SG.SBJ.EXT C Jegaan 3SBJ see-EXT LER

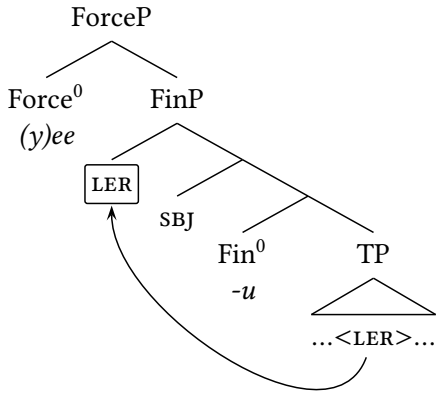
In (26b), the resumptive surfaces to the left of the declarative complementizer *(y)ee*. In (26c), the resumptive appears at the foot of the *wh*-dependency, in the object position of the embedded clause.[19] In addition, the resumptive cannot appear between the subject and the verb, as shown in (27):

(27) *__xar__$_i$ xalaat-**o** [$_{CP}$ yee Jegaan **ten**$_i$ a ga'-**u** —$_i$]
what think-2SG.SBJ.EXT C Jegaan LER 3SBJ see-EXT
Intended: 'What do you think Jegaan saw?'

I take the declarative complementizer *(y)ee* to occupy the head Force, which is the highest projection in a clause and encodes that clause's illocutionary force (Rizzi 1997). As argued above, movement to subject and *wh*-movement both target Spec-FinP in Seereer. The subject occupies an inner specifier and any Ā-element occupies an outer specifier. This derives the order of *wh*-phrases in relation to subjects. I argue that the LER occupies the same position that Ā-moved phrases do. I take its position to be derived via Ā-movement to the outer Spec-FinP. For LERs corresponding to non-subject *wh*-phrases, this yields the structure in (28):

17. I will leave the reason why the demonstratives are only required in the case of *tam* and *neen* for further research.
18. The declarative complementizer *(y)ee* can be ommitted freely. I have found no semantic difference between embedded declaratives with *(y)ee* and those without it. Additionally, ommission of the complementizer does not affect the need for a LER. Therefore, in this paper, I have chosen to represent all declarative embedded clauses with an overt complementizer.
19. Seereer does have an *in situ* resumption strategy that is employed in cases of argument topicalization. However, this kind of resumptive is systematically ruled out in *wh*-questions. Additionally, topicalization is Seereer does not trigger the presence of extraction morphology, suggesting that it is not derived via Ā-movement, but instead involves base generation of the dislocated element in a topic position. Therefore, I will not discuss the *in situ* resumption strategy here.

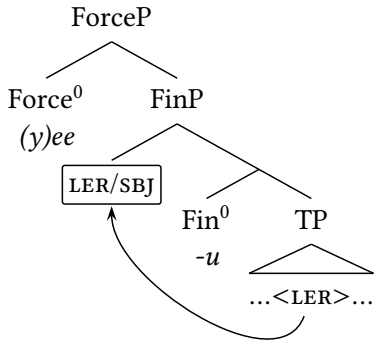
(28) *Non-subject* LERs *occupy outer Spec-FinP*



The structure in (28) ensures that the LER will never surface between the subject DP (as shown to be impossible by 27). This is because we expect the LER to behave like other *wh*-phrases in Seereer and not tuck in behind an A-specifier.

When the LER corresponds to an extracted subject, I take it to occupy the same hybrid A/Ā-specifier that local *wh*-subjects occupy. This is shown in (29):

(29) *Subject* LERs *occupy single Spec-FinP*



Evidence that the LER moves to its position in Spec-FinP comes from the fact that all embedded clauses with a LER must also have extraction morphology. As shown in section 3, the suffix *-u* is only present when Ā-movement has occurred, and therefore, the LER must occupy a specifier that has been derived via Ā-movement.

In section 5, I argue that left edge resumptives are the overtly spelled out copies of the moved *wh*-phrase. Thus, the position of the LER is linked to the position of the *wh*-phrase (and the position of other LERs) via a movement operation. It is important to note, however, that the evidence that the resumptive undergoes movement to Spec-FinP in its *local* clause is notionally independent of the evidence that cross-clausal movement has occurred in long-distance structures. This is because extraction morphology only tracks whether or not local Ā-movement has occurred. One could therefore propose an analysis where movement occurs *within* embedded clauses, but where

movement does not connect the *wh*-phrase and the LER (Schneider-Zioga 2009). Below, I will show that such an account is untenable.

5 Seereer Left Edge Resumptives as Copies

In this section, I argue that left edge resumptives are overtly spelled out copies of the moved *wh*-phrase. Under this analysis, the resumptives and the *wh*-phrase are connected directly through movement. Evidence for this treatment comes from island effects, reconstruction effects and quantifier float. Specifically, LER resumptives do not alleviate island violations and allow reconstruction to their position and to the most embedded position. I show that these facts, when taken together, rule out an approach where the *wh*-phrase and the resumptives are not directly connected via a movement relation, but instead realize different, independently generated items.

5.1 Evidence from Island Effects

There is robust evidence from island effects that long-distance *wh*-dependencies involve cross-clausal movement in Seereer and that LERs behave like they are copies of the moved *wh*-phrase. Take first the case of an embedded polar interrogative introduced by the complementizer *ndax*:

(30) a. *Subject WH*

***an**$_i$ a lamt-**u** [$_{CP}$ ndax **ten**$_i$ jaw-**u** maalo]
who 3SBJ ask-EXT C_{INT} LER cook-EXT
'Who did you ask whether __ cooked rice?'

b. *Object WH*

***xar**$_i$ and-**o** [$_{CP}$ ndax **ten**$_i$ Ami a ga'-**u** $\_\_i$]
what know-2SG.SBJ.EXT C_{INT} LER Ami 3SBJ
'What do you know whether Ami saw __?'

As shown in (30), *wh*-movement from an *ndax*-clause is impossible. The presence of the LER *ten* does nothing to alleviate the ungrammaticality for either subject, (30a), or object extraction, (30b). These judgements are made even more striking by the fact that focus is compatible with matrix clause polar questions. As seen in (31):

(31) [$_{CP}$ ndax **ten**$_{FOC}$ Ami a ga'-**u** $\_\_i$]
C_{INT} 3SG Ami 3SBJ see-EXT
'Is it him Ami saw?'

Note that the matrix polar question in (31) is surface identical to the embedded polar question in (30b). Under an account where there is no movement between the position of the LER and the position of the matrix *wh*-phrase, (31) and embedded clause in (30b) are structurally identical as well. Therefore, such an account cannot offer an explanation of why the difference in grammaticality occurs. On the other hand, that difference is explained if there is *wh*-movement of *xar* 'what' from the embedded clause to the matrix clause in (30b).

The judgements for *ndax*-islands are reinforced by data from complex noun phrase islands. As shown in (32), extraction of a *wh*-phrase from both the subject and object positions in a relative clause is impossible:

(32) *Relative clause island (CPNC)*

a. *Subject WH*

***an**$_i$ ga'-**um** [$_{DP}$ maalo fe [$_{CP}$ **ten**$_i$ jaw-**na** —$_i$]]
who see-1SG.SBJ.EXT rice DET LER cook-C$_{REL}$
Intended: 'Who did I see the rice that — cooked?'

b. *Object WH*

***xar**$_i$ ga'-**o** [$_{DP}$ otew oxe [$_{CP}$ **ten**$_i$ jik-**na** —$_i$]]
what see-2SG.SBJ.EXT woman DET 3SG buy-C$_{REL}$
Intended: 'What did you see the woman who bought —?'

In (32a), the subject of an object relative clause is extracted and in (32b) the object of a subject relative clause is extracted. Both are ungrammatical. The presence of a LER does not alleviate this ungrammaticality. The pattern holds for extraction from adjunct clauses, shown in (33):

(33) *Adjunct islands*

a. *Subject WH*

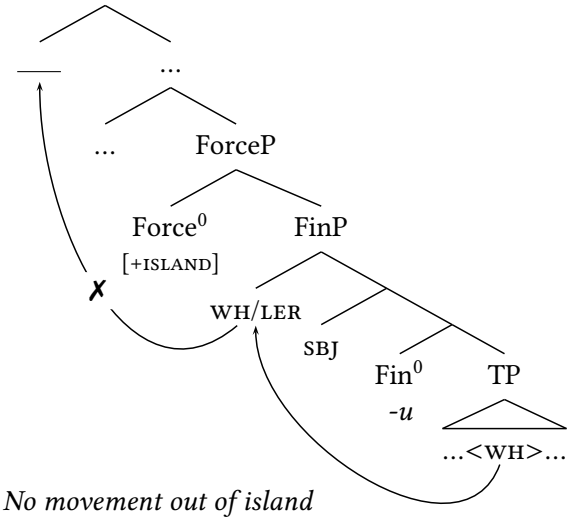
***an**$_i$ ret-**o** Dakar [$_{CP}$ balaa **ten**$_i$ jik-**u** atere le]
who go-2SG.SBJ.EXT Dakar before LER Jegaan buy-EXT book
Intended: 'Who did you go to Dakar before — bought the book?'

b. *Object WH*

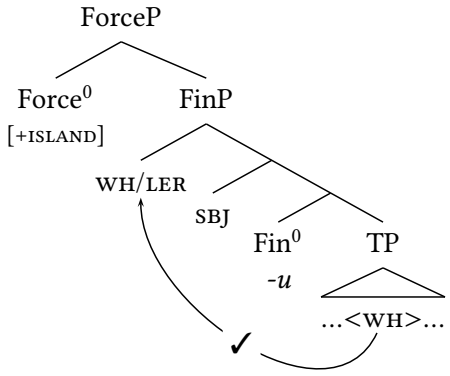
***xar**$_i$ ret-**o** Dakar [$_{CP}$ balaa **ten**$_i$ Jegaan a jik-**u** —$_i$]
what go-2SG.SBJ.EXT Dakar before LER Jegaan 3SBJ buy-EXT
Intended 'What did you go to Dakar before Jegaan bought —?'

The combined picture gained from the data above is that the presence of an island disrupts or blocks the relationship between the *wh*-phrase and the LER. Because islands are domains are standardly taken to block movement, this data provides evidence that the *wh*-phrase and the LER are linked by a movement relation. Compare the two partial derivations in (34):

(34) a. *Movement out of island*



b. *No movement out of island*



Structurally, these two derivations are the same except for whether movement has occured from out of the island. In (34a), movement across an island boundary has occurred, and thus the structure is ilicit. In (34b), on the other hand, no movement has occurred, leaving the embedded LER. It is unclear why such a structure should be ilicit.

5.2 Evidence from Reconstruction

Further evidence for an analysis that treats LERs as copies of the moved *wh*-phrase comes from reconstruction for reflexive binding.[20] Reflexives in Seereer are formed with the noun *xoox* 'head' (glossed REFL below) plus a possessive pronoun matching the person/number-features of the binder. Seereer reflexives are subject to Condition A: the reflexive must be c-commanded by its antecedent, as shown in (35a), and the binder and the antecedent must be within the same local binding domain,

20. Here, I restrict the discusson to reconstruction for reflexive binding. This is because it seems that there is no reconstruction for purposes of quantifier variable binding under either local or long distance Ā-movement in Seereer. Further research is required to determine why this is the case.

which I take to be the phase (following Lee-Schoenfeld 2008), as shown in (35b):

(35) a. *xoox **um**$_i$ a ga'a Jegaan$_i$
REFL 3SG 3SBJ see.DV Jegaan
Intended: 'Himself saw Jegaan.'

b. and-aam$_j$ [$_{CP}$ ee Jegaan$_i$ a ga'a xoox **um**$_i$/***es**$_j$]
know-1SG.SBJ.DV C Jegaan 3SBJ see.DV REFL 3SG
'I know that Jegaan saw himself/*myself'

This means that for a reflexive to be bound in cases of Ā-movement, the moved phrase must reconstruct to a position where it is locally c-commanded by its antecedent. Consider the case of local Ā-movement. In (36) the reflexive complement of the noun *foto* 'photo' may be bound by the subject, even though the entire phrase has undergone *wh*-movement:[21]

(36) [foto xoox **um**$_i$ num]$_k$ Yande$_i$ a ga'-**u** —$_k$
photo REFL 3SG which Yande 3SBJ see-EXT
'Which photo of herself did Yande see?'

We see that the reflexive in (36) reconstructs to its base generated position where it is c-commanded by the subject *Yande*. This is schematically represented in (37):

(37) [which photo of herself] Yande$_i$ sees [which photo of herself$_i$]
BINDING
RECONSTRUCTION

This reconstruction follows naturally from the Copy Theory of movement because the reflexive literally exists in two positions at once, and it is in the lower position where the reflexive is bound.

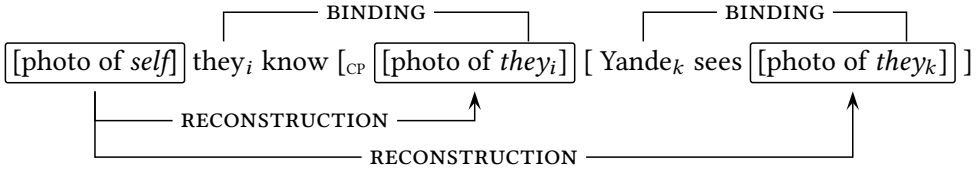
Long distance Ā-movement behaves the same way. First, notice that the reflexive complement of *foto* cannot be bound by the matrix 3PL subject in (38). This follows naturally from Condition A. However, when the DP containing the reflexive undergoes long distance *wh*-movement to the left edge of the matrix clause in (39), the binding possibilities change: the reflexive may be bound by either the embedded 3SG (*xoox um*) subject or the matrix 3PL subject (*xoox den*).

(38) a$_j$ nqalaat-a [$_{CP}$ yee Yande$_i$ a ga'-a foto xoox **um**$_i$/***den**$_j$]
3SBJ think.PL-DV C Yande 3SBJ see-DV photo REFL 3SG/3PL
'They think Yande saw a picture of herself/*themselves.'

21. This is also the case with other reflexives that have undergone Ā-movement for focus. In fact, all statements in ths section regarding binding into picture NPs also hold for regular reflexives, though for reasons of space I do not give examples here.

(39) [foto xoox **um**$_i$/**den**$_j$ num]$_k$ a$_j$ nqalaat-**u** [$_{CP}$ yee **ten**$_k$ Yande$_i$ a
photo REFL 3SG/3PL which 3AGR think.PL-FOC C 3SG Yande 3AGR
ga'-**u** —$_k$]
see-DV
'Which picture of herself/themselves do they think Yande saw?'

Here, I follow Lee-Schoenfeld (2008) and take the binding domain of a reflexive to be the phase. Thus, the expansion of binding possibilities in (39) is due to the ability of the moved *wh*-phrase to reconstruct to a position where it is locally c-commanded by the matrix subject, namely the position the of pronoun *ten* at the left edge of the embedded CP phase. Reconstruction is standardly taken to occur only into a trace/copy position (Sportiche 2007). Thus, the LER must underlyingly be a copy of the *wh*-phrase. In the underlying structure, the reflexive is at the position of the LER, so it should be able to be bound. The surface realization simply obscures this fact. This is schematically represented in (40):

(40) 

Crucially, long distance movement of the *wh*-phrase out of the embedded clause does not remove the possibility for the reflexive to be bound by the embedded subject. Thus, the moved phrase must be able reconstruct to its base generated position. If reconstruction is linked to movement, this option provides evidence that the base position and the LER are linked via a movement relation, since the path of reconstruction can be traced through the position of the LER to the base position inside the embedded clause.

5.3 Evidence from Quantifier Float

A final piece of evidence that the position of the LER and the *wh*-phrase are linked derivationally via movement comes from quantifier float. The Seereer quantifier *fop* can optionally appear post verbally when associated with non-Ā-subjects, as shown by (41):

(41) a. goor we **fop** a ngar-a
men DET all 3SBJ come.PL-DV
'All the men arrived.'

b. goor we a ngar-a **fop**
men DET 3SBJ come.PL-DV all
'All the men arrived.'

Here I follow the stranding analysis of quantifier float (Sportiche 1988; Merchant 1996) in which the quantifier is generated as a constituent with the element it modifies and is subsequently stranded through movement of that element. Under such an analysis, the floated quantifier in (41b) is

stranded in Spec-*v*P by A-movement of the subject to Spec-FinP:[22]

(42) [$_{DP}$ goor we] a ngara … [$_{vP}$ [$_{QP}$ t_{DP} fop] …]

The quantifier *fop* may also modify the *wh*-word *aniin* 'who.PL'. In cases of local *wh*-movement, the quantifier may occur with the modified interrogative or post-verbally, just as in non-Ā-cases:

(43) a. aniin **fop** ngar-u
who.PL all come.PL-EXT
'Who all arrived?'

b. aniin ngar-u **fop**
men DET come.PL-EXT
'Who all arrived?'

So, the quantifier may either be stranded by *wh*-movement of the interrogative to Spec-FinP, in which case post-verbal, or it may be spelled out in the *wh*-phrase's overt position. With this in mind, consider the positions at which the quantifier may occur under long distance *wh*-movement, shown in (44):

(44) a. aniin **fop** foog-o [$_{CP}$ yee den ngar-u
who.PL all think-2SG.SBJ.EXT C LER come.PL-EXT
'Who all do you think arrived?'

b. aniin foog-o [$_{CP}$ yee deno **fop** ngar-u
who.PL think-2SG.SBJ.EXT C LER all come.PL-EXT
'Who all do you think arrived?'

c. aniin foog-o [$_{CP}$ yee den ngar-u **fop**
who.PL think-2SG.SBJ.EXT C LER come.PL-EXT all
'Who all do you think arrived?'

Like the cases of local *wh*-movement, the quantifier can surface in the matrix scope position, as in (44a), in the base generated position of the *wh*-phrase, as in(44c). In addition (44b), the quantifier *fop* can appear modifying the LER at the edge of the embedded clause.[23]

Under the analysis of LERs as overtly spelled out copies of the moved *wh*-phrase, this set of facts receives a unified explanation. When a quantifier modifies a moved *wh*-phrase, it may be stranded in a non-final position (modifying a trace/copy). Thus, in cases of long distance *wh*-movement, the quantifier can surface at either the embedded clause edge or the base position, both of which are non-final positions. Additionally, if quantifier float is derived by stranding of the quantifier via movement, then it follows that the LER instantiates a copy linked to the matrix *wh*-phrase by such an operation.

The distribution of quantifier float positions is identical to the pattern of quantifier float in

22. In (42), I use trace notation instead of writing out full copy for ease of exposition.
23. The form *deno* is the long form of the 3rd person plural pronoun.

West Ulster English discussed by McCloskey (2000). Just like in Seereer, the quantifier *all* in that dialect of English can surface in a *wh*-phrase's base generated position; at the edge of intermediate clause; and in final matrix scope position. McCloskey concludes that this behavior provides strong evidence for intermediate landing sites in long distance *wh*-movement. Here, I take it to be further supporting evidence that LERs are overtly spelled out copies a moved *wh*-phrase.

5.4 Against a Base Generation Account

Taken together, the data from island effects, reconstruction, and quantifier float support an analysis in which the *wh*-phrase and LERs are linked via movement, and thus an account that takes the resumptive element to be an overtly spelled out copy of the moved phrase. Under the Copy Theory of Movement, movement between two positions leaves two copies of the moved phrase in the structure: one in the position that the mover originated, and one in the target position (Corver and Nunes 2007). The account in this paper holds that the resumptive element represents overtly realized material present in one of those copies.

An account that does not posit movement between the position of the LER and the position of the *wh*-phrase cannot explain the island, reconstruction, and quantifier float data. Such an account would be required to posit that the resumptive and *wh*-phrase are Merged as separate objects. Thus, the dependency between the two positions would have to be established through a relation other than movement, such as anaphoric binding. This type of analysis has been developed for the Bantu language Kinande by Schneider-Zioga (2009). She shows that Kinande long distance Ā-dependencies do not demonstrate reconstruction to the embedded clause, are not sensitive to island constraints, and do not exhibit superiorty effects in long distance *wh*-questions (Schneider-Zioga 2009).[24] She develops an account in which the *wh*-phrase is generated in the matrix clause, while a null resumptive operator occupies the embedded Spec-CP position, as shown in (45):

(45) $[_{CP}\ WH_j\ C\ [_{IP}\ \ldots\ [\ <WH_j>\ [_{CP}\ OP_j\ C\ [_{IP}\ \ldots\ \_j\ \ldots\ ]]]]$
MOVE MOVE

Schneider-Zioga's analysis makes the correct predictions about Kinande long distance Ā-dependencies. First, since there is no movement crossing a clause boundry, long distance *wh*-dependencies should not be sensitive to islands. Second, reconstruction should not be possible to the foot of the dependency in the embedded clause, or even to the position of the embedded null resumptive, as the material in the fronted phrase has never been in those positions.

For the same reasons, however, an analysis along the same lines makes exactly the *wrong* predictions for Seereer. As we have seen, island constraints are robust in Seereer long distance dependencies, and reconstruction is possible to both the position of an LER and the most embedded position. Therefore, such an account is untenable for the Seereer data, and I conclude that left edge resumptive elements are overtly spelled out copies of the moved *wh*-phrase. In the next section, I review what has been said about other languages that display multiple copy spell-out in *wh*-chains,

24. Both local and long distance *wh*-questions exhibit superiority effects in Seereer, but for reasons of space I do not discuss the phenomenon here.

before turning to my analysis and proposal in section 7.

6 Copy Repetition in *Wh*-Chains

Multiple copy spell-out in long distance *wh*-chains has received a considerable amount of attention in the recent literature (see the collection of papers in Lutz et al. 2000, for example). The phenomenon, often referred to as '*wh*-copying' (Felser 2004) is attested i.a. in German (Felser 2004; Fanselow and Mahajan 2000), Frisian (Hiemstra 1986), Afrikaans (du Plessis 1977), dialectal Dutch (Barbiers et al. 2009; Schippers 2012), Romani (McDaniel 1989), and Passamaquoddy (Bruening 2006). Examples from German, Dutch, and Romani are shown in (46):

(46) a. **Wen** glaubst du, **wen** sie getroffen hat?
who think you who she met has
'Who do you think she met?' (German, Felser 2004:544)

b. **Wie** denk je **wie** ik gezien heb?
who think you who I seen have
'Who do you think I have seen?' (Overijssel Dutch, Barbiers et al. 2009:2)

c. **Kas** o Demìri mislenola **kas** i Arìfa dikhla?
whom Demir think whom Arifa saw
'Who does Demir think Arifa saw?' (Romani, McDaniel 1989:569 n. 5)

The *wh*-copying strategy has been taken as strong evidence for successive cyclicity and for the Copy Theory of Movement (Nunes 2004; Felser 2004). If movement actually involves the copying of a phrase and merging it into a higher position, as it does under the Copy Theory, then we should expect to see phonetic realization of more than one copy in some languages (Nunes 2004; **?**). This is exactly what *wh*-copying is. When successive cyclic *wh*-movement occurs, the resulting structure includes many copies of the moved *wh*-phrase, schematically represented with an English example in (47):

(47) [$_{CP}$ **What**$_i$ do you think [$_{CP}$ *what*$_i$ [Mary said [$_{CP}$ *what*$_i$ [John bought *what*$_i$?]]]

The difference between the English example in (47) and the German example in (46a), then, can be analyzed as a surface one. In English, only the highest copy in the *wh*-chain is realized phonetically. In German, each copy in a Spec-CP position is realized phonetically. Since movement involves copying of the material in one position to another, the form of the overt copies in German also follows: they all spell-out the same material, and therefore are phonetically the same. However, the availability of *wh*-copying as a strategy raises important thereotical questions that remain unresolved in the literature. I now explore these problems in turn.

6.1 Copies are only spelled out in Spec-CP

In all *wh*-copying languages known to me, overt copies only surface at the edge of embedded clauses, in the specifier of CP (or in the specifier of an equivalent projection, such as FinP in

Seereer). That is, intermediate copies may neither appear in their base generated position, nor in any intermediate landing site other than Spec-CP. This is illustrated for Seereer in (48a)–(48b): the clause in (48a) shows that the copy cannot be spelled out in a position higher than the embedded Spec-FinP, while the clause (48b) shows that the copy cannot surface in the base position:

(48) a. **xar**$_i$ lay-**o** [$_{vP}$ (**ten**$_i$) Yande ... [$_{CP}$ yee [$_{vP}$ (**ten**$_i$) Jegaan a
what say-2SG.SBJ.EXT LER Yande C LER Jegaan 3SBJ
ga'-**u** —$_i$
see-EXT
Intended: 'What did you tell Yande Jegaan saw?'

b. *__xar__$_i$ xalaat-**o** [$_{ForceP}$ yee Jegaan a ga'-**u** **ten**$_i$
what think-2SG.SBJ.EXT C Jegaan 3SBJ see-EXT LER
Intended: 'What do you think Jegaan saw?'

It is not clear how to distinguish copies in the base position or Spec-*v*P from those in intermediate Spec-CPs under the assumption that these repetitions are simply phonetic realizations of the copies present in the underlying structure. The prohibition against overt copies in Spec-*v*P is especially problematic. It has been argued extensively in the literature that successive cyclic movement proceeds through both the CP phase edge and the *v*P phase edge (Chomsky 2000, 2001, 2008; Rackowski and Richards 2005; van Urk and Richards 2015). If both CP and *v*P are phases (Chomsky 2001, 2008), we must posit that the *v*P phase edge is somehow different from the CP phase edge or that successive cyclic movement skips Spec-*v*P. I return to this issue below in section 9.

6.2 Non-identical Copies

Embedded duplicates are usually phonetically identical to the matrix *wh*-word, as illustrated above in (46). This identity follows straightforwardly from the assumption that duplicates are just the phonetic realization of underlying copies. However, there are also examples of repetition in *wh*-chains that do not involve identical duplication. Such a situation is found in some dialects of Dutch (Barbiers et al. 2009). The sentence in (49) is identical semantically to (46b), but the relative pronoun *die* occupies the edge of the embedded clause instead of the *wh*-word *wie*:

(49) **Wie** denk je **die** ik gezien heb?
who think you REL.PRON I seen have
'Who do you think I have seen?' (North-Holland Dutch, Barbiers et al. 2009:2)

Within the sample of *wh*-copying languages discussed in the literature, identical duplication of the moved *wh*-word is by far more common than non-identical repetition. We have seen that Seereer is a language that enforces non-identity of copies. As illustrated in (50), embedded copies may not be realized as an exact phonetic duplicate to the matrix *wh*-word:

(50) *__xar__$_i$ xalaat-**o** [$_{CP}$ yee **xar**$_i$ Jegaan a ga'-**u** —$_i$
what think-2SG.SBJ.EXT C what Jegaan 3SBJ see-EXT
'What do you think Jegaan saw —?'

This is true of all *wh*-words in the language. As far as I am aware, this makes Seereer the only example of a *wh*-copying language that completely disallows identity between the matrix *wh*-word and lower copies.

This non-identity constraint is problematic in that it requires an 'extra' mechanism between the underlying embedded copies and the surface realization. It could be the case that the matrix copy and the embedded copy in (49) and (50) are actually structurally different. This is the route pursued by Barbiers et al. (2009) for Dutch, who posit that a different amount of structure is copied from one position to another in cases of non-identical repetition than is copied in cases of identical repetition. Recall that Dutch also allows identical *wh*-copying, as shown above in (46b). Barbiers et. al. propose that, in Dutch, *wh*-words are the result of a complex phrase, consisiting of several projections.[25] In identical repetition, the entire phrase is copied. When non-identical repetition occurs, as in (49), only a subpart of the structure has been moved to the higher position. This leaves a different amount of structure in the two positions, and the result is a difference in surface spell-out.

I do not pursue a full account of the non-identity constraint in Seereer in this paper, but do I sketch a possible analysis in section 7.4. My approach is somewhat similar to Barbiers et al. (2009) in that it posits that different amounts of structure/features are spelled out in final and intermediate positions. Unlike Barbiers et al.'s analysis of Dutch, however, I do not assume partial copying.

6.3 Multiple copies prove problematic for linearization

A third problem is that *wh*-copying constructions should result in a failure to linearize the structure under Kayne's (1994) Linear Correspondence Axiom (LCA) (cf. Nunes 2004; Felser 2004). The LCA requires anti-symmetric c-command relations between terminals so that they can be linearized. However, in the case of *wh*-copying, there will be two (or more) non-distinct copies of the moved *wh*-phrase, both of which asymmetrically c-command and are c-commanded by an intervening material. Thus, linearization will be impossible, as the phonological component will receive conflicting instructions as to where to spell-out the *wh*-word.[26] This should cause the derivation to crash. As seen by (51), the spelling out of more than one copy normally results in a non-converging derivation:

(51) *John$_i$ was hit John$_i$

Obviously, *wh*-copying is a construction where multiple copy spell-out results in a convergent derivation. Therefore, these constructions must be able to circumvent an LCA violation somehow.

Nunes (2004) proposes that intermediate copies must be 'hidden' from the LCA in order to be spelled out. He argues that in *wh*-copying languages, intermediate movement proceeds via adjunction of the *wh*-word to C^0. This results in a complex terminal of the form $[_{C^0}$ wh $[_{C^0}$ C^0]], the internal structure of which is invisible to the LCA. Thus, intermediate copies in *wh*-copying languages are 'hidden' from the linearization mechanism and are spelled out.[27]

25. See Barbiers et al. (2009) for the exact proposal.
26. The same type of conflict arises in the system of Cyclic Linearization developed by Fox and Pesetsky (2005).
27. Note that Nunes (2004) does not discuss *why* successive cyclic movement should proceed via adjunction to C^0 in some languages and not in others.

This proposal is problematic for languages in which an overt complementizer and a *wh*-copy co-occur. As we have seen, Seereer is such a language.[28] The declarative complementizer *(y)ee* occurs optionally to the left of the embedded copy:

(52) **an**$_i$ xalaat-**o** [$_{\text{ForceP}}$ yee **ten**$_i$ Jegaan a ga'-**u** —$_i$]
who think-2SG.SBJ.EXT C LER Jegaan 3SBJ see-EXT
'Who do you think Jegaan saw?'

If the embedded copy and the complementizer formed a single complex terminal, we should expect them to be spelled out as a single word. Yet in Seereer, this is not the case. By all tests of Seereer wordhood, the pronoun and the complementizers are separate words. Furthermore, even if the complex termimal could be spelled out as a single word, (head) adjunction of the *wh*-copy to C^0 should result in the order WH>C and not C>WH (if head adjunction is always left adjunction; Kayne 1994). An alternative would be to propose that the copy undergoes fusion with Fin^0. However, this would predict that the embedded copy should surface as part of the verb word, as V also occupies Fin^0, or fall between the subject and the verb. The latter option is impossible (as shown in example 27, above). So, it seems that Nunes's (2004) account cannot be applied to Seereer *wh*-copying.

6.4 What prevents multiple spell-out?

A final problem for the analysis of *wh*-copying is cross-linguistic variation: what prevents *wh*-copies from being spelled out in most languages? *Wh*-copying is invariably analyzed as a surface alternative for spelling out structures involving long distance *wh*-movement; and the mechanism that allows multiple copies to surface where they do is normally attributed to the phonological componenent. This suggests that *wh*-copying should exist as a free alternative to surface long distance *wh*-movement, but this does not seem to be the case. In fact, there is evidence to suggest that the *wh*-copying strategy and the surface long distance strategy are in complementary distribution (cf. Stepanov and Stateva 2006). English, for example, disallows *wh*-copying, as do Scandinavian languages, French, Spanish, and Basque (Schippers 2012).[29]

A satisfactory account for the difference between *wh*-copying and surface long distance *wh*-movement languages has not been proposed in the literature. In 7.3, I attempt to fill this analytic gap. I propose that these two language types differ parametrically in the status of intermediate copies.

7 A Chain-based Analysis

In this section I present my analysis of *wh*-copying in Seereer. My proposal addresses three outstanding issues in the theoretical literature on *wh*-copying discussed in the previous section; namely: Why are copies spelled out only in Spec-FinP in Seereer (or, more generally, in the clausal phase edge)?; What allows multiple copies to be linearized?; and finally, can a principled account

28. An overt complementizer can also occur to the right of *wh*-copies in some dialects of German (Felser 2004).
29. Interestingly, however, *wh*-copying is attested in children's speech in all these languages, which suggests that the strategy is made available by UG. See Schippers (2012) and Lohndal (2010) for discussion and references.

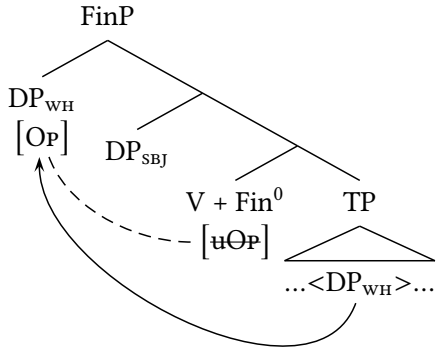
for the difference between *wh*-copying languages and non-*wh*-copying languages be achieved? In addition, I sketch an account for the obligatory non-identity of embedded copies.

I argue that each intermediate CP phase edge has its own feature checking requirement that triggers movement, rather than positing an optionally assigned edge or EPP feature (Chomsky 2000; **?**) or some other derivational mechanism that forces these intermediate movement steps, such as Bošković's (2007) requirement that movers with unchecked features vacate a phase or Heck and Müller's (2000) phase balance in 7.1. I also argue that the features in question are always present on CP level phase heads (Preminger 2011). In 7.2, I propose that a copy in a chain is identified as the head of that chain if it is involved in a feature checking operation. Thus, each round of movement to a clause edge counts as its own chain under my proposal, and this is what allows multiple copies to be spelled out and linearized in *wh*-copying languages. In 7.3, I argue that the chain head status of intermediate copies actually results in a representational ambiguity, and that languages resolve this ambiguity differently at PF in one of two ways. This derives the cross-linguistic complementarity of *wh*-copying and surface long distance movement. Finally, in 7.4, I sketch an account of why Seereer left edge resumptives are not spelled out as identical copies of the matrix *wh*-word.

7.1 Extraction Morphology and Operator Agreement

As we have seen, local *wh*-movement in Seereer involves the appearance of special morphology on the verb, namely the final suffix *-u* (extraction morphology). I have argued in section 3 that this morphology is located in the phase head that triggers Ā-movement, Fin^0, and that the extraction suffix is spelled out when Ā-movement has targeted Spec-FinP. The configuration is given again for a non-subject *wh*-question in (53):

(53) **Checking of [uOP] on Fin^0 triggers Ā-movement**



The valued OP-feature on the *wh*-phrase checks the corresponding unvalued OP-feature on Fin^0, and the *wh*-phrase moved to Spec-FinP. We have also seen that in cases of long distance movement, extraction morphology appears on each verb along the path of movement:

(54) **xar**$_i$ xalaat-**o** [$_{CP}$ yee **ten**$_i$ Yande a lay-**u** [$_{CP}$ yee **ten**$_i$ Jegaan
what think-2SG.SBJ.EXT C 3SG Yande 3SBJ say-EXT C 3SG Jegaan
a jaw-**u** —$_i$
3SBJ cook-EXT
'What do you think Yande said Jegaan cooked —?'

The data in (54) follows naturally from the analysis of extraction morphology advocated here. The *wh*-phrase enters into multiple valuation relationships on its way to the matrix scope position- one with each Fin^0 in the structure. This yields the extraction suffix on each verb in along the same movement path. The structure of (54) is that of (55):

(55) [$_{ForceP}$ **xar**$_i$ V+Fin$_{[\text{u}\sout{\text{OP}}]}$ [$_{ForceP}$ … [$_{FinP}$ **ten**$_i$ V+Fin$_{[\text{u}\sout{\text{OP}}]}$ [$_{ForceP}$ … [$_{FinP}$ **ten**$_i$ V+Fin$_{[\text{u}\sout{\text{OP}}]}$ *xar*$_i$]]]]]

Thus, I am arguing for a theory of successive cyclicity where *each* step of movement to the edge of a clause is triggered by feature checking. To be precise, I adopt the model of *wh*-movement suggested by Preminger (2011). A crucial component in this approach is the idea that a failure of Agree does not induce ungrammaticality. This means unvalued OP-probe can be present on all Fin^0. If a *wh*-phrase is present, the OP-feature on that *wh*-phrase values the probe, resulting in movement to Spec-FinP. If a *wh*-phrase is absent, then probing fails, but, since failures of Agree do not induce a crash, this is harmless. Additionally, the outcome of probing has morphological ramifications. When probing succeeds, and the OP-feature is checked, the focus suffix *-u* appears. Elsewhere, the default vowel *-a* surfaces.

The analysis of extraction morphology just offered has the consequence that each step of movement to Spec-FinP is triggered by feature valuation, regardless of whether that step is intermediate or final. This elegantly eliminates the look ahead problem. Since an OP-feature is always present on Fin^0 in Preminger's (2011) system, there is no need for the derivation to 'know' which version of Fin^0 needs to merged at the embedded FinP level. There is only one Fin^0 to insert. This makes a unified analysis of extraction morphology possible: morphology appears whenever an OP-feature has been checked, and this feature is present on all matrix and embedded Fin^0.

7.2 Defining Chain Heads

The unification of intermediate and final steps in long distance *wh*-movement has a further ramification: The CP level syntax of a matrix clause and an embedded finite clause are indistiguishable, as the Fin^0 in both clause types is (featurally) identical. This indistinguishablity leads to an interesting conceptual observation: A property that unites these domains is the fact that they allow Ā-extraction across their CP phase boundary. Under the analysis advocated here, this parrallelism is hardcoded featurally into the lexical item that heads the CP phase.

Because of the presence of a OP-feature on Fin^0/C^0, each declarative embedded clause would be able to function as its own *wh*-question if the derivation were to halt at its level. Let us consider this point more closely. Given the assumption that derivations proceed from the bottom up, the embedded CP phase will be built before any material from the matrix clause is introduced above

it. Under the further assumption that the derivation is 'blind' (i.e. does not allow look ahead), if the embedded clause is finite, then that embedded CP *must* allow a *wh*-phrase to cross its phase boundary. This is because a finite clause could constitute its own utterance, and therefore must at least have the property that allows it to form an Ā-dependency. A similar line of reasoning leads Schippers (2012) to propose that each CP-phase edge (for Seereer each FinP phase edge) functions as a potential terminal landing site for *wh*-movement. From there, Schippers argues that this means each copy in a Spec-CP acts as the head of its own movement chain. However, she does not offer a precise theoretical definition of 'chain head'.

Here, I propose that it is the feature checking relation that the copy in Spec-FinP (or Spec-CP) enters into which marks it as the head of a movement chain. Specifically, I propose the Chain Head Principle to define the head of a movement chain, an initial definition of which is given in (56):

(56) *The Chain Head Principle (First Pass):*

A copy in a chain is identified as the head of that chain if it is involved in valuation of a probe.

Other copies in a chain that do not fit this criteria will be designated as the tail of a chain. When combined with the independently needed principle that the heads of chains are spelled out and tails deleted (Nunes 2004), the Chain Head Principle dictates that only copies that are involved in a feature checking relationship will be able to be spelled out.

However, as formulated in (56), the principle turns out to be problematic. Under the assumption that Merge is triggered by the need to valaue uninterpretable features on a selecting head (Wurmbrand 2014), merging an item its base thematic position should also involve feature checking. For example, merging of an object *wh*-phrase could involve checking an uninterpretable [uD] feature on V^0. Subsequent movement of that same *wh*-phrase to the Spec-CP would check a [uOP] feature there. Thus, both the VP internal copy and the Spec-CP copy would be designated as a chain head by (56).

It is necessary, therefore, to relativize the principle in (56) to a special class of features. Here, I propose that this class is made up of precisely those feature which actually trigger movement, namely OP-features and φ-features. Taking this into account, a revised version of the Chain Head Principle is given in (57):

(57) *The Chain Head Principle:*

A copy in a chain is identified as the head of that chain if it is involved in the valuation of [uφ] or [uOP].

Thus, we have two types of chain heads: those that have valued [uφ] and those that valued [uOP]. These types of chain heads correspond to A-chains heads and Ā-chain heads, respectively. This version of the Chain Heads Principle predicts that in Ā-chains, only copies at the edges of CP phases are able to be spelled out.[30] As such, in Seereer, only copies in the specifier of Spec-FinP will be accessible to phonectic realization.

30. I take up the issue of *v*P edge below in section 9.

Under this analysis, the result of successive cyclic movement is not a single chain spanning several clauses. Instead, successive cyclic movement gives rise to a series of smaller chains, each spanning only one clause. More precisely, one chain links the base position and the most embedded CP phase edge, and a series of chains link higher CP phase edges to one another. Successive cyclicity as a phenomenon still exists; the output of its application is simply taken to be different than previously thought.

While this may seem at first to be just a terminological variant, it in fact has important consequences. Take again the structure from (55), repeated here as (58) to illustrate this conception of successive cyclic movement:

(58) $[_{\text{ForceP}}$ **xar**$_i$ V+Fin$_{[\text{uOP}]}$ $[_{\text{ForceP}}$ ... $[_{\text{FinP}}$ **ten**$_i$ V+Fin$_{[\text{uOP}]}$ $[_{\text{ForceP}}$ ... $[_{\text{FinP}}$ **ten**$_i$ V+Fin$_{[\text{uOP}]}$ *xar*$_i$]]]]]

Chain 3 — Chain 2 — Chain 1

In (58), there are three chains, each headed by one of the bolded copies. Under the independently motivated assumption that chain heads should be spelled out, the phonological component will attempt to phonetically instatiate each bolded copy in (58). spell-out and linearization are possible in this situation precisely because successive cyclicity results in multiple chains: each chain will be treated as distinct by the LCA. This conclusion is independently motivated, as movement chains that start from distinctly merged objects are not treated as identical by the LCA:

(59) $[_{\text{CP}}$ What$_k$ did $[_{\text{TP}}$ John$_j$ $[_{v\text{P}}$ John$_j$ buy what$_i$?]]]

There are two chains in (59): an A-chain consisting of two copies of *John* in Spec-*v*P to Spec-TP, and an Ā-chain consisting of two copies of *what* from the object position in VP to Spec-CP. Clearly, the heads of these chains are treated as distinct by the LCA, and therefore it follows that the heads in (58) should be kept distinct as well.[31]

7.3 The Heads/Tails Parameter

If the Chain Heads Principle is universally active, as I would like to claim it is, then successive cyclic *wh*-movement *always* creates a series of chains, each headed by a copy in a Spec-CP. This raises afresh a question faced by all analyses of *wh*-copying: Why do some languages spell-out intermediate copies, while others do not? Under the approach advocated here, this question becomes a seemingly acute problem. If intermediate copies are always the heads of a chain, then they should be spelled out in every language. Yet in most languages, they are not. I believe that the Chain Heads Principle actually leads to an elegant answer to this question. To see this, first consider the English sentence in (60):

31. As Schippers (2012) points out in a footnote, this line of reasoning becomes somewhat problematic when one considers *wh*-subjects. In the traditional analysis, *wh*-subjects undergo both A-movement to Spec-TP and Ā-movement to Spec-CP. Both of these movements are triggered by feature checking, and therefore the copies in Spec-TP and Spec-CP should each qualify as the head of their own chains under (57). Yet, only the copy in Spec-CP is spelled out. This is not problematic for my analysis, since there is only one Spec-FinP for Seereer of *wh*-subjects. For languages like English, on the other hand, this is more problematic. However, other theories that do not involve the principle in (57) must also deal with this problem, and therefore, it does not contradict my approach. I will leave the issue for later work.

(60) D C B A
[$_{CP}$ **What**$_i$ do you think [$_{CP}$ $\boxed{what_i}$ [Mary said [$_{CP}$ $\boxed{what_i}$ [John bought $what_i$?]]
CHAIN 3 CHAIN 2 CHAIN 1

The intermediate copies are boxed in (60). Notice that these copies differ from the matrix copy and the copy at the foot of the dependency in an important way: they are both the head of one chain, and the tail of another. Copy B is simultaneously the head of Chain 1 and the tail of Chain 2. Copy C is simultaneously the head of Chain 2 and the tail of Chain 3. On the other hand, the non-intermediate copies (A and D) are each part of only one chain. Copy A is the tail of only Chain 1, while Copy D is the head of only Chain 3.

This situation leads to an ambiguity of representation: at the point of spell-out, the morphophonological component will be unable to determine if an intermediate copy is a chain head or a chain tail. I suggest that PF does not tolerate this ambiguity, as spell-out should be given unambiguous instructions (Nunes 2004). This follows from the observation that chain heads and chain tails are treated different: the head is the item privileged for phonetic realization, while the tail is deleted. Thus, I suggest that languages are parameterized to eliminate this ambiguity at the point of spell-out. Specifically, I propose the parameter in (61) to solve the situation:

(61) *The Heads/Tails Parameter*

An item must be unambiguously identified as the head or tail of a chain at the point of spell-out. When an object is ambiguous as to head/tail status, languages resolve this difference in one of two ways:

i. That item is treated as the tail of a chain. (non-*wh*-copying languages)

ii. That item is treated as the head of a chain. (*wh*-copying languages)

In a non-*wh*-copying language with setting (i), such as English, intermediate copies will be treated as tails and therefore will not be spelled out. In a *wh*-copying language like Seereer or German, with setting (ii), intermediate copies will be treated as heads and therefore will be spelled out. To see how this works in detail, consider (62), taking English and Seereer as model languages:

(62) a. In both languages, the highest copy will always be spelled out, as it will always be a chain head.

b. In both languages, the lowest copy will never be spelled out, as it always be a chain tail.

c. In Seereer, intermediate copies will always be spelled out because they are treated as heads.

d. In English, intermediate copies will never be spelled out because they are treated as tails.

Because there are only two settings to the parameter, we make an important prediction: intermediate positions must be treated uniformly by any given language. In other words, we will never find a language in which only some intermediate CP phase edge copies are spelled out, while others are not. This prediction is borne out in the existing literature: there is no attested *wh*-copying language that only spells out some intermediate copies without spelling out others (Felser 2004;

Schippers 2012).

Taken together, the Chain Heads principle and the Heads/Tails parameter correctly predict that we will find two types of languages: those that spell-out intermediate *wh*-copies and those that do not. However, neither theoretical device takes an interest in *how* intermediate copies should be realized if they must be spelled out. The Heads/Tails parameter is simply concerned with resolving the representational ambiguities that follow from the Chain Heads principle when successive cyclic movement applies. Thus, differences in how copies are actually realized in individual languages must be analyzed as arising from other independent properties of those languages' morphology. This is in line with the Minimalist ideal of locating variation in the inventory of lexical items and at the interfaces (in this case, PF), instead of in the operation of the narrow syntax proper. In the next section I take up this issue for the non-identity of embedded copies in Seereer.

7.4 Non-identical copies in Seereer

As was shown above, Seereer does not allow identical *wh*-copying. This is illustrated again in (63):

(63) a. *Identical lower copy*

***xar**$_i$ xalaat-**o** [$_{\text{CP}}$ yee **xar**$_i$ Jegaan a ga'-**u** —$_i$]
what think-2SG.SBJ.EXT C what Jegaan 3SBJ see-EXT
Intended: 'What do you think Jegaan saw —?'

b. *Non-identical lower copy*

xar$_i$ xalaat-**o** [$_{\text{CP}}$ yee **ten**$_i$ Jegaan a ga'-**u** —$_i$]
what think-2SG.SBJ.EXT C 3SG Jegaan 3SBJ see-EXT
'What do you think Jegaan saw —?'

In (63a), the embedded copy is spelled out as an exact copy of the *wh*-phrase *xar* in the matrix scope position. This configuration is ungrammatical. On the other hand, in (63b), the embedded copy is spelled out as the 3rd person singular pronoun *ten*. This configuration is grammatical. This is true of all *wh*-words in Seereer; none allow the embedded copy in long distance *wh*-questions to be an exact copy. This makes Seereer unique among *wh*-copying languages, as I know of no other language with a similar constraint. The only other non-identical copying language discussed in the literature is Dutch (Barbiers et al. 2009; Boef 2012).

The problem raised by such non-identical copying is that it requires some 'extra' mechanism beyond the one that requires intermediate copies to be spelled out. Here, I would like to suggest a tentative solution to this problem. The intuition behind my suggestion is that non-identity arises from the fact that intermediate clauses are not interpreted as interrogative in long distance *wh*-questions. Suppose that, in addition to having an OP-feature that triggers Ā-movement, *wh*-words also ha a feature [WH] that types as a *wh*-question the clause where the *wh*-word takes its scope (Cheng 1991). The *wh*-word *xar* 'what' would have a feature structure similar to the one in (64):

(64) $\begin{bmatrix} \text{D} \\ \text{OP} \\ \text{WH} \\ \varphi\text{:3SG} \end{bmatrix}$

Suppose further that the WH-feature may only be interpreted at the position where the *wh*-word takes its scope. Thus, the WH-feature could not be interpreted in intermediate positions. I propose that in Seereer, it is this fact that leads the *wh*-phrase to be obligatorily realized as a pronoun. Because the WH-feature cannot be interpreted on intermediate copies, it is deleted from those copies before they reach the interfaces. At the point of phonological interpretation, then, the intermediate copies would have the structure in (65):

(65) $\begin{bmatrix} \text{D} \\ \text{OP} \\ \varphi\text{:3SG} \end{bmatrix}$

Aside from the OP-feature, the structure in (65) is identical to what one would expect of a pronoun's feature structure: a set of φ-features and a categorical D feature. Therefore, I suggest that *ten* is inserted in the morphology to realize (65).

If this proposal is on the right track, then it means that variation in the realization of medial copies between different *wh*-copying languages is caused by morphological differences between individual languages. This idea is supported by other analyses of *wh*-copying. For example, Felser (2004) proposes that intermediate *wh*-copies in German actually spell-out a feature structure identical to indefinite pronouns, which are homophonous with *wh*-words in German. So, the surface difference between Seereer and German would be located in the inventories of vocabulary items that these languages have to spell-out the feature bundles that are left in intermediate CP edges.

8 Movement to embedded CP edges

Up to this point, I have shown that a theory that posits feature checking in intermediate CP phases along the path of successive cyclic movement can account for two properties of Seereer long distance *wh*-movement in a uniform way:

(66) a. Overt copies of a moved *wh*-phrase surface only in the CP layer and not elsewhere.

b. Extraction sensitive morphology is present on every verb along the path of the dependency.

The account is uniform in two ways. First, it argues that a single mechanism, feature checking, is at the heart of both properties in (66). Second, the same principles that account for an overt copy and extraction morphology in the matrix clause also account for those features in embedded clauses. Theories where movement to the scope position is fundamentally different than movement to embedded CP edges cannot offer a uniform account of the phenomena in (66). In this section, I would like to show that this is the case by examining one such theory, that of Bošković (2007), more closely. Furthermore, I argue that two of Bošković's (2007) main arguments against feature checking with intermediate C^0 are conceptually tied to his specific assumptions regarding feature checking. I will show that these conceptual issues are dispensed with under the theory advocated here, while maintaining empirical coverage.

As discussed briefly in section 2, Bošković (2007) develops a theory of successive cyclic Ā-movement in which it is a property of the mover that drives displacement to the edge of embedded

CPs, instead of a property of local C^0. Specifically, Bošković argues that *wh*-words are endowed with an uninterpretable feature [uF], which is checked by entering into an Agree relationship with an interpretable feature [iF] on an interrogative C^0. Because the feature on the *wh*-item is uninterpretable, it must be checked for the derivation to converge. Bošković posits that embedded C^0 lack the ability to check [uF] on the *wh*-word because they are declarative. It is this key fact that drives movement of the *wh*-phrase to the embedded CP phase edge. If the *wh*-word stays inside the embedded CP phase, there will be an unchecked uninterpretable feature within the phase's spell-out domain, and the derivation will crash. To avoid this, the *wh*-word moves to the edge of the CP to escape this fate. Observe that, in Bošković's (2007) theory, movement to the edge is still driven by the presence of a feature, and thus is still consistent with Last Resort. It is just not a property of the intermediate C^0 that triggers movement.

Consider first how what one would have to say in order to account for extraction sensitive morphology like the final suffix *-u* in Seereer under such a system. Usually, the morphological realization of a given head is taken to be dependent on the features present on that head (this is the case in Distributed Morphology, for instance; **?** **?**, Embick 2010). With regards to extraction sensitive morphology, this phenomenon is usually taken to spell-out a feature checked or valued by Ā-movement. Bošković (2007) cannot claim this in his system, because it is impossible for a single *wh*-operator to enter into multiple feature checking relationships along the path of movement. Once [uF] on the moving *wh*-phrase is checked, it is removed, and therefore cannot trigger further steps of movement.[32] The mechanism deriving the final step of movement is thus divorced from the intermediate steps; the heads involved along the movement path cannot, by definition, have the same features as the final head. This leads us to expect extraction morphology to only show up in the final clause. Yet, in Seereer, the final suffix *-u* surfaces on *each* verb along the path of a dependency.[33] Bošković would have to argue that an independent mechanism, separate from the process that triggers movement, is involved in the realization of extraction sensitive morphology.

Bošković (2008) argues more explicitly that extraction morphology along the entire path of movement can only result from multiple operators entering into a feature checking relationship with multiple C^0. He takes as evidence for this position Schneider-Zioga's (2009) analysis of Kinande, where there is no evidence for cross-clausal movement. The lack of cross-clausal movement in Kinande is explained, Bošković argues, by the fact that an operator is frozen once it enters into a feature checking relationship. Because of freezing, multiple operators are required in Kinande to derive a long distance dependency. This in turn results in the surface pattern of extraction morphology along the entire path of the dependency.

Such an analysis is untenable for Seereer. As we saw in section 5.3, Seereer shows robust evidence for cross-clausal movement, and therefore is an example of a single operator entering into feature checking relationships with multiple C^0. In other words, feature checking with intermediate heads does not result in freezing in Seereer. The same is true of Irish, as shown by McCloskey (2002). In Irish, the complementizer *aL* marks a clause out of which Ā-movement has taken place. When *aL* appears along the entire length of a dependency, there is evidence that movement has

32. In other words, checking of [uF] on the *wh*-phrase results in freezing. See Bošković (2008) for discussion.

33. As we have seen above, this is also the case for other languages exhibiting this type of morphology (McCloskey 2002).

taken place along that path. On the other hand, when cross-clausal movment is banned, a different strategy is used, spelled out with the complementizer *aN*.

A similar analytic conundrum holds for cases of multiple copy spell-out in Ā-chains. *Wh*-copying, by definition, occurs in intermediate positions of a successive cyclic chain. As far as I can tell, nothing about the derivation of successive cyclic movement in Bošković's system can be leveraged to explain the presence of multiple copies. Yet as a phenomenon, *wh*-copying seems tightly tied to how successive cyclicity is derived. Again, Bošković would need to appeal to an external mechanism to get the *wh*-copying data to follow. One such mechanism could be Nunes (2004), who argues that multiple copy spell-out arises from head adjunction of the moving *wh*-word to intermediate C^0. As discussed in section 6.3, Nunes's account proves difficult to extend to the Seereer data. This is because Seereer shows an overt complementizer even in cases of *wh*-copying, which is unexpected in a system where the *wh*-word and C^0 have fused.[34]

At this point, I would like to step back and examine two of Bošković's (2007) arguments against feature checking with intermediate C^0. The first argument is that intermediate clauses are declarative: they are not interpreted as interrogative. Thus, the declarative C^0 in intermediate clauses must be in some way similar to declarative C^0 in matrix clauses. However, they differ from those C^0 by licensing *wh*-movement through their Spec when this is needed (that is, when a *wh*-word is present in their clause). Bošković considers this problematic because it generates a look ahead problem at the embedded CP level.[35] The second argument comes from the implementation of 'defective' WH-features from the analysis of successive cyclicity in that Chomsky (2000); **?**. These features are used by Chomsky to motivate the movement of a *wh*-phrase to intermediate Spec-CPs. They are defective in that they allow a moving *wh*-phrase to stay active and therefore remain visible to higher C^0. Notice that both of these arguments are conceptual in nature. They are tied directly to a specific way that Agree and feature interpretation are implemented in the theory. Thus, a theory of successive cyclicity that posits feature checking in intermediate positions without recourse to defective features and without creating look ahead would be on equal par with theories that do not posit probes on intermediate C^0 to avoid those two issues, such as Bošković's (2007).

Bošković's two conceptual arguments really boil down to one central problem: The fact that intermediate clauses that allow *wh*-movement to cross them are not interpreted as questions. The 'defective' features are really just a device that Chomsky (2000); **?** uses to model this fact.[36] But notice that it is really only problematic if the semantic interpretation of the dependency is tied directly to the feature/probe that derives that dependency. Consider this point in more detail: Let us say that the feature responsible for interrogative interpretation in *wh*-questions is WH. Now, let

34. I find Nunes's (2004) proposal problematic on other grounds as well. Adjunction of the *wh*-word to C^0 should block further movement from intermediate clauses, as movement from such a position should violate the Head Movement Constraint (Matushansky 2006).

35. The look ahead problem only exists if one assumes syntax is 'crash-proof', i.e. generates only objects that are licit at the interfaces (Frampton and Gutmann 2002). Generate-and-filter based approaches, where the syntax is free to generate objects later deemed illicit at the interfaces, do not seem to face this issue.

36. More precisely, defective features are used by Chomsky to prevent the *wh*-phrase from freezing in intermediate positions. If one takes freezing to occur only in positions where a *wh*-phrase is interpreted, then defective features really just model the fact that intermediate CPs are not interpreted as questions. This is also true of Rizzi's (2006) formal vs. criterial features with regards to Ā-movement.

us say further that this feature is what derives movement of the *wh*-phrase to Spec-CP. Movement of the *wh*-phrase is thus driven by interpretation, but intermediate CPs are not interpreted as interrogative, hence the conundrum. This motivates Bošković's (2007) analysis of only the last step of movement being driven by such a feature.

Now, consider what happens if the feature or mechanism that derives movement of the *wh*-operator (creating the dependency) and the interpretation of that dependency are divorced. The problem of the interpretation of intermediate CPs disappears entirely, as these CPs can have the ability to create a dependency without licensing a certain interpretation of that dependency. In this paper, I have been advocating for such a system.

Evidence from Seereer for this position comes in the form of other Ā-dependencies, namely relativization and focus.[37] In local relativization and focus, verbs must take the extraction suffix *-u* (as seen in (10) in section 3). Long distance focus and long distance relativization show extraction morphology on each verb along the path of the dependency. In addition, embedded clauses must have an overt copy of the moved phrase, as shown in (67):

(67) *Long Distance Focus and Relativization*

a. *Long Distance Focus*

maalo$_i$	foog-**um**	[$_{CP}$ ee	**ten**	Mataar	a	jaw-**u**	$\_\_i$]
rice	think-1SG.EXT	C	LER	Mataar	3SBJ	cook-EXT	

'It's RICE$_{FOC}$ that I think Mataar cooked '

b. *Long distance relativization*

[maalo fe]$_i$	foog-**uum**-a	[$_{CP}$ ee	**ten**	Mataar	a	ci'-u-n	$\_\_i$
rice DET	think-1SG.EXT-REL	C	LER	Mataar	3SBJ	cook-EXT-3OBJ	

]

'the rice that I think Mataar gave him'

The embedded clauses in (67) look exactly like the embedded clauses we have seen in cases of long distance *wh*-movement. Taking this at face value leads to the conclusion that Ā-movement to the edge of embedded CPs is derived the same way no matter what the ultimate interpretation of the dependency ends up being. In this paper, I have advocated for generalized operator probe, [uOP] that derives Ā-movement. It is the satisfaction of this probe that results in extraction morphology and ultimately results in overt copies being realized phonetically in Seereer, regardless of what type of Ā-dependency is derived.[38]

The idea of generalized OP-probe marries elegantly with the revision of Agree advocated by **?**. In Preminger's system, Agree is obligatory (probes must probe), but the failure of Agree to find

37. The focus construction is morphosyntactically identical to *wh*-questions on the surface.

38. There are other ways of implementing a separation of the movement-deriving mechanism from the interpretation of the dependency. Abels (2012) argues that only the highest instance of a feature is interpreted. Intermediate C^0 are therefore able to have a WH-probe without having that probe interpreted. Another way of implementing this idea would be the theory of features developed in Pesetsky and Torrego (2007), where feature interpretability is a separate dimension than feature valuation. As Pesetsky and Torrego note, this allows the interpreation of an Ā-dependency to be determined at the highest position, while maintaining that there are features on intermediate C^0 that derive movement.

compatible features does not doom the derivation to crash. This is the system I have used to model the behavior of Seereer *wh*-movement. Notably, Preminger's system allows there be an Ā-inducing probe on each CP-level phase head, but also allows for these probes to remain unemployed. This ensures that a *wh*-phrase will always move up, but that the lack of a *wh*-phrase is unproblematic. If ultimate interpretation of the dependency is tied to another mechanism, say, the presence of a specific flavor of Force head in *wh*-questions, then the observation that dependencies all behave the same way in lower clauses can also be modeled.[39]

9 Movement through the edge of *v*P

The analysis of successive cyclic movement presented here is complicated significantly by the idea that *v*P is a phase (Chomsky 2000, 2001, 2008). This is because any phrase moving out of an embedded clause will not move directly from the edge of one CP to the edge of another, but will have to stop off at the *v*P phase edge between them. In other words, successive cyclic Ā-movement stops over at the edge of every phase along the path of the dependency.

As I have discussed above, there is no language where copies of the moved *wh*-phrase show up at both the CP edge and the *v*P edge. In languages where phonetically realized copies surface at the edge of embedded CPs, they only surface there, and not elsewhere. If *v*P is a phase and movement must reference both the edge of *v*P and the edge of CP, we would find at least some languages where overt material is manifested in both positions. This systemic lack of overt *wh*-copies at the edge of both CP and *v*P has gone conspicuously unexplained in the existing literature on the *wh*-copying phenomenon. Under the theory developed here, there are several analytic options available to explain this fact:

(68) ***Wh*-Copying and Spec-*v*P**

a. Successive cyclic movement proceeds via Spec-CP and Spec-*v*P and is triggered by checking an [uOP] feature on both those heads. However, the spelling out of copies is suppressed at the *v*P phase edge for some reason.

b. Successive cyclic movement proceeds via Spec-CP and Spec-*v*P. However, movement to the edge of *v*P involves checking a non-[uOP] feature or involves a different mechanism than feature checking

c. Successive cyclic movement does not proceed through Spec-*v*P in these languages, but instead targets only Spec-CP.

Option (68a) forces an unattractive complication of the theory developed in this paper. This is because Chain Heads Principle predicts that a copy in Spec-*v*P should head a chain. Thus, some new mechanism would have to be introduced to distinguish Spec-*v*P headed chains and Spec-CP headed chains, or the Heads/Tails parameter would predict that both positions should be spelled out in *wh*-copying languages. Therefore, I will not explore option (68a) in this paper further.

39. As noted by **?**, this system does have a problem in deriving freezing effects, whereby a *wh*-phrase is locked in the Spec where it is interpreted. Like Preminger, I leave this issue aside for now.

Instead, I would like to pursue the third option, (68c), that successive cyclic movement does not target Spec-*v*P in *wh*-copying languages, skipping that position to move directly from Spec-CP to Spec-CP. I suggest here that *v*P is not a phase in Seereer. Evidence in support of this claim comes from VP ellipsis, or rather the lack of it. As shown by (69), the auxiliaries *-xe* and *xan* FUT do not license VP ellipsis.[40] The site of ellipsis is indicated with a 'Δ':

(69) a. *Jegaan axe [$_{VP}$ retaa Dakar], Baabu iitam axe [$_{VP}$ Δ]
Jegaan 3SG.AUX go.IMPF Dakar Baabu also
Intended: 'Jegaan is going to Dakar, and Baabu is Δ too.'

b. *Jegaan xan a [$_{VP}$ ñaam maalo], Baabu iitam xan [$_{VP}$ Δ]
Jegaan FUT 3SG eat rice Baabu also
Intended: 'Jegaan will eat rice, and Baabu will Δ too.'

It has been argued that only phase heads can trigger ellipsis of their complement at PF (Gallego 2009; van Craenenbroeck 2004; Rouvert 2012; Bošković 2014). Taking this idea seriously, the fact that VP ellipsis is impossible in (69) suggests that v^0 is not a phase head in Seereer.[41]

As I have argued above, the verb in Seereer always undergoes head movement out of *v*P. In finite clauses without an auxiliary, the verb moves all the way to Fin^0, the higher phase head.[42] I propose that head movement of the verb up the clausal spine is exactly what voids *v*P of its status as a phase. Following recent lines of research by several authors (Gallego and Uriagereka 2006, Gallego 2010, den Dikken 2007), I assume that head movement of a phase head 'slides up' (or 'extends') the phase to the projection of the incorporated head. In Seereer finite clauses, where the V moves through v^0 all the way to Fin^0, this has the consequence of extending the *v*P phase is to the FinP (CP) level phase. Because both phase heads, v^0 and Fin^0, are part of a single complex head, only one phase is triggered.

This has an important ramification for *wh*-phrases that originate inside the *v*P: because there is no phase between the *wh*-phrase and Spec-FinP, it is able to move directly to that position. There is no need for an 'escape hatch' at the edge of *v*P. Thus, *wh*-phrases never move to Spec-*v*P in Seereer. Consider what this means in turn for the analysis of *wh*-copying. *Wh*-phrases are free to move from the edge of one clause to the edge of the next without stopping over in Spec-*v*P. This is shown in (70):[43]

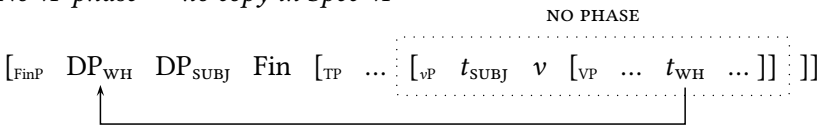
40. Seereer does have a few lexical verbs that license null complement anaphora, but as this phenomenon is distinct from VP ellipsis, I will not consider it here.

41. It could also be the case *v* in Seereer *is* a phase head and that phase head status and the ability to license ellipsis do not correspond one-to-one (Coppe van Urk, p.c.). Here, I will set this possibility aside and continue with the assumption that *v*P is not a phase in Seereer.

42. In clauses where the lexical verb does not move to Fin^0, it moves at least to Asp^0. If AspP is above *v*P, this movement will still void *v*P of phase status. I will not consider such cases here.

43. Arrows in the tree represent head movement. Head adjunction has not been represented for ease of display.

(70) *No vP phase → no copy in Spec-vP*



The conclusion is simple: we will never expect to see overt *wh*-copies in that position because there were never any copies there in the first place.

In German, another *wh*-copying language, the situation is remarkably similar to that of Seereer. First, as in other *wh*-copying languages, overt copies of the moved *wh*-phrase never surface at the edge of *v*P (Felser 2004; Schippers 2012). Second, as noted by Lobeck (1995), German does not allow VP ellipsis. Finally, the finite verb in German undergoes head movement to at least T^0 and in root clauses to C^0 (den Besten 1983). The logic is therefore the same as in Seereer: head movement of the finite verb voids *v*P of its phase status, and therefore *wh*-phrases originating in Spec-*v*P do not have to move via Spec-*v*P. More work must be done to see if this style of analysis can be extended to other *wh*-copying languages.

There is at least one language where it has been shown that overt material associated with a moved *wh*-phrase surfaces at the edge of *v*P. In Dinka, a plural morpheme *ke* must be stranded in each Spec-*v*P along the path of movement when a plural *wh*-phrase is extracted (van Urk and Richards 2015). This morpheme cannot get stranded in the Spec-CP positions. Van Urk and Richards argue that this is strong evidence that *v*P is a phase (at least in Dinka) and that successive Ā-movement proceeds via each Spec-*v*P along the path. Here, I accept this position without dispute. However, no overt material shows up in any Spec-CPs except for the highest in cases of long distance extraction in Dinka (van Urk and Richards 2015). Furthermore, no material shows up in Spec-*v*P when a singular phrase is extracted. Therefore, Dinka cannot be taken as a counterexample to the claim that there is no language where copies surface in both Spec-CP and Spec-*v*P.

When taken together, this data forms a small typology. In languages like Seereer and German, overtly spelled out material from an Ā-chain surfaces at the edge of each CP along the path of movement. In languages like Dinka, repetition targets the edge of *v*P. There are no languages where repetition targets both. This leads to the conclusion that languages differ as to whether Ā-movement targets the edge of *v*P. In Seereer and German, there is evidence that movement *cannot* utilise this position. In Dinka, on the other hand, there is evidence that movement *must* utilise this position.[44] This observation encourages a more detailed cross-linguistic examination of how Ā-movement interacts with the *v*P edge.

Additionally, in *wh*-copying, we have independent evidence for two recent lines of research. First, head movement of a phase head extends the phase up the structure. Second, only a phase head may trigger ellipsis of its complement at PF. More work must be carried out to see if this approach is tenable when it comes to other *wh*-copying languages documented in the literature.

44. Ā-movement in Dinka also targets Spec-CP (van Urk and Richards 2015), but I will leave aside why overt material only surfaces in the highest Spec-CP in that language.

10 Conclusion

In this paper, I have examined the properties of long distance *wh*-movement in Seereer. I have shown that successive cyclic Ā-movement in Seereer leaves two marks. First, each embedded clause edge is occupied by an overtly realized copy of the moved *wh*-phrase. I have argued that this is a form of *wh*-copying, but that, notably, in Seereer, overt copies are obligatorily distinct from the moved *wh*-phrase. Second, each verb along the path of *wh*-movement takes a suffix *-u* that is only present in cases of Ā-movement. I have labeled this suffix 'extraction morphology.' I have argued that we can give both these phenomena a unified explanation by assuming movement to all CP-level phase edges involves checking of a movement inducing feature, [Op] on the phase head. Extraction morphology spells out this checked Op-feature on the phase.

Multiple copy spell-out also arises because there the *wh*-prase enters into an Agree relation in these positions. I have argued that an Ā-chain Op-probe valuation; the copy in a chain that values an Op-probe on C^0 is marked as the head of an Ā-chain. Thus, successive cyclic Ā-movement results in the formation of multiple chains along the path of extraction. However, this also results in a representational ambiguity with regards to copies in intermediate Spec-CPs: they are simultaneously the head of chain and the tail of another. I have argued that this ambiguity is not tolerated by the morphophonological component, and that languages choose to resolve the ambiguity in one of two ways. Either intermediate copies are treated like priveleged head positions and spelled out, or they are treated like the tail end of a chain not targeted for spell-out. Because there are only two choices, and intermediate copies are identically ambiguous, languages are uniform in the way they make this choice.

Furthermore, I have shown that a theory that does not include feature valuation at CP edges not easily compatible with such a theory. Such theories posit a fundamental difference between the intermediate and final steps in successive cyclic movement. Yet, there seems to be a deep similarity between these positions. In languages that show morphological reflexes of Ā-movement along the entire dependency, this mark is the same in final and non-final clauses. In addition, both final and non-final CPs can be targeted for phonetic realization, as shown by *wh*-copying languages like Seereer. Theories that divorce the final step of movement from intermediate steps of movement miss this deep similarity.

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