

Long Distance *Wh*-movement in Seereer: Implications for Intermediate Movement*

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1 Introduction

- **Question:** What motivates intermediate movement in a successive-cyclic long distance dependency?

(1) [CP **What** do you think [CP <what> [John bought <what>?]]

- Two broad styles of analysis are present in the literature:
 - Terminal movement and intermediate movement are derived in the same way (Chomsky 1995; McCloskey 2002; Abels 2012; van Urk and Richards 2013).
 - Intermediate movement is triggered via a different mechanism than terminal movement (Heck and Müller 2000; Chomsky 2000; Bošković 2007)
- This talk will examine data from long distance *wh*-dependencies in Seereer, a language in which successive cyclic movement leaves two kinds of marks on the clause:
 - Each verb along the path of the dependency bears **special morphology**.
 - A **pronoun** reflecting the φ -features of the moved *wh*-phrase appears at the edge of each embedded clause.

(2) **xar_i** foog-o [CP yee **ten_i** Yande a-lay-u [CP yee **ten_i** Jegaan a-ga'-u —_i
 what think-2SG.EXT C 3SG Yande 3-say-EXT C 3SG Jegaan 3-see-EXT
 'What do you think Yande said Jegaan saw —?'

- Seereer resembles languages that show morphological reflexes of successive cyclic movement, such as Irish (McCloskey 2002), Kinande (Schneider-Zioga 2009), or Chamorro (Chung 1994) *and* languages that show repetition in \bar{A} -chains, such as German (Felser 2004), Dutch (Barbiers et al. 2009), or Passamaquoddy (Bruening 2006).
- I show that these pronouns are actually overtly spelled out copies of the moved *wh*-phrase and that morphology on the verb spells out the feature that derives \bar{A} -movement.
- I argue that these two phenomena provide evidence **that intermediate movement steps are just like terminal movement**. To capture this, I propose the following:
 - Both terminal movement and intermediate movement are *feature-driven* (Chomsky 1995; McCloskey 2002; Abels 2012).
 - Each round of movement to the edge of a CP *counts as its own \bar{A} -chain*; this is what allows in multiple copy spell-out.

*I thank Line Mikkelsen and Peter Jenks for insightful comments, guidance, and discussion on this project, as well as my consultant El Hadji Malick Loum for sharing his language with me. All data in this paper were gathered during the 2012-2013 UC Berkeley Field Methods class and subsequent follow up work with John Merrill in 2013-2014. Abbreviations: AGR = agreement; AUX = auxiliary; CL = class; DET = determiner; DV = default vowel; EXT = extraction suffix; FUT = future; IMPF = imperfective; INF = infinitive; LEP = left edge pronoun; OBJ = object; PL = plural; PST = past; REFL = reflexive; REL = relative; SBJ = subject; SG = singular; 1 = first person; 2 = second person; 3 = third person.

2 Verbal Morphology and \bar{A} -movement in Seereer

- In Seereer, verbal morphology is sensitive as to whether or not \bar{A} -movement has occurred. This sensitivity manifests itself in which form of *final suffix* a verb takes.
- Verbs in declarative clauses take the final suffix **-a**, as in (3). Verbs in *wh*-questions take the final suffix **-u**, as in (4):

(3) Declarative

Jegaan a-jaw-**a** maalo fe
 Jegaan 3-cook-DV rice DET
 ‘Jegaan cooked rice.’

(4) Wh-question

xar_i Jegaan a-jaw-**u** —_i?
 what Jegaan 3-cook-EXT
 ‘What did Jegaan cook?’

- Wh*-questions also involve fronting of the *wh*-phrase.
- The final suffix **-u** also appears in focus clauses, (5a), and relative clauses, (5b)¹:

(5) a. **maalo**_{FOC} Mataar a-jaw-**u** —.
 rice Mataar 3-cook-EXT
 ‘Mataar cooked RICE_{FOC}.’

Focus Clause

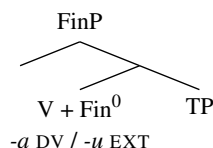
b. **maalo fe** [_{CP} Mataar a-ci’-**uu**]-n-a —.
 rice DET Mataar 3-cook-EXT-3OBJ-REL
 ‘the rice that Mataar gave him’

Relative Clause

Generalization: The suffix **-u** appears in cases of \bar{A} -movement.

- I will refer to this suffix as **extraction morphology** (glossed EXT).
- Because of the suffix is sensitive to \bar{A} -movement, I propose that the final suffixes are located in the C-layer, specifically Rizzi’s (1997) Fin^0 . The verb undergoes head movement to Fin^0 during the derivation:

(6) Final Suffixes Occupy Fin^0



- An argument for V-to-C movement comes from the fact that a final suffix is blocked when there is a higher auxiliary in the clause:

(7) a. Jegaan a-xe **ret-aa-(*a)** Dakar
 Jegaan 3-AUX go-IMPV-DV Dakar
 ‘Jegaan is going to Dakar.’

Progressive Aux

b. Jegaan **xan-a ret-(*a)** Dakar
 Jegaan FUT-3 go-DV Dakar
 ‘Jegaan will go to Dakar.’

Future Aux

- I assume that the highest verbal element moves to Fin^0 . When the the lexical verb moves, the final suffix surfaces. Auxiliaries have special paradigms.

¹In (5b), **-u** is lengthened due to a regular morphophonological rule triggered by the relative suffix **-(n)a**.

- The morphological expression of subject-verb agreement is also sensitive to extraction in Seereer²:
 - Final suffixes have special forms for 1SG and 2SG subjects.
 - Subject extraction suppresses subject φ -agreement ('Anti-Agreement'; Ouhalla 1993)³.

(8)

Declarative		
	SINGULAR	PLURAL
1	V- <i>aam</i>	<i>i</i> -V _M - <i>a</i>
2	V- <i>aa</i>	<i>nu</i> -V _M - <i>a</i>
3	<i>a</i> -V- <i>a</i>	<i>a</i> -V _M - <i>a</i>

(9)

Extraction		
	SINGULAR	PLURAL
1	V- <i>um</i>	<i>i</i> -V _M - <i>u</i>
2	V- <i>o</i>	<i>nu</i> -V _M - <i>u</i>
3	<i>a</i> -V- <i>u</i>	<i>a</i> -V _M - <i>u</i>
AAE	V- <i>u</i>	V _M - <i>u</i>

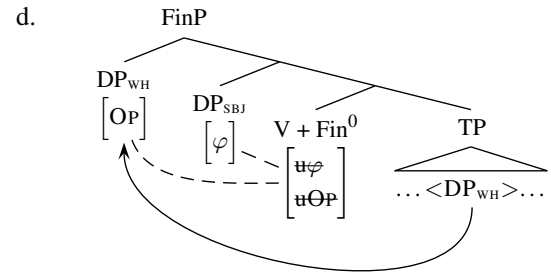
- To capture the fact that the final suffixes in C interact with φ -agreement, I propose the following:

Fin⁰ is the C-level phase head in Seereer and it carries both an **unvalued OP-feature** which derives \bar{A} -movement (McCloskey 2002) and **unvalued φ -features** which derive subject agreement and subject movement.

- Since Fin⁰ has two movement inducing probes, it can project to specifiers.
- Examples (10) and (11) show how this works for non-subject and subject *wh*-questions, respectively.

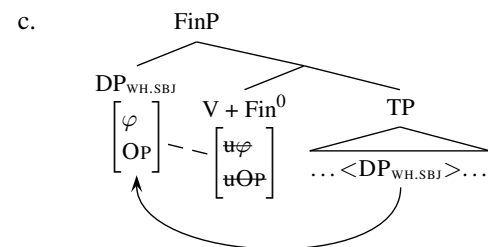
(10) **Non-subject *wh*-movement**

- Subject DP moves to inner Spec-FinP to satisfy [u φ].
- Wh*-phrase moves to outer Spec-FinP to satisfy [uOP].
- Assume no tucking in of an \bar{A} -operator inside an A-position.



(11) **Subject *wh*-movement**

- Subject DP satisfies *both* [u φ] and [uOP] on Fin⁰.
- Only one Spec-FinP.



- When uOP on Fin⁰ is valued, the extraction paradigm is used. When uOP remains unvalued, the declarative paradigm is used. I follow Preminger (2011) in positing that the OP-probe is **allowed to fail**, and therefore this feature can always be present on the CP phase head.

Upshot: *Wh*-movement to Spec-FinP is **feature-driven**. Whether or not the feature deriving movement is valued has morphological consequences.

²In (8) and (9), V_M represents a verb stem that has undergone plural initial consonant mutation.

³For reasons of space and time, I will not propose an analysis of agreement here.

3 Long Distance *Wh*-Movement in Seereer

- Long distance *wh*-movement in Seereer is characterized by two important properties:
 - Each verb along the path of the dependency bears **extraction morphology**.
 - A **pronoun** reflecting the φ -features of the moved *wh*-phrase appears at the edge of each embedded clause.

(12) $\boxed{\text{xar}_i}$ foog-o [CP yee $\boxed{\text{ten}_i}$ Jegaan a-jik-u —_i
 what think-2SG.EXT C 3SG Jegaan 3-buy-EXT
 ‘What do you think Jegaan bought —?’

(13) $\boxed{\text{aniin}_i}$ foog-o [CP yee $\boxed{\text{den}_i}$ Yande a-lay-u [CP yee $\boxed{\text{den}_i}$ Jegaan a-ga'-u —_i
 who.PL think-2SG.EXT C 3PL Yande 3-say-EXT C 3PL Jegaan 3-see-EXT
 ‘Who all do you think Yande said Jegaan bsaw —?’

-
- I will refer to the pronoun present in these clauses as a **left edge pronoun** (abbreviated LEP).
- Left edge pronouns occur with all *wh*-phrases in Seereer in cases of long distance extraction. I will focus on cases of argument extraction in this talk.
- Both extraction morphology and the LEP are **obligatory**. Omission of either results in ungrammaticality:

(14) a. * xar_i foog-o [CP yee $\boxed{\emptyset}$ Jegaan a-jik-u —_i
 what think-2SG.EXT C Jegaan 3-buy-EXT
 Intended: ‘What do you think Jegaan bought —?’

No pronoun

b. * xar_i foog-o [CP yee ten_i Jegaan a-jik- $\boxed{\text{a}}$ —_i
 what think-2SG.EXT C 3SG Jegaan 3-buy-DV
 Intended ‘What do you think Jegaan bought —?’

Suffix -a

- The pattern is schematized in (15):

(15) **The Pattern of Long Distance *Wh*-movement**
 [CP WH_i ... V-u ... [CP C LEP_i ... V-u ...]]

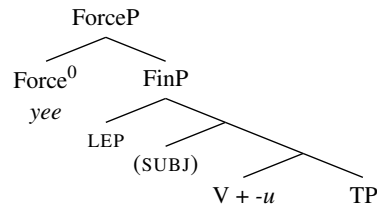
- The position of LEPs in embedded clauses is fixed. As seen in (16), they must always surface in the left periphery of the embedded clause, following an overt complementizer:

(16) a. xar_i xalaat-o [CP yee $\boxed{\text{ten}_i}$ Jegaan a-ga'-u —_i
 what think-2SG.EXT C LEP Jegaan 3-see-EXT
 ‘What do you think Jegaan saw?’

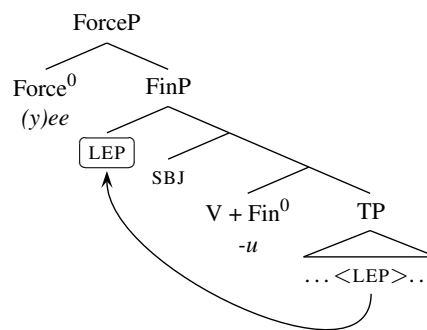
b. * xar_i xalaat-o [CP $\boxed{\text{ten}_i}$ yee Jegaan a-ga'-u —_i
 what think-2SG.EXT LEP C Jegaan 3-see-EXT

c. * xar_i xalaat-o [CP yee Jegaan a-ga'-u $\boxed{\text{ten}_i}$
 what think-2SG.EXT C Jegaan 3-see-EXT LEP

- I argue that the LEP occupies the same structural position as a *wh*-phrase, Spec-FinP. The complementizer (y)ee occupies a higher C head, namely Force⁰:

(17) **Position of LEP**

- When the LEP corresponds to an object, it occupies the outer Spec-FinP, as per (10). When it corresponds to a subject, it occupies the only Spec-FinP, as per (11).
- The presence of obligatory extraction morphology in each clause suggests that the LEP reaches its surface position via **movement**. Movement of the LEP values the uOP-features on Fin⁰ and this results in the verb in that clause having extraction morphology.
- This is shown for a non-subject LEP in (18):

(18) **Non-subject LEP movement**

Consequence: \bar{A} -movement in the matrix clause and in the embedded clause is **feature-driven**.

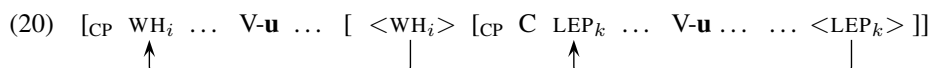
- I propose that all CP phase heads carry features that derive \bar{A} -movement, but that these probes are **allowed to fail** (Preminger 2011; Abels 2012). This means they can be present even when there is no long distance dependency.
- The fact that movement occurs in embedded clauses does not tell us anything about the relationship between the matrix *wh*-phrase and the LEP. Below, I show they are related directly through movement.

4 Left Edge Pronouns as Copies

- **Question:** What is the relationship between the matrix *wh*-phrase and the LEP?
- *Option 1:* The *wh*-phrase and the pronoun are linked **directly via movement**, like some analyses of *wh*-copying by Felser (2004); Barbiers et al. (2009); Schippers (2012).

(19) **The Pattern of Long Distance *Wh*-movement**

- *Option 2:* The *wh*-phrase and the pronoun are **base generated separately** and related indirectly, such as some analyses of *wh*-scope marking by Dayal (1994); Herburger (1994); Legate (2011).



- I argue for Option 1: Seereer left edge pronouns are **overtly spelled out copies of the moved *wh*-phrase**.
- Arguments for this analysis come from:
 - Islands
 - Reconstruction for reflexive binding

4.1 Argument 1: Islands

- Polar questions, relative clauses, and adjunct clauses all behave as islands for \bar{A} -movement in Seereer.
- The presence of a left edge pronoun inside an island **does not alleviate a violation** incurred from forming a *wh*-dependency with a gap inside that island.
- Extraction from a embedded polar question with the complementizer *ndax* is illicit, whether or not a LEP is present.

(21) Embedded Polar Question

- a. ***xar_i** and-o [CP ndax **ten_i** Ami a-ga'-u —_i
 what know-2SG.EXT C_{INT} LEP Ami 3-see-EXT
 Intended: 'What do you know whether Ami saw ___?'
- b. ***xar_i** and-o [CP ndax **Ø** Ami a-ga'-u —_i
 what know-2SG.EXT C_{INT} Ami 3-see-EXT
 Intended: 'What do you know whether Ami saw ___?'

- Extraction from inside a relative clause is also illicit:

(22) Relative Clause Island (CPNC)

- a. ***an_i** ga'-o [DP maalo fe [CP **ten_i** jaw-na
 who see-2SG.EXT rice DET LEP cook-C_{REL}
 Intended: 'Who did you see the rice that ___ cooked?'
- b. ***an_i** ga'-o [DP maalo fe [CP **Ø** jaw-na
 who see-2SG.EXT rice DET cook-C_{REL}
 Intended: 'Who did you see the rice that ___ cooked?'

- And the same is true of adjunct islands:

(23) Adjunct Islands

- a. ***xar_i** ret-o Dakar [CP balaa **ten_i** Jegaan a-jik-u —_i
 what go-2SG.EXT Dakar C.before LEP Jegaan 3-buy-EXT
 Intended: 'What did you go to Dakar before Jegaan bought ___?'
- b. ***xar_i** ret-o Dakar [CP balaa **Ø** Jegaan a-jik-u —_i
 what go-2SG.EXT Dakar C.before Jegaan 3-buy-EXT
 Intended: 'What did you go to Dakar before Jegaan bought ___?'

- Because islands are standardly taken to be domains that block movement, these facts can be taken to support the idea that left edge pronouns and the matrix *wh*-phrase are **connected by movement**.

- If the matrix *wh*-phrase and the pronoun were base generated separately, we would not expect these effects to occur. This is because an island boundary would not be crossed by movement in any of the examples in (21), (22), and (23)
- In fact, under the base generated account, we might even expect the presence of a LEP to alleviate island violations, as base generated resumptive pronouns often do (McCloskey 2002; Schneider-Zioga 2009).

4.2 Argument 2: Reconstruction

- Left edge pronouns behave as if they are copies of the moved *wh*-phrase for purposes of reflexive binding.
- First, notice that in (24), the reflexive complement of the noun *foto* ‘photo, picture’ may be bound by the embedded subject *Yande* but not the matrix 3PL subject (here indicated only by agreement):

(24) a_j -nqalaat-a [_{CP} yee $Yande_i$ a-ga’-a foto xoox **um_i/*den_j**
 3-think.PL-DV C Yande 3-see-DV photo REFL 3SG/3PL
 ‘They think Yande saw a picture of herself/*themselves.’

- However, when the *wh*-phrase is extracted, the binding possibilities for the reflexive expand: binding by the matrix subject is now licit.

(25) [foto xoox **um_i/den_j** num]_k a_j -nqalaat-**u** [_{CP} yee **ten_k** $Yande_i$ a-ga’-**u** —_k
 photo REFL 3SG/3PL which 3-think.PL-FOC C 3SG Yande 3-see-DV
 ‘Which picture of herself/themselves do they think Yande saw?’

- This expansion of binding possibilities is due to reconstruction to the position of the LEP. Following Following Lee-Schoenfeld (2008), I and take the binding domain of a reflexive to be the phase. Thus, the position of the LEP at the edge of the embedded CP can be bound by the matrix subject.

(26) [which photo of *self*] they know [_{CP} [which photo of *self*] [Yande sees [which photo of *self*]]
 └────────── RECONSTRUCTION ─────────┐
 ┌────────── BINDING ─────────┘

- Taking reconstruction to straightforwardly follow from movement (Sportiche 2007), this points to the LEP being an **overt copy** of the matrix *wh*-phrase.
- Notice that the reflexive can still be bound by the embedded subject. In this, we have support for movement connecting all three positions. If the matrix *wh*-phrase and the LEP are generated separately, reconstruction to the most embedded position would not be expected.

Conclusion: Left edge pronouns are the **overtly spelled out copies of the moved *wh*-phrase**.

5 Multiple Copy Spell-out and \bar{A} -chains

- **Problem:** Spelling out multiple copies of the same item should be problematic for linearization (Kayne 1994; Nunes 2004)⁴. Why and how do multiple copies surface?
- **Observation:** In Seereer, **copies surface only in Spec-FinP**, the position that \bar{A} -movement targets in terminal movement. Copies *cannot* surface in their base generated position:

(27) * **xar_i** xalaat-o [CP yee Jegaan a-ga'-u **ten_i**]
 what think-2SG.EXT C Jegaan 3-see-EXT LEP
 Intended: 'What do you think Jegaan saw?'

- I posit that copies surface in Spec-FinP **because movement to that position is feature-driven**. Here, I assume that the movement deriving features are $u\varphi$ and uOP .
- More precisely, I argue that movement to such positions defines a copy there as the head of a chain. I propose the Chain Head Principle to formalize this idea:

(28) **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 $[u\varphi]$ or $[uOP]$.

- Thus, we have two types of chain heads:
 - Those that value $u\varphi$ (= A-chain head)
 - Those that value uOP (= \bar{A} -chain head)
- The principle in (28) has a radical consequence:

Successive cyclic \bar{A} -movement generates multiple \bar{A} -chains, each terminating in Spec-CP.

- Given this consequence, terminal movement and intermediate movement are identical: both are **feature-driven** and both **create a single chain**.
- Thus, successive cyclic movement is the result of multiple chains being interleaved. Consider what this means for a long distance dependency with two levels of embedding, as in (29a):

(29) a. **xar_i** foog-o [CP yee **ten_i** Yande a-lay-u [CP yee **ten_i** Jegaan a-ga'-u —_i]
 what think-2SG.EXT C 3SG Yande 3-say-EXT C 3SG Jegaan 3-see-EXT
 'What do you think Yande said Jegaan saw —?'

b. [ForceP **xar_i** ... V+Fin⁰ [ForceP ... [FinP **ten_i** ... V+Fin⁰ [ForceP ... [FinP **ten_i** ... V+Fin⁰ <xar_i>?]]
 ↑ Chain 3 ↑ Chain 2 ↑ Chain 1

- This is not just a terminological difference! It can be leveraged to allow multiple copy spell-out.
- Because there are multiple chains in (29b), the structure can be linearized with multiple copies. **Each chain head can be targeted for spell-out**. In other words:

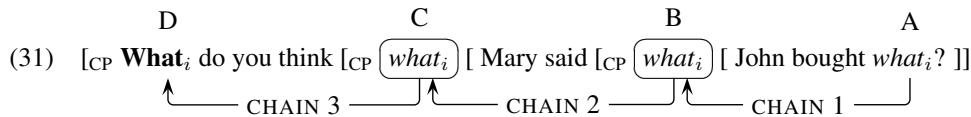
The heads of separate chains are linearized as separate items.

⁴A similar problem arises in the system of Cyclic Linearization developed in Fox and Pesetsky (2005).

- This idea is independently motivated, chains involving different arguments must be treated separately:

(30) [CP What_k did [TP John_j [vP <John_j> buy <what_i>?]]]

- **New Problem!:** Why do the heads of intermediate chains surface in some languages (e.g., Seereer, German) but not in others (e.g., English).
- Notice that there is an added layer of complexity. Take an English example:

(31) 

- Intermediate chain heads 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.**
- I posit that this results in a **representational ambiguity** at the point of spell-out. The interface does not know whether to treat intermediate copies as the head of one chain or the tail of another.
- I propose that the interface **does not tolerate such ambiguity**. However, languages differ in the way they resolve this issue, dictated by a spell-out parameter:

(32) **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 item is ambiguous as to head/tail status, languages resolve this difference in one of two ways:

- That item is treated as the tail of a chain. (non-*wh*-copying languages)
 - That item is treated as the head of a chain. (*wh*-copying languages)
- English has setting (i); Seereer has setting (ii). This results in a structure like (31) being spelled out differently:

(33) a. In both languages, the highest copy (D) will always be spelled out, as it will always be a chain head.
 b. In both languages, the lowest copy (A) will never be spelled out, as it always be a chain tail.
 c. In Seereer, intermediate copies (B, C) will always be spelled out because they are treated as heads.
 d. In English, intermediate copies (B, C) will never be spelled out because they are treated as tails.

- The Heads/Tail parameter predicts that we will find no language in which some intermediate positions are spelled out and others are not. This is borne out in the literature (Schippers 2012)
- The Heads/Tails parameter does not dictate *how* a given copy will be spelled out. It's only function is to resolve the representational ambiguity of intermediate copies created by successive cyclic movement
- Different languages can therefore be expected to differ in the way that multiple copies are realized on the surface. For example, in *wh*-copying languages like German, intermediate copies must be spelled out identically in form to the matrix *wh*-phrase:

(34) **Wen** glaubst du, **wen** sie getroffen hat?
 who think you who she met has
 'Who do you think she met?'

(German, Felser 2004:544)

- Under the view advocated here, such differences 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.

6 Conclusion

- In this talk, I have shown that in Seereer long distance *wh*-dependencies, intermediate movement looks just like terminal movement:
 - Both terminal and intermediate movement trigger **extraction morphology** on the verb.
 - Both terminal and intermediate movement result in the **spelling out of a copy** of the moved *wh*-phrase.
- I developed an analysis in which both terminal movement and intermediate movement are **driven by a feature on the CP-level phase head**, in Seereer's case Fin^0 (Chomsky 1995; McCloskey 2002; Preminger 2011; Abels 2012; van Urk and Richards 2013).
- I further proposed that feature-driven movement defines the end of chains. Therefore, **each step of movement to a CP phase edge counts as its own \bar{A} -chain**, and that this property is what results in multiple copy spell-out in Seereer.

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