Minimality and wh-in-situ in Malayalam

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1. Introduction

It is generally thought that wh-in-situ and overt wh-movement are comparable in their expressive power. Despite differences in the surface position of the wh-phrase, the English (1a) and the Japanese (1b) are both grammatical long-distance questions.

(1) a. What did John say [Mary bought ___]?

b. Hideki-ga [Kyoko-ga nani-o ka-tta ka] i-ta
   Hideki-NOM [Kyoko-NOM what-ACC buy-PAST Q] say-PAST
   ‘What did Hideki say Kyoko bought?’

The basic generalization, then, is that variation in the surface position of the wh-phrase does not create deep differences in the kind of questions speakers of these languages can form. At the same time, it has been observed that at least some languages seemingly disallow long-distance wh-in-situ. In languages like Hindi (Mahajan 1990, Dayal 1996), Bangla (Bayer 1997, Simpson & Bhattacharya 2003) and Iraqi Arabic (Wahba 1991, Ouhalla 1996, Simpson 2000), in-situ wh-expressions inside finite embedded clauses seem to only have clause-bound scope. Throughout this paper, I will refer to the Hindi-type languages as restricted scope languages and the Japanese-type languages as unrestricted scope languages.

One explanation for this pattern that has been put forth is that languages vary parametrically with respect to the locality conditions on wh-licensing (Wahba 1991, Ouhalla 1996, Simpson 2000). For instance, Ouhalla (1996) argues that wh-phrases in restricted scope languages need to be bound by a clause-mate question operator. In the same spirit, Simpson (2000) proposes that the locality domain of wh-feature-checking is the immediately local finite clause in restricted scope languages, whereas it is the entire sentence in

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unrestricted scope languages. Differences in formal implementation aside, the main takeaway from these accounts is that there is a typological distinction between two subclasses of wh-in-situ languages based on locality of wh-licensing.

In this paper, I argue against this sort of typological division between classes of wh-in-situ based on (non-)clause-boundedness. At least in some languages, apparent clause-boundedness can be shown to be epiphenomenal and not due to a radically different syntax for wh-in-situ. I draw on evidence from Malayalam (Dravidian), which has been argued to have only clause-bound wh-in-situ, based on cases like (2) (Srikumar 2007, Madhavan 2013).

(2) *[Sita eethu pustakam vaayich-ennu] Raman vicaarichu?
     Sita which book read-COMP Raman thought
     Unavailable reading: ‘Which book did Raman think Sita read?’

I will show that the restricted scope of the in-situ wh-phrase in cases like (2) is not due to a general clause-boundedness constraint on wh-in-situ, but the result of a pernicious interaction between wh-Agreement and ǂA-operations affecting embedded clauses. Specifically, licensing of a wh-phrase is disrupted by ǂA-movement of the clause that contains it, an operation that is highly favored and sometimes obligatory with finite CPs. I develop a Minimality-based analysis that explains this interaction. Licensing in-situ wh-phrase requires establishing an Agree relationship between the interrogative C and the wh-phrase. The features on the head of the moving clause, however, are sufficiently similar to [wh]-features and intervene for Agree between the higher C and the embedded wh. Crucially, when this illicit configuration can be avoided, Malayalam behaves in the relevant respects on par with unrestricted scope languages like Japanese and English.

This paper is organized as follows. In the next section, I introduce the relevant wh-question-formation patterns in Malayalam. I show in §3 that the restricted behavior of embedded wh-phrases correlates with whether or not the container clause itself has undergone ǂA-movement to a peripheral position and not with finiteness. §4 presents the core of my analysis. In §5, I show how the analysis readily explains the transparency of finite clauses to long-distance wh-licensing in cleft configurations.

2. Wh-in-situ asymmetries

In simplex sentences, wh-phrases can be left in their base position and yield a question interpretation. We see this in (3) for subject, object and adjunct questions respectively.¹

¹In-situ wh-expressions in Malayalam do not undergo covert movement. Following Pesetsky (2000), Beck (2006), Cable (2010), and Kotek (2014), I use Focus-Intervention effects as a diagnostic for genuine in-situ interpretation. Focus-related elements like maatram ‘only’ are prohibited from surface c-commanding an in-situ wh-phrase, as illustrated in (i). Scrambling the wh-phrase above the intervening element can rescue the structure (ii).

(i) *Rajan pustakangal maatram aar-kke okke koduthu?
     Rajan books only who-DAT all gave
     ‘Who all did Rajan give only books to?’
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(3) a. Raman **eethu pustakam** vaayi-chu?
   Raman which book read-PST
   ‘Which book did Raman read?’

   b. **Eethu kutti** ee pustakam vaayi-chu?
   Which child this book read-PST
   ‘Which boy read this book?’

   c. Raman **eppol** ee pustakam vaayi-chu?
   Raman when this book read-PST
   ‘When did Raman read this book?’

Generally, *wh*-phrases inside non-finite clauses are said to be able to take matrix scope, as we see in (4).

(4) Raman [**eethu pustakam** vaayikk-aan] shramichu?
    Raman [which book read-INF] tried
    ‘Which book did Raman try to read?’

However, the scope of in-situ *wh*-phrases inside finite clausal complements appears to be highly restricted. In (5a), where the *wh*-phrase is embedded in the complement of a verb like *know*, which can take both interrogative and declarative complements, only the embedded question interpretation is available. In (5b), we have a *wh*-phrase inside the finite complement of a verb like *think*. An embedded question interpretation is unavailable and as a result, the structure is simply ungrammatical.

(5) a. [Sita **eethu pustakam** vaayich-ennu] Raman-u ariyaam
    Sita which book read-COMP Raman-DAT know
    ✓Embedded Q: ‘Raman knows which book Sita read.’
    ✗Matrix Q: ‘For which book x does Raman know that Sita read x?’

   b. *[Sita **eethu pustakam** vaayich-ennu] Raman vicaarichu?
      Sita which book read-COMP Raman thought
      Intended: ‘Which book did Raman think Sita read?’

This restriction is puzzling in light of the fact that the same clauses are transparent for overt extraction, at least in the case of bridge verbs like *say* or *think*. Example (6) shows that long-distance relativization from finite complements is possible. In (7), we see that clefting from a finite embedded clause is also possible.

(ii) Rajan **aar-kke** okke pustakangal maatram koduthu?
    Rajan who-DAT all books only gave
    ‘Who all did Rajan give only books to?’
One might jump to the conclusion at this point that it is a core fact about Malayalam that finite clauses are scope islands for wh-expressions. To put differently, perhaps Malayalam belongs in the the class restricted scope languages with Hindi, Bangla and Iraqi Arabic. However, examples like (5b) are special in another way: the embedded clauses in these examples appear in a preposed position rather than the canonical preverbal object position. In fact, a variant of (5b) with the embedded clause in a medial position is not possible. Consequently, finiteness and non-canonical clause position are confounded in these examples, raising the question as to which of the two factors is directly responsible for the unavailability of wide scope. The answer in this paper is that it clause position and not finiteness that is relevant for wh-scope. We find that when clauses appear in an immediately preverbal object position, wh-phrases inside them can take matrix scope; when they appear in a fronted position, this is not possible. The next section explores this correlation, beginning with a discussion of the phenomenon of clause fronting.

3. Clausal fronting and wh-in-situ

Though Malayalam is a uniformly head-final SOV language, clausal complements can and sometimes must appear to the left of the matrix subject, as already seen in (5a) and (5b).\(^2\) In this section, I show that clause fronting is a type of A-movement, but whether or not it is obligatory for a given embedded clause is modulated by prosodic factors. When clauses are sufficiently light, they have the option of remaining in-situ, irrespective of finiteness. Using such cases as the core test environments, I demonstrate that it is clause fronting that prevents embedded wh-phrases from taking matrix scope.

3.1 Syntactic properties

The fronted clause is generally the leftmost element in a given sentence. Previous analyses of fronted clauses take them to occupy a specific designated left-peripheral position (Hany Babu 1997, Srikumar 2007), an analysis I will adopt in this paper. A further claim I will advance is that fronted clauses get to their left-peripheral position via A-movement. Evidence for this comes from obligatory reconstruction, syntactic locality effects and parasitic gap licensing, as detailed below.

\(^2\)Clauses can also appear sentence-finally. Preference for leftward versus rightward position of clausal complements seems to be subject to dialectal variation. Directionality of clausal displacement does not make a difference for the argumentation in this paper.
**Argument 1: Principle C effects**

In (8a), although the embedded subject *Raman* linearly precedes the co-indexed matrix subject, the structure is ungrammatical. This suggests that the fronted embedded clause has reconstructed to a position where the R-expression is c-commanded by the co-indexed pronoun. It is well-known that reconstruction for binding is required for A-movement (Lebeaux 1988, Chomsky 1995), and the observed obligatoriness of reconstruction with fronted clauses suggests that they undergo A-movement.

(8) a. *[Raman, aane class-il onnaaman ennu] avan, vicaarichu
    [Raman, COP class-in first that] he, thought
    ‘He thought that Raman is first in class.’

b. *[avan, aane class-il onnaaman ennu] Raman, vicaarichu
    [he, COP class-in first that] Raman thought

**Argument 2: Locality effects**

Clausal fronting is sensitive to islands. Relative clauses and temporal adjuncts are both islands for A-extraction in Malayalam. We find that clausal fronting cannot take place from inside them, suggesting that the fronting operation obeys the sort of syntactic locality conditions that constrain A-movement.

(9) a. *[Sita War and Peace vaayichu ennu]CP njaan [ t tCP paranj-a] aaL-e 
    [Sita War and Peace read that] I [ said-REL] person-ACC saw
    Intended: ‘I saw the person who said that Sita read War and Peace.’

b. *[Sita war-um ennu]CP Raman [Amma tCP paranj-appol]TempC
    [Sita come-FUT that] Raman [mother said-when] became.happy
    Intended: ‘Raman became happy when mother said that Sita will come.’

**Argument 3: Parasitic gap licensing**

As Engdahl (1983) observed, parasitic gaps are licensed only when there is an antecedent gap created by A-movement. If clausal movement involves A-movement, then it, too, should in principle license parasitic gaps. The contrast between (10a) and (10b), which differ minimally with respect to the occurrence of clausal fronting, suggests that the fronting operation licenses parasitic gaps.³

³One might ask why (10b) is not outright ungrammatical. Malayalam is a topic-drop language, so it is possible to ameliorate the ill-formedness of unlicensed gaps in the right contexts by imagining a dropped
The evidence considered above demonstrates that clausal fronting patterns with \( \overline{\Lambda} \)-movement operation, in turn suggesting that it is a narrow-syntactic operation. In keeping with the idea that all syntactic movement is feature-driven, I will propose a triggering feature \([FR]\) (to evoke the fronted position of the clause), which will be responsible for fronting. The unvalued variant of this feature, i.e. the probe, is taken to be located on a left-peripheral functional head, H, which has an EPP property and attracts the relevant embedded clause to its specifier.

### 3.2 Why do clauses front?

It is commonly thought that all finite clauses in Malayalam must front (Srikumar 2007, Menon 2011), which, under the featural view proposed above, would mean that all finite clauses intrinsically possess the requisite \([FR]\)-feature. However, I show below that fronting is not obligatory for all finite clauses. Rather, obligatoriness of fronting seems to relate to prosodic heaviness, which correlates, albeit not perfectly, with finiteness of the clause.

The main clause-fronting patterns in Malayalam are as follows. Clauses, finite or non-finite, with all arguments overtly realized, are required to front. Neither (11a) nor (12a) have licit variants with the embedded clause in a medial position.

#### (11) Heavy finite clause

a. \[[Sita veett-il var-anam enn]\] Raman paranju
   \[[Sita home-LOC come-FUT that]\] Raman said
   ‘Raman said that Sita should come home.’

b. \(\times\) Raman \[[Sita veett-il var-anam enn] paranju\]
   Raman \[[Sita home-LOC come-FUT that]\] said
   ‘Raman said that Sita should come home.’

#### (12) Heavy non-finite clause

a. \[[Sita veett-il var-aan]\] Raman aagrahichu
   \[[Sita home-LOC come-INF]\] Raman wished
   ‘Raman wished for Sita to come home.’

b. \(\times\) Raman \[[Sita veett-il var-aan]\] aagrahichu
   Raman \[[Sita home-LOC come-INF]\] wished
   ‘Raman wished for Sita to come home.’

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\(\times\) is the sign that indicates an ungrammatical sentence in Malayalam. However, since the text is in English, this sign is not used in the translation.
Clauses, finite or nonfinite, with a null subject, may optionally front. In contrast with the previous examples, (13a) and (13b) do have acceptable variants where the embedded clause remains in-situ.4

(13) **Light finite clause**
   a. [ pro veett-il var-anam ennu ] Raman paranju  
   [ home-LOC come-FUT that ] Raman said  
   ‘Raman said that pro should come home.’
   b. ✓ Raman [ pro veett-il var-anam ennu ] paranju  
   Raman [ home-LOC come-FUT that ] said  
   ‘Raman said that pro should come home.’

(14) **Light non-finite clause**
   a. [ veett-il var-aan ] Raman aagrahichu  
   [ home-LOC come-INF ] Raman wished  
   ‘Raman wished to come home.’
   b. ✓ Raman [ veett-il var-aan ] aagrahichu  
   Raman [ home-LOC come-INF ] wished  
   ‘Raman wished to come home.’

An immediate question that is raised by this revised view is why prosody conditions clause-position in the first place. My answer turns to recent accounts of clausal extraposition, which have converged on the idea that clauses evacuate their medial position in SOV languages to avoid “prosodic monsters” (Truckenbrodt 1995, Féry 2011, Manetta 2012, Hartmann 2013). The crucial observation is that when prosodically heavy clauses appear in a medial position, they cannot be given a well-formed prosodic parse. Moving the embedded clause to a peripheral position is taken to be a repair mechanism for fixing an otherwise illegitimate syntax-prosody mapping. A prosodic account along these lines is consistent with what we see in Malayalam, especially given the fact that fronting has no recognizable interpretive effects. Clause fronting in Malayalam can be thought of as a syntactic mechanism by which the language derives structures that can potentially pass through a prosodic filter.

3.3 **Interaction with wh-scope**

The fact that finiteness of embedded clauses and obligatoriness of fronting can be dissociated means that we can now disentangle the relative contributions of finiteness and clause-position in disrupting wh-scope. The crucial test cases involve non-finite clauses with PRO-subjects and light finite clauses. We find that when these clauses appear in their base positions, embedded wh-phrases can take matrix scope, irrespective of finiteness of the clause:

4Similar patterns have been found by Potsdam & Edmiston (2016) for Malagasy, which obligatorily extraposes embedded clauses only when the embedded subject is overt.
Non-finite clauses

Raman [eethu pustakam vaayikk-aan] shramichu?
Raman [which book read-INF] tried
‘Which book did Raman try to read?’

Light finite clauses

Nee [enthu patti enn] vicaarichu
You [what happened COMP] thought
‘What did you think happened?’

A minimal modification of the examples above in terms of clause position results in a change in grammaticality, as we see in (17) and (18). This, too, is irrespective of finiteness.

(17) *[eethu pustakam vaayikk-aan] Raman shramichu?
[which book read-INF] Raman tried
‘Which book did Raman try to read?’

(18) *[enthu patti enn] nee vicaarichu
[what happened COMP] you thought
‘What did you think happened?’

The above examples tell us that crucially, finiteness is not the relevant factor for disrupting wh-scope. We can instead form the following generalization about wh-licensing in Malayalam:

(19) Clause position - Wh correlation
A wh-phrase cannot take scope outside of a fronted embedded clause.

Note that for wh-containing clauses that obligatorily front, neither the fronted nor the in-situ option is available. A fronted heavy clause with an embedded wh will be impossible in the matrix-question reading, as fronting appears to restrict wh-scope. An unfronted heavy clause is illicit because of the general ban on medial heavy clauses.

3.4 Interim summary

This section presented crucial evidence that wh-in-situ in Malayalam is not uniformly clause-bounded. What creates scope islands for wh-phrases is clause fronting, and the correlation between fronting and wh-scope cross-cuts finiteness distinctions. Both finite and non-finite clauses license wide-scope of embedded wh-phrases when the clause is in-situ. Both finite and non-finite clauses fail to license wide-scope for embedded wh-phrases when the clause has fronted. I argued that the relationship between wh-scope and finiteness is at best indirect, and modulated by prosodic factors. There is a strong tendency for finite
4. A Minimality-based approach to restricted scope

The main question that arises from the revised picture in (19) is why fronting of a clause keeps a wh-expression from taking scope outside of that clause. I will argue that this is so because clausal fronting and wh-Agreement, both Ā-operations, interact with fatal consequences. This interaction is made possible by the fact that interrogative C in Malayalam is a generalized Ā-probe, which can interact with any number of featurally more specific Ā-features. In the illicit configurations in question, the FR-features on the head of the embedded clause interve for Agree between the matrix interrogative C and the embedded wh-phrase, leading C to erroneously Agree with the head of the clause. This, in turn, uses up features relevant for fronting, leaving the higher head H without a suitable goal.

I adopt an articulated feature-geometry for Ā-elements, as in (20), with features lower in the hierarchy entailing the higher ones (see also Starke (2001), Rizzi (2004), Abels (2012)). Throughout, I will use the following notation to mark entailment relations: [SPECIFIC] → [GENERAL].

![Feature-Geometry Diagram](image)

Furthermore, it will be assumed that probes can be relativized to different levels in this hierarchy (Harley & Ritter 2002, Béjar & Rezac 2009, Preminger 2012). I assume the following feature-specifications for the relevant probes in Malayalam:

(21) **Relativized probes in Malayalam**

<table>
<thead>
<tr>
<th>a. Interrogative C: [Ā]</th>
<th>GENERAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>b. The head H responsible for clausal-fronting: [FR]</td>
<td>SPECIFIC</td>
</tr>
</tbody>
</table>

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3 Interrogative C in English might also be a generalized Ā-probe. As first discussed by Pesetsky (1982) and later argued to reduce to locality effects in Kitahara (1997), the interrogative C in English fails to distinguish between varieties of Ā-operations:

(i) **wh...Relativization**

a. [What subject]i, do you know whoj PRO to talk to tj about ti
b. *Whoj do you know [what subject]i PRO to talk to tj about ti

(ii) **wh...Topicalization**

a. This problem, Mary knows whoj PRO to consult tj about ti
b. *This specialistj, Mary knows [what problems]i to consult tj about ti
With these ingredients, we can now turn to explaining the patterns of grammaticality and ungrammaticality. There are two main patterns that need to be accounted for:

1. A \textit{wh}-phrase inside an embedded clause \textit{cannot} take matrix scope if the container has fronted.

2. A \textit{wh}-phrase inside an embedded clause \textit{can} take matrix scope if the container clause remains in-situ.

I discuss pattern 1 first. In order for a construction to receive a question interpretation, an interrogative C must be present in the derivation, and it must establish a syntactic dependency with the \textit{wh}-element (see e.g. Simpson (2000), Watanabe (2006)). Clauses that need to front must bear the requisite \([\text{FR}]\)-feature. Given the generalized nature of the probe on interrogative C in Malayalam, it can successfully make contact with the appropriate \([\text{wh}]\)-feature bearing goal \textit{as long as no other} \([\tilde{\text{A}}]\)-feature intervenes. However, when the head of the clause dominating the \textit{wh}-expression bears an \([\text{FR}]\)-feature, a feature entailing \([\tilde{\text{A}}]\), it will necessarily be a closer goal for C than the \textit{wh}-expression, in turn blocking Agree between C and the \textit{wh}-phrase. This intervention configuration is schematized in (22).

\begin{equation}
\text{(22) Intervention Configuration}
\end{equation}

The probe on C will make erroneous contact with \([\text{FR}]\), in turn rendering them inactive for further Agree operations, such that the higher probe on H cannot make contact with the head of the frontable clause. As a result, the clause will fail to undergo fronting, as illustrated in (23). The problem is thus two-fold: (i) whenever an \([\text{FR}]\)-feature is present on an embedded clause, interrogative C will fail to make contact with a \textit{wh}-phrase inside that clause, and (ii) furthermore, whenever an interrogative C is in the derivation and \([\text{FR}]\)-features on a frontable clause is the closest \([\tilde{\text{A}}]\)-feature-bearing element in its domain, a higher probe on H will not be able to make contact with and front the clause that needs fronting.
Turning now to pattern 2, we observe that the grammatical examples all involve a matrix-scope-taking wh-expression inside an embedded clause left in-situ. Clauses that remain in their base-position do not possess the [FR]-feature necessary for fronting. In such a derivation, there is no intervening [Â]-feature to potentially interrupt Agree between the interrogative C and wh, and we expect the interrogative C to be able to successfully find its wh-goal.

In this section, I argued that the restricted scope of certain embedded wh-phrase in Malayalam is the result of a pernicious interaction between two Æ-operations. Specifically, I suggested that interrogative C in Malayalam is a flat [Â]-probe, and Agree between C and a wh-phrase cannot obtain in the presence of an intervening [Â]-element, in this case, the [FR]-features on the clause needing fronting. The erroneous interaction between C and [FR] stymies the higher head H’s attempts to agree with and attract the embedded clause. We now have a way of explaining the ungrammaticality of examples like (5b), which involve both a matrix-scope-taking wh-phrase (and therefore a matrix interrogative C) and a fronted clause: such structures can never be generated given the feature-specifications and relative ordering of the probes involved.

5. Circumventing intervention

Crucial for the account presented above is the fact that the head H triggering clausal fronting is introduced above C, so that the [Â]-feature on the frontable clause is still active when C is merged, and thus capable of blocking wh-agreement. If the head targetting the [Â]-features on the clause were to be merged below C, we might expect Agree between the lower head and the embedded clause to deactivate the potential intervener, permitting later Agree between C and a wh-phrase within the clause. This is precisely what happens in cleft configurations, another counterexample to the traditional claim that wh-in-situ in Malayalam is finite-clause-bounded.

Recall that long-distance wh-question formation is not possible when the wh-phrase is inside a clause that is required to front (e.g. (24), repeated from above):
(24) **Canonical question:** *wh*-containing CP undergoes fronting

*[Sita *eethu pustakam* vaayich-ennu] Raman vicaarichu?  
Sita which book read-COMP Raman thought  
Intended: ‘Which book did Raman think Sita read?’

To form the intended question in (24), one would use a cleft question, as in (25).

(25) **Cleft question:** *wh*-containing CP undergoes clefting.

*[Sita *eethu pustakam* vaayichu enn] aane Raman vicaarich-athe?  
Sita which book read COMP COP Raman thought-NOMNL  
‘Which book was it that Raman thought Sita read?’

The cleft question above shares a number of properties with the ungrammatical non-cleft question in (24). In both, the *wh*-phrase remains in its base-position within the finite complement clause and in both, the container clause undergoes leftward naïve-movement. Yet, the *wh*-phrase can scope out of the embedded clause only in the cleft question. I will suggest that the crucial difference between (24) and (25) lies in the relative ordering of probes in the two structures.

I assume the structure in (26) for clefts in Malayalam (Aravind 2015).

(26)

```
CP
   /\      
  C  FocP
    /\    /\     
   FocP FocP PredP
    /\    /\        
   Pred Pred aane    cleft clause
      /\           ...
     ath
```

Cleft configurations involve a Focus-projection, whose head is responsible for clefting the Focus-feature bearing constituent. Crucially, this projection is below the interrogative C.\(^6\) Thus, when an embedded clause bears Ñ-features relevant for clefting, they will be Agreed with and deleted before interrogative C probes. By the time C probes, the closest active [Ñ]-feature is the *wh*-feature on the *wh*-expression. The relevant configuration is schematized in (26).

\(^6\)Evidence for this comes from the fact that elements can scramble to a position to the left of clefted *wh*-phrases and create Focus-Intervention effects. If Focus-Intervention occurs only when the intervener occurs between an in-situ *wh*-phrase and the interrogative C, then the position of the clefted *wh*-phrase must be below C.
6. Conclusion

This paper argued that apparent finite clause-boundedness of wh-in-situ in Malayalam is not genuine clause-boundedness at all, but the consequence of a pernicious interaction between A-operations. Specifically, I showed that Agree between C and an embedded wh-element is blocked in the presence of intervening [A]-features relevant for fronting of the embedded clause. Malayalam thus offers evidence that wh-in-situ across languages is less diverse than initially thought. Cross-linguistic variation with respect to locality of wh-scope may be reducable to interactions between wh-licensing and independent, language-specific operations.

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References

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