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Citation	Aravind, Athulya. "Licensing Long-Distance Wh-in-Situ in Malayalam." <i>Natural Language & Linguistic Theory</i> , vol. 36, no. 1, Feb. 2018, pp. 1–43.
As Published	http://dx.doi.org/10.1007/s11049-017-9371-2
Publisher	Springer Netherlands
Version	Author's final manuscript
Citable link	http://hdl.handle.net/1721.1/113876
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Noname manuscript No. (will be inserted by the editor)
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Licensing long-distance *wh*-in-situ in Malayalam

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Received: 30 May 2016 / Accepted: 20 March 2017

Abstract It is generally thought that *wh*-in-situ, like overt movement, is potentially unbounded. At the same time, certain languages have been argued to disallow long-distance *wh*-in-situ. This paper argues that even in languages that show apparent clause-boundedness effects, *wh*-in-situ, like *wh*-movement, can in principle cross an arbitrary number of clauses. Failure to license a *wh*-phrase across a clause boundary, when it occurs, can be shown to result from the interaction between *wh*-agreement and independent operations affecting embedded clauses. Evidence will be drawn primarily from Malayalam (Dravidian), which has been argued to disallow long-distance *wh*-in-situ with finite embedded clauses. I will show that the relevant factor for *wh*-licensing is not finiteness, but \bar{A} -movement of embedded clauses, an operation that is common with finite CPs. The core of the problem lies in the fact that interrogative C is a generalized $[\bar{A}]$ -probe that can interact with a number of featurally more specific goals, including the $[\bar{A}]$ -features on the head of the moving clause. It will be shown that this approach can account for a number of facts about Malayalam *wh*-question formation, including selective transparency of certain finite clauses for long-distance *wh*-licensing.

Keywords *wh*-in-situ · Malayalam · Clause-boundedness · Long-distance question-formation · Relativized probes

1 Introduction

Languages can be broadly categorized into two types with respect to *wh*-question formation. There are those that overtly move one or all *wh*-phrases to the front of the clause and those that leave them in-situ. In principle, both *wh*-strategies can be unbounded. Consider the long-distance *wh*-questions in English (1a) and Japanese (1b). Though the *wh*-expressions differ in surface position, the interpretation is the same—the *wh*-phrase originating in the embedded clause takes scope over the entire sentence.

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- (1) a. **What** did John say [Mary bought ___]?
 b. Hideki-ga [Kyoko-ga **nani-o** kat-ta to] it-ta no
 Hideki-NOM [Kyoko-NOM what-ACC buy-PAST] say-PAST Q
 ‘What did Hideki say Kyoko bought?’

The basic generalization is that this type of parametric variation with respect to *wh*-movement does not create deep differences in the kind of questions speakers of the different languages can form. Island environments aside, both movement and in-situ strategies are in principle unbounded and allow speakers to ask long-distance questions of arbitrary length.

However, it has been observed that in a number of languages, *wh*-in-situ appears to be subject to locality restrictions that are unique to this question-formation strategy, an observation which, if true, raises doubts about the generalization above. In languages like Hindi-Urdu (Mahajan 1990; Dayal 1996), Bangla (Bayer 1997; Simpson and Bhattacharya 2003) and Iraqi Arabic (Wahba 1991; Ouhalla 1996; Simpson 2000), in-situ *wh*-expressions inside finite complements seem restricted to clause-bound scope. On the basis of the apparent strict locality of *wh*-in-situ in these languages, a number of researchers have suggested that languages can *parametrically vary* with respect to the locality conditions on *wh*-licensing (Ouhalla 1996; Nakamura 1998; Simpson 2000).

Simpson (2000), for example, argues that the domain for *wh*-feature checking may vary across languages, proposing the following three-way classification (2).

- (2) *Wh-licensing domains* (Simpson 2000: 109, ex. (58))
- a. **Type A:** Romanian, Bulgarian Spec, CP
 - b. **Type B:** Iraqi Arabic, Hindi-Urdu Immediate tense domain of the +Q C⁰
 - c. **Type C:** English The sentence

Of particular relevance for our purposes is the distinction between Type B and Type C languages. On Simpson’s proposal, Type B languages like Iraqi Arabic and Hindi-Urdu disallow long-distance *wh*-in-situ because a *wh*-phrase that remains inside a finite embedded clause cannot be accessed for *wh*-feature-checking, since the interrogative C cannot see past its immediately local tense domain. Long-distance *wh*-movement in these languages, then, is in-part motivated by the need to get the embedded *wh*-phrase into an accessible *wh*-licensing domain.

A similar proposal is put forth in Ouhalla (1996), who attributes the locus of parametric variation to properties of the *wh*-phrases themselves. More specifically, he argues that *wh*-phrases in languages like Iraqi Arabic and Hindi-Urdu are anaphors that cannot be bound across a finite clause.

I will refer to those languages claimed to have clause-boundedness restrictions on *wh*-in-situ (whether it be restrictions on *wh*-licensing domains or binding requirements on the *wh*-phrase itself) as **restricted-scope** languages, and languages like English, Japanese, Mandarin and Korean as **unrestricted-scope** languages. The proposals outlined above, though presenting straightforward explanations for why *wh*-in-situ may be more constrained in restricted scope languages than *wh*-movement, presuppose that finiteness is the relevant factor in these asymmetries. One of the main claims

in this paper is that finiteness is not directly correlated with clause-boundedness effects in restricted scope languages. I will argue instead that *wh*-in-situ is uniformly non-clause-bound, and that apparent clause-boundedness effects are epiphenomenal. I draw primarily on evidence from Malayalam (Dravidian), a language that has been argued in the past to have only clause-bound *wh*-in-situ (Hany Babu 1997; Srikumar 1992; Jayaseelan 2003, 2004; Srikumar 2007; Madhavan 2013). I will show that the restricted scope of in-situ *wh*-phrases is not due to a general clause-boundedness constraint, but is instead the result of a pernicious interaction between *wh*-Agreement and \bar{A} -operations affecting embedded clauses. Specifically, licensing of a *wh*-phrase is disrupted by \bar{A} -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*-phrases requires establishing an Agree relationship between the interrogative C and the *wh*-phrase¹ (Simpson 2000; Watanabe 2006). The features on the head of the moving clause, however, are sufficiently similar to [*wh*]-features to intervene for Agree between the higher C and the embedded *wh*, an intervention that has cascading effects on the derivation as a whole. Crucially, when this illicit configuration can be avoided, long-distance *wh*-in-situ is possible in Malayalam, demonstrating that potential differences in the scope-taking abilities of embedded *wh*-phrases in certain environments need not reflect a radically different syntax of *wh*-in-situ in this language.

The remainder of this paper is organized as follows. I begin by presenting a general picture of *wh*-question formation in Malayalam, including the fact that in certain multi-clausal constructions, long-distance *wh*-in-situ is disallowed. I will then show that the ungrammaticality of long-distance *wh*-questions reflects a general inability of *wh*-phrases to take scope out of embedded clauses—finite or non-finite—that undergo clausal fronting, an \bar{A} -operation common in the language. I then present the core of my analysis. I argue that interrogative C in Malayalam is a generalized probe that can interact with any number of featurally more specific goals, including those on the head of the fronting clause. As a result, in configurations where the clause dominating the *wh*-phrase bears [\bar{A}]-features relevant for fronting, the interrogative C erroneously makes contact with it. Next, I turn to cleft questions, which provide further evidence that restricted scope behavior of *wh*-in-situ is the result of fatal interactions among \bar{A} -operations. In cleft configurations, unlike simple clauses, in-situ *wh*-phrases can take scope out of finite clauses, a pattern I will argue is due to the fact that the illicit interaction configuration is circumvented in clefts. I conclude with a discussion of possible extensions of the present account to other restricted scope languages, as well as unrestricted scope languages like Japanese.

¹The syntax of in-situ *wh*-expressions is much-debated. At least three camps of analysis can be found in the literature: (i) *wh*-phrases covertly move to C (e.g. Huang 1982), (ii) some Q-related operator, not the *wh*-element itself, undergoes movement (Hagstrom 1998; Cable 2010) and (iii) there is no movement at all (Baker 1970; Reinhart 1998). As will be shown in section 2, a covert-movement analysis is not supported by the Malayalam data. For present purposes, I will assume that Malayalam *wh*-phrases remain in their base position. The syntactic link between the *wh*-expression and its scope position is taken to be established via Agree.

2 In-situ *wh*-expressions in Malayalam

The main question formation strategy in Malayalam involves *wh*-in-situ. In simplex sentences, *wh*-phrases can be left in their base position and yield a question interpretation. We see this in (3).

- (3) a. **Eethu kuTTi** ee pustakam vaayi-chu?
 which child this book read-PERF
 ‘Which boy read this book?’
 b. Raman **eethu pustakam** vaayi-chu?
 Raman which book read-PERF
 ‘Which book did Raman read?’

In-situ *wh*-phrases in Malayalam do not appear to be island-sensitive, as illustrated by the fact that they are acceptable inside relative clauses (4a) and adjuncts (4b), both islands for overt movement:

- (4) a. Raman [_{RelC} **aaru** thann-a] pustakam vaayichu?
 Raman [who gave-REL] book read?
 ‘Which x is such that x gave Raman a book and Raman read that book?’
 b. Nee Raman-e [_{TempC} **enth**u paranja-ppol] shakaarichu?
 you Raman-ACC [what said-while] scolded?
 ‘What is such that you scolded Raman when he said it?’

This section will present a fuller picture of *wh*-question formation in Malayalam as necessary background. I will start out by providing evidence showing that *wh*-phrases in Malayalam remain in their base position and do not covertly move to C. I will then show that despite not involving movement, in-situ *wh*-phrases appear to show puzzling locality restrictions that appear unique to this strategy.

2.1 Malayalam *wh*-phrases as genuinely in-situ

Focus Intervention effects can establish that in-situ *wh*-phrases in Malayalam remain in their base position at the time of interpretation. *Focus intervention* is the name given to the phenomenon where in-situ *wh*-phrases are forbidden from appearing in the scope of certain scopal or focus-related elements, like negation or *only*. In Beck (2006), focus intervention is argued to be at the source of the ungrammaticality of the Korean sentence in (5), where the *wh*-phrase *nuku-lul* ‘who-ACC’ occurs in the scope of the focus sensitive operator *man* ‘only’. Observe that scrambling the *wh*-phrase past the offending element to a higher position, as in (6), seems to repair the otherwise illicit structure.

- (5) *Minsu-man nuku-lul po-ss-ni?
 Minsu-only who-ACC see-PAST-Q
 ‘Who did only Minsu see?’

- (6) Nuku-lul Minsu-man po-ss-ni?
 who-ACC Minsu-only see-PAST-Q
 ‘Who did only Minsu see?’ (Beck and Kim 2006)

In Beck’s (2006) analysis of such effects, which builds on earlier work by Rooth (1985) and Hamblin (1973), both *wh*-phrases and focus phrases introduce focus-alternatives into the computation. Intervention occurs when the alternatives introduced by the *wh*-phrase are “picked up” by another operator before they can reach the appropriate interrogative operator. It is straightforward why movement, overt or covert, should repair the illicit configuration—the alternatives generated by the *wh*-phrase are no longer in the scope of the offending operator, and thus cannot be accidentally accessed by it.

Focus Intervention effects have been argued to distinguish between covert movement and in-situ composition of *wh*-phrases, sometimes within the very same language (e.g. Pesetsky 2000; Cable 2010; Kotek 2014). For instance, observing that in-situ *wh*-phrases in English Superiority-violating questions (7a), but not Superiority-obeying (7b) questions, were subject to intervention effects, Pesetsky (2000) argued that the two types of questions differed in where the in-situ *wh*-phrases were interpreted.

- (7) a. *Which professor did **only Fred** introduce which student to __?
 b. Which student did **only Fred** introduce to __ which professor?

Though in both cases, the second *wh*-phrase is pronounced in its base position, in cases like (7b), it was argued to undergo covert movement, such that at the point of interpretation, it is no longer in the scope of the potential intervener.

If these arguments are on the right track, focus intervention effects can serve as a useful tool for determining the position of a *wh*-phrase at the time of interpretation, even when this is not transparent from the actual pronunciation site. When we apply the diagnostic to Malayalam, we find that the language patterns with Korean and Superiority-violating English questions in displaying the intervention effect. Whenever a focus-related element occurs to the left of an in-situ *wh*-phrase, the resulting structure is ungrammatical, as illustrated by the contrast between (8a) and (8b). As in Korean, scrambling the *wh*-phrase to a higher position repairs the violation (8c).

- (8) a. Rajan pustakangal aar-kke koduthu?
 Rajan books-ACC who-DAT gave
 ‘Who all did Rajan give books to?’
 b. *Rajan pustakangal maatram aar-kke koduthu?
 Rajan books only who-DAT gave
 ‘Who all did Rajan give only books to?’
 c. Rajan aar-kke pustakangal maatram koduthu?
 Rajan who-DAT books only gave
 ‘Who all did Rajan give only books to?’

If the research tradition of Pesetsky (2000). Beck (2006) and their successors is correct, the susceptibility of Malayalam *wh*-phrases to intervention effects suggests that they do not raise to C, overtly or covertly.

2.2 *Wh*-asymmetries

The *wh*-in-situ strategy, which we saw to be unproblematic in mono-clausal constructions, nevertheless fails in certain bi-clausal constructions. In particular, *wh*-phrases inside finite clausal complements appear to be highly restricted.² In (9), where the *wh*-phrase is embedded in the complement of *know*, which can take both interrogative and declarative complements, only the embedded question interpretation is available.

- (9) [Sita **eethu pustakam** vaayikk-um ennu] Raman-u ariyaam
 [Sita which book read-FUT that] Raman-DAT know
 ✓Embedded Q: ‘Raman knows which book Sita will read.’
 ✗Matrix Q: ‘For which book x does Raman know that Sita will read x?’

A verb like *vicaarikk-* ‘think’, on the other hand, cannot take question complements. When an embedded *wh*-phrase occurs inside its complement, the resulting structure is ungrammatical, as neither a narrow scope nor wide scope reading seems to be available.

- (10) *[Sita **eethu pustakam** vaayikk-um ennu] Raman vicaarichu?
 [Sita which book read-FUT that] Raman thought
 ✗Embedded Q: ‘Raman thought which book Sita will read.’
 ✗Matrix Q: ‘Which book did Raman think Sita will read?’

This restriction is puzzling in light of the fact that the same clause is transparent for overt extraction, at least in the case of bridge verbs like *say* or *think*. Example (11) shows that long-distance relativization from finite complements is possible. In (12), we see that clefting³ from a finite embedded clause is possible.

- (11) [[Sita __ vaayikk-um ennu] Raman paranj-a] pustakam ivide unde
 [[Sita read-FUT that] Raman said-REL] book here COP
 ‘The book that Raman said Sita will read is here.’
 (12) War and Peace aane [Sita __ vaayikk-um ennu] Raman vicaaarch-athe
 War and Peace COP [Sita read-FUT that] Raman thought-NOMNL
 ‘It’s War and Peace that Raman thought Sita will read.’

In addition, as we see below in (34), embedded *wh*-phrases seem to be able to take matrix scope out of non-finite clauses.

²There is debate as to what counts as a finite clause in Malayalam. For instance, Amritavalli and Jayaseelan (2005) argues that only clauses that can host certain modals, mood morphology and “high” negation can be considered finite. Though this debate is not crucial to the issues in this paper—it will be shown shortly that finiteness is not a relevant factor for *wh*-scope—the relevant finite clauses in the examples used in this section satisfy the aforementioned criteria of finiteness.

³See section 5 for evidence that Malayalam clefts involve overt movement.

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

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. One possibility, pursued by some previous analyses of the phenomena (e.g. Madhavan 2013), resorts to the Phase Impenetrability Condition (PIC) (Chomsky 2001) as an explanation. Perhaps the matrix C cannot Agree with an embedded *wh*-in-situ because it is too low within another phase to be accessible. However, there are cross-linguistic and Malayalam-specific reasons to believe that languages have mechanisms for accomplishing long-distance Agree without violating the PIC. For instance, as mentioned earlier, languages like Japanese and Korean do allow long-distance *wh*-in-situ across a phase boundary. More crucially for present purposes, even in Malayalam, long-distance *wh*-in-situ across a finite-clause boundary is sometimes possible. The intended question in (10) can be formed by clefting the entire embedded clause. As we see in (14), a *wh*-phrase inside a finite embedded clause can receive wide scope in this configuration.

- (14) [Sita **eethu pustakam** vaayikk-um ennu] aane Raman vicaarich-athe?
 [Sita which book read-FUT that] COP Raman thought-NOMNL
 ‘Which book was it that Raman thought Sita will read?’

It seems, therefore, that we need another explanation for the ungrammaticality of questions like (10).

Observe that examples like (10) are special in another way: in addition to being finite, the embedded clauses in such examples appear in a preposed position rather than the canonical object position. This raises an important question: which of the two factors—finiteness or fronted clause position—is responsible for the unavailability of wide scope? I will argue that it is fronted clause position and not finiteness that is directly 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 examines in more detail the correlation between clausal-fronting and *wh*-scope.

3 Clausal fronting and *wh*-in-situ

Malayalam is an SOV language, but clausal complements can and sometimes must appear sentence-initially, resulting in an OSV order, as already seen in (9) and (10). It is often thought there is a strict correspondence between obligatoriness of fronting and finiteness—finite clauses must front, whereas fronting is optional for non-finite clauses (e.g. Srikumar 2007; Menon 2011). If this were the case, then it would be particularly difficult to ascertain which factor is directly responsible for the disruption of *wh*-scope. I will show, however, that fronting does not directly correlate with finiteness: not all finite clauses must front and not all non-finite clauses have the option to remain in a non-fronted position. What is relevant for fronting, instead, is the

prosodic heaviness of the clause in question. In particular, I will suggest that prosodic constraints operative in the language interact to prohibit certain heavy clauses from appearing in a medial position.⁴ Later in this section, I will offer a precise characterization of heaviness relevant to fronting. What is crucial for us is that we can now construct examples in which finiteness and clausal fronting can be divorced. Once we do so, we are able to establish that it is fronting and not finiteness that is directly responsible for the *wh*-scope patterns we find in this language.

This section is organized as follows. I will first demonstrate that fronting is feature-driven syntactic movement, specifically \bar{A} -movement. Next, I discuss the question of why certain clauses should possess the features relevant for fronting. I will suggest that the obligatoriness of fronting correlates with prosodic considerations, in particular, the weight of the embedded subject. Embedded clauses with overt subjects cannot remain in their base position, for reasons that I will argue relate to prosodic ill-formedness of such structures. But clauses with unpronounced subjects, finite or non-finite, can remain in-situ, and in such cases, embedded in-situ *wh*-expressions can freely take matrix scope.

3.1 Syntactic properties of fronted clauses

The fronted clause is generally the leftmost element in a given sentence. Previous analyses of fronted clauses generally take them to occupy a specific designated left-peripheral position (Hany Babu 1997; Srikumar 2007), an analysis I will adopt in this paper. I will argue, furthermore, that clauses undergo overt \bar{A} -movement to this position. Evidence comes from obligatory reconstruction, syntactic locality effects and parasitic gap licensing, which I detail below.

3.1.1 Fronted clauses obligatorily reconstruct for binding

Consider (15) below; a pronoun inside the embedded clause can be bound by a quantifier in the matrix, even though the pronoun linearly precedes its binder⁵. The grammaticality of (15), then, shows us that fronted clauses *can* in principle reconstruct for binding and thus argues for movement.

- (15) [avarude_i kuTTi aane class-il onnaaman ennu] oroo sthree_i-um vicaarichu
 [her_i child COP class-in first that] each woman_i-UM thought
 ‘Each woman thought that her child is first in class.’

Evidence that this movement is of the \bar{A} -type comes from Principle C effects. It is well-known that reconstruction for Principle C is required for \bar{A} -movement (Lebeaux 1988; Chomsky 1995). The ungrammaticality of (16a) illustrates that fronted clauses in Malayalam *must* reconstruct.

⁴See Dryer (1991) for a typological survey showing that movement of medial clauses to a peripheral position is commonplace for SOV languages.

⁵Mohanan (1982) argues that what matters for binding in Malayalam is linear precedence. This does not seem to be the case for the dialect spoken by my informants (from the Pathanamthitta region of Kerala, India).

- (16) a. *[Raman_i aane class-il onnaaman ennu] avan_i vicaarichu
 [Raman_i COP class-in first that] he_i thought
 ‘He thought that Raman is first in class.’
 b. ?[avan_i aane class-il onnaaman ennu] Raman_i vicaarichu
 [he_i COP class-in first that] Raman thought

The examples in (16) do not contrast perfectly, as the embedded coindexed pronoun in (16b) is somewhat degraded. This degradedness is due to a blocking effect. Malayalam has a long-distance reflexive, *taan*, which takes human antecedents and is subject-oriented (e.g. Jayaseelan 1998). When the conditions for using *taan* are met, as they are in the subject position of the complement of an attitude verb, speakers of Malayalam prefer to use the reflexive instead of a bound pronoun. Thus, the counterpart of (16b) with *taan*, as in (17), is judged more acceptable.

- (17) [taan_i aane class-il onnaaman ennu] Raman_i vicaarichu
 [SELF_i COP class-in first that] Raman thought

Cases like (16b) are nevertheless judged grammatical by speakers, so I take it to be sufficient evidence that the embedded clause reconstructs for binding. The example in (17) gives further support for a reconstruction analysis, since the anaphor can be bound by a matrix element, even when it is contained within a fronted clause.

3.1.2 Argument 2: Clause-fronting is island-sensitive

If clausal fronting is \bar{A} -movement, we expect it to obey locality constraints on movement. We find that this is indeed the case. Relative clauses and temporal adjuncts are islands for \bar{A} -extraction in Malayalam, as illustrated by the impossibility of clefting out of them in (18).

- (18) a. *Sita aane Raman [__ thann-a]_{RelC} pustakam vaayich-athe
 Sita COP Raman [gave-REL] book read-NOMNL
 Intended: ‘It’s Sita that Raman read a book that she gave him.’
 b. *Sita aane Raman [__ wann-appol]_{TempC} santhoshich-athe
 Sita COP Raman [came-when] become.happy-NOMNL
 Intended: ‘It’s Sita that Raman became happy when she came.’

Clausal fronting is similarly restricted when the clause is inside an island. As shown below, fronting out of relative clauses (19a) and temporal adjuncts (19b) is ungrammatical.

- (19) a. *[Sita *War and Peace* vaayikk-um ennu]_{CP} njaan [t_i t_{CP} paranj-a]
 [Sita War and Peace read-FUT that] I [said-REL]
 aaL-e_i kandu
 person-ACC saw
 Intended: ‘I saw the person who said that Sita will read *War and Peace*.’

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

3.1.3 Argument 3: Fronted clauses license parasitic gaps

Parasitic gap constructions, exemplified in (20), feature an ordinary gap left by movement and in addition, a gap inside e.g. an adjunct, which is understood as coindexed with the original gap.

- (20) Which article did you file __ [without reading __]?

As Engdahl (1983) observed, parasitic gaps are licensed only when there is an antecedent gap created by \bar{A} -movement.⁶ If clausal movement involves \bar{A} -movement, then it, too, should in principle license parasitic gaps. This expectation is borne out.⁷ When we compare pairs of sentences containing gaps, which differ minimally with respect to the presence of clausal fronting, we find a contrast in acceptability. In (21a), the non-finite clause has fronted, and the parasitic gap is licensed; in (21b), where the embedded clause remains in-situ, a similar gap is quite odd.

- (21) a. War and Peace vaayikk-aan Raman __ ishtapped-aathe shramichu
 War and Peace read-INF Raman enjoy-without tried

⁶The precise reason for the restriction to \bar{A} -movement is debated. Nissenbaum (2000), for instance, proposes that parasitic gaps involve the composition, by way of Predicate Modification (Heim and Kratzer 1998), of two predicates of type $\langle e, t \rangle$, one derived by null-operator movement and the other by overt movement. The \bar{A} -movement constraint follows if only this type of movement leaves the sort of variable that would result in the requisite type $\langle e, t \rangle$ predicate.

⁷A word of caution is in order, however, since certain properties of Malayalam make parasitic gap licensing a less-than-perfect diagnostic for \bar{A} -movement in this language. Malayalam is a topic-drop language (Ross 1982; Huang 1984), so it is possible to ameliorate the ill-formedness of unlicensed gaps in the right contexts by imagining a dropped topic in that position. But such a strategy is generally difficult where no prior discourse exists to license topic-drop. Thus, in the absence of a rich context, there is a contrast between truly grammatically licensed gaps and those “rescued” by a topic-drop strategy. We see this when comparing a parasitic gap in a cleft construction (7) versus a passive (7); in the absence of a rich context, the cleft sentence with a gap is grammatical, but the passive sentence is quite odd.

(i) **A-movement: passive**

??War and Peace Raman-aal [__ vaayikk-aathe] verukka-ppeTTu
 War and Peace Raman-BY [read-without] hate-PASS

‘War and Peace was hated by Raman without having read.’

(ii) **A-bar movement: cleft**

War and Peace aane Raman [__ vaayikk-aathe] verukkunn-athe
 War and Peace COP Raman [read-without] hates-NOMNL

‘It’s War and Peace that Raman hates without having read.’

‘Raman tried to read War and Peace without enjoying the activity.’

- b. ??Raman War and Peace vaayikk-aan ishtapped-aathe shramichu
 Raman War and Peace read-INF enjoy-without tried

I take these data as evidence that parasitic gaps are genuinely licensed by the clause fronting operation, which in turn supports the view that fronting involves \bar{A} -movement.

3.2 Why do clauses front?

The evidence considered in the previous section establishes that clausal fronting is an \bar{A} -movement operation. I will posit 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 attracts the relevant embedded clause to its specifier. This [FR]-feature will not have any particular semantics or interpretive function associated with it, the reasons that will become clearer later in this section. Rather, it should be thought of as an EPP-type feature. Despite the lack of an obvious function, the existence of such a feature is well-motivated given the evidence that fronting is narrow-syntactic movement and the assumption that all syntactic movement is feature-driven.

A question that arises at this point is what determines whether or not an embedded clause possesses an [FR] feature and when the configuration will involve the movement-triggering head, H. Clausal fronting does not have obvious semantic or information-structural correlates, making it difficult to subsume fronting under more familiar operations like topicalization or focalization. It is more commonly assumed that fronting is simply a language-specific requirement on all finite clauses. I will argue here that this generalization is at best incomplete. Upon closer examination of frontable clauses, we find that finiteness is neither sufficient nor necessary to make fronting obligatory. In what follows, I will outline the environments in which clausal fronting must happen, and offer a prosodic explanation for these patterns.

3.2.1 The relevance of embedded subjects

There is a strong correlation between the size of the embedded subject and the ability of its clause to remain in-situ. We saw earlier in (9) and (23), repeated below, that certain finite complements are required to front. In both of these examples, the embedded subject is an overt lexical noun. I will argue below the obligatoriness of fronting correlates with the presence of an overt embedded subject.

- (22) [Sita **eethu pustakam** vaayikk-um ennu] Raman-u ariyaam
 [Sita which book read-FUT that] Raman-DAT know
 ✓Embedded Q: ‘Raman knows which book Sita will read.’
 ✗Matrix Q: ‘For which book x does Raman know that Sita will read x?’
- (23) *[Sita **eethu pustakam** vaayikk-um ennu] Raman vicaarichu?
 [Sita which book read-FUT that] Raman thought

✗Embedded Q: ‘Raman thought which book Sita will read.’

✗Matrix Q: ‘Which book did Raman think Sita will read?’

Crucially, the presence of an overt lexical subject makes fronting obligatory for non-finite clauses, as well. Consider the contrast between (24) and (25). The embedded clauses in (24) have a null subject and may appear in either a preposed or a medial position; on the other hand, the embedded subjects in (25) are overt, and only the fronted position is licit.

- (24) 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
- (25) a. [Sita veett-il var-aan] Raman aagrahichu
 [Sita home-LOC come-INF] Raman wished
 ‘Raman wished for Sita to come home.’
 b. ??Raman [Sita veett-il var-aan] aagrahichu
 Raman [Sita home-LOC come-INF] wished

Conversely, non-overtness of the embedded subject makes fronting optional for finite clauses. The sentences in (26) and (27) differ minimally with respect to the overtness of the embedded subject. We find that only in (26) is the embedded clause allowed to remain in-situ.⁸

⁸Embedded clauses with pronominal subjects are more acceptable in a medial position than those with lexical subjects, though dispreferred in comparison to embedded clauses with null subjects.

- (i) a. ?Raman [nee Sita-ye kalyaanamkazhikk-anam ennu] paranju
 Raman [you Sita-ACC marry-MOD that] said
 ‘Raman said that you should marry Sita.’
 b. [nee Sita-ye kalyaanamkazhikk-anam ennu] Raman paranju
 [you Sita-ACC marry-MOD that] Raman said

This gives preliminary evidence that the acceptability of medial clauses is not categorical, but gradient, a property that would be difficult to capture under analyses on which fronting is an operation that is obligatory for finite clauses. Relevantly for present purposes, the availability of wide-scope for embedded *wh*-questions correlate with fronting, even for these kinds of examples, as shown in (ii).

- (ii) a. ?Raman [nee aar-e kalyaanamkazhikk-anam ennu] paranju?
 Raman [you who-ACC marry-MOD that] said
 ‘Who did Raman say that you should marry?’
 b. *[nee aar-e kalyaanamkazhikk-anam ennu] Raman paranju?
 [you who-ACC marry-MOD that] Raman said

For ease of exposition, however, I will restrict my examples to the clear-cut cases of acceptable (null subjects) and unacceptable (overt lexical subjects) medial clauses.

- (26) a. Raman [*pro* Sita-ye kalyaanamkzhikk-um ennu] paranju
 Raman [Sita-ACC marry-FUT that] said
 ‘Raman said that he will marry Sita.’
 b. [*pro* Sita-ye kalyaanamkzhikk-um ennu] Raman paranju
 [Sita-ACC marry-FUT that] Raman said
- (27) a. ??Raman [Manu Sita-ye kalyaanamkzhikk-um ennu] paranju
 Raman [Manu Sita-ACC marry-FUT that] said
 ‘Raman said that Manu will marry Sita.’
 b. [Manu Sita-ye kalyaanamkzhikk-um ennu] Raman paranju
 [Manu Sita-ACC marry-FUT that] Raman said

In contrast, the weight of the other constituents in the clause does not have a similar effect. Both examples in (28) have null subjects, but they differ with respect to the weight of the direct object. We find that in both cases, the embedded clause may remain in-situ.

- (28) a. Raman [pustakam vaayikk-aan] shramichu
 Raman [book read-INF] tried
 ‘Raman tried to read a book.’
 b. Raman [skul-il ninnu kitti-a pustakam vaayikk-aan] shramichu
 Raman [school-ABL from get-REL book read-INF] tried
 ‘Raman tried to read the book he got from school.’

What is the reason behind the special prosodic status of subjects in Malayalam? The link between prosodic heaviness and overtness of subjects may lie in the fact that subjects receive main stress and are perceived to be prominent in Malayalam⁹, which, in turn, affects the way a given sentence is parsed prosodically. Féry (2009), in her prosodic analysis of Malayalam, notes that there is a strong prosodic boundary at the right edge of the subject in canonical sentences. I take this as indication that Malayalam intonationally distinguishes the subject from the predicate. Formalizing this as a prosodic constraint active in the language, the next section offers an explanation for why fronting is rendered obligatory for a given clause.

3.2.2 Syntax-prosody mapping and bi-clausal sentences

In this section, I will show that the clause-fronting patterns that we find in Malayalam fall out from general principles of prosodic parsing. Specifically, I will argue that when a heavy clause remains in its base position, the resulting structure is *prosodically ineffable*: it cannot receive a prosodic parse that does not violate at least one prosodic well-formedness principle.

I assume that prosodic structure is distinct from syntactic structure and consists of the following, hierarchically ordered prosodic categories above the foot: ω (prosodic word), ϕ (phonological phrase), and ι (intonational phrase). Furthermore, for any

⁹This could be related to the fact that canonically subjects are construed as topical in Malayalam (see e.g. Mathew 2014).

prosodic category, a sentence is exhaustively parsed into a sequence of such categories (Selkirk 1984). I take there to be (rough) correspondence between the syntactic structure and prosodic structure, as long as this mapping does not conflict with prosodic well-formedness (Selkirk 1984, 2011; Nespor and Vogel 1986; Hayes 1990). One such well-formedness principle is Selkirk's (1984) Strict Layer Hypothesis, a variant of which is given in (29), which mandates that a non-terminal prosodic category of one level may not be dominated by a prosodic category of a lower level in the hierarchy.

- (29) STRICT LAYERING: A prosodic category of level n (e.g. an ι -phrase) cannot dominate a category of level $n - 1$ (e.g. a ϕ -phrase)

Another relevant principle that has been shown to create mismatches in the syntax-prosody mapping (e.g. Elfner 2012), involves phonology-specific binarity restrictions on phrase sizes. For Malayalam, I will propose that intonational phrases must be composed of maximally two phonological-phrases (30).

- (30) MAXBIN(ι, ϕ): An ι -phrase must contain maximally two ϕ -phrases

An idea that goes back to at least Selkirk (1984) is that in addition to syntax, certain extraneous features like *prominence* may also yield amendments to prosodic structure. We can formalize this notion with a constraint as in (31), which states that a prominent element must head a phonological phrase of its own.

- (31) PROSPROM: Prosodically prominent constituents must head a minimal ϕ -phrase

In canonical sentences in Malayalam, the subject receives prominence,¹⁰ and the requirement in (31) would account for the observation that the language intonationally distinguishes the subject from the predicate Féry (2009).

With these assumptions, let us now turn to the prosodic parsing of multi-clausal sentences in Malayalam. Medial clauses with an overt subject cannot be parsed in a way that does not violate at least one of the three principles laid out above, as will be explicated below. Suppose we were to parse each embedded clause as heading its own

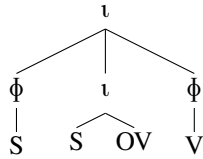
¹⁰Note that in scrambling configurations, it is the scrambled element that receives prominence and heads its own phonological phrase (Swenson et al. 2015). As pointed out by an anonymous reviewer, we then expect that clauses that otherwise could remain in-situ are forced to front if scrambling has taken place. This prediction seems to be borne out, as shown in (i) below. The form in (b), where the direct object has scrambled to the left of the indirect object, but the clause remains in-situ, is degraded in comparison to (c), where that clause has fronted.

- (i) a. Raman [Sita-kke ee pustakam kodukk-aan] shramiccu
 Raman Sita-DAT this book give-INF tried
 'Raman tried to give this book to Sita.'
 b. ??Raman [ee pustakam Sita-kke kodukk-aan] shramiccu
 Raman this book Sita-DAT give-INF tried
 c. [ee pustakam Sita-kke kodukk-aan] Raman shramiccu
 this book Sita-DAT give-INF Raman tried

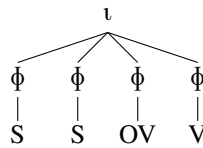
intonational phrase, as in (32a): this would result in the embedded clause ι -phrase being dominated by the ϕ -phrase headed by the embedded verb, in violation of Strict Layering. Parsing each major constituent as heading its own ϕ -phrase, which is then dominated by a single ι -phrase is in keeping with Strict Layering, but goes against the restriction against long strings of ϕ -phrases (32b). There is a way in which we could satisfy Strict Layering and MINBIN, as demonstrated in (32c). However, observe that this would fail to meet the requirement that the prosodically prominent subject head its own ϕ -phrase. When the embedded subject is unpronounced, PROSPROM is no longer relevant, allowing for the possibility of medial clauses with null subjects.¹¹

(32) *Structure*: S [S O V] V

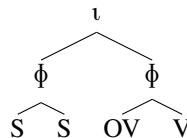
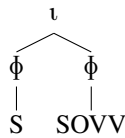
a. *Potential parse 1*:
Violates Strict Layering



b. *Potential parse 2*:
Violates MAXBIN

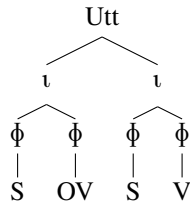


c. *Potential parse 3*:
Violates PROSPROM



The availability of clause fronting as a syntactic mechanism in Malayalam makes a multi-clausal sentence utterable. A structure in which the clause has moved to a peripheral position can easily receive a well-formed prosodic parse, as illustrated in (33).

(33) *Structure*: [[SOV] SV]



¹¹Though I have presented the prosodic requirements at play as obligatory rules for ease of exposition, they can be reformulated as violable constraints and incorporated into an Optimality Theoretic Model and the same conclusions should follow. However, doing so involves making claims about the syntax-prosody interface (e.g. what constitutes the input that defines the competing candidates) that go beyond the scope of this paper.

Crucially, in certain circumstances, bi-clausal sentences fail to have any acceptable prosodic parse *unless* the clause undergoes movement to a peripheral position. The idea that clausal movement to peripheral positions is driven by the need to circumvent “prosodic monsters” is now commonplace within accounts of extraposition (Truckenbrodt 1995; Göbbel 2007; Féry 2011; Manetta 2012; Hartmann 2013).¹² Manetta (2012), for instance, argues that finite clauses in Hindi-Urdu, a restricted scope language (see section 7), are prosodically aligned to the right edge. Similar patterns of clausal movement have also been observed by Potsdam and Edmiston (2016) for Malayasy, which extraposes embedded clauses when the subject is overt. As Potsdam and Edmiston (2016) argue, the relevant prosodic property of Malayasy, as in Malayalam, is that subjects are prosodically set apart from the rest of the clause, which in turn creates a prosodic parsing problem when the clause is left in-situ.

Let me remark on one final issue before moving on. Evidence in the previous section showed clausal fronting to be run-of-the-mill \bar{A} -movement, and thus run-of-the-mill *syntactic* movement. How should we understand the elements driving clausal fronting—the head H and the feature [FR]—if ultimately, the driving force behind-the-scenes is prosody? The logic is the same as the distinction advanced by Fanselow (2007) between “triggering” and “exploitation.” The prosodic parser can *exploit* the result of a syntactic operations, even when the elements *triggering* the operations are purely syntactic. In line with this logic, I will suggest that [FR]-features do not have a prosodic interpretation, per se, as prosodic structure is built on the *output* of syntactic derivation. Instead, [FR] should be seen simply as a word-order or EPP-type feature. The presence of H and [FR] may very well be syntactically *optional*, for both finite and non-finite complements. However, a derivation without [FR] and the resulting clausal fronting would leave the prosodic parser with an irredeemable structure, at least in the case of prosodically heavy clauses.

3.3 Interaction with *wh*-scope

Having established that clause fronting is triggered by an optional FR feature, which is rendered de-facto obligatory for prosodically heavy clauses, we can now turn to the question of how this operation interacts with *wh*-in-situ. The last section demonstrated that fronting need not dovetail with finiteness. Non-finite clauses with null subjects and finite clauses with null subjects both front optionally. This allows us to construct test environments where finiteness and clause position are disentangled, to identify which of the two factors has an effect on the scope of embedded *wh*-phrases.

Suppose the *wh*-licensing domain for Malayalam were the immediate finite clause, as proposed for Iraqi Arabic and Hindi-Urdu by Simpson (2000); Ouhalla (1996) and others. We would then expect that an embedded *wh*-phrase inside a finite clause may not to take matrix scope, irrespective of clause position. Conversely, we expect matrix scope to be possible for *wh*-expressions inside non-finite complements, irrespective of position. If on the other hand, clause-position determines scope possibilities, we

¹²Not every one of these analyses take clausal movement to take place in the syntax, as I have argued is the case in Malayalam.

predict that fronted clauses block wide scope and in-situ clauses permit it across-the-board. We see below that the second set of predictions is borne out. When the clause appears in its base position, embedded *wh*-phrases can take matrix scope, irrespective of finiteness of the clause:

(34) **Non-finite clauses**

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

(35) **Light finite clauses**

Nee [**enthu patt-um** ennu] vicaarikk-unnu
 You [what happen-FUT that] think-PROG
 ‘What do you think will happen?’

A minimal modification of the examples above in terms of clause position results in a change in grammaticality, as we see in (36–37). The (b) sentences show that the corresponding declaratives are licit. This, too, is irrespective of finiteness of the clause.

- (36) a. *[**eethu pustakam** vaayikk-aan] Raman shramichu?
 [which book read-INF] Raman tried
 ‘Which book did Raman try to read?’
 b. [*War and Peace* vaayikk-aan] Raman shramichu
 [War and Peace read-INF] Raman tried
 ‘Raman tried to read *War and Peace*.’
- (37) a. *[**enthu patt-um** ennu] nee vicaarikk-unnu
 [what happen-FUT that] you think-PROG
 ‘What do you think will happen?’
 b. [abhatham patt-um ennu] njaan vicaarikk-unnu
 [mistake happen-FUT that] I think-PROG
 ‘I think a mistake will happen.’

On the basis of the above examples, we can form the following generalization about *wh*-licensing in Malayalam:

(38) **CLAUSe POSITION – Wh CORRELATION**

In a canonical question, *wh*-phrases cannot take scope outside of a fronted embedded clause.

As a consequence, 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 resulting prosodic illformedness of medial heavy clauses. The following section offers an explanation for the correlation in (38).

3.4 Section summary

This section focused on the phenomenon of clausal fronting, which I argued was directly responsible for restricting the scope of *wh*-in-situ. The role of fronting for *wh*-licensing is often obscured by the fact that fronting is common with finite clauses. It was shown that obligatory fronting is conditioned by prosodic factors and that finite clauses that are sufficiently light have the option of remaining in their base position. Such clauses, when they remain in-situ, allow for embedded *wh*-phrases to take scope out of them, suggesting that *wh*-in-situ in Malayalam cannot be accurately described as having clause-bound scope across-the-board.

4 A locality-based approach to restricted scope

The main question that arises from this revised picture is why fronting of a clause keeps a *wh*-expression from taking scope outside of that clause. We saw in the previous section that fronted clauses obligatorily reconstruct, so it is not the case that they are outside of the domain of the interrogative C at the point of interpretation. Furthermore, since overt extraction is possible out of fronted clauses, as we previously saw in (11) and (12), fronted clauses are not altogether opaque for syntactic operations. When, then, does fronting create a scope island for *wh*-expressions? I will argue as follows: Because the Agree relations triggered by the clause-fronting feature [FR] and by [*wh*] are both \bar{A} -operations, the two features are similar enough to interact. Crucially, this interaction has fatal consequences. The [FR]-features on the head of the embedded clause intervene for Agree between a higher 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.

4.1 Crossing \bar{A} -paths

A core discovery about syntactic locality is that syntactic relations must involve the closest eligible elements (e.g. Rizzi 1990; Chomsky 1995). The contrast between the sentences in (39) is attributable to the fact that in the (b) example, a lower *wh*-phrase is the target for movement by the lower C, skipping over a higher *wh*-expression.

- (39) a. [What subject]_i do you know who_j PRO to talk to t_j about t_i
 b. *Who_j do you know [what subject]_i PRO to talk to t_j about t_i

However, as observed by Pesetsky (1982), similar ungrammaticality can obtain even when the interacting operations are not the same type. Examples (40) and (41) are parallel to (39) above, except that in these examples, *wh*-movement interacts with relativization and topicalization respectively.

(40) **INTERACTION 1: *wh*...Relativization**

- a. chess, which_i I wonder who_j you believe t_j to play t_i well
- b. *John, who_j I wonder [what game]_i you believe t_j to play t_i well

(41) **INTERACTION 2: *wh*...Topicalization**

- a. This problem_i, Mary knows who_j PRO to consult t_j about t_i
- b. *This specialist_j, Mary knows [what problems]_i to consult t_j about t_i

Thus, features like [Topic] and [Rel] are interveners, in English at least, for an operation typically taken to target [*wh*]-features.

This behavior can be captured under the classical conception of Relativized Minimality (Rizzi 1990), where an intervening element of the same class (A, \bar{A} , Head) blocks operations belonging to the same class. As pointed out by Kitahara (1997), many of the illicit configurations that fell under Chomsky's (1973) A-over-A constraint can also be reduced to Relativized Minimality effects. These cases differ from those above only in that the intervener is a category that *dominates* another of the same type.

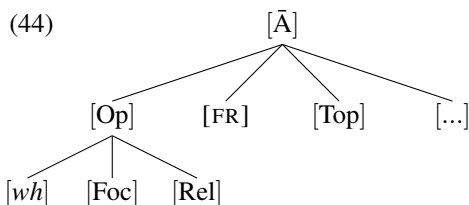
- (42) a. ?[Which student]_i did Rachel ask [what picture of t_i]_j PRO to put up t_j?
- b. *[What picture of t_i]_j did Rachel ask [which student]_i PRO to put up t_j?

Unfortunately, Relativized Minimality in its original form overpredicts, as these interactions seem to be subject to cross-linguistic variation. A case in point is Topicalization, which, as we saw in (41), interacts with *wh*-movement in English, but not in Italian or German (Müller and Sternefeld 1993; Rizzi 2004). An Italian example is given in (43) for illustration.

- (43) Mi domando, il premio Nobel, a chi lo potrebbero dare
'I wonder, the NOBEL PRIZE, to whom they could give.' (Rizzi 1997)

The more restrictive conception of Minimality in Chomsky's (1995) Attract Closest, which requires featural identity between the target and the intervener, is too selective, as it fails to account for the interactions in (40) and (41).

What seems to be necessary is a more articulated feature geometry for \bar{A} -elements, as has been developed for the class of ϕ -elements (by Harley and Ritter 2002; Béjar and Rezac 2009; Preminger 2012, among others). These approaches posit hierarchies of features, with subclasses and superclasses and entailment relations among features within the hierarchy. Furthermore, it is assumed that probes may be relativized to more or less specific features, and this relativization may vary across languages. Building on Starke (2001), Rizzi (2004), Abels (2012) and others, I will extend the feature-geometric approach to the \bar{A} -domain and make use of a hierarchy as in (44).



Under the model sketched above, the feature $[wh]$ entails higher-level features like $[Op]$ and $[\bar{A}]$. I will use the symbol ‘ \rightarrow ’ to mark an entailment relation between features. Thus, the notation $[wh] \rightarrow [\bar{A}]$ would indicate that the head bearing a $[wh]$ -feature also, by entailment, bears an $[\bar{A}]$ -feature.

Let us see now how these tools help us understand the interactions in, for example, the ungrammatical topicalization example from above. Suppose C in English is a relatively flat probe that looks for $[\bar{A}]$ -features. Let us also take for granted that the topicalized phrase *the specialist* bears a $[Topic]$ -feature and that *what problems* bears a $[wh]$ -feature. Both $[Topic]$ and $[wh]$ will entail $[\bar{A}]$ under our system. Therefore, a relationship between C and the *wh*, as schematized in (45), is impossible, since *the specialist* also bears the relevant $[\bar{A}]$ -feature.

$$(45) \quad [\dots [C_{[\bar{A}]} \text{ [to consult } \boxed{\text{the specialist}_{[Top] \rightarrow [\bar{A}]}} \text{ about which problem}_{[wh] \rightarrow [\bar{A}]}]]]$$

X

The lack of similar interactions in Italian would be due to a different feature-specification on the probe. So, the Italian C may probe at the $[Op]$ level, which would mean that Focus and Relative operators would intervene, but not Topics.

4.2 \bar{A} -interactions in Malayalam

Malayalam long-distance questions involve an A-over-A configuration, though the features involved are not identical. As we saw above, a relativized probing approach will allow us to capture intervention effects that occur even when related, but non-identical features are involved. One might wonder at this point whether this is needed in Malayalam independently of the long-distance *wh*-in-situ patterns of interest. The answer appears to be yes, as similar effects arise even in non-questions. By way of example, consider (46) vs. (47). Clausal fronting to the sentence-initial position is optional in cleft configurations. Crucially, fronting is grammatical only if the clefted constituent does not start out as a subconstituent of the fronted clause (46). It is not possible to cleft an element inside an embedded clause that subsequently fronts (47). Such a configuration, which is structurally parallel to the remnant movement example in (42), seems to be illicit precisely because both the clefted constituent and the container clause are slated to undergo the same type of movement.¹³

¹³ It is very difficult to form examples of the sort in (40) or (41) in Malayalam due to a number of language-specific confounds:

1. Since Malayalam has short scrambling, it is often impossible to tell whether we have crossing paths or whether movement of a potential Minimality-violator is fed by scrambling (see e.g. Wiltschko 1997).
2. Malayalam does not permit scrambling across a finite-clause-boundary (a fact that is independent of clause fronting), so one might consider constructing sentences where the two interacting elements are separated by a finite clause boundary. However, these examples would frequently implicate a third factor, namely \bar{A} -movement of the finite clause.
3. I was able to come up with examples like (i), which avoid the aforementioned problems, but they introduce a confound of their own, as they involve extraction from a *wh*-island.

- (46) [_{CP} Sita *War and Peace* vaayichu ennu] Raman_i aane [t_i t_{CP} paranj-athe]
 [Sita *War and Peace* read COMP] Raman COP [said-NOMNL]
 ‘It’s Raman who said that Sita read War and Peace.’
- (47) *[_{CP} Sita t_i vaayichu ennu] *War and Peace*_i aane [Raman t_{CP} paranj-athe]
 [Sita read COMP] War and Peace COP [Raman said-NOMNL]
 ‘It’s War and Peace that Raman said that Sita read.’

Note, however, that the cases that we discussed in the previous section all involved two movement steps. This sets them apart from the Malayalam cases we are interested in, which involve only one instance of movement (the *wh*-phrase remains in-situ). However, the Malayalam configurations in question do involve two Agree steps. Given that Agree is a prerequisite for movement, a recasting of Minimality as a locality constraint on Agree allows us to capture both cases under the same umbrella. I will therefore be adopting a view of Minimality as in (48). Closeness is defined in terms of c-command, along the lines outlined in (49).

- (48) **GENERALIZED MINIMALITY**
 A probe must Agree with the closest possible goal bearing the relevant features.
- (49) **CLOSENESS**
 A probe α which c-commands two goals β and γ is closer to β than to γ if β c-commands γ

The ungrammaticality of certain Malayalam long-distance questions, I will argue, is in part due to the fact that any derivation that associates the *wh*-element with interrogative C when the *wh* is inside a fronted clause also violates the constraint in (48). This is so because the interrogative C in Malayalam is relativized to [\bar{A}], a feature entailed by both [*wh*] and [FR], the feature responsible for clausal fronting. Thus, both are viable goals for C. In a configuration where the frontable clause dominates the *wh*-phrase, the head of the clause will necessarily be structurally higher and, by the definition in (49), a closer goal for C than *wh*. Thus, as long as the [FR]-feature is present on the clause head, *wh*-Agreement between C and a clause-internal *wh*-phrase cannot take place.

Before going into the details of this account, I want to take note of some necessary auxiliary assumptions:

1. Locality of Agree

The Phase Impenetrability Condition (PIC) (Chomsky 2001) prohibits syntactic operations from occurring across phase boundaries; only phase edges are accessible to

- (i) *aar-kke [nee t_i vaayichu ennu] ariyunn-a pustakam_i
 who-DAT you read that know-REL book
 Intended: ‘The book that who knows you read’

Consequently, the remnant movement cases above are, as far as I can tell, the most clear-cut evidence in the language for \bar{A} -interactions.

higher operations. I will assume that Agree is subject to locality and that the PIC restricts its application (see e.g. Adger and Ramchand 2005). For Malayalam, the phase in question is CP. As we saw previously, long-distance *wh*-questions *are* possible in certain cases. We therefore need a mechanism for implementing Long Distance Agreement in a way that doesn't violate the PIC. For present purposes, I will adopt a version of Cyclic Agree, proposed in Legate (2005). The main idea behind this approach is that Long Distance Agree proceeds via a number of local Agree steps.¹⁴ Implementing this idea requires an additional assumption that intermediate probe features, once valued, may act as a goal for further instances of Agree by higher probes.

For the relevant cross-phasal dependencies in Malayalam, I will take the embedded C to serve as an intermediary. The role of the intermediate C in the derivation of long-distance *wh*-movement is well-established: it is often proposed that the intermediate C, while not an interrogative complementizer in and of itself, possesses a semantically inert [*wh*]-feature that triggers movement of the embedded *wh* to its specifier (McCloskey 2002; Abels 2012). Similarly, I take the intermediate C in Malayalam to be equipped with a [*wh*]-feature, which, once valued via Agree with the *wh*-phrase itself, can serve as the goal for the higher C (see Munataka 2006 for a similar proposal for Japanese long-distance questions).

2. The Malayalam left periphery

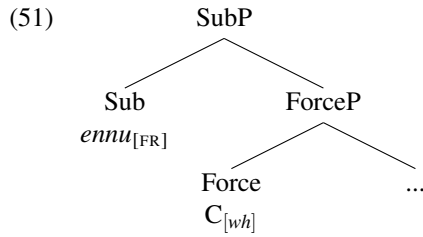
I will take the Malayalam left-periphery to involve into (at least) two distinct projections, in the spirit of Rizzi (1997). This is because subordination markers like *ennu* 'that' co-occur with the Q-morpheme *-oo*, as illustrated in (50).¹⁵

- (50) [Raman War and Peace vayikk-um-oo ennu] Amma chodichu
 [Raman War and Peace read-FUT-Q that] mother asked
 'Mother asked if Raman will read War and Peace.'

Concretely, I will take the C-domain in Malayalam to be split into two projections: Sub, responsible for hosting subordination markers like *ennu* 'that', and Force, responsible for hosting Q-morphemes. I take interrogative C to instantiate Force, even when an overt Q-morpheme is absent. Thus, in configurations requiring both clausal movement and long-distance Agree with a *wh*-expression, the head Sub will bear features relevant for clausal-movement (e.g. FR) and the head Force will bear features relevant for *wh*-licensing, in keeping with the Cyclic Agree assumptions mentioned above. The corresponding structure is schematized in (51).

¹⁴An alternative would be to posit that finite clauses in Malayalam are not phasal. Some researchers have argued in favor of a more contextual approach to phasehood (see e.g. Bošković 2005, 2014). Adjudicating between the two alternatives is not important for us at present, as the current proposal is compatible with either one.

¹⁵Though the question morpheme is not overtly present in *wh*-questions, I will follow Hagstrom (1998) and Cable (2010), among others, in assuming that a phonologically null variant is nevertheless present. Additional support for this comes from the fact that in pre 19th-century Malayalam, the question particle *-oo* was pronounced even in *wh*-questions (Jayaseelan 2001).



3. Properties of Agree and features

Following Preminger (2012), the operation Agree is obligatory, but if a probe does not find a matching goal in its domain, this failure does not result in ungrammaticality. The Activity Condition (Chomsky 2000, 2001), defined in (52), ensures that once a set of features have been Agreed with, they are ineligible for further operations.

(52) **Activity Condition**

A feature on a given head may serve as a goal for Agree only once.

The feature-specifications on the relevant probes in Malayalam are provided in (53).

(53) **FEATURE SPECIFICATIONS IN MALAYALAM**

Interrogative C:	$[u\bar{A}]$
Embedded C:	$[wh] \rightarrow [\bar{A}]$
H:	$[uFR]$

The interrogative C is taken to be a generalized $[\bar{A}]$ -probe. The *wh*-expression bears $[wh]$ -features, which entail $[\bar{A}]$. Assuming Cyclic Agree, in the case of finite CPs, the embedded C will serve as an intermediary and bear $[wh]$ -features. Clauses that undergo fronting—SubP when finite, or a smaller structure, arguably AspP, when non-finite—will bear the requisite $[FR]$ -features, the unvalued variant of which will be on the head H triggering fronting in the first place.¹⁶

4.3 Deriving the patterns

Let us consider the two main patterns that need to be accounted for:

¹⁶Since in the \bar{A} -domain, Agree is not accompanied by morphological cues to the feature-specifications on the probe, we can only infer the feature-structure based on what kinds of elements the probe does and does not interact with. We reason that H is not equipped with a flat probe, because fronting can take place past an intervening \bar{A} -feature-bearing element, as shown in (i). In (i), a cleft sentence, fronting of the embedded clause successfully takes place within the cleft-clause, although \bar{A} -features are active on an intervening matrix subject.

- (i) Raman; aane [Sita wannu ennu]_j t_i innale t_j amma-ode paranj-athe
 Raman COP Sita came that yesterday mother-SOC told-NOMNL
 ‘It’s Raman that told mother yesterday that Sita came.’

1. A *wh*-phrase inside an embedded clause cannot take matrix scope if the container has fronted.
2. A *wh*-phrase inside an embedded clause can take matrix scope if the container clause remains in-situ.

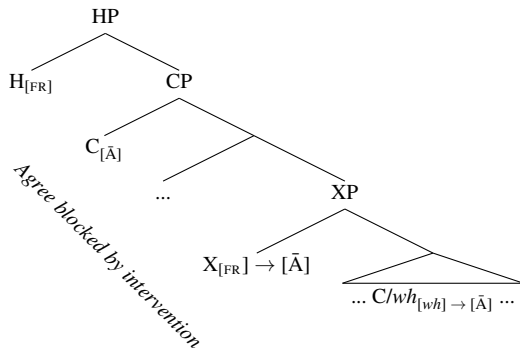
I discuss pattern 1 first.

4.3.1 Explaining ungrammaticality

In order for a construction to receive a question interpretation, an interrogative C must be present and it must establish a syntactic dependency with the *wh*-element (see e.g. Simpson 2000; Watanabe 2006; Adger and Ramchand 2005). Clauses that undergo fronting must bear the requisite [FR]-feature. According to the feature-specifications in (53), the interrogative C in Malayalam is a generalized [\bar{A}]-probe. It can successfully make contact with the appropriate [*wh*]-feature-bearing element as long as no other [\bar{A}]-feature intervenes.

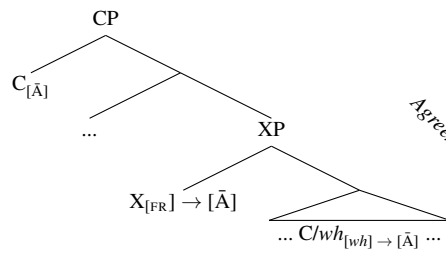
Now, consider what will happen when the head of the clause dominating the *wh*-expression bears an [FR]-feature. Because [FR] entails [\bar{A}], the head of the clause bearing this feature will necessarily be a closer goal for C than the [*wh*]-feature bearing element in these configuration. Concretely, in finite clauses, the head Sub bearing [FR] is higher than the embedded C, which bears the requisite [*wh*]-feature. In non-finite clauses, which are not phasal and do not require an intermediary for non-local Agree, the head Asp will bear FR and will intervene for Agree between C and the *wh*-expression contained within AspP. The result in either case is that Agree between C and *wh* itself is blocked. The intervention configuration is schematized in (54).

(54) INTERVENTION CONFIGURATION

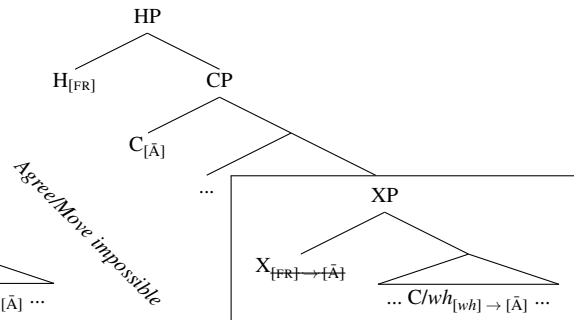


Instead, the generalized probe on C will make erroneous contact with [FR]. By the Activity Condition stated in (52), the Agree relation between C and the head of the clause renders [FR] ineligible for further Agree operations, with the result that when the higher head H merges, it can no longer make contact with the frontable embedded clause. This is schematized in (55).

(55) a. C AGREES WITH X



b. H CANNOT AGREE WITH X



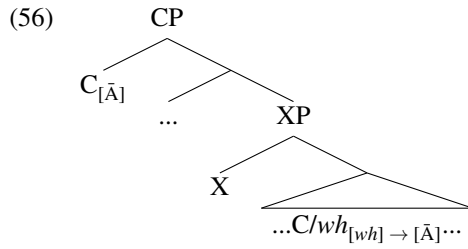
If H cannot establish an Agree-relation with the embedded clause, it is impossible for the embedded clause to front. We now have a way of explaining the ungrammaticality of examples like (10), which involve both a matrix-scope-taking *wh*-phrase (and thus a matrix interrogative C) and a fronted clause: these structures can never be generated.

Given our assumptions about the nature of Agree, H's failure to find a goal need not force the derivation to crash. However, it does result in a structure in which the embedded clause remains in-situ. This in turn could result in a structure that cannot be pronounced, given the arguments in section 3.2 concerning Malayalam prosody. Thus, for derivations involving a heavy embedded clause, *wh*-Agreement and clausal fronting, we are faced with two alternatives that are both untenable: we can establish the relevant syntactic dependencies—between interrogative C and the *wh*-element and between H and the head of the frontable clause—at the cost of violating locality constraints on Agree, or we can obey locality and be left with a prosodically ill-formed structure.¹⁷

4.3.2 Explaining grammaticality

Recall that the presence of [FR] on the head of the clause is formally optional, though sometimes required for prosodic effability, as discussed above. The acceptable examples, in which *wh*-expressions can take wide scope, all involve *wh*-expressions embedded inside prosodically light clauses that remain in their base positions. Thus, such clauses need not possess the [FR]-features necessary for fronting. In such a derivation, there is no intervening [̄A]-feature to potentially interrupt Agree between C and *wh*. This is schematized in (56).

¹⁷One of these alternatives involves violating a syntactic locality constraint generally taken to be fundamental, whereas the other involves illicit prosody. We might expect that derivations involving the prosodic violation are more tolerable than those involving the former. Testing this prediction is difficult, as it involves comparing ill-formedness of different types, but my informants do find *wh*-in-situ with medial heavy clauses to be somewhat better than *wh*-in-situ inside fronted clauses.



Because the generalized probe that is susceptible to erroneous interactions is located on the *interrogative* C, we do not expect clausal fronting to create problems in the absence of the $[\bar{A}]$ -feature-bearing C. In declarative sentences, from which the intervening $[\bar{A}]$ -probe is absent, the left-peripheral head H will be the first probe to make contact with the $[\text{FR}]$ -features.

4.4 Section summary

This section showed that the restricted scope of certain embedded *wh*-phrases in Malayalam is the result of a pernicious interaction between two \bar{A} -operations. A feature-geometric approach, along with a generalized view of minimality as a constraint on Agree, derived the patterns. Interrogative C, a flat $[\bar{A}]$ -probe, erroneously makes contact with $[\text{FR}]$ -features on the head of the *wh*-containing embedded clause, in turn blocking both *wh*-Agreement and a higher head's attempt to Attract the clause. As a result of these interactions, derivations in which both *wh*-Agreement and clausal-fronting take place simply cannot be generated in this language.¹⁸

¹⁸Thus far, we have restricted our attention to single *wh*-questions. The pattern of *wh*-licensing is the same in multiple *wh*-questions when there are one or more matrix-scope taking embedded *wh*-phrases: the *wh*-question is licensed when the clause is medial, but blocked when it is fronted, as shown in (i).

- (i) a. aare [enthu vaayikk-aan] thudangi?
 who what read-INF started
 ‘Who started reading what?’
 b. *[enthu vaayikk-aan] aare thudangi?
 what read-INF who started

The approach advocated here should account for cases like (i) under the assumption that there are as many \bar{A} -probes as there are *wh*-goals: the first \bar{A} -probe will find the matrix *wh*-phrase, but the second probe will find the \bar{A} -features on the clause first.

The situation is slightly different, though no less fatal, for cases like (ii), where there are multiple *wh*-phrases within the embedded clause.

- (ii) *[aare enthu vaayichu ennu] Raman paranju?
 who what read that Raman said
 Intended: ‘Who did Raman say read what?’

In such cases, we would expect that the first \bar{A} -probe find and Agree with the intervening $[\text{FR}]$ features. These features will be inactive thereafter, making it possible for the second \bar{A} -probe to find one of the *wh*-phrases. However, in such a derivation, the clause should not be able to front, as the probe triggering

5 Order of operations

The previous section developed an analysis of long-distance *wh*-in-situ in Malayalam in which apparent clause-boundedness is reduced to locality considerations: *wh*-Agreement fails if an intervening head bears features relevant for the generalized probe on C. In the ungrammatical cases considered above, Agree between C and the *wh* was attempted before clausal fronting, which meant that the [FR] features on the to-be-fronted clause was still active and an eligible goal for the [\bar{A}]-probe on C. However, the Activity Condition defined in (52) predicts that the Agree between C and *wh* should be possible in the same configurations if the intervening \bar{A} -features has already been targeted for Agree by some other probe. In other words, *the order of the two \bar{A} -operations* is predicted to make a difference for whether or not long-distance *wh*-in-situ is possible. As it happens, cleft questions in Malayalam involve configurations where *wh*-Agreement is attempted *after* an \bar{A} -operation affecting the embedded clause, namely clefting. As predicted, embedded *wh*-expressions in clefts can always take matrix scope.

Recall that canonical long-distance *wh*-question formation is not possible when the *wh*-phrase is inside a clause that is required to front (57), though clefting the embedded clause yields the right long-distance question interpretation (58).

- (57) *[Sita **eethu pustakam** vaayikk-um ennu] Raman vicaarichu?
 [Sita which book read-FUT that] Raman thought
 (= (10))

Intended: ‘Which book did Raman think Sita will read?’

- (58) [Sita **eethu pustakam** vaayikk-um ennu] aane Raman vicaarich-athe?
 [Sita which book read-FUT that] COP Raman thought-NOMNL
 ‘Which book was it that Raman thought Sita will read?’

The cleft question above shares a number of properties with the ungrammatical non-cleft question in (23). In both, the *wh*-phrase remains in its base-position within the finite complement clause and in both, the container clause undergoes leftward \bar{A} -movement. Yet, the *wh*-phrase can scope out of the embedded clause only in the cleft question. I will show below that the present account readily accounts for this pattern.

5.1 Background on Malayalam clefts

Clefts in Malayalam are biclausal constructions, involving the copula *aane*, a discourse-prominent or focused constituent (the *pivot*) and a cleft-clause headed by the nominalizer *athe*. The nominalized clause has a reduced structure and does not seem to support projections higher than TP. An example of a Malayalam cleft is given in (59):

this movement will not be able to find the requisite [FR] features. Thus, sentences like (ii), where the clause has fronted, cannot be generated.

- (59) Raman aane Sita-kke pustakam koduth-athe
 Raman COP Sita-DAT book gave-NOMNL
 PIVOT COPULA CLEFT CLAUSE
 ‘It’s Raman that gave a book to Sita.’

As mentioned in previous sections, cleft-constructions in Malayalam show properties associated with \bar{A} -movement. Furthermore, they display semantic effects taken to characterize clefts across languages, which include: (i) an existence presupposition that some entity satisfies the cleft clause and (ii) an inference that the entity denoted by the pivot exhaustively satisfies the predicate.

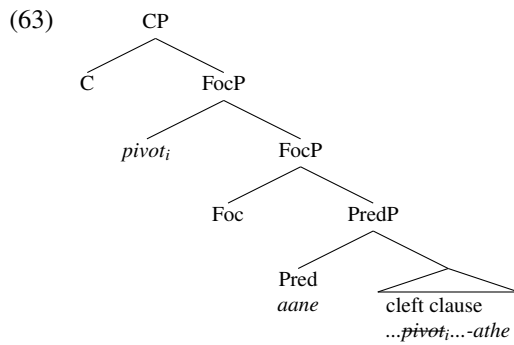
Analyses of clefts diverge on whether the pivot is base-generated in its surface position (e.g. Percus 1997), or whether the clefted constituent originates inside the cleft-clause and overtly moves to its surface position (Chomsky 1977; Kiss 1998; Frascarelli and Ramaglia 2013). Malayalam clefts display case and idiom connectivity between the pivot and the cleft-clause, both explained straightforwardly under an overt movement analysis. Consider (60), in which the pivot *aana-ye* ‘elephant-ACC’ behaves as though case-marked by the verb inside the cleft-clause. (61) shows that the case connectivity persists in quirky case-marked experiencer subjects.

- (60) *aana-ye/*aana* aane kutti *t* null-athe
 elephant-ACC/*elephant.NOM COP child pinch-NOMNL
 ‘It’s the elephant that the child pinched.’
- (61) *Sita-kkə* aane Raman-odə *t* deshyam thonni-athe
 Sita-DAT COP Raman-SOC anger feel-NOMNL
 ‘It’s Sita that felt anger towards Raman.’

The sentence in (62) illustrates idiom-connectivity in clefts: a phrase that is part of a larger idiom chunk can serve as the clefted constituent, while retaining the idiomatic interpretation. The availability of the idiomatic interpretation for phrases separated on the surface gives evidence for reconstruction, which in turn, is evidence for movement.

- (62) *Annaan kunj-ine* aane ningal maramkeettaan padippikk-unn-athe
 Squirrel baby-ACC COP you.PL tree.climbing teach-PROG-ATHE
 Lit. ‘It’s a baby squirrel that you are teaching how to climb.’
 ‘It’s an expert that you are trying to teach; this is unnecessary.’

I will therefore assume a movement analysis and the following syntactic structure for Malayalam clefts:



The crucial difference between clefting and clause-fronting, for our purposes, lies in the relative ordering of the heads triggering the \bar{A} -operations—the interrogative C in clefts is structurally higher than the Focus head responsible for clefting. For cases as in (58) above, this means that wh-Agreement takes place *after* the container clause has undergone clefting. Furthermore, movement of the clause to a peripheral position via clefting should also solve any prosodic parsing issues that would otherwise arise with medial clauses. In other words, clausal clefting would carry out precisely the kind of movement that yields a prosodically parsable structure. Thus, neither FR-features nor the head H driving clausal fronting would then be necessary in these constructions.¹⁹

5.2 In-situ composition of *wh*-phrases in clefts

In cleft questions, the *wh*-phrase itself or a larger pied-piped constituent occupies the pivot position, as we see in (64).

- (64) aare aane Sita-kke pustakam koduth-athe?
 who COP Sita-DAT book gave-NOMNL
 ‘Who is it that gave a book to Sita?’

Though the construction in (64) involves movement, I will argue that it is not an instance of *wh*-movement. Rather, I suggest that clefting of the *wh*-phrase is driven by the same mechanism driving non-*wh*-clefting, a [Foc]-feature on the clefted constituent. As discussed in section 2, both *wh*-phrases and Focus-phrases have been argued to project Focus-alternatives (e.g. Beck 2006). Furthermore, *wh*-phrases and Focus phrases compete for the same position in languages that have a designated syntactic focus position, e.g. Hungarian (Szabolcsi 1981; Brody 1990; Kiss 1998). It does not seem unreasonable, then, to say that *wh*-phrases also bear [Focus]-features.

From the clefted position, licensing of the *wh*-phrase proceeds in the same way as ordinary in-situ *wh*-phrases, via in-situ composition. Evidence for this once again

¹⁹It is also the case that clefts are prosodically distinct from canonical sentences, with main stress falling on the clefted constituent (e.g. Swenson et al. 2015). It could be the case that prosodic ill-formedness that could lead to clausal movement in canonical sentences simply do not arise in cleft configurations.

comes from intervention effects. Recall that ordinary in-situ *wh*-questions in Malayalam are subject to intervention from a focus-sensitive element that occurs between the *wh*-phrase and the interrogative C. We find similar intervention effects in cleft questions. It is possible to scramble material from the cleft-clause to a position to the left of the clefted constituent. In keeping with the literature on scrambling, I will take the landing site for scrambled constituents to be a position below C. In (65), *Rajan* is the pivot, but *pustakangal* ‘books’ has scrambled to its left.

- (65) Pustakangal Rajan aane Sita-kke koduth-athe
 Books Rajan COP Sita-DAT gave-NOMNL
 ‘It’s Rajan that gave books to Sita.’

In a cleft question, a focus-sensitive element scrambled to the left of the pivot can lead to an intervention effect.

- (66) a. Eethu pustakam aaNe Lily maatram vaayich-athe?
 which book COP Lily only read-NOMNL
 ‘Which book was it that only Lily read?’
 b. ??Lily maatram eethu pustakam aaNe vaayich-athe?
 Lily only which book COP read-NOMNL (Kim 2002)

The parallel effects in cleft and non-cleft questions suggest that *wh*-interpretation in both cases happens the same way, although the *wh*-phrase has undergone movement in a cleft question, this movement is not itself *wh*-movement, i.e. movement-to-C. The *wh*-phrases in cleft and canonical questions are licensed in an analogous fashion.

It is worth noting that the presence of intervention effects in turn give support for the structure proposed in (63), where the head C c-commands Foc. Focus-alternatives are taken to propagate up the derivation (Kratzer and Shimoyama 2002; Beck 2006), so an intervention problem occurs between the operator that interprets these alternatives, namely C, and the source of the alternatives, the *wh*-expression, only if the both the *wh* and the intervener are *below* C.

5.3 Explaining the grammaticality of long-distance cleft questions

I now turn to the question of interest: why are in-situ embedded *wh*-phrases licensed in cleft questions, when they are not licensed in canonical *wh*-questions? The relevant contrast between canonical questions (67) and cleft questions (68) is repeated below:

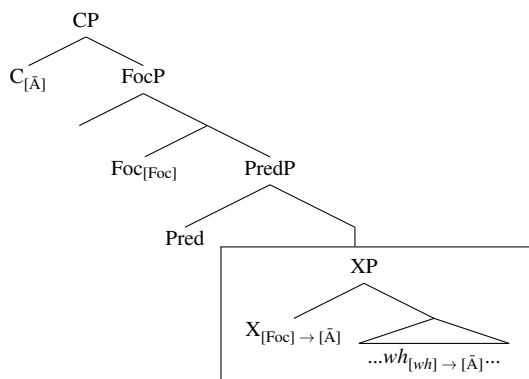
- (67) *[Sita **eethu pustakam** vaayikk-um ennu] Raman vicaarichu?
 [Sita which book read-FUT that] Raman thought
 Intended: ‘Which book did Raman think Sita will read?’
 (68) [Sita **eethu pustakam** vaayikk-um ennu] aane Raman vicaarich-athe?
 [Sita which book read-FUT that] COP Raman thought-NOMNL
 ‘Which book was it that Raman thought Sita will read?’

As I suggested above, the crucial difference between the two configurations concerns the relative order of the probes and thus the order of operations. In canonical questions, the head *H* responsible for clausal fronting is structurally higher than *C*. In clefts, the head *Focus* triggering clausal clefting is below *C*. Therefore, clefting takes place prior to *wh*-Agreement. Consequently, the potentially intervening $[\bar{A}]$ features on the clefted clauses have already been checked and deleted.²⁰

Let us consider the derivation in more detail. Since the entire embedded clause is to undergo clefting, the head of this clause, *Sub*, would bear the requisite $[\text{Foc}]$ -feature. The features on the *Focus* head probe first, agreeing with and attracting the entire embedded clause to its specifier. Conditions on Activity demand that the features on *Sub* are now deleted and no longer accessible for further Agree relations. Assuming Cyclic Agree as we did in the previous section, the embedded *C* would bear $[wh]$ and, by entailment, $[\bar{A}]$ features. By the time the matrix *C* is merged, these are the only relevant *active* features in the derivations and *wh*-Agreement can freely take place. The derivation is schematized in (69):

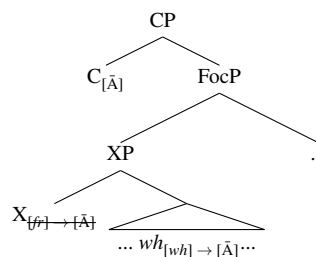
(69) a. STEP 1:

Foc Agrees w/+Attracts XP



b. STEP 2:

C Agrees with *wh*



The contrast in acceptability between canonical questions and cleft-questions is mysterious under approaches that take the scope of *wh*-in-situ in certain languages to be clause-bound. We see in the case of Malayalam that the same finite clause may be selectively transparent for *wh*-scope depending on the configuration. Because restricted-scope, under the present account, is the result of a particular intervention configuration, it predicts the selective availability of long-distance *wh*-in-situ in clefts configurations.²¹

²⁰Given that clefting interacts with clausal fronting, another \bar{A} -operation, as seen in e.g. (47) earlier, it is possible that the *Focus* head bears a generalized probe. However, since this distinction does not make a difference for present purposes—it is the *order* of the heads that matters—I will mark the head as bearing $[\text{Foc}]$ -features for ease of exposition.

²¹A reviewer wonders why Malayalam permits successive-cyclic *Focus*-movement in clefts, but the same strategy is not available in *wh*-questions. All that I am able to say about this at present is that Malayalam simply does not (overtly or covertly) move its *wh*-phrases to *C*, in short or long-distance questions (see evidence in sections 2.1 and 5.2 above). It is beyond the scope of this paper to offer an explanation for why Malayalam *wh*-elements fit into the typology as they do.

6 Comparison to alternative analyses

In the previous sections, I offered an account of long-distance *wh*-licensing that accounts for the distribution of embedded *wh*-expressions in Malayalam. I have argued that an analysis that ties the disruption of wide scope to the presence of an intervening \bar{A} -feature-bearing head accounts for both the blocking of wide scope in canonical sentences and the availability of the same in cleft sentences. In this section, I take a closer look at some of the previous treatments of the same phenomena and show that they are unable to account for many of the facts considered above.

The issue of long-distance *wh*-licensing in Malayalam has been discussed previously by Jayaseelan (2003, 2004) and Madhavan (2013). Both authors deny, to varying degrees, the notion that Malayalam is a garden-variety *wh*-in-situ language. Madhavan (2013) argues that Malayalam allows *wh*-in-situ for short-distance questions, but has obligatory *wh*-fronting for long-distance questions with finite embedded clauses. The PIC (Chomsky 2001) is taken to be behind these restrictions, with the matrix interrogative C failing to find its goal, namely the embedded *wh*-phrase, when the goal is inside a finite complement. Clefting an embedded *wh*-expression allows it to move to a position where it can be accessed by the higher C.

In light of the fact that embedded in-situ expressions *can* receive matrix scope in some environments, a PIC-based account of scope-blocking is empirically adequate. Recognizing the problem posed by clausal clefting, the author suggests that in clefts, question-interpretation is made possible even in the absence of feature-checking via unselective binding by a question-operator. A question that is raised immediately is why the same strategy is not available in non-cleft long-distance questions. A more fatal problem for such an analysis is that even in canonical configurations, long-distance *wh*-in-situ is grammatical as long as the clause appears in the immediately pre-verbal position.

Jayaseelan's (2003, 2004) account fares better in this regard, as clause position is a crucial factor in his account. Jayaseelan's analysis is built on the following two assumptions. First, he takes Malayalam to be underlyingly head-initial, the basic SOV order being derived by a series of leftward movements of arguments.²² Second, he takes Malayalam to be an overt *wh*-movement language. He claims that the canonical SOV order is disallowed when the subject is a *wh*-phrase; the subject must instead appear to the immediate left of the verb, as illustrated in (70).

- (70) a. *aarə Priya-e kandu?
 who Priya-ACC kandu?
 'Who saw Priya?'
 b. Priya-e aarə kandu?
 Priya-ACC who kandu?
 'Who saw Priya?'

²²For Jayaseelan, clausal complements are base-generated to the right of the verb and move to a preverbal position like other internal arguments. However, because of a dispreference in the language for center-embedding, they extrapose.

To account for this pattern, he proposes that *wh*-phrases move to a low Focus position immediately above *vP* within the clause in which it takes scope. If this movement were to proceed analogously to English long-distance *wh*-movement, one might expect to find successful-cyclic movement through the embedded FocusP to the matrix FocusP. However, the author points out that this is impossible due to the PIC, as the embedded FocusP is not at a phase-edge. The language is claimed to have two rescue strategies. The first is to pied-pipe the entire clause to the Focus position. This explains the grammaticality of long-distance questions when the clause appears preverbally. The second strategy is clefting. Clefting, which involves successive cyclic movement through Spec, CP, allows the embedded *wh*-phrase to be in the appropriate matrix Focus position without violating the PIC.

In principle, then, the full pattern of long-distance *wh*-licensing in Malayalam can be explained if we adopt basic antisymmetry assumptions and take Malayalam to be a special sort of *wh*-movement language. However, these assumptions suffer from conceptual and empirical problems. Both the claims about head-initiality and obligatory Focus-movement lack independent support in Malayalam. Moreover, the starting premise, that Malayalam requires obligatory movement of *wh*-phrases to a *vP*-adjacent Focus position, has been challenged. Mathew (2014) has pointed out that the contrast in (70) is only seen with bare *wh*-phrases; *wh*-phrases that have independent quantificational force need not need appear adjacent to the verb, as shown in (71). She argues instead that the ungrammaticality of (70a) stems from the fact that the left-most element in a given clause is construed as Topic in Malayalam, and bare indefinites, *wh*-phrases included, are banned from this position.

- (71) a. aar-okke Priya-e kandu?
 who-all Priya-ACC kandu?
 ‘Who all saw Priya?’
 b. ethra per Priya-e kandu?
 how.many people Priya-ACC kandu?
 ‘How many people saw Priya?’ (Mathew 2014)

Cases like (71) are *prima facie* counter-evidence to the Focus-movement analysis, but we might try to make it work by taking the clause-initial *wh*-phrases to have scrambled leftward after having first moved to a verb-adjacent Focus position. However, scrambling in Malayalam is a species of A-movement (it creates new binding possibilities, for instance) and if we take Focus-movement to be \bar{A} -movement, the resulting chain would constitute an instance of improper movement (Chomsky 1973). Thus, it seems to me impossible to maintain the core of the analysis without stipulating that cases like (71) are exceptions to the *Focus*-movement requirement.

Before moving on, I would like to consider an even simpler account, suggested by a reviewer, which tries to explain the difference between canonical and cleft questions in terms of *Criterial Freezing* (Wexler and Culicover 1980; Rizzi 2006; Rizzi and Shlonsky 2007). The crux of the analysis is as follows. Suppose the relevant heads in Malayalam are ordered as follows: $C < H$ in canonical questions, and $Foc < C$ in cleft questions. On the assumption that moved constituents are barriers for syntactic operations, including Agree, one would expect that the Agree between C

and the embedded *wh*-phrase fail in the case of canonical questions, but succeed in cleft questions. If this were tenable, it would make for a much more elegant analysis in that eliminates the need for a feature-geometry and relativized probing.

Unfortunately, this analysis is insufficient for Malayalam for a number of reasons. First, the moved clause is not uniformly a barrier for Agree. As shown in (72), repeated from section 2.2, elements inside a moved CP can be targeted for relativization.

- (72) [[Sita __ vaayikk-um ennu] Raman paranj-a] pustakam ivide unde
 [[Sita read-FUT that] Raman said-REL] book here COP
 ‘The book that Raman said Sita will read is here.’

Moreover, there is independent evidence that the order of heads in clefts is $C < \text{Foc}$, and not vice versa. Recall from section 5.2 that clefted *wh*-phrases are also subject to intervention effects: when a focus-sensitive element has scrambled to a position above the clefted *wh*-expression, we find intervention effects similar to those found in canonical questions. Following Beck (2006) and others, we understood these effects to occur when a focus-sensitive operator occurs *between* the interrogative *C* and the *wh*-phrase and takes the alternatives associated with the *wh*-phrase as its argument. Given what we know about focus-intervention configurations, we can reason about the relative ordering of *C* and *Foc* in cleft questions: *C* must be above *Foc*, and also the landing site of the potential intervener.

7 Beyond Malayalam

This paper has argued that the claimed correlation of finiteness with specially restricted scope for embedded *wh*-in-situ is false for Malayalam, and offered an entirely different account on which scope restrictions were linked to \bar{A} -movement of the container. In this section, I demonstrate that the applicability of this account can extend beyond Malayalam to other restricted scope languages. I use Hindi-Urdu as a case study, though the proposal should carry over at least to other restricted scope Indo-Aryan languages.

Mahajan (1987) observed that *wh*-in-situ inside embedded finite clauses in Hindi-Urdu cannot take matrix scope; this is illustrated by the ungrammaticality of (73).

- (73) *tum soch-te ho [ki **kaun** aa-egaa]?
 you.PL think-HAB.MPL be.PRS.2PL [that who come-FUT.3MSG]
 ‘Who do you think will come?’ (Dayal 1996)

It is also well-known that *wh*-scope in Hindi-Urdu correlates with another phenomenon that takes place in the language: the obligatory post-verbal positioning of finite clausal complements. Though Hindi-Urdu is an SOV language, finite clausal complements must appear post-verbally, resulting in an SVO order for bi-clausal sentences.²³ Based

²³Like clausal fronting in Malayalam, the post-verbal clause position does not have obvious semantic or information-structural correlates.

on evidence from non-finite clauses, which can optionally appear post-verbally, Dayal (1996) claims that clause position is the determining factor for *wh*-scope. As shown in (74), embedded *wh*-phrases fail to take matrix scope when the container clause is post-verbal, even when the clause is non-finite.

(74) a. **Preverbal complement clause: wide-scope possible**

tum [kyaa paRhnaa] caahte ho
 you [what read.INF] want PR
 ‘What do you want to read?’

b. **Postverbal complement clause: wide-scope blocked**

*tum caahte ho [kyaa paRhnaa]
 you want PR [what read.INF]

Intended: ‘What do you want to read?’

(Dayal 1996)

Dayal argues that the scope-islandhood of post-verbal clauses is due to the fact that they are base-generated adjuncts and therefore islands for covert *wh*-movement. Such an analysis faces a number of challenges, chief among which is the fact that post-verbal clauses are not barriers for overt extraction (Bayer 1997; Mahajan 1997). Furthermore, evidence from binding phenomena suggests that the post-verbal position of clauses is derived by rightward movement, rather than being base-generated. Post-verbal clauses can contain elements bound by a matrix element (75a) and display Principle C effects (75b).²⁴

(75) a. Raam-ne har laRke_i-se kahaa [ki vo_i jiitegaa]
 Raam-ERG every boy-SOC said [tht he win.FUT]

‘Raam told every boy_i that he_i will win.’

b. *Raam-ne us_i-se kahaa [ki Mohan_i jiitegaa]
 Raam-ERG he-SOC said [that Mohan win.FUT]

‘Raam told him_i that Mohan_i will win.’

(Kidwai 2013)

Bhatt and Dayal (2007) capture the variable binding facts while maintaining the key insight in Dayal’s (1996) original proposal that clausal movement is linked to scope-restrictions. Their starting point is the observation that wide scope is blocked not only for embedded *wh*-phrases inside an extraposed complement clause, but also

²⁴ A number of authors have attempted to account for the binding facts within an anti-symmetric approach (Mahajan 1997; Simpson and Bhattacharya 2003; Simpson and Choudhury 2015). These authors take SVO to be the “default” word-order and argue that nominals get to a pre-verbal position via leftward movement, likely for Case reasons. I will not adopt this analysis here for a number of reasons. First, such an approach fails to explain the optional post-verbal positioning of non-finite clauses. Second, anti-symmetric approaches cannot explain the correlation between clause position and *wh*-scope and take them to be spurious (Simpson and Choudhury 2015). If patterns of restricted *wh*-scope across languages reflect the same underlying phenomenon, then the Malayalam data we saw in previous sections provide a compelling argument against such a view. The Malayalam fronted clauses we examined here do not appear in a post-verbal position to begin with and therefore the clausal movement patterns cannot be explained by resorting to anti-symmetry. On the other hand, an overt movement approach can capture the patterns in both Hindi-Urdu and Malayalam in a uniform fashion. For further arguments against anti-symmetric approaches, I refer the reader to Bhatt and Dayal (2007).

for any and all *wh*-phrases that have moved to the right of the auxiliary, as shown in (76).

- (76) a. S O_{wh} V Aux
 Sita-ne dhyaan-se kis-ko dekh-aa thaa?
 Sita-ERG care-with who-ACC see-PFV be.PST
 ‘Who had Sita looked at carefully?’
 b. S V Aux O_{wh}
 *Sita-ne dhyaan-se dekh-aa thaa kis-ko?
 Sita-ERG care-with see-PFV be.PST who-ACC
 ✗‘Who had Sita looked at carefully?’

Scope restrictions in Hindi-Urdu are thus found in a proper superset of environments in which we see restricted *wh*-scope in Malayalam.

The full range of *wh*-patterns is argued to receive an explanation if we take rightward movement to be remnant movement of a VP, from which the verb has evacuated. The binding patterns follow from the fact that the moved VP cannot be interpreted at its landing site and therefore obligatorily reconstructs. The scope facts are taken to follow from a well-known property of remnant movement, first observed in Barss (1986), that scopal elements inside remnants cannot take scope outside of it. Concretely, Bhatt and Dayal (2007) proposes that covert *wh*-movement to C cannot take place when the *wh*-phrase is inside the reconstructed remnant.

An important contribution of Bhatt and Dayal (2007) is the observation that scope-restrictions appear in two different environments—embedded *wh*-phrases and rightward-moved non-embedded *wh*-phrases. Thus, its scope extends beyond that of the present paper, which exclusively examines long-distance *wh*-in-situ.²⁵ Nevertheless, their proposal shares with the present account the idea that the crucial player in blocking wide-scope of *wh*-expressions is the movement of an XP dominating it. I show below that their proposal about remnant-movement can be straightforwardly recast within the feature-geometric framework presented here.

Bhatt and Dayal (2007) remain agnostic as to the *type* of remnant movement the XP undergoes, and the position to which the remnant is moving. Suppose, like clause fronting in Malayalam, the remnant VP-movement is \bar{A} -movement triggered by a feature [ρ] on a left-peripheral head—for convenience, let us refer to it once again as H. VPs that undergo rightward remnant-movement will bear the feature [ρ], which in turn entails [\bar{A}]. The [\bar{A}]-features on this XP would intervene for Agree between the matrix C and the remnant-internal *wh*, thus blocking the syntactic dependency necessary for *wh*-licensing.

The puzzle in Hindi-Urdu is complicated by the fact that wide-scope for *wh*-phrases can be obtained by overtly fronting the *wh*-phrase, as in (77).

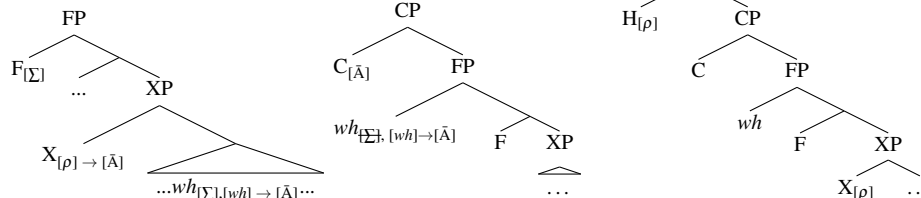
- (77) **kaun_i** tum soch-te ho [ki t_i aa-egaa]?
 who you.PL think-HAB.MPL be.PRS.2PL [that come-FUT.3MSG]
 ‘Who do you think will come?’ (Dayal 1996)

²⁵Note that Malayalam does not allow cases like (76).

(78) Ravi jaan-taa hai [ki kis-ko_i tum maan-tii
Ravi know-HAB.MSG be.PRS.SG [that who-ACC you believe.HAB.F
ho [ki Billu-ne t_i maar-aa]]
be.PRES.2PL [that Billu-ERG hit-PFV]
'Ravi knows who you think that Billu hit.'
(Mahajan 1987)

I follow Sauerland (1996); Miyagawa (1997); Grewendorf and Sabel (1999), and Müller (2000) in taking scrambling to be feature-driven movement (driven by a feature $[\Sigma]$) to the specifier of a functional head below C. Given that long-distance scrambling in Hindi-Urdu has \bar{A} -properties (see e.g. Mahajan 1990), I will assume that $[\Sigma]$ entails $[\bar{A}]$. In scrambling configurations, the first relevant element to probe will be the functional head seeking $[\Sigma]$ -features. The *wh*-phrase bearing $[\Sigma]$ -features will be attracted to the specifier of this head, with the result that it will now be closer to the interrogative C than the \bar{A} -features on the embedded clause. The head of the embedded clause is no longer in a position to interact with the flat probe on C. This is schematized in (79).

3: Extraposition



²⁶Malayalam, unlike Hindi, does not allow scrambling as a rescue strategy, a fact that relates to the fact pointed out in fn. 13 that Malayalam disallows long-distance scrambling altogether. While I do not have an explanation for why this is, it should be pointed out that having short-scrambling, while lacking long-scrambling is a property that the language shares with many others, e.g. German, Mandarin, Czech, Tsez, Nez-Perce, a.o. Another long-distance question formation strategy in Hindi-Urdu is scope marking. One might ask whether the same is true for Malayalam. Since we never find cases in which one *wh*-element marks the scope of a different pronounced *wh*-element, I take it to be the case that scope-marking as found in languages like Hindi-Urdu, German, Hungarian, Russian, etc. does not exist in Malayalam (though see Jayaseelan 2004 for a differing view). We are grateful to a reviewer for raising these questions.

I have shown above that the distribution of *wh*-scope in Hindi-Urdu can straightforwardly be given an analysis on which the limited scope of *wh*-in-situ is a side-effect of how interrogative C interacts with $[\bar{A}]$ -features on the container, which, following Bhatt and Dayal (2007), we took to be a remnant. The differences in scope-possibilities between overt scrambling and in-situ licensing have to do with the relative positioning of the two probes at work. Recasting Bhatt and Dayal's (2007) analysis in this way not only results in the same empirical coverage, but is arguably desirable as it allows us to forgo certain problematic assumptions. For instance, for Bhatt and Dayal (2007), it is crucial that in-situ *wh*-phrases in Hindi undergo covert movement, but this assumption is somewhat problematic given that these *wh*-phrases exhibit intervention effects, a hallmark of genuinely in-situ *wh*-expressions. Thus, if Barss's generalization about scope-freezing is a generalization about the distribution of covert movement, then Bhatt and Dayal's (2007) account of Hindi *wh*-scope cannot be maintained without added assumptions. But even if this were not an issue, the present account has the general explanatory advantage of explaining, rather than taking for granted, the observed scope-freezing effect.

8 Some further issues

If the line of analysis presented in this paper is correct, there is a direct connection between restrictions on *wh*-scope and movement of the container clause. Specifically, the fact that the head of the container bears an \bar{A} -feature creates a configuration in which an embedded *wh*-phrase cannot be accessed for Agree without violating Minimality. However, when we look across languages, we find that the tight link between restricted scope and clausal movement is not always observable, with a language exhibiting restricted scope without clause movement or there being clause movement without concomitant scope restrictions. If these languages resemble Malayalam and Hindi-Urdu in all other relevant respects, these counter-examples may suggest that the analyses presented here are not a universal solution.

Iraqi Arabic serves as a puzzle in one direction: the language, which famously shows finite clause-boundedness effects for *wh*-in-situ (Wahba 1991; Ouhalla 1996; Basilico 1998), does not show indication that the clause itself has undergone \bar{A} -movement. The scope restrictions on *wh*-in-situ is illustrated by the contrast between (80) and (81). Long-distance *wh*-in-situ is possible with non-finite clauses (80), but impossible when the *wh*-phrase is inside a finite complement (81).

- (80) Mona hawlat tishtiri sheno?
 Mona tried to-buy what
 'What did Mona try to buy?'
 (81) *Mona tsawwarat [Ali ishtara sheno] ?
 Mona thought [Ali bought what]
 'What did Mona think Ali bought?'
-

Moreover, overt long-distance movement of the *wh*-phrase is in fact possible and gives wide scope to the embedded *wh*-phrase, as we see in (82).²⁷

- (82) Sheno tsawwarat Mona [Ali ishtara] ?
 what thought Mona [Ali bought]
 ‘What did Mona think Ali bought?’

The fact that long-distance *wh*-in-situ and *wh*-movement seem to be treated differently in the very same language lends credence to the idea that some languages may place special locality restrictions specifically on *wh*-in-situ.²⁸ However, it must be noted that a careful study of the *wh*-patterns of Iraqi Arabic, with an eye towards understanding the properties of embedded clauses in particular, has not yet been carried out. It is worth exploring, for instance, whether Iraqi Arabic finite clauses, which appear in the canonical object position, have nevertheless undergone (string-vacuous) rightward movement similar to what takes place in Hindi-Urdu.

An opposite puzzle is presented by Japanese, in which an embedded in-situ *wh*-phrase can take wide scope even when the clause containing it has undergone movement. The puzzle raised by Japanese for the present account is why clausal movement in some languages does not create an intervention configuration.

- (83) [Kyoko-ga **nani-o** ka-tta to] Hideki-ga it-ta no
 [Kyoko-NOM what-ACC buy-PAST that] Hideki-NOM say-PAST Q
 ‘What did Hideki say Kyoko bought?’

Three possibilities come to mind. It could be that the nature of the fronting we see in (83) is fundamentally different from the clausal fronting in a language like Malayalam. For instance, the movement may not take place in the narrow syntax, in which case we would not expect it to intervene for other narrow-syntactic operations in the first place. Alternatively, perhaps clauses are moving to a lower position than interrogative C in Japanese, thus making the derivation long-distance *wh*-questions analogous to that in Malayalam clefts. Finally, it could be that the feature specifications on interrogative C differs across the two languages. Japanese interrogative C, unlike its Malayalam counterpart, could be a maximally specified probe that only interacts with elements bearing the feature [*wh*]. Of course, this would simply place

²⁷ As pointed out in Ouhalla (1996), Iraqi Arabic does not allow scrambling, which suggests that this is genuine *wh*-movement.

²⁸ It is worth noting that analyses positing *wh*-in-situ-specific locality conditions are also empirically inadequate when it comes to Iraqi Arabic. As was noted by Wahba (1991), restrictions on long-distance *wh*-question formation in Iraqi Arabic seem to extend beyond embedded *wh*-in-situ; long-distance movement of non-nominal *wh*-phrases is also blocked in the language, as shown in (1).

- (1) *leesh tsawwarit Mona [Ali masha] ?
 why thought Mona [Ali left]
 ‘Why did Mona think Ali left?’

Thus, a full account of Iraqi Arabic long-distance question-formation would need to provide explanations for both (i) the apparent ban on long-distance *wh*-in-situ and (ii) the asymmetry between nominal and non-nominal *wh*-expressions when it comes to overt *wh*-fronting.

the locus of variation in a different place, namely the feature-structure of probes, and therefore is no more explanatory than the parametric variation approach this paper has argued against (Ouhalla 1996; Simpson 2000). Teasing apart these possibilities is an avenue for future research.

To summarize, the general framework advanced in this paper is flexible enough to account for the *wh*-scope patterns in some languages, but still others remain mysterious. Iraqi Arabic, for instance, may be a residual case in which restricted *wh*-scope cannot be reduced to an epiphenomenon.²⁹

9 Conclusion

This paper has examined apparent restrictions on *wh*-in-situ in Malayalam and argued that they are not inherent to *wh*-question-formation, but rather, consequences of how *wh*-licensing in a given language interacts with other language-specific operations. I argued that the apparent clause-boundedness of *wh*-in-situ should not be analyzed as clause-boundedness at all, but as the result of a pernicious interaction between features relevant for *wh*-licensing and those necessary for the fronting of the *wh*-containing clause. Specifically, I showed that Agree between the interrogative C and an embedded *wh*-element is blocked when (i) the interrogative C is a generalized [\bar{A}]-probe and (ii) other [\bar{A}]-feature-bearing heads occur in between C and the *wh*-phrase. Malayalam thus provides evidence that *wh*-in-situ across languages is less diverse than initially thought.

Acknowledgements Thanks to Adam Albright, Kenyon Branan, Veneeta Dayal, Sabine Iatridou, Norvin Richards, Roger Schwarzschild, Coppe van Urk, Michelle Yuan, the audience at NELS 46 and especially Danny Fox and David Pesetsky for comments and generous feedback. I am also grateful to three anonymous *NLLT* reviewers and the managing editor, Kyle Johnson, for extensive comments on an earlier draft. All errors are my own.

References

- Abels, Klaus. 2012. The Italian left periphery: A view from locality. *Linguistic Inquiry* 43: 229–254.
- Adger, David, and Gillian Ramchand. 2005. Merge and move: *Wh*-dependencies revisited. *Linguistic Inquiry* 36 (2): 161–193.
- Amritavalli, R., and K. A. Jayaseelan. 2005. Finiteness and negation in Dravidian. In *The Oxford handbook of comparative syntax*, eds. Guglielmo Cinque and Richard S. Kayne, 178–220. Oxford: Oxford University Press.
- Baker, C. L. 1970. Double negatives. *Linguistic Inquiry* 1 (2): 169–186.

²⁹Another language that has clausal movement and allows *wh*-in-situ is German, and a reviewer asks what the present analysis predicts for this language. Finite clauses appear in an extraposed position, but they are often taken to right-adjoin to a lower position than CP (Muller 1996, Moulton 2015, a.o). This would mean that the probe triggering this movement is lower than C, and an intervention configuration should in principle be avoided.

- Barss, Andrew. 1986. Chains and anaphoric dependence: On reconstruction and its implications. PhD diss, Massachusetts Institute of Technology.
- Basilico, David. 1998. Wh-movement in Iraqi Arabic and Slave. *The Linguistic Review* 15 (4).
- Bayer, Josef. 1997. CP extraposition as argument shift. In *Rightward movement*, eds. Dorothee Beerman, David LeBlanc, and Henk van Riemsdijk, 37–58. Amsterdam: John Benjamins.
- Beck, Sigrid. 2006. Intervention effects follow from focus interpretation. *Natural Language Semantics* 14 (1): 1–56.
- Béjar, Susana, and Milan Rezac. 2009. Cyclic agree. *Linguistic Inquiry* 40 (1): 35–73.
- Bhatt, Rajesh, and Veneeta Dayal. 2007. Rightward scrambling as rightward remnant movement. *Linguistic Inquiry* 38 (2): 287–301.
- Bošković, Željko. 2005. On the locality of left branch extraction and the structure of NP. *Studia Linguistica* 59 (1): 1–45.
- Bošković, Željko. 2014. Now I'm a phase, now I'm not a phase: On the variability of phases with extraction and ellipsis. *Linguistic Inquiry* 45: 27–89.
- Brody, Michael. 1990. Some remarks on the focus field in Hungarian.
- Cable, Seth. 2010. *The grammar of Q: Q-particles, Wh-Movement and Pied-Piping*. Oxford University Press.
- Chomsky, Noam. 1973. Conditions on transformations. In *Essays on form and interpretation*, 81–162. New York: Elsevier North-Holland, Inc.
- Chomsky, Noam. 1977. On wh-movement. In *Formal syntax*, eds. Peter Culicover, Thomas Wasow, and Adrian Akmajian. New York: Academic Press.
- Chomsky, Noam. 1995. *The minimalist program*. Cambridge: MIT Press.
- Chomsky, Noam. 2000. Minimalist inquiries: The framework. In *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*, eds. Roger Martin, David Michaels, and Juan Uriagereka, 89–156. MIT Press.
- Chomsky, Noam. 2001. Derivation by phase. In *Ken Hale: A life in linguistics*, ed. Michael Kenstowicz, 1–52. Cambridge, Massachusetts: MIT Press.
- Dayal, Veneeta. 1996. *Locality in Wh-quantification: Questions and relative clauses in Hindi*. Dordrecht: Kluwer Academic Press.
- Dryer, Matthew S. 1991. SVO languages and the OV/VO typology. *Journal of Linguistics* 27: 443–482.
- Engdahl, Elisabet. 1983. Parasitic gaps. *Linguistics and Philosophy* 6 (1): 5–34.
- Fanselow, Gisbert. 2007. The restricted access of information structure to syntax: A minority report. In *The notions of information structure*, eds. Caroline Féry, Gisbert Fanselow, and Manfred Krifka. *Working papers of SFB632: Interdisciplinary studies on information structure*. Potsdam: Universitätsverlag Potsdam.
- Féry, Caroline. 2009. Indian languages as intonational 'phrase languages'. Ms. University of Potsdam.
- Féry, Caroline. 2011. German sentence accents and embedded prosodic phrases. *Lingua* 121: 1906–1922.
- Frascarelli, Mara, and Francesca Ramaglia. 2013. 'phasing' contrast at the interfaces: A feature-compositional approach to topics. In *Information structure and*

- agreement*, eds. Victoria Camacho-Taboada, Ángel L. Jiménez-Fernández, Javier Martín-González, and Mariano Reyes-Tejedor. Benjamins.
- Göbbel, Edward. 2007. Extraposition as PF movement. In *Western Conference on Linguistics (WECOL)*. California State University: Department of Linguistics.
- Grewendorf, Günther, and Joachim Sabel. 1999. Scrambling in German and Japanese: Adjunction versus multiple specifiers. *Natural Language and Linguistic Theory* 17 (1): 1–65.
- Hagstrom, Paul. 1998. Decomposing questions. PhD diss, Massachusetts Institute of Technology.
- Hamblin, Charles. 1973. Questions in Montague grammar. *Foundations of Language* 10 (1): 41–53.
- Hany Babu, M. T. 1997. The syntax of functional categories. PhD diss, Central Institute of English and Foreign Languages.
- Harley, Heidi, and Elizabeth Ritter. 2002. Person and number in pronouns: A feature-geometric analysis. *Language* 78 (3): 482–526.
- Hartmann, Katharina. 2013. Rightward movement in a comparative perspective, eds. Gert Webelhuth, Manfred Sailer, and Heike Walker. Amsterdam: John Benjamins.
- Hayes, Bruce. 1990. Precompiled phrasal phonology. In *The phonology-syntax connection*, eds. Sharon Inkelas and Draga Zec, 85–108. Chicago: University of Chicago Press.
- Heim, Irene, and Angelika Kratzer. 1998. *Semantics in generative grammar*. Malden: Blackwell.
- Huang, C. T. James. 1982. Logical relations in Chinese and the theory of grammar. PhD diss, Massachusetts Institute of Technology.
- Huang, C. T. James. 1984. On the distribution and reference of empty pronouns. *Linguistic Inquiry* 15: 531–574.
- Jayaseelan, K. A. 2001. Questions and question-word incorporating quantifiers in Malayalam. *Syntax* 4 (2): 63–93.
- Jayaseelan, K. A. 2003. Question words in focus positions. In *Linguistic variation yearbook*, Vol. 3, 69–99. John Benjamins Publishing Company.
- Jayaseelan, K. A. 2004. Question movement in some sov languages and the theory of feature checking question movement in some SOV languages and the theory of feature checking. *Language and Linguistics* 5 (1): 5–27.
- Kiss, Katalin É. 1998. Identificational focus versus information focus. *Language* 74: 245–273.
- Kotek, Hadas. 2014. Composing questions. PhD diss, Massachusetts Institute of Technology.
- Kratzer, Angelika, and Junko Shimoyama. 2002. Indeterminate pronouns: The view from Japanese. In *Tokyo conference on psycholinguistics*, ed. Yukio Otsu, Vol. 3, 1–25. Tokyo: Hituzi Syobo.
- Lebeaux, David. 1988. Language acquisition and the form of the grammar. PhD diss, University of Massachusetts, Amherst.
- Legate, Julie Anne. 2005. Phases and cyclic agreement. In *Perspectives on phases*, eds. Martha McGinnis and Norvin Richards. Cambridge: MIT Working Papers in Linguistics.

- Madhavan, Punnapurtath. 2013. Multiple wh-questions and the cleft construction in Malayalam. In *Cleft structures*, eds. Katharina Hartmann and Tonjes Veenstra, 269–284. Amsterdam: John Benjamins.
- Mahajan, Anoop. 1990. The A/A-bar distinction and movement theory. PhD diss, Massachusetts Institute of Technology.
- Mahajan, Anoop. 1997. Rightward scrambling. In *Rightward movement*, eds. Dorothee Beerman, David LeBlanc, and Henk van Riemsdijk, 185–213. Amsterdam: John Benjamins.
- Mahajan, Anoop K. 1987. Notes on wh-questions in Hindi. Paper presented at Sala, Cornell and Syracuse Universities.
- Manetta, Emily. 2012. Reconsidering rightward scrambling: Postverbal constituents in Hindi-Urdu. *Syntax* 43 (1): 43–74.
- Mathew, Rosmin. 2014. The syntactic effect of head movement: Wh and verb movement in Malayalam. PhD diss, University of Tromsø.
- McCloskey, James. 2002. Resumption, successive cyclicity, and the locality of operations. In *Derivation and explanation in the minimalist program*, eds. Samuel David Epstein and T. Daniel Seely, 184–226. Malden: Blackwell Publishing.
- Menon, Mythili. 2011. Revisiting Infinitives: The need for Tense in Malayalam. University of Tromsø. Talk at Finiteness in South Asian Languages. University of Tromsø.
- Miyagawa, Shigeru. 1997. Against optional scrambling. *Linguistic Inquiry* 28 (1): 1–25.
- Mohanan, K. P. 1982. Infinitival subjects, government, and the abstract case. *Linguistic Inquiry* 13 (2): 323–327.
- Müller, Gereon. 2000. Shape conservation and remnant movement. In *North East Linguistic Society (NELS) 30*, eds. Masako Hirotani, Andries Coetzee, Nancy Hall, and Ji-yung Kim, 525–540. Amherst: GLSA.
- Müller, Gereon, and Wolfgang Sternefeld. 1993. Improper movement and unambiguous binding. *Linguistic Inquiry* 24 (3): 461–508.
- Munataka, Takashi. 2006. Intermediate Agree: Complementizer as a bridge. In *Workshop on Altaic Formal Linguistics (WAFL) 3*, ed. Sergei Tatevosov. Moscow: Maks Press.
- Nakamura, Masanori. 1998. Reference set, Minimal Link Condition, and parameterization. In *Is the best good enough?*, eds. Pilar Barbosa, Danny Fox, Paul Hagstrom, Martha McGinnis, and David Pesetsky, 291–314. Cambridge: MIT Press.
- Nespor, Marina, and Irene Vogel. 1986. *Prosodic phonology*. Dordrecht: Foris.
- Nissenbaum, Jon. 2000. Covert movement and parasitic gaps. In *North East Linguistic Society (NELS) 30*, eds. Masako Hirotani, Andries Coetzee, Nancy Hall, and Ji-yung Kim, 541–556. Amherst: GLSA.
- Ouhalla, Jamal. 1996. Remarks on the binding properties of wh-pronouns. *Linguistic Inquiry* 27 (4): 676–707.
- Percus, Orin. 1997. Prying open the cleft. In *North East Linguistic Society (NELS) 27*, ed. Kiyomi Kusumoto, 337–351. Amherst: GLSA.
- Pesetsky, David. 1982. Paths and categories. PhD diss, Massachusetts Institute of Technology.
- Pesetsky, David. 2000. *Phrasal movement and its kin*. Cambridge: MIT Press.

- Potsdam, Eric, and Daniel Edmiston. 2016. Extraposition in Malagasy. In *22nd Meeting of the Austronesian Formal Linguistics Association (AFLA)*.
- Preminger, Omer. 2012. Agreement as a fallible operation. PhD diss, Massachusetts Institute of Technology.
- Reinhart, Tanya. 1998. Wh-in-situ in the framework of the Minimalist Program. *Natural Language Semantics* 6 (1): 29–56.
- Rizzi, Luigi. 1990. *Relativized minimality*. Cambridge: MIT Press.
- Rizzi, Luigi. 1997. The fine structure of the left periphery. In *Elements of grammar*, ed. Liliane Haegeman, 281–337. Dordrecht: Kluwer Academic Publishers.
- Rizzi, Luigi. 2004. Locality and left periphery. In *Structures and beyond: The cartography of syntactic structures*, ed. Adriana Belletti, Vol. 3, 223–251. Oxford: Oxford University Press.
- Rizzi, Luigi. 2006. Wh-movement: Moving on, eds. Lisa Lai Shen Cheng and Norbert Corver, 97–133. Cambridge: MIT Press.
- Rizzi, Luigi, and Uri Shlonsky. 2007. Interfaces + recursion = language? Chomsky's minimalism and the view from syntax-semantics, eds. Hans-Martin Gartner and Uli Sauerland, 115–160. Berlin: Mouton de Gruyter.
- Rooth, Mats. 1985. Association with focus. PhD diss, University of Massachusetts, Amherst.
- Ross, John R. 1982. Pronoun deleting processes in German. Paper presented at the annual meeting of the Linguistic Society of America, San Diego, California.
- Sauerland, Uli. 1996. The interpretability of scrambling. In *Formal approaches to Japanese linguistics*, eds. Masatoshi Koizumi, Masayuki Oishi, and Uli Sauerland, Vol. 2.
- Selkirk, Elisabeth. 2011. The syntax-phonology interface, eds. John A. Goldsmith, Jason Riggie, and Alan Yu. Blackwell Publishers.
- Selkirk, Elisabeth O. 1984. *Phonology and syntax: The relation between sound and structure*. Cambridge: MIT Press.
- Simpson, Andrew. 2000. *Wh-movement and the theory of feature-checking*. Amsterdam: John Benjamins.
- Simpson, Andrew, and Tanmoy Bhattacharya. 2003. Obligatory overt wh-movement in a wh-in-situ language. *Linguistic Inquiry* 34 (1): 127–142.
- Simpson, Andrew, and Arunima Choudhury. 2015. The nonuniform syntax of postverbal elements in SOV languages: Hindi, Bangla, and the rightward scrambling debate. *Linguistic Inquiry* 46 (3): 533–551.
- Srikumar, K. 1992. Question-word movement in Malayalam and GB theory. PhD diss, Osmania University, Hyderabad.
- Srikumar, K. 2007. Clausal pied-piping and subjacency. In *Linguistic theory and South Asian languages: Essays in honour of K.A. Jayaseelan*, eds. Joseph Bayer, Tanmoy Bhattacharya, and MT Hany Babu, 53–69. Amsterdam: John Benjamins.
- Starke, Michal. 2001. Move dissolves into merge: A theory of locality. PhD diss, University of Geneva.
- Swenson, Amanda, Athulya Aravind, and Paul Marty. 2015. The expression of information structure in Malayalam. Ms., MIT.
- Szabolcsi, Anna. 1981. Compositionality in focus. *Acta Linguistica Societatis Linguisticae Europaeae* 1: 141–162.

- Truckenbrodt, Hubert. 1995. Extraposition from NP and prosodic structure. In *North East Linguistic Society (NELS) 25*, ed. Jill Beckman, 503–518. Amherst: GLSA.
- Wahba, Wafaa. 1991. LF movement in Iraqi Arabic. In *Logical structure and linguistic structure: Cross-linguistic perspectives*, eds. C. T. James Huang and Robert May, 253–276. Dordrecht: Springer.
- Watanabe, Akira. 2006. Wh-movement: Moving on. In *The pied-piper feature*, eds. Lisa Lai Shen Cheng and Norbert Corver. Cambridge: MIT Press.
- Wexler, Kenneth, and Peter Culicover. 1980. *Formal principles of language acquisition*. Cambridge: MIT Press.
- Wiltschko, Martina. 1997. Superiority in German. In *West Coast Conference on Formal Linguistics (WCCFL)*, eds. Emily Curtis, James Lyle, and Gabriel Webster, 431–445. Stanford: Stanford Linguistics Association.