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WH-IN-SITU AND MOVEMENT IN SINHALA QUESTIONS★

ABSTRACT. This article shows that Sinhala, a *wh*-in-situ language, implements movement of a Q-element to determine the scope of *wh*-phrases; this movement, which displays the behavior of a phrasal category, may be induced either in overt syntax or in LF. Covert Q-movement observes island conditions in the same manner as overt phrasal category movement. When the option of Q-movement is not available, Sinhala makes use of a strategy to merge a null operator directly in its local scope position to fix the scope of a *wh*-phrase.

1. Introduction

Sinhala (Indo-Aryan; Sri Lanka) is a *wh*-in-situ language[1] in which *wh*-questions have some notable properties. First, the scope of *wh*-in-situ must be specified either by a Q-particle or by a special verbal marking. Second, a Q-particle associated with *wh*-in-situ can appear in various positions, either in a clause-final position where a

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[1] Gair and Sumangala (1992, p. 93) suggest that Sinhala could be a 'move-*wh*' language, basing their discussion on examples like (i) (adapted from their (3a) and (3c)):

(i)a. amma [Siri t_i kieuwa kiyəla] kalpənaa keruwe mok-ak $də_i$.
mother Siri read-A that thinking did-E what Q
What was it that mother thought that Siri read?

wh-phrase acquires scope, or in a constituent position typically adjacent to a *wh*-phrase, where it marks a focused *wh*-constituent. In this paper, I argue that these properties of Sinhala *wh*-questions follow naturally from the assumption that a Q-particle is first merged in a position to mark a *wh*-constituent and is then moved to clause-final position as an operator encoding the scope of *wh*-in-situ. This movement occurs either in overt syntax or in LF.

A major objective of the present paper is to show that it is Q-movement, rather than movement of a *wh*-phrase, which is used to form an operator-variable structure in a *wh*-question, and that a Q-element, while delimiting a *wh*-constituent in its Merge position, serves as an operator that assigns scope to its host *wh*-in-situ. I argue that irrespective of whether the Q-element appears in Merge position or in scope position in overt syntax, it eventually ends up in the scope position, where it encodes the scope of *wh*-in-situ.

Significantly, even if Q-movement is induced in LF, it observes island constraints in the same way as overt phrasal movement; Q-particles behave like phrasal elements in this respect. It is often observed that island effects do not emerge in *wh*-in-situ languages, even when *wh*-phrases are deeply embedded in islands. I argue that this stems from the fact that *wh*-phrases serve as bound variables that do not undergo movement. However, island effects *are* incurred if a Q-element, which is used to fix the scope of a *wh*-phrase, is merged in a

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Footnote 1 (*Continued*)

(i)b. mok-ak də$_i$ amma [Siri t$_i$ kieuwa kiyəla] kalpənaa keruwe?
what Q mother Siri read-A that thinking did-E
What did mother think that Siri read?

However, the *wh*-words in (i) are not displaced by *wh*-movement but by other syntactic operations (i.e., pseudo-clefting in (ia) and scrambling in (ib)), since constituents other than *wh*-words can be moved:

(ii)a. amma [Siri t$_i$ kieuwa kiyəla] kalpənaa keruwe potə$_i$?
mother Siri read-A that thinking did-E book
It was the book that mother thought that Siri read.

b. potə$_i$ amma [Siri t$_i$ keruwa kiyəla] kalpənaa keruwa.
book mother Siri read-A that thinking did-A
The book, mother thought that Siri read.

Since Sinhala does not have a syntactic operation of *wh*-movement (in any strict sense), it is reasonable to say that Sinhala is a '*wh*-in-situ' language.

position where the later movement violates island conditions. When the Q-element is merged outside islands, island violations do not occur irrespective of whether movement takes place in overt syntax or in LF.

Some lexically-specified *wh*-phrases are not associated with a detachable Q-particle, and display idiosyncratic behavior with regard to their scope, in that they can only take scope over the local clause in which they reside. I argue that this follows from the fact that the assignment of scope to these *wh*-phrases can only be achieved with recourse to the strategy of base-generating a null operator in the closest scope position, since such *wh*-phrases are unable to make use of movement of a Q-element to form an appropriate LF structure. The discussion leads to the conclusion that *wh*-phrases are always construed as bound variables (rather than *wh*-operators), whose scope must be interpreted by way of an external scope assigner, i.e., a Q-particle or a null operator.

The discussion proceeds as follows. In section 2, I summarize the basic facts of Sinhala *wh*-questions, and argue that a Q-element, which can be construed as a non-projected head, behaves like a phrasal element in the syntax. Section 3 illustrates that Q-movement, which assigns scope to *wh*-in-situ, takes place in LF if it is not displaced in overt syntax. Section 4 shows that when the option of raising a Q-element is not available to generate the scope of *wh*-phrases, Sinhala resorts to the strategy of base-generating a null operator in the local scope position for scope assignment. Conclusions are presented in section 5.

2. *WH*-Constituents in Sinhala

2.1. *Particle-Predicate Concord*

A Sinhala *wh*-interrogative is typically formed with a Q-element occurring contiguous with a *wh*-element:

(1) Chitra monəwa **də** gatte?
Chitra what Q bought-E
What did Chitra buy?

One characteristic property of questions in which the Q-element *də* occurs immediately after the host *wh*-phrase is that the verb bears a special ending, i.e., the *-e* ending which is glossed as '-E'. This verbal ending differs from the neutral *-a* ending shown in (2) and glossed as '-A':

(2) Chitra potə gatta.
Chitra book bought-A
Chitra bought the book.

In a matrix *wh*-question where the Q-particle *də* stands next to a *wh*-in-situ, the verb cannot have the ordinary *-a* ending, as illustrated in (3):

(3) *Chitra monəwa **də** gatta?
Chitra what Q bought-A
What did Chitra buy?

In a *wh*-in-situ language like Japanese, a question particle occurs only in clause-final position; in Sinhala, *də* generally cannot be placed clause-finally in direct *wh*-questions:

(4) *Chitra monəwa gatta/gatte **də**?
Chitra what bought-A/bought-E Q
What did Chitra buy?

(4) is ill-formed regardless of whether the verb receives the *-e* marking or the *-a* marking.

Wh-words in Sinhala are indefinite pronouns whose interpretation depends on the kind of Q-element. For example, when *monəwa* 'what, thing' takes the affix *-t*, as in *monəwa-t*, it means 'anything', but if it takes *-hari*, as in *monəwa-hari*, it means 'something'. Owing to this property of *wh*-words, the presence of *də* is mandatory in an ordinary *wh*-question; if no Q-element is present, the sentence is judged ill-formed regardless of whether the verb bears the *-a* or *-e* ending, as illustrated in (5):

(5) *Chitra monəwa gatte/gatta?
Chitra what bought-E/bought-A
What did Chitra buy?

The *-e* marking must co-occur with the Q particle *də* located adjacent to a *wh*-phrase; in this paper, this co-occurrence requirement is referred to as PARTICLE-PREDICATE CONCORD.

In *wh*-questions, the *-e* ending encodes the scope of *wh*-elements. The examples in (6) illustrate that in a *wh*-question where *də* is adjacent to a *wh*-phrase, the scope of the *wh*-phrase is interpreted relative to this verbal marking:

(6)a. Ranjit [kau **də** aawa kiyəla] danne?
Ranjit who Q came-A that know-E
Who does Ranjit know came?

b. Ranjit [kau **də** aawe kiyəla] dannəwa.
Ranjit who Q came-E that know-A
Ranjit knows who came.

In (6a), the matrix verb *danne* 'know' bears the *-e* marking, and the sentence is understood to be a matrix *wh*-question; in (6b), the lower verb *aawe* 'came' bears the *-e* marking, and the sentence is understood as an embedded *wh*-question. The assumption that the *-e* marking serves to encode the scope of a *wh*-phrase gains additional plausibility from (7):

(7) *kau **də** [Ranjit aawe kiyəla] dannəwa.
who Q Ranjit came-E that know-A

In (7), *kau də* 'who Q' is located in the matrix clause but the embedded verb receives the *-e* ending. This type of *wh*-scope, involving a lowering operation, is illegitimate cross-linguistically, and the ungrammaticality of (7) confirms that the scope of a *wh*-word is specified by the special *-e* marking on the verb.

Note that the *-e* and *-a* affixes can only appear on the finite form of a verb, and are incompatible with other verbal forms such as participles, infinitivals and adnominals. Hence, the scope of a *wh*-phrase can only be marked on a finite verb, which may occur either in the matrix clause or in the embedded clauses selected by complementizers like *kiyəla* 'that', which introduces an ordinary subordinate clause, and *kiənə* 'that', which introduces a noun complement clause. Notably, the verb which immediately precedes a relative clause head takes an adnominal form with the *-ə* ending, which differs from the *-e* or *-a* ending. This indicates that the verb taking an adnominal form is not capable of marking the scope of a *wh*-phrase.[2] Nor is it possible for a Q-element to occur at the right end of the adnominal verb; *wh*-phrases can never take scope over a relative clause.

[2] The *-e* marking is not used in relative clause formation even though relativization involves some kind of operator binding. The reason is that the special *-e* affix is usable only in focus constructions where focus is syntactically separated from presupposition. Since relativization does not fulfill this function, the *-e* ending does not appear on the verb in the relative clause.

A Q-particle *də* associated with a *wh*-phrase may occur in clause-final position, although the contexts in which it can appear there are fairly restricted (see Gair 1983; Kishimoto 1992; Gair and Sumangala 1992). For example, clause-final Q-placement is possible when a *wh*-phrase is embedded within the complement clause of a verb like *dannəwa* 'know', and also in direct *wh*-questions formed with *kiidenek* 'how many (animate)' and *kii-ak* 'how many (inanimate)':

(8) a. Ranjit [kauru aawa **də** kiyəla] dannəwa.[3]
Ranjit who *came-A Q that know-A*
Ranjit knows who came.

b. kiidenek potə kieuwa **də**?
how.many book read-A Q
How many (people) read the book?

With the *wh*-words *kiidenek* and *kii-ak*, *də* may be placed clause-finally even in the matrix clause. In (8a) and (8b), where *də* occurs in clause-final position, the verb takes the ordinary declarative *-a* ending, not the *-e* ending.

The clause-final Q-particle does not mark a *wh*-constituent on the surface; instead, it specifies *wh*-scope, behaving in a way similar to the *-e* ending on a predicate in a *wh*-question where *də* is attached to a *wh*-constituent:

(9) a. Ranjit [kiidenek enəwa kiyəla] dannəwa **də**?
Ranjit how.many come-A that know-A Q
How many (people) does Ranjit know will come?

b. Ranjit [kiidenek enəwa **də** kiyəla] dannəwa.
Ranjit how.many come-A Q that know-A
Ranjit knows how many (people) will come.

Example, (9a) is only understood as a matrix *wh*-question, and (9b) as an embedded *wh*-question; this shows that the clause-final Q-element marks the scope of a *wh*-phrase. This view gains support from the unacceptability of (10):

(10) *kiidenek [Ranjit enəwa **də** kiyəla] dannəwa.
how.many Ranjit come-A Q that know-A

[3] The *wh*-word meaning 'who' is *kauru*, but when *də* is adjacent to the *wh*-word, *-ru* is dropped, as in *kau də*.

In (10), *də* appears in the embedded clause, while the host *wh*-phrase is in the matrix clause. Since (10) patterns with (7), it can be reasonably concluded that the clause-final *də* assumes a scope-marking function.

Whenever it is possible for the Q-particle *də* to appear in clause-final position, it is also possible for it to occur instead in a position adjacent to its host *wh*-phrase; compare (11a,b) to (8a,b).

(11) a. Ranjit [kau **də** aawe kiyəla] dannəwa.
Ranjit who Q came-E that know-A
Ranjit knows who came.

b. kiidenek **də** potə kieuwe?
how.many Q book read-E
How many (people) read the book?

If the Q-element is attached to a *wh*-phrase, then the *-e* ending appears on the verb in the clause where the *wh*-word takes scope, as illustrated by the minimal pairs in (8) and (11).[4] Not surprisingly, in cases in which two possible sites for Q-elements are available, a single

[4] The *-e* marking signaling the scope of a *wh*-phrase can only appear in the clause where the host *wh*-phrase takes scope. If this verbal marking occurs in other places, the sentence is unacceptable:

(i) a. Ranjit [Chitra kiidenek **də** dækka/*dække kiyəla] danne?
Ranjit Chitra how.many Q saw-A/saw-E that know-E
How many (people) does Ranjit know that Chitra saw?

b. Ranjit [Chitra kiidenek **də** dække kiyəla] dannəwa/*danne.
Ranjit Chitra how.many Q saw-E that know-A/know-E
Ranjit knows how many (people) Chitra saw.

In a matrix *wh*-question like (ia), the *-e* marking can appear only on the matrix verb, but not on the embedded verb. In an embedded *wh*-question like (ib), only the embedded verb can have the *-e* marking. In a *wh*-question in which *də* occurs in clause-final scope position, the *-e* marking cannot appear anywhere:

(ii) a. Ranjit [Chitra kiidenek dækka/*dække kiyəla] dannəwa **də**?
Ranjit Chitra how.many saw-A/saw-E that know-A Q
How many (people) does Ranjit know that Chitra saw?

b. Ranjit [Chitra kiidenek dækka **də** kiyəla] dannəwa/*danne.
Ranjit Chitra how.many saw-A Q that know-A/know-E
Ranjit knows how many (people) Chitra saw.

wh-phrase may not be associated with two instances of the Q-particle *də*,[5] as illustrated in (12):

(12) a. *Ranjit [kau **də** aawe/aawa **də** kiyəla] dannəwa.
Ranjit who Q came-E/came-A Q that know-A
Ranjit knows who came.

b. *kiidenek **də** potə kieuwe/kieuwa **də**?
how.many Q book read-E/read-A Q
How many (people) read the book?

Verbs permitting the clause-final *də* in their complement clause, as in (8a), include *dannəwa* 'know', *hoya bərənəwa* 'examine', *parikʃaa kərənəwa* 'look into, inspect', and *teerenəwa* 'understand'. However, there are other verbs which do not allow *də* to be placed in clause-final scope position, as shown in (13):

(13) a. *Ranjit [kauru aawa **də** kiyəla] æhuwa.
Ranjit who came-A Q that asked-A
Ranjit asked who came.

b. Ranjit [kau **də** aawe kiyəla] æhuwa.
Ranjit who Q came-E that asked-A
Ranjit asked who came.

This class of verbs includes *ahanəwa* 'ask', *prasnə kərənəwa* 'question', and *hitenəwa* 'consider'. The class of verbs which allow the placement of *də* in clause-final scope position cannot simply be specified by the ability to take an interrogative subordinate clause,

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Footnote 4 (*Continued*)
Further, as shown in (iii), a non-interrogative embedded clause can have neither the *-e* marking nor the clause-final Q-particle:

(iii) a. *Ranjit [Chitra kiidenek **də** dække kiyəla] wiswaasə kərənəwa/kendiruwa.
Ranjit Chitra how.many Q saw-E that believe-A/whispered-A
Ranjit believes/whispered how many (people) Chitra saw.

b. *Ranjit [Chitra kiidenek dækka **də** kiyəla] wiswaasə kərənəwa/kendiruwa.
Ranjit Chitra how.many saw-A Q that believe-A/whispered-A
Ranjit believes/whispered how many (people) Chitra saw.

In *wh*-questions, only when *də* remains in its 'delimiter' position can the *-e* affix occur on the verb in the clause over which the associated *wh*-word takes scope.

[5] Similar facts obtain for other Q-particles as well, since a *wh*-phrase cannot be bound by more than one Q-element.

because *ahanəwa* 'ask' does not allow *də* to be placed at the end of its subordinate clause; nor can verbs taking the clause-final *də* be specified by their ability to select a declarative complement in addition to an interrogative complement:

(14) Ranjit [Chitra aawa kiyəla] dannəwa/hitenəwa/
Ranjit Chitra came that know-A/consider/
*hoya bərənəwa/*ahanəwa.
examine-A/ask-A
Ranjit knows/considers/examines/asks that Chitra came.

As shown in (14), there is no correlation between the class of predicates permitting the clause-final Q-placement in the complement clause and the class of predicates selecting a non-interrogative complement. For present purposes, it is sufficient to note that the sequence 'Verb + *də kiyəla*' is allowed only for a proper subset of verbs that can take an interrogative complement (see Gair 1983).

In cases where there are two options for placement of the Q-particle, either attached to the host *wh*-phrase or in clause-final position, these two options are used in different discourse contexts. The version with the particle attached to the *wh*-phrase is uttered when the speaker assumes that there is at least one value which satisfies the proposition, whereas clause-final particle placement indicates no such presupposition. In other words, a clause-final *də* is used in a discourse context where the set of individuals that can fill the value of the *wh*-word might be empty. The speaker therefore would not be surprised to receive the answer (15b) in response to (15a):

(15) a. Q: kiidenek potə kieuwa **də**?
how.many book read-A Q
How many (people) read the book?

b. A: kauru-wat kieuwe nææ.
anyone read not-A
No one read it.

By contrast, since *wh*-attached *də* is uttered in a context in which the speaker anticipates that there is at least one value satisfying the proposition, the speaker would not expect the answer (16b) to the question (16a):

(16) a. Q: kiidenek **də** potə kieuwe?
how.many Q book read-E
How many (people) was it that read the book?

b. A: #kauru-wat kieuwe nææ.
anyone read not-A
No one read it.

Essentially the same situation holds for (8a) and (11a). In uttering a sentence of the type (8a), the speaker holds that the set of individuals which satisfy the proposition might be empty. Hence, the following question-answer pair is natural:[6]

(17) a. Q: oyaa [kauru aawa **də** kiyəla] dannəwa **də**?
you who came-A Q that know-A Q
Do you know who came?

b. A: oo. kauru-wat aawe nææ.
yes anyone came not-A
Yes. No one came.

On the other hand, a sentence like (11a) is uttered in a discourse context where the speaker presumes that there should exist at least one individual who came. Thus, the answer in (18b) strikes the speaker as unexpected:

(18) a. Q: oyaa [kau **də** aawe kiyəla] dannəwa **də**?
you who Q came-E that know-A Q
Do you know (who it was) who came?

b. A: #oo. kauru-wat aawe nææ.
yes anyone came not-A
Yes. No one came.

When a *wh*-question involving an ordinary *wh*-phrase like *kauru* 'who' is directly addressed to the hearer as a matrix question, the speaker seeks the value of the *wh*-word, while presupposing that the set of individuals satisfying the proposition is not empty. Thus, in

[6] In (17a), the semantic interpretation is not equivalent to 'Do you know whether anyone came?', since the embedded clause is a *wh*-interrogative, which asks for the identity of individuals, although the speaker anticipates that the actual value that fills the *wh*-word may be null. Needless to say, in this case, the embedded *də* cannot be replaced by *də-nædda* 'whether,' without changing the meaning.

ordinary direct *wh*-questions, *də* cannot be placed clause-finally.[7] The placement of *də* in clause-final scope position can be effected when the set of individuals satisfying the proposition can be assumed to be possibly empty.

With regard to scope, the Q-particle *də* has a function similar to the focus particles *tamay* and *y* and the negative focus particle *newey*, all of which can be used to mark focused constituents, as illustrated by the example in (19):

(19) Chitra ee potə **tamay** kieuwe.
Chitra that book FOC read-E
It was that book that Chitra read.

In (19), the particle *tamay* specifies a focused constituent, and the *-e* marking specifies the scope of the delimited constituent.

It is worth noting that focus particles generally are allowed to appear in clause-final position as well, as illustrated in (20):

(20) Ranjit ee potə kieuwa **tamay**.
Ranjit that book read-A FOC
Certainly, Ranjit read that book.

When *tamay* occurs clause-finally, the verb takes the ordinary *-a* ending, rather than the *-e* ending. Clause-final *tamay* does not delimit a focused constituent, and focus may fall on any constituent in the clause. Thus, (20) can mean 'It was Ranjit who read that book', 'It was that book that Ranjit read' or 'Ranjit did read that book'.

When not associated with a *wh*-phrase, the particle *də* can be used to indicate a yes/no question. This yes/no particle can be placed in focus-marking position or clause-final scope position, just like *tamay*:

(21)a. Chitra ee potə **də** kieuwe?
Chitra that book Q read-E
Was it that book that Chitra read?

b. Chitra ee potə kieuwa **də**?
Chitra that book read-A Q
Did Chitra read that book?

[7] Essentially the same account can be carried over to the ill-formedness of (13a), where *də* occurs in clause-final position.

Unlike the *wh*-question particle *də*, the yes/no question particle may be placed freely in clause-final position even in the matrix clause. When it is contiguous with a nominal constituent, like (21a), it marks a focused constituent, but when it occurs at the end of a clause, like (21b), it simply indicates that the relevant clause is a yes/no interrogative.[8]

Note further that yes/no interrogation may be indicated by *də-næddə* 'whether'.[9] This particle differs, however, from the yes/no question particle *də*, in that it can only be placed in clause-final position:

(22) a. Chitra ee potə kieuwa **də-næddə**?
Chitra that book read-A whether
Did Chitra read that book?

b. *Chitra ee potə **də-næddə** kieuwe/kieuwa?
Chitra that book whether read-E/read-A
Did Chitra read that book?

I assume that *də-næddə* is a particle that occupies a clause-final complementizer position, just like a clause-final question particle *də*.

[8] The yes/no question particle, which can be construed as having the same function as focus particles like *tamay*, behaves differently from the *wh*-question particle, in that it is not possible to have multiple foci in a single clause:

(i) *Chitra **də** ee potə **də** kieuwe?
Chitra Q that book Q read-E
Did Chitra read that book?

The unacceptability of (i) parallels the unacceptability of (ii), which involves multiple foci with the focus particle *tamay*:

(ii) *Chitra **tamay** ee potə **tamay** kieuwe.
Chitra FOC that book FOC read-E
Certainly, Chitra read that book.

By contrast, the *wh*-question particle allows for multiple foci:

(iii) kau **də** monə potə **də** kieuwe?
who Q what book Q read-E
Who read what book?

Thus, the yes/no question particle patterns with the focus particle *tamay*, but not with the *wh*-question particle.

[9] To be more precise, the complementizer *də-næddə* can be glossed as 'whether-or-not', or 'Q-not-Q'.

A clause introduced by *də-næddə* corresponds in form to a *whether*-clause in English, but unlike a *whether*-clause in English, it can serve as a direct yes/no question.

Returning to the discussion of *wh*-questions, the Q-element *də* most typically appears immediately after its host *wh*-word. However, it is not directly attached to a lexical head, but rather is attached to some maximal projection. In (23a) and (23b), *də* appears adjoined to the DP containing the *wh*-phrase, and in (23c), it is preceded by the postposition *ekkə* 'with':

(23) a. Chitra [monə potə] **də** gatte?
Chitra what book Q bought-E
What book did Chitra buy?

b. Chitra [kaa-ge amma] **də** dække?
Chitra who-GEN mother Q saw-E
Whose mother did Chitra see?

c. Chitra [kauru ekkə] **də** kataa kəlee?
Chitra who with Q talk did-E
With whom did Chitra talk?

It is not possible to place *də* immediately after a *wh*-word embedded inside PP or DP, since DPs and PPs constitute islands in Sinhala (see section 3).

In (8a), the Q-element *də* appears in the scope position, which lies between the complementizer *kiyəla* and the finite verb in the embedded clause. The same Q-element can also occur to the right of the complementizer as an additional site for Q-placement, in which case *də* does not mark the scope of *wh*-in-situ:

(24) Ranjit [kauru aawa kiyəla] **də** danne/*dannəwa?
Ranjit who came that Q know-E/know-A
Who does Ranjit know came?

In (24), since an independent scope marking, namely the *-e* marking on the matrix verb, must be present, we can reasonably assume that the Q-element *də* is used as a delimiter marking the delimited constituent (see section 2.2).

In conclusion, Sinhala *wh*-questions are typically formed with *də* appearing either (i) attached to the right edge of the maximal projection including a *wh*-word in it, as in (23a–c), or (ii) to the immediate right of the *kiyəla*-complementizer, as in (24). In these two

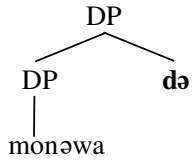
cases, *də* delimits a focused *wh*-constituent, and the scope of the *wh*-element is specified by the special *-e* ending on the verb, producing particle-predicate concord. There are also contexts in which *də* may be placed in scope position, that is, (iii) to the right of the matrix verb, as in (9a), or (iv) between the finite verb and the complementizer in the embedded clause, as in (9b). In the latter two cases, *də* marks the scope of *wh*-in-situ, and the verb has an ordinary ending.

2.2. *The Status of Q-Particles*

Having surveyed the basic properties of Sinhala *wh*-questions, we are now in a position to discuss some of the theoretical assumptions pertaining to the nature of Q-particles. In this section, I show that while the Q-particle *də* is merged in a delimiter position to mark a delimited *wh*-constituent, it serves as an operator to bind *wh*-in-situ after it is moved to its scope position.

Let us begin by noting that a Q-particle used to delimit a *wh*-constituent can be attached to a number of different types of constituents without changing their categorical properties; this suggests that the operation to generate *də* involves adjunction (see Aoyagi 1999). In addition, since *də* is a particle that does not project any further, we can assume that it has the properties of a non-projected head in the sense of Chomsky (1995b). A non-projected head can, in principle, be either a maximal or a minimal projection. But since *də* must be adjoined to a maximal projection when it is merged, as noted earlier, it is plausible to hypothesize that *də* counts as a phrasal element in the syntax. If so, we can assume that the *wh*-expression *monəwa də* 'what Q' should have the following structure:

(25)

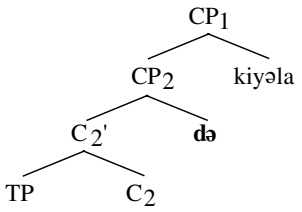


When a Q-particle is merged in its Merge position, it is merged (as an XP element) with a maximal projection which includes the *wh*-form. This is a reasonable assumption, since only XP can adjoin to XP (Chomsky 1995a). I also assume that the relevant Merge operation forms a two-segment category (see Chomsky 2000).

The next question is where the clause-final *də*, which encodes the scope of *wh*-in-situ, is located in the clause structure. To see this, first note the general fact that in Sinhala, the complementizer *kiyəla* 'that'

occurs in both declarative and interrogative clauses, and that a clause-final *də* is allowed to co-exist with *kiyəla*, as in (8a) and (9b) above. That *də*, which I assume is an operator binding a *wh*-phrase, can appear to the immediate left of the complementizer suggests that CP recursion is allowed in Sinhala. I assume then that Sinhala has two layers of CP projections, as represented in (26):

(26)



The lower CP, filled by an operator such as the Q-element as in (26), is referred to as CP_2, so as to distinguish it from the upper CP which is occupied by the ordinary complementizer CP_1. This analysis is in fact in accord with the basic claim shared by researchers advocating CP stacking (see Browning 1996, and also Culicover 1992; Authier 1992; Bhatt and Yoon 1991; Whitman 1989; Kim 1989).

Since the clause-final *də*, which assigns scope to a *wh*-phrase, is a non-projected head which acts like a phrasal element in the syntax (by hypothesis), I assume that *də* occupies [Spec, C_2], rather than the C_2 head position. This assumption receives support from the fact that the clause-final Q-element *də* counts as an operator that binds and forms an A-bar chain with its associated *wh*-phrase. The *wh*-expression bound by *də* must be a maximal projection of a category, but not just a head or an X^0 category, for the theta criterion to be satisfied. If so, the Q-element *də* must also have the status of XP to meet the requirement of 'chain uniformity' (see Chomsky 1995b, 2000).

The Q-element located in scope position does not mark a delimited *wh*-constituent. But as discussed below, a delimited *wh*-constituent must be picked out by the Q-element in a *wh*-question. This suggests that the Q-element can be placed in clause-final position only by means of movement, which moves it to the scope position from a constituent position where it is merged to mark a delimited *wh*-constituent, and that the Q-element cannot be based-generated in its scope position as a complementizer. Now, given the standard assumption that XP moves into Spec, and does not target a head position, we can maintain the hypothesis that the clause-final Q-element is a phrasal element that

occupies [Spec, C_2].[10] In Sinhala, the operator position [Spec, C_2] must stand at the right end of a clause, since a clause-final Q-element is located between the finite verb and the complementizer in the embedded clause, and to the right of the finite verb in the main clause.

Note further that the Q-particle *də* is construed as a dependent element affixing to whatever constituent appears to its left. This property of *də* can also be naturally explained on the current assumptions. Since a Q-particle is a non-projected element, which may count as a minimal projection (as well as a maximal projection), we can assume that in PF it does not have the status of a phrase but functions like an X^0 head. Given the assumption that a Q-particle acts like a head element at PF, it is easy to see that *də* is affixed to a constituent on its left, behaving like a clitic.[11]

Let us now proceed to discuss the question of how *də* is placed in various positions, and in particular, how it can occur in either 'scope' position or 'delimiter' position. I propose that *də* can be merged (i.e., base-generated) in any delimiter position where the constituent it delimits can be turned into a simple *wh*-expression. I argue that since clause-final *də* does not delimit a *wh*-constituent, *də* can only be placed in clause-final scope position via movement from a delimiter position.

The Q-particle *də* serves primarily to delimit a *wh*-constituent in a *wh*-question, in a way similar to focus particles like *tamay*. As for its possible Merge site, then, it is reasonable to hypothesize that *də* can only be merged in a 'delimiter' position which marks a delimited *wh*-constituent. On this view, if *də* is to mark *wh*-scope (as an operator to form an A-bar chain with the *wh*-phrase), it must be moved to the scope position, as shown in (27b):

(27) a. $[_{CP_2}\ [_{TP}\ \ldots\ \textit{WH}\ \mathbf{də}\ \ldots]]$
b. $[_{CP_2}\ [_{TP}\ \ldots\ \textit{WH}\ t_i\ \ldots]\mathbf{də}_i]$

I propose that *də* can potentially be merged in any 'delimiter' position where it picks out a *wh*-constituent. Thus, although *də* is most typically merged to the closest possible maximal projection to the host *wh*-word, it may also be merged in a distant position separate from the *wh*-word, as long as it can c-command and bind the *wh*-word. Since *də* in delimiter position serves to pick out a focused constituent

[10] Likewise, when a focus particle like *tamay* appears in clause-final position, I assume that it appears in [Spec, C_2].

[11] Since focus particles are allowed to occur in the same position as the Q-particle, I assume that in the sequence *ee potə tamay* 'that book FOC', *tamay* is adjoined to the DP *ee potə*.

in a *wh*-question, I assume that its merger is licensed when a focus feature [+F] on the *wh*-word is legitimately percolated up to the delimited *wh*-constituent.

One might argue, however, that *də* can be merged even more freely, and that Merge can target both scope-marking and delimiter positions. If this is the case, the option where *də* is directly merged in the scope position, should also be available, as represented by (28):

(28) $[_{CP_2}[_{TP} \ldots WH \ldots]$**də**$]$

In Sinhala, however, there is good reason to believe that *də*, which is associated with a *wh*-phrase, cannot be directly merged in its scope-marking position.

Empirical evidence in favor of the view that the *wh*-question particle *də* may not be base-generated in scope position may be obtained by looking at a 'minimal' answer to a *wh*-question. To see this, consider (29):

(29) a. Q: Chitra kiidenek **də** dække?
Chitra how.many Q saw-E
How many (people) did Chitra see?

b. A: tundenek.
two
Two (people).

The *wh*-question in (29a) can be answered in a number of ways, but a minimal answer can be made by supplying only the value of the *wh*-phrase, as in (29b). Interestingly, in a case in which a Q-element is merged in a position separate from its host *wh*-phrase, it is not possible to supply just the value of the *wh*-word as a minimal answer:

(30) a. Q: Chitra [kiidenek ekkə] **də** sellan kəlee?
Chitra how.many with Q play did-E
With how many (people) did Chitra play?

b. A: ?*tundenek.
two
Two (people).

c. A′: tundenek ekkə.
two with
With two (people).

Example (30a) represents a case in which a *wh*-word is embedded in a PP. Since the sequence *[*kiidenek də ekkə*] 'how.many Q with' is not possible, the Q-particle *də* must be placed outside the PP. For (30a), a licit minimal answer is the one which repeats the PP along with the value of the *wh*-word.

The same constraint is imposed on (31a), where a *wh*-word is embedded inside a complex DP island:

(31)a. Q: Chitra [[kiidenek aawa kiənə] kaṭəkataawə] **də** æhuwe?
Chitra how.many came that rumor Q heard-E
Chitra heard the rumor that how many (people) came?

b. A: ?*tundenek.
two
Two (people).

c. A′: [tundenek aawa kiənə] kaṭəkataawə.
two came that rumor
The rumor that two (people) came.

In response to (31a), it is not legitimate to give just the value of the *wh*-word. In order to give a well-formed minimal answer, it is necessary to recapitulate the entire material marked with *də*, along with the value of the *wh*-word, as in (31c).[12]

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[12] As pointed out to me by Joan Maling (p.c.), English echo questions work somewhat similarly, since (ic), but not (ib), is a felicitous answer to a question like (ia):

(i)a. Q: John heard the rumor that WHO was coming?
b. A: ?*Robin.
c. A′: The rumor that Robin was coming.

The unacceptability of (ib) stands in contrast to the acceptability of (iib), which is provided as an answer to (iia):

(ii)a. John heard that WHO was coming?
b. Robin.

In English, unlike Sinhala, no syntactic device of a delimiting marker is available, so this fact might suggest that delimitation of a constituent is made relying on pragmatics. In (ia), the complex DP, rather than the *wh*-phrase, is a dominant element in the discourse, so that an answer like (ib), which supplies only the value of the *wh*-phrase, is not appropriate.

In (29a), since *də* is directly attached to the *wh*-phrase, its minimal answer is the one which only comprises the value of the *wh*-phrase. But in (31a) *də* is directly merged to the DP containing a noun complement, so its minimal answer must recapitulate the whole complex DP together with the value of the *wh*-phrase. The important point is that a licit minimal answer requires that the *wh*-constituent delimited by *də*, to which I assume the [+F] feature of a *wh*-word is percolated up, be recapitulated.

In cases in which the Q-element *də* appears in scope position, the answer that recapitulates the entire sentence does not count as a minimal answer. To answer the question in (32a), it is fully permissible to provide just the value of the *wh*-word:

(32)a. Q: Chitra kiidenek dækka **də**?
Chitra how.many saw-A Q
How many (people) did Chitra see?

b. A: tundenek.
two
Two (people).

If *də* were directly merged in the scope position, the entire sentence should be delimited as a *wh*-constituent. If so, its minimal answer should be the one which spells out the entire sentence along with the value of the *wh*-word, but clearly, this type of answer is not minimal.

For a *wh*-question like (33a), where the *wh*-word is inside PP, its minimal answer must repeat the PP, as shown in (33c), and the answer just supplying the value of the *wh*-word does not count as a minimal answer, as shown in (33b). Compare the examples in (31).

(33)a. Q: Chitra [kiidenek ekkə] sellan kəlaa **də**?
Chitra how.many with play did-A Q
With how many (people) did Chitra play?

b. A: ?*tundenek.
two
Two (people).

c. A′: tundenek ekkə.
two *with*
With two (people).

Furthermore, in (34a), in which a *wh*-word is embedded in a noun complement, just like (31a), the answer that recapitulates the complex DP alongside the value of the *wh*-word is called for as its minimal answer, even though *də* is placed at the end of the sentence:

(34) a. Q: Chitra [[kiidenek aawa kiənə] kaʈəkataawə]
Chitra *how.many* *came-A* *that* *rumor*
æhuwa **də**
heard-A *Q*
Chitra heard the rumor that how many (people) came?

b. A: ?*tundenek.
two
Two (people).

c. A′: [tundenek aawa kiənə] kaʈəkataawə.
two *came-A* *that* *rumor*
The rumor that two (people) came.

Thus, a comparison of the minimal answers to the questions above shows that no change is observed when *də* occurs clause-finally. Since these minimal answers reflect the constituent which *də* delimits, it must be the case that in (32a)–(34a), the Q-element picks out a focused *wh*-constituent, located in a delimiter position (rather than at the end of the sentence), in the same manner as the Q-element in (29a)–(31a). Given this, it is easy to see that in (32a)–(34a), the Q-element *də* is merged in a delimiter position where *də* occurs in (29a)–(31a), but is placed in the scope position on the surface as a consequence of overt movement.[13]

It should be noted that when a *wh*-phrase is embedded in the complement clause of a bridge verb like *kienəwa* 'say', it is possible for *də* to occur either contiguous with the *wh*-phrase or to the immediate right of the complementizer. This suggests that *də* can be

[13] The type of question-answer pair found in (34) is often used to argue for the so-called 'pied piping' analysis of *wh*-questions, which claims that a large-scale DP containing a *wh*-phrase may be pied piped into [Spec, C] (see Nishigauchi 1990; Choe 1987; Pesetsky 1987, among others). The Sinhala facts indicate that what actually undergoes movement is the Q-element, rather than a pied-piped constituent.

base-generated in two different 'delimiter' positions. (Recall that the Q-element occurring to the right of a complementizer is in a delimiter position, but not in a scope position.) Interestingly, possible minimal answers differ depending on where the Q element occurs. First, consider (35):

(35)a. Q: Chitra [kau **də** aawa kiyəla] kiiwe?
Chitra who Q came-A that said-E
Who did Chitra say came?

b. A: Ranjit.

In answer to a question like (35a), where *də* is contiguous with the *wh*-phrase, it is fully permissible to provide just the value of the *wh*-phrase as a minimal answer, as shown in (35b). But when the Q-particle occurs to the immediate right of the complementizer, it is necessary to repeat the embedded clause with the complementizer, alongside the value of the *wh*-phrase, as illustrated in (36):

(36)a. Q: Chitra [kauru aawa kiyəla] **də** kiiwe?
Chitra who came-A that Q said-E
Who did Chitra say came?

b. A: ?*Ranjit.

c. A′: Ranjit aawa kiyəla.
Ranjit came-A that
That Ranjit came.

The data indicate that in (36a), the whole embedded clause is delimited as a *wh*-constituent. Note that if *də* were first merged in a position adjacent to the *wh*-phrase and moved to the right of the complementizer, the *wh*-phrase, rather than the entire complement clause, would be delimited. In that case, we would expect that the answer in (36b) should be licit, contrary to fact. In light of this consideration, we can reasonably conclude that in (36a), *də* is directly merged to the right of the complementizer.

When a *wh*-phrase is embedded in the complement clause of a bridge verb, two different Merge sites for *də* are available. This immediately raises the question of where an overtly moved *də* is merged in such a context. When *də* is positioned in the scope position, as in (37a), it is possible to provide just the value of the *wh*-phrase as a minimal answer:

(37)a. Q: Chitra [kiidenek aawa kiyəla] kiiwa **də**?
Chitra how.many came-A that said-A Q
How many (people) did Chitra say came?

b. A: tundenek.
two
Two (people).

The fact that the *wh*-phrase is a delimited constituent in (37a) indicates that *də* is first merged in a position contiguous with the *wh*-phrase, rather than to the right of the complementizer, and then is overtly moved to its scope position.

Now, if the clause-final placement of *də* involves operator movement, the question to be addressed is what motivates it. Here, I suggest that a formal feature which contributes to the morphological realization of the *-e* marking on a finite verb is responsible for the attraction of *də*. I argue that particle-predicate concord in Sinhala may be adequately characterized if we assume that the formal feature [+Q] on the verb needs to be checked off by *də*, which assigns scope to its host *wh*-phrase, or to be more precise, by an 'operator' feature in it (cf. Chomsky 1993, pp. 31–32). I propose that the morphological realization of verb forms is dictated by the following morphological rule:

(38) A finite verb bears the *-e* ending if the feature [+Q] is present on the verb at PF; otherwise, it bears the *-a* ending.

There is a sense in which the [+Q] feature should be checked and deleted by *də* when it is attracted to [Spec, C_2], since the special *-e* marking can appear only on the verb in the clause where the *wh*-phrase actually takes scope in *wh*-questions. (When *də* is not overtly moved, [+Q] marks *wh*-scope, but in the present analysis, [+Q] is not an operator that forms an A-bar chain with a *wh*-phrase.)

The overt movement of *də* must be feature-driven. If [+Q] assigned to a predicate is weak, then overt movement of *də* is not required. In that case, *də* remains in the original position where it is merged in overt syntax.

(39) $[_{CP_2}[_{TP} \ldots \ WH\ \textbf{də} \ldots] \ [+Q]]$

In (39), feature checking does not take place overtly, so that [+Q] feeds into PF, and the verb receives the *-e* ending. (In this case, the

Q-particle is moved covertly to its scope position, which means that it comes to function as an operator to form an A-bar chain with the *wh*-phrase in LF; I will turn to this issue in section 3.) On the other hand, if [+Q] is strong, then *də*, which is merged in a position to delimit a *wh*-constituent, is overtly moved into its scope position for feature checking.

(40) $[_{CP_2}\ [_{TP}\ \ldots\ \textit{WH}\ t_i \ldots]\ \mathbf{də}_i]$

When *də* occurs in a position to mark scope, as in (40), the strong feature [+Q] on the verb is checked and deleted by *də* in the checking domain of C_2 in overt syntax, so the verb yields the ordinary *-a* ending. In this case, *də*, located in clause-final position, is morphologically affixed to the verb, and marks the scope of the *wh*-word. I assume here that in Sinhala the verb is head-raised from V to C_2 and resides in C_2 in overt syntax, and that feature checking is executed under a Spec-head configuration.

The assignment of a strong or weak feature is conditioned by a semantic factor. The foregoing discussion on the position of Q-particle indicates that a weak feature [+Q] is assigned where an 'existential' presupposition obtains, while a strong feature [+Q] is assigned where no such presupposition is required. In the context in which Q-movement is optional, the conditions for the assignment of the strong [+Q] feature as well as the weak [+Q] feature are met. Note that the semantic difference, which governs the overt position of *də*, is not structurally represented in LF, but the correct interpretation still obtains, since the presupposition is encoded as a semantic feature of the *wh*-word, which survives to the LF output.

Overt movement of *də* displays the properties of phrasal A-bar movement, just as in ordinary operator movement, in that movement targets a scope position, i.e., CP_2 (to form an operator-variable structure with a *wh*-word), its dependency can be long distance, etc. This state of affairs is naturally anticipated under the proposed analysis, according to which a Q-particle behaves like a phrasal category for the purpose of movement.

The next question to be raised is why the *wh*-question particle *də* is first merged to a constituent inside a clause, serving as a delimiter, even when it appears in its scope position. The key to the answer lies in the fact that the Q-element serving as a scope marker appears in such a position that it cannot separate a legitimate

wh-constituent from other constituents. In Sinhala *wh*-questions, although *də* is sometimes merged to a maximal projection other than its associated *wh*-phrase, the *wh*-constituent picked out by *də* must be one that can be *wh*-questioned. Thus, no matter how far *də* is merged away from the host *wh*-phrase, it can only be merged in a position where the delimited constituent can be *wh*-questioned. From now on, I will refer to this requirement as the '*wh*-questioning' constraint.

We can easily confirm that the Q-element serving as a delimiter is always placed in a position where the delimited constituent can be *wh*-questioned, even when it is separate from the host *wh*-phrase. To take just one example, consider (41):

(41)a. Chitra [[kauru aawa kiənə] kaʈəkataawə] **də** æhuwe?
Chitra who came-A that rumor Q heard-E
Chitra heard the rumor that who came?

b. Chitra monəwa **də** æhuwe?
Chitra what Q heard-E
What did Chitra hear?

In (41a), the complex DP containing *kauru* 'who' is marked by *də*. The fact that (41b), in which the complex DP is replaced by a simple *wh*-phrase, is well-formed indicates that in (41a), *də* is merged in a position such that the constituent it marks can be *wh*-questioned.

The example in (42b), by contrast, shows that the clausal constituent TP immediately followed by *də* in (42a) cannot be *wh*-questioned:

(42)a. Chitra [kauru aawa **də** kiyəla] dannəwa.
Chitra who came-A Q that know-A
Chitra knows who came.

b. *Chitra [monəwa **də** kiyəla] danne?
Chitra what Q that know-E
What$_i$ does Chitra know that t$_i$?

As shown in (42b), the *wh*-phrase *monəwa* 'what', which is substituted for the clausal complement [*kauru aawa*] 'who came', cannot be a legitimate *wh*-constituent. This substitution should be possible if the

constituent marked by *də* can be *wh*-questioned.[14] Note that (42b) is not ruled out on the basis that the clausal complement of the complementizer requires a finite verb, since (43) is acceptable in some appropriate context:

(43) Chitra [kaa-ṭə **də** kiyəla] dannəwa.
Chitra who-DAT Q that know-A
Chitra knows to whom.

Example (43) is usable, for instance, in a context in which the speaker is reporting that Chitra knows the identity of the person to whom Ranjit gave a book.[15] In (43), what precedes the complementizer *kiyəla* 'that' is a *wh*-phrase combined with *də*, indicating that *kiyəla* does not have to select a constituent containing a verb as its complement.

The impossibility of replacing the clausal constituent with a simple *wh*-phrase in (42b) indicates that the '*wh*-questioning' constraint is violated by the direct merger of *də* to its scope position. Thus, the derivation in which *də* is merged directly to this position is illicit and does not converge in Sinhala. In order to form a legitimate *wh*-question where *də* appears in clause-final scope position, *də* must first be merged in a 'delimiter' position (for the purpose of identifying a legitimate *wh*-constituent), and then moved to the clause-final 'scope' position.

In an economy-based approach such as Chomsky (1995b), the derivation that involves Merge alone, as in (28), is less costly than the derivation in (27b), which involves both Merge and Move. Thus, (27b) should, other things being equal, be ruled out in favor of (28). But in Sinhala *wh*-questions, the derivation in (28) does not con-

[14] This does not mean that natural language never allows the complement clause that precedes a complementizer to be *wh*-questioned. Notice that a *wh*-in-situ language like Japanese allows the clausal complement to be turned into a *wh*-phrase:

(i) John-wa Mary-ni [*nan* to] itta **no**?
John-TOP Mary-DAT what that told Q
John told Mary that what?

The unacceptability of (42b), when compared with (i), suggests that while natural language does allow the option of the clausal complement which precedes a complementizer to be *wh*-questioned, Sinhala does not choose this option.

[15] Example (43) involves sluicing. In the given context, (43) should have a form like (i) if the entire sequence in the embedded clause is spelled out:

(i) Chitra [[Ranjit ee potə dunne] kaa-ṭə **də** kiyəla] dannəwa.
Chitra Ranjit that book gave-E who-DAT Q that know-A
Chitra knows to whom it was that Ranjit gave that book.

verge because it does not satisfy the '*wh*-questioning' requirement. In the economy-based analysis, only convergent derivations are compared. Thus, the non-convergent derivation in (28) does not block the derivation in (27b). Therefore, the derivation in (27b), which involves both Merge and Move, is an optimal derivation and is selected.[16]

We can state here that if *də*, which counts as an operator, is moved to [Spec, C_2], it forms an operator-variable structure (i.e., an A-bar chain) with the associated *wh*-phrase, so that the scope of the *wh*-phrase is fixed by the position of *də* in LF. The present analysis, which analyzes the special verbal marking as assuming the role of a formal feature to attract a Q-element, can correctly capture the generalization on particle-predicate concord. That is, when *də* occurs in Merge position, the scope of the *wh*-word is marked by the *-e* marking, which is an overt realization of a [+Q] feature. But when *də* is positioned in the scope position, *də* specifies the scope of the *wh*-word, and the verb's special ending does not obtain (since [+Q] is checked off) (cf. section 4).

To summarize, on the assumption that *də* is construed as a non-projected head, we can naturally explain why *də* undergoes A-bar operator movement in overt syntax, behaving like a phrasal element, although it is thought of as being phonologically dependent. I have argued that *də* can be merged in any position where the delimited constituent can be turned into a simple *wh*-expression, and that the placement of *də* in clause-final scope position always results from a syntactic operation that moves it after it is first merged in such a position that it can delimit a *wh*-constituent.

3. Phrasal Movement in LF

In the previous section, I have argued that when *də* appears in scope position, it is overtly moved to check the strong [+Q] feature. When [+Q] is weak, overt movement of *də* is not required, but for the derivation to converge, [+Q] must be checked in LF.[17] In this section,

[16] This does not mean that the base-generation of an operator element in scope position is always prohibited in Sinhala *wh*-questions. An operator can be merged in scope position under a very restricted context, and this can happen when a Q-element cannot serve as a scope marker. I will discuss the details of this fact in section 4.

[17] Covert movement cannot be induced by an EPP feature, which may be assigned to C (cf. Chomsky 2000). If an EPP feature is assigned to C, then overt movement, rather than covert movement, is induced.

I argue that in such a case, i.e., when [+Q] is weak, *də* must be moved into its scopal position in LF for the purpose of feature checking as well as forming an operator-variable structure with a *wh*-phrase, and that this movement displays the properties of phrasal category movement.

3.1. *Island Effects in LF*

As a first point, I show that movement of *də* must count as phrasal even if it is invoked in LF, and that this covert movement incurs various island effects in exactly the same way as overt phrasal movement. Now, for the purpose of checking syntactic islands in Sinhala, let us consider the following examples that involve overt pseudo-cleft extraction:

(44)a. *oyaa [[Chitra t_i dunnə] potə] kieuwe Ranjit-ʈə$_i$.
you Chitra gave book read-E Ranjit-DAT
It was to Ranjit$_i$ that you read the book that Chitra gave t_i.

b. *Chitra [[Ranjit t_i gatta kiənə] kaʈəkataawə] æhuwe
Chitra Ranjit bought-A that rumor heard-E
ee potə$_i$.
that book
It was that book$_i$ that Chitra heard the rumor that Ranjit bought t_i.

c. *[Chitra t_i kanə koʈə] Ranjit pudumə unee maalu$_i$.
Chitra ate time Ranjit surprise became-E fish
It was fish$_i$ that Ranjit was surprised when Chitra ate t_i.

d. ??Chitra [Ranjit t_i gatta kiyəla] kendiruwe ee potə$_i$.
Chitra Ranjit bought-A that whispered-E that book
It was that book$_i$ that Chitra whispered that Ranjit bought t_i.

e. ??Ranjit [Chitra t_i kieuwa də-næddə kiyəla] danne
Ranjit Chitra read-A whether that know-E
ee potə$_i$.
that book
It is that book$_i$ that Ranjit knows whether Chitra read t_i.

In (44), the focused DPs have been overtly extracted from various syntactic positions, i.e., from within a relative clause, a noun com-

plement clause, an adjunct clause, the complement clause of a non-bridge verb, and a *whether*-clause.[18] Overt extraction of a phrasal element via pseudo-clefting is fully acceptable if it does not originate from within an island, as illustrated in (45):

(45) Ranjit [Chitra t_i kieuwa kiyəla] kiiwe ee potə$_i$.
Ranjit Chitra read-A that said-E that book
It was that book$_i$ that Ranjit said [that Chitra read t_i].

Since the pseudo-cleft construction, which induces the *-e* suffix on the verb in the clause where the moved element resides, is a variant of focusing constructions, I assume that the constituent moved by pseudo-clefting resides in [Spec, C_2] to the right, where a focus operator is typically accommodated in Sinhala (see section 4).[19] The examples in (44) illustrate some of the island effects caused by overt extraction of phrasal elements.[20]

Next, let us consider *wh*-questions. The following *wh*-questions, which are the counterparts of those in (44), are all unacceptable in just the same way as (44), despite the fact that they do not involve overt extraction:

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[18] Since *də-nædda* is a fixed expression, it is treated as an equivalent of 'whether' in English. Even if it turns out that *də-nædda* is equivalent to 'whether or not', the essential point remains the same, since both types of complement clauses form an island for extraction:

(i)a. ?*What do you wonder whether John read?
b. ?*What do you wonder whether or not John read?

[19] Given this analysis, we can say that in Sinhala, [Spec, C_2], which accommodates a focus operator, stands at the right end of a clause. This means that focus constructions in general involve either overt or covert movement of a focusing operator to [Spec, C_2] to the right. In this analysis, both clause-final Q-element and overtly moved 'focused' constituent are conceived of as occupying the same [Spec, C_2], the only difference being that the Q-element is cliticized onto the verb, behaving like a clitic, whereas the focused constituent is not.

[20] Not all islands are testable due to some language particular restrictions. For instance, in English, it is known that a factive complement selected by the verb *regret* forms a weak island. But in Sinhala, it is not possible to test it, because factive verbs like *kanagaatu wenəwa* 'regret' do not select a clause, but a complex DP, as in (i):

(i) Chitra [Ram tuwaalə una kiənə] eka gæna kanagaatu wenəwa.
Chitra Ram hurt became-A that fact about regret become-A
Chitra regrets the fact that Ram was hurt.

A complex DP constitutes an island, independently of the context in which it appears.

(46)a. *oyaa [[Chitra kaa-ʈə **də** dunnə] potə] kieuwe?
you Chitra who-DAT Q gave book read-E
To whom$_i$ did you read the book that Chitra gave t_i?

b. *Chitra [[Ranjit monəwa **də** gatta kiənə] kaʈəkataawə] æhuwe?
Chitra Ranjit what Q bought-A that rumor heard-E
What$_i$ did Chitra hear the rumor that Ranjit bought t_i?

c. *[Chitra monəwa **də** kanə koʈə] Ranjit pudumə unee?
Chitra what Q ate time Ranjit surprise became-E
What$_i$ was Ranjit surprised when Chitra ate t_i?

d. ??Chitra [Ranjit monəwa **də** gatta kiyəla] kendiruwe?
Chitra Ranjit what Q bought-A that whispered-E
What$_i$ did Chitra whisper that Ranjit bought t_i?

e. ?*Ranjit [Chitra monəwa **də** kieuwa də-næddə kiyəla] danne?
Ranjit Chitra what Q read-A whether that know-E
What$_i$ does Ranjit know whether Chitra read t_i?

Recall here that the *-e* suffix appears on the verb located in the clause where the *wh*-phrase acquires scope, but not on any other verbs. The verb endings in (46) indicate that the sentences are all construed as direct *wh*-questions. The island effects in (46) are quite analogous to those observed in overt pseudo-cleft extraction. This suggests that in (46), covert phrasal movement of *də* into [Spec, C_2] in the main clause should be held responsible for the island effects.

The correctness of this view is supported by the fact that the island effects are absent in cases where the Q-particle appears to the right of the islands:

(47)a. oyaa [[Chitra kaa-ʈə dunnə] potə] **də** kieuwe?
you Chitra who-DAT gave book Q read-E
You read the book that Chitra gave to who?

b. Chitra [[Ranjit monəwa gatta kiənə] kaʈəkataawə] **də** æhuwe?
Chitra Ranjit what bought-A that rumor Q heard-E
Chitra heard the rumor that Ranjit bought what?

c. [Chitra monəwa kanə koṭə] **də** Ranjit pudumə unee?
Chitra what ate time Q Ranjit surprise became-E
Ranjit was surprised when Chitra ate what?

d. Chitra [Ranjit monə potə gatta kiyəla] **də** kendiruwe?
Chitra Ranjit what book bought-A that Q whispered-E
Chitra whispered that Ranjit bought what book?

e. Ranjit [Chitra monəwa kieuwa də-næddə kiyəla] **də** danne?
Ranjit Chitra what read-A whether that Q know-E
Ranjit knows whether Chitra read what?

Recall that the merger of *də* targets a maximal projection containing a *wh*-word. Thus, *də* may be merged to the right edge of an island, separate from its host *wh*-word, as in (47), if *də* c-commands and can bind the *wh*-word. Interestingly, all the examples in (47), in opposition to those in (46), are acceptable. The only visible difference is that while the Q-particles are contiguous with their host *wh*-phrases in (46), the Q-particles are attached at the right edge of the islands in (47). The fact that islands effects are voided when Q-particles are placed at the right edge of islands on the surface was first noted by Gair (1983).

In all the examples in (46) and (47), the Q-particle *də* serves as a delimiter, and is not moved in overt syntax, so that it must be moved into its scope position in LF. For the sake of exposition, let us assume that movement of *də* proceeds in a successive cyclic fashion from the Merge position to the scope position by way of any available [Spec, C_2] on its way. In all cases in (47), LF movement starts out at the right edge of the islands, but in (46), it involves extraction out of the islands. In (46d), *də* may be raised to its scope position through [Spec, C_2] in the embedded clause, and in the rest of the examples in (46), it is moved directly from the Merge position to the scope position in LF. Notably, island effects obtain when LF movement of *də* involves extraction out of islands, as shown in (46), but they do not when *də* starts out at the right margin of the islands, as shown in (47).

The presence or absence of the island effects in (46) and (47) (i.e., Gair's generalization) is naturally anticipated in the present analysis, according to which *də* is merged to a maximal projection (containing a *wh*-form) by adjunction:

(48)a. $[_{CP_2}[_{TP} \ldots [_{XP} \ldots \mathit{WH}\ t_i \ldots] \ldots]\mathbf{də}_i]$
b. $[_{CP_2}[_{TP} \ldots [_{XP}[_{XP} \ldots \mathit{WH} \ldots]\ t_i] \ldots]\mathbf{də}_i]$

When *də* is merged within an island XP, as in (48a), the subsequent LF movement of *də* into its scope position involves the crossing of XP, as a result of which an island effect is manifested, as illustrated in (46). But when it is adjoined to XP, as in (48b), it is only dominated by a single segment of XP. In this case, the later LF movement of *də* to [Spec, C_2] would not involve extraction out of XP, so that the sentences in (47) are all well-formed.[21]

In this connection, notice that the islandhood of a category intervening between *də* and its scopal position cannot be voided by a Merge operation. To illustrate, consider (49):

(49) *Chitra [Ranjit [[kauru liyəpu] potə] **də** gatta kiənə]
Chitra Ranjit who wrote book Q bought-A that
kaṭəkataawə æhuwe?
rumor heard-E
Chitra heard the rumor that Ranjit bought the book that who wrote?

In (49), *də* is attached to a DP which comprises a relative clause containing the *wh*-word *kauru* 'who'; this DP is further embedded in a noun complement clause. The ungrammaticality of (49) is comparable to that of (50), where the lower complex DP is replaced by a simple *wh*-phrase:

(50) *Chitra [Ranjit monəwa **də** gatta kiənə] kaṭəkataawə
Chitra Ranjit what Q bought-A that rumor
æhuwe?
heard-E
What$_i$ did Chitra hear the rumor that Ranjit bought t_i?

Both (49) and (50) are matrix *wh*-questions, as the matrix verb receives the *-e* ending. Since *də* resides in a delimiter position, it must be raised to [Spec, C_2] in the main clause in LF. Then, the island violations in (49) and (50) must be caused by the LF movement of *də* into this scope position. Notice that in (49), *də* is adjoined to a DP comprising a relative clause, which constitutes an island, represented by XP in (51):

(51) $[_{CP_2}[_{TP} \ldots [_{YP} \ldots [_{XP}[_{XP} \ldots \mathit{WH} \ldots]t_i] \ldots] \ldots] \ldots]$ **də**$_i$]

[21] To be more precise, it is necessary to assume here that no other islands exist between XP and CP_2.

The adjunction operation does not incur an island violation pertaining to XP. Even so, *də* must covertly move out of the noun complement island, which is represented by YP in (51). Since the LF movement of *də* in (49) crosses the same type of complex DP island as that of (50), (49) is found unacceptable in the same way that (50) is.

It is important to keep in mind that under the current assumptions, movement of *wh*-forms is not necessary throughout the derivation, since *wh*-features are [+Interpretable] (see Chomsky 1995b). By the present account, *wh*-phrases are construed as variables to be bound by *də* (without movement) (cf. Pesetsky 1987; Reinhart 1997). Thus, as long as a Q-element residing in scope position appropriately binds the *wh*-phrase, the scope interpretation can be obtained without requiring movement of the *wh*-phrase:

(52) $[_{CP_2}[_{TP} \ldots [\ldots WH_i \ldots] \ldots]$ **də**$_i]$

There is a sense in which Sinhala *wh*-phrases should be construed as variables to form an A-bar chain with a Q-element, since they are not inherent *wh*-operators, but indeterminate pronouns whose quantificational force is determined according to the kind of Q-particle associated with them. If *wh*-words are variables that are not moved throughout derivations, we can easily see that they can be deeply embedded within islands when movement of *də* does not violate island conditions, as in (47).

The Sinhala data clearly indicate that LF movement of *də* incurs the same standard island effects that are observed for overt extraction of phrasal elements. The fact that the island violations observed for (46) are parallel to those in (44) is expected, given the bare phrase theoretic assumption on *də*, since this Q-element can undergo phrasal category movement.

The analysis which views the island violations in (49) as coming from LF movement of *də* gains further empirical support from the fact that in (53), where *də* occurs next to the host *wh*-phrase, a non-*wh*-phrase can be extracted without creating any island effect:

(53) Ranjit-ʈə$_i$, oyaa [Chitra t$_i$ monəwa **də** dunne kiyəla] dannəwa.
Ranjit-DAT you Chitra what Q gave-E that know-A
To Ranjit$_i$, you know what Chitra gave t$_i$.

In (53), the DP *Ranjit-ʈə* 'to Ranjit' is overtly extracted from the embedded clause via scrambling. The acceptability of (53) parallels the well-formedness of (54), which involves overt extraction of a phrasal item from a non-interrogative subordinate clause selected by the verb *dannəwa* 'know':

(54) Ranjit-ʈə$_i$, oyaa [Chitra t_i ee potə dunna kiyəla] dannəwa.
Ranjit-DAT you Chitra that book gave-A that know-A
To Ranjit$_i$, you know that Chitra gave that book t_i .

In (53), just like (54), the scrambled phrase can be moved without displaying any island effect. An embedded *wh*-question, however, forms an island for extraction when the Q-element is placed clause-finally, as in (55):

(55) ??Ranjit-ʈə$_i$, oyaa [Chitra t_i monəwa dunna **də**
Ranjit-DAT you Chitra what gave-A Q
kiyəla] dannəwa.
that know-A
To Ranjit$_i$, you know what Chitra gave t_i.

The island effect also obtains when *də* is attached to the right of the complementizer, as shown in (56):

(56) ?*Ranjit-ʈə$_i$, oyaa [Chitra t_i monəwa dunna kiyəla]
Ranjit-DAT you Chitra what gave-A that
də danne?
Q know-E
To Ranjit$_i$, what do you know that Chitra gave t_i?

In (56), the matrix verb marks the scope of the *wh*-phrase, and the Q-element is base-generated to the right of the complementizer. The facts in (53), (55) and (56) show that the scrambling of a DP causes an island violation when *də* is placed either to the left or to the right of the complementizer, but not when it is contiguous with the *wh*-phrase.

Now, given that long distance scrambling is an instance of A-bar movement, as argued by Mahajan (1990), the presence or absence of the *wh*-island effects in (53), (55), and (56) can be accounted for on the assumption that both the Q-particle and the scrambled phrase count

as operator elements.[22] In (53), *də* is adjoined to the direct object, and hence does not c-command the indirect object, allowing the extraction of the DP *Ranjit-ʈə* 'to Ranjit' out of the embedded clause with no violation of the Minimal Link Condition (MLC).[23] By contrast, in (55), *də* appears in [Spec, C_2] in the complement clause, and in (56), it is adjoined to the right of the complement clause. In both cases, *də* c-commands the indirect object *Ranjit-ʈə* 'to Ranjit', so that *də* counts as a closer operator element to be attracted. Consequently, the extraction of *Ranjit-ʈə* to the sentence-initial position via scrambling induces a MLC violation, thereby the sentences being unacceptable.[24]

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[22] In Sinhala, scrambling does not allow LF reconstruction, as shown below:

(i) *monəwa$_i$, Ranjit [Chitra t_i kieuwa **də** kiyəla] dannəwa.
what Ranjit Chitra read-A Q that know-A
What, Ranjit knows Q Chitra read.

In view of this fact, we can reasonably assume that in Sinhala, a scrambled element can serve as an operator in LF (cf. Saito 1989, 1992).

[23] The MLC is defined as follows (Chomsky 1995b, p. 311):

(i) K attracts α only if there is no β, β closer to K than α, such that K attracts β.

The notion of 'closeness' is defined over 'c-command' (Chomsky 1995b, p. 358):

(ii) β is closer to the target K than α if β c-commands α.

The notion of 'c-command' is defined as (iii):

(iii) α c-commands *β* if α does not dominate β and every γ that dominates α dominates β.

The notion of 'domination', which is relevant for 'c-command', is defined as follows:

(iv) β is dominated by α if it is dominated by some segment of α.

[24] The same contrast that is observed for (53) and (55) obtains in a case like (i), where the direct object is scrambled across the subject:

(i)a. ee potə$_i$, Ranjit [kau **də** t_i kieuwe kiyəla] dannəwa.
that book Ranjit who Q read-E that know-A
That book, Ranjit knows who read.

b. ??ee potə$_i$, Ranjit [kauru t_i kieuwa **də** kiyəla] dannəwa.
that book Ranjit who read-A Q that know-A
That book, Ranjit knows who read.

The contrast in acceptability between (ia) and (ib) can be accounted for by the MLC, which accounts for the contrast in acceptability between (53) and (55).

Notice that the same type of contrast in acceptability that is observed in (53) and (55) also obtains in the pseudo-cleft construction, where rightward movement is induced:

(57)a. Ram [Chitra t_i monəwa **də** dunne kiyəla] danne Ranjit-ʈə$_i$
Ram Chitra what Q gave-E that know-E Ranjit-DAT
It is to Ranjit that Ram knows what Chitra gave.

b. ??Ram [Chitra t_i monəwa dunna **də** kiyəla]
Ram Chitra what gave-A Q that
danne Ranjit-ʈə$_i$.
know-E Ranjit-DAT
It is to Ranjit that Ram knows what Chitra gave.

Example (57b), which involves the extraction of the dative phrase via pseudo-clefting, exhibits a mild island effect, but this effect is absent when *də* is adjacent to the host *wh*-phrase, as shown in (57a). The contrast in acceptability can be accounted for by appealing to MLC, just in the same way as (53) and (55), if the DP undergoing pseudo-clefting counts as an operator element.[25]

The non-existence of blocking effects in (53) and (57a) indicates that when *də* resides in a delimiter position, no operator (to bind a

[25] The same type of *wh*-island violation that is observed for (55) and (57b) occurs if a phrasal element is extracted from a *whether*-clause:

(i)a. Ranjit [Chitra t_i kieuwa kiyəla] danne ee potə$_i$.
Ranjit Chitra read-A that know-E that book
It is that book that Ranjit knows that Chitra read.

b. ??Ranjit [Chitra t_i kieuwa də-næddə kiyəla] danne ee potə$_i$.
Ranjit Chitra read-A whether that know-E that book
It is that book that Ranjit knows whether Chitra read.

While long distance extraction is licit from the non-interrogative subordinate clause, long distance extraction out of the *də-næddə*-clause is degraded. The deviance of long distance extraction is also observed when a phrasal item is extracted from the *də-næddə*-clause by way of scrambling:

(ii) ??ee potə$_i$, Ranjit [Chitra t_i kieuwa də-næddə kiyəla] dannəwa.
that book Ranjit Chitra read-A whether that know-A
That book, Ranjit knows whether Chitra read.

In (ib) and (ii), *də-næddə* 'whether' occupies the same position as *də*, so we can assume that *də-næddə* is an operator element which fills [Spec, C_2] in the embedded clause. Under this configuration, the long distance extraction of the DP *ee potə* 'that book' will incur a MLC violation.

wh-form) occupies [Spec, C_2] in overt syntax. Since scope must be assigned to the *wh*-phrase by forming an operator-variable structure, *də* must be moved to [Spec, C_2] in LF if it remains in a delimiter position where it is merged in overt syntax. The data in (53), (55) and (57) further confirms that the island violations in (46) are indeed caused by LF movement of *də* into the scope position. This LF movement is obviously motivated by the LF requirement of scope interpretations as well as by the necessity of checking the feature [+Q]. The present analysis is therefore in line with those proposed by Reinhart (1991) and Longobardi (1992), who argue for the island sensitivity of LF movement, while maintaining that LF movement may be necessitated by LF interface conditions. Further, since LF movement of *də* displays the same properties as overt phrasal movement, it is easy to see that Q-movement is a phrasal movement, irrespective of whether it occurs in overt syntax or in LF.

To account for the islands effects found in (46), one might argue that an abstract operator is generated contiguous with the *wh*-phrase and is moved 'overtly' to [Spec, C_2], adopting Watanabe's (1992) analysis. In fact, this line of inquiry is pursued by Gair and Sumangala (1992) and Sumangala (1992), who argue that when *də* is contiguous with a *wh*-word, a null pronominal (or a null operator) is overtly moved to its scope position, which is marked by the verb's *-e* ending. This analysis is not tenable, however. As shown above, when *də* appears in delimiter position, no operator element occupies [Spec, C_2]. It is clear then that we cannot appeal to an overtly moved abstract operator to account for the island effects.

Notice that in an analysis postulating a null operator, i.e., an invisible phrasal category, to explain the difference in island effects between (46) and (47), it is necessary to ensure that the null operator starts out from the position of its associated Q head. Given the bare phrase theoretic assumptions, however, even this stipulation is not necessary, since *də* can be subject to phrasal movement. In addition, the null operator analysis predicts that the null operator can determine the scope of a *wh*-phrase, independently of whether or not *də* is detachable from the host *wh*-phrase. But as I will discuss in section 4, scope properties differ depending on whether or not a *wh*-word is associated with a detachable Q-element, which suggests that *də* should undergo phrasal movement in (46) and (47). Under the proposed Q-movement analysis, everything falls out at no extra cost, and there is no need to postulate the existence of a null operator to account for the island effects in (46).

Hagstrom's (1998) analysis, which also analyzes Sinhala *wh*-questions as invoking Q-movement, differs from my analysis, since it subscribes to the view that *də* is always generated next to the host *wh*-phrase, and that when *də* is embedded in an island, it must migrate to the right edge of the island. Crucially, this 'migration' operation does not observe island conditions; otherwise, *wh*-phrases would never be embedded in syntactic islands. From the current perspective, however, there is no need to stipulate 'migration'. By my account, since *də* functions as a *wh*-delimiter in a way comparable to a focus particle like *tamay*, *də* may be merged in a position separate from its host *wh*-word. If *də* is merged in such a way that the later movement does not violate any island conditions, as in (47), no island effects are expected to emerge.

At this point, it should also be noted that islandhood can be voided in *wh*-questions in which overt movement of Q-elements is invoked, as shown by the examples in (58):[26]

(58) a. [oyaa [[Chitra kaa-ṭə dunnə] potə] kieuwa **də** kiyəla]
you Chitra who-DAT gave book read-A Q that
mamə dannəwa.
I know-A
I know who$_i$ you read the book that Chitra gave to t$_i$.

b. [Chitra [[Ranjit monəwa gatta kiənə]kaṭəkataawə] æhuwa
Chitra Ranjit what bought-A that rumor heard-A
də kiyəla] mamə dannəwa.
Q that I know-A
I know what$_i$ Chitra heard the rumor that Ranjit bought t$_i$.

c. [[Chitra monəwa kanə koṭə] Ranjit pudumə unaa
Chitra what ate time Ranjit surprise became-A
də kiyəla] mamə dannəwa.
Q that I know-A
I know what$_i$ Ranjit was surprised when Chitra ate t$_i$.

d. [Chitra [Ranjit monə potə gatta kiyəla] kendiruwa
Chitra Ranjit what book bought-A that whispered-A
də kiyəla] mamə dannəwa.
Q that I know-A
I know what book$_i$ Chitra whispered that Ranjit bought t$_i$.

[26] In all the examples in (58), the intermediate clause is scrambled to the front in order to facilitate comprehension.

e. [Ranjit [Chitra monəwa kieuwa də-næddə kiyəla] æhuwa
Ranjit Chitra what read-A whether that asked-A
də kiyəla] mamə dannəwa.
Q that I know-A
I know what$_i$ Ranjit asked whether Chitra read t_i.

In the examples in (58), *də* is placed to the right of the finite verb in the complement clause selected by the verb *dannəwa* 'know', which means that *də* is overtly moved. But this overt syntactic movement does not induce any island effect. The position where *də* is originated is not overtly marked, but since island conditions pertain to overt syntactic movement, *də* must be merged outside the islands.

The examples in (58) involve overt movement rather than LF movement, but still the same strategy for evading island effects is available. This strategy cannot be used in a language like English, where *wh*-words are necessarily moved in the overt component. The fact indicates that the difference in island effects between '*wh*-in-situ' languages (like Sinhala) and 'overt *wh*-movement' languages (like English) is not related to an LF-syntax dichotomy (cf. Huang 1982; Nishigauchi 1990). Instead, it is reduced to the question of whether or not a *wh*-phrase can be associated with a separable Q-element moving into a scope position. This would be a difference related to the morphology of *wh*-words.

To sum up, when *də* is attached to an island containing a *wh*-word, as in (47), the LF movement of *də* does not involve the crossing of the island, so that no island effect obtains.[27] However, when *də* is further embedded in another island, an island violation occurs, as illustrated by (49). These facts clearly indicate that the island violations in (46)

[27] One crucial difference that distinguishes Japanese from Sinhala in the voiding effect of the islandhood is that in Japanese, as reported by Nishigauchi (1990) and Watanabe (1992), a *wh*-word cannot be embedded in a *whether*-clause:

(i) ?*John-wa [Mary-ga nani-o yonda ka-doo-ka] sitte-iru no?
John-TOP Mary-NOM what-ACC read whether know Q
What does John know whether Mary read?

If both Sinhala and Japanese freely utilize the strategy to avoid an island effect, the ungrammaticality of (i) would pose a problem. Although it is beyond the scope of this paper to discuss the typological difference, the fact seems to suggest that while *də-næddə* 'whether' in Sinhala does not block the binding of a Q-element to its host *wh*-phrase, *ka-doo-ka* 'whether' does if it intervenes between the Q-element and the host *wh*-phrase. See Watanabe (1992) and Hagstrom (1998).

are incurred by LF movement of *də*, which we can assume to be responsible for determining the scope of *wh*-phrases.

3.2. *The Adjunct Condition Effect*

One question that remains to be addressed is whether the island violations that are observed when *də* is embedded inside islands are incurred by a syntactic operation other than phrasal category movement, such as feature movement (in the sense of Chomsky (1995b)) or Agree (in the sense of Chomsky (2000, 2001)). In this subsection, I argue, in light of the behavior of *wh*-adjuncts, that phrasal category movement should be responsible for those island effects.

One argument in support of this view may be adduced from Takahashi's (1997) discussion on the Adjunct Condition on feature movement.[28] Takahashi argues that when phrasal category movement is not involved, i.e., when feature movement is relevant, the scope of an adjunct is determined via base-generation of an adjunct operator in the closest operator position (cf. Rizzi 1990). This brings us the effect that only a short distance construal is allowed for adjuncts, i.e., the Adjunction Condition effect. In the framework of Chomsky (2000, 2001), where feature movement is replaced by Agree, the presence of the Adjunct Condition effect means that the derivation involving adjuncts does not converge by Agree, and that in order for the derivation to converge, a null operator must be inserted. But when a phrasal category is moved, scope determination does not rely on the insertion of a null operator. In this case, adjuncts are free from the Adjunct Condition effect, and both short and long distance construals are allowed.

This means that we can test for the presence or absence of phrasal category movement by looking at the behavior of adjuncts. In Sinhala, we can assume that relativization does not invoke phrasal category movement, since long distance extraction of reason and manner adjuncts is not possible, while local construal is perfectly legitimate:

(59)a. *[Ranjit [Chitra e_i aawa kiyəla] kiiwə] widiyə/heetuwə$_i$
Ranjit Chitra came-A that said way/reason
the way/reason Ranjit said that Chitra came

[28] Takahashi (1997) also argues for feature movement's susceptibility to the Subject Condition, but since Sinhala does not show the relevant subject-object asymmetries, this condition does not apply to Sinhala.

b. [Chitra e_i aawə] widiyə/heetuwə$_i$
Chitra came way/reason
the way/reason Chitra came

In (59a), the reason and manner adjuncts cannot originate from the embedded clause, which indicates that the option of inserting a null operator into [Spec, C_2] in the local clause must be chosen to form a relative clause with an adjunct, in the absence of phrasal category movement.

If phrasal category movement were not implemented for Sinhala *wh*-questions, we would predict that long distance dependency should not be allowed for adjunct *wh*-phrases. But the manner adjunct *kohomə* 'how' allows for a long distance construal as well as a short distance construal, as shown in (60):

(60)a. Ranjit [Chitra kohomə **də** aawa kiyəla] kiiwe?
Ranjit Chitra how Q came-A that said-E
How$_i$ did Ranjit say [that Chitra came t_i]?

b. Chitra kohomə **də** aawe?
Chitra how Q came-E
How did Chitra come?

In (60), LF movement is involved, but long distance dependency is possible in just the same way as (61), where *də* is overtly moved to the scope position in the intermediate clause:

(61) [Ranjit [Chitra kohomə aawa kiyəla] kiiwa **də** kiyəla]
Ranjit Chitra how came-A that said-A Q that
mamə dannəwa.
I know-A
I know how$_i$ Ranjit said [that Chitra came t_i].

The well-formedness of (61) is expected in the present analysis, since the overtly moved Q-element counts as a phrasal category in syntax. Further, since long distance construal with *wh*-adjuncts is possible when phrasal category movement is involved, it must be the case that phrasal category movement is invoked in the derivation of a *wh*-question in (60a), where covert movement is relevant, just as in (61), where overt movement is relevant. Notice that in the framework of Chomsky (2000, 2001), no covert movement should exist, but inter-

estingly, the Sinhala data indicate that phrasal category movement can occur in LF.

In essence, what is demonstrated by Sinhala *wh*-questions is that LF movement of *də* is an instance of phrasal movement which obeys island conditions, and that extraction of *də* from within an island is illicit even if it occurs in LF. Since Huang (1982), it has been widely assumed that the bounding conditions are relaxed in the LF component, and that LF movement is not subject to island constraints. But the Sinhala data clearly indicate that LF movement is constrained by various island conditions. The voiding effect, however, can be obtained if a Q-element can be generated in a position where the later movement does not violate island conditions.

4. Null Operator Insertion

Sinhala has a small inventory of *wh*-items which cannot be associated with detachable Q-elements. Although this class of *wh*-phrases has not received much attention in the Sinhala literature, an inspection of the data reveals that when the option of Q-movement is not available, Sinhala resorts to the strategy of null operator insertion to create an operator-variable structure.

First, the *wh*-adjunct *mokə* 'why' is included in the category of *wh*-phrases where *də* can never be separated from the host, although it looks just like an ordinary *wh*-phrase like *kauru* 'who', which is associated with a separable Q-element:

(62)a. Ranjit [Chitra mokə **də** aawe kiyəla] dannəwa.
Ranjit Chitra why Q came-E that know-A
Ranjit knows why Chitra came.

b.*Ranjit [Chitra mokə aawa **də** kiyəla] dannəwa.
Ranjit Chitra why came-A Q that know-A
Ranjit knows why Chitra came.

In the subordinate clause of the verb *dannəwa* 'know', the Q-particle *də* associated with an ordinary *w*h-phrase can be moved to the clause final position, but in the case of *mokə*, it cannot. There is another type of *wh*-adjunct, namely, *æi* 'why', which cannot co-occur with *də*:[29]

[29] There are some dialects where the *wh*-form *æi də* 'why' is permissible. The *wh*-phrase *æi də* patterns exactly like *mokə də* 'why' in these dialects.

(63) Chitra {æi/*æi **də**} potə kieuwe?
Chitra why/why Q book read-E
Why did Chitra read the book?

Since *mokə* and *də* are never separable, and since the behavior of *mokə də* is identical to that of *æi*, as we will see below, it is reasonable to say that *mokə də* forms a single lexical item, which is unanalyzable in syntax.

The *wh*-adjuncts *mokə də* and *æi* are not associated with a separable Q element, which suggests that they cannot invoke movement of a Q-element to form an operator-variable structure. Now, the question that immediately arises is how a legitimate operator-variable format is formed with these *wh*-adjuncts. There are two conceivable ways of forming an operator-variable structure. One is to move the *wh*-phrases in the LF component. The other is to base-generate a null operator in the scope position. Note that feature movement and Agree do not create a licit operator-variable structure encoding scope for adjuncts, and therefore, are not candidates here (cf. section 3.2). In the following discussion, I show that Sinhala utilizes the 'null operator' strategy when movement of a Q-element cannot be implemented to assign scope to *wh*-phrases.

As discussed by Rizzi (1990), and also by Takahashi (1997), the scope position where an invisible operator can be directly generated is quite restricted, and it can only be merged in the local scope position of the clause in which the *wh*-word resides. But there is no such stringent 'locality' constraint on phrasal category movement. If this is correct, we can check which option is available by looking at the long distance construal of *wh*-questions. Now, consider (64):

(64) ?*Ranjit [Chitra {mokə **də**/æi} aawa kiyəla] kiiwe?
Ranjit Chitra why Q/why came-A that said-E
Why$_i$ did Ranjit say [that Chitra came t$_i$]?

If the *wh*-adjuncts *mokə də* and *æi* were susceptible to LF category raising, they should be able to take matrix scope, but as indicated by (64), they cannot. In contrast, when the *wh*-adjuncts take embedded scope, the sentence is fully acceptable:

(65) Ranjit [Chitra {mokə **də**/æi} aawe kiyəla] dannəwa.
Ranjit Chitra why Q/why came-E that know-A
Ranjit knows why Chitra came.

The fact that the scope of the *wh*-adjuncts cannot go beyond the clause in which they are located shows that a null operator is inserted in the closest [Spec, C_2] for scope assignment:

(66) $[_{CP_2}[_{TP}\ldots WH_i\ldots]\mathbf{OP}_i]$

In (66), the null operator legitimately binds the *wh*-word, and thereby the structure is well-formed. But since a null operator can be merged only in the local clause where the *wh*-word is located, the long distance construal in (67) is not possible:

(67) $^{*}[_{CP_2}[_{TP}\ldots[_{CP_2}[_{TP}\ldots WH_i\ldots]]]\mathbf{OP}_i]$

In (64), the *wh*-word is not embedded in a syntactic island; this suggests that the long distance construal would be possible if LF raising were instantiated. The unacceptability of (64) indicates then that the scope of the *wh*-adjuncts is assigned by base-generating a null operator in the local scope position.

A question worth addressing at this moment is when the null operator is merged in the local scope position. Since lexical access is not admitted at LF, and since LF may only involve rearrangement of constituents, the null operator must be merged in the overt component to check a strong [+Q] feature. If this is the case, then it is predicted that overt extraction of a phrasal element out of the clause in which a *wh*-adjunct resides should display a *wh*-island effect. The expectation is in fact borne out:

(68) *ee potə$_i$, Ranjit [Chitra {mokə **də**/æi} t$_i$ gatte
that book Ranjit Chitra why Q/why bought-E
kiyəla] dannəwa.
that know-A
That book$_i$, Ranjit knows why Chitra bought t$_i$.

In (68), a *wh*-island effect is present, which suggests that an operator element should occupy the embedded [Spec, C_2] in overt syntax, in spite of the fact that it is not visible in the surface strings. The same island effect is observed for overt pseudo-cleft extraction:

(69) *Ranjit [Chitra {mokə **də**/æi} t$_i$ gatte kiyəla]
Ranjit Chitra why Q/why bought-E that
danne ee potə$_i$.
know-E that book
It is that book$_i$ that Ranjit knows why Chitra bought t$_i$.

The presence of island effects in (68) and (69) stands in sharp contrast to the lack of a *wh*-island effect with *kohomə* 'how' in (70):

(70) ee potə$_i$, Ranjit [Chitra kohomə **də** t$_i$ gatte
that book Ranjit Chitra how Q bought-E
kiyəla] dannəwa.
that know-A
That book$_i$, Ranjit knows how Chitra bought t$_i$.

The manner adjunct *kohomə* is associated with a detachable Q-element, and when the Q-element is adjacent to the *wh*-adjunct, no operator element occupies the scope position in the embedded clause. Therefore, (70) is acceptable. Note that a *wh*-island effect emerges if *də* is placed in the clause-final position:

(71) ??ee potə$_i$, Ranjit [Chitra kohomə t$_i$ gatta
that book Ranjit Chitra how bought-E
də kiyəla] dannəwa.
Q that know-A
That book$_i$, Ranjit knows how Chitra bought t$_i$.

The fact that the clause in which the *wh*-adjuncts *mokə də* and *æi* reside forms an island for long distance extraction of phrasal items, which is shown in (68) and (69), gives us a clear indication that when *də* does not participate in scope determination, the insertion of a null operator into the closest scope position takes place in the overt component.

In Sinhala *wh*-questions, the strategy to base-generate a null operator to form an operator-variable structure is always used when a detachable *də* is not available. To see this, consider the following sentences:

(72) a. Chitra kiiy-ak **də** geuwe?
Chitra how.much Q paid-E
How much did Chitra pay?

b. Chitra kiiya **də** geuwe?
Chitra how.much Q paid-E
How much did Chitra pay?

The *wh*-phrases *kiiy-ak* 'how much' and *kiiya* 'how much' occupy the same syntactic position, i.e., the direct object position of *geuwa* 'paid', but differ in the possibility of Q-movement. The *wh*-phrase *kiiy-ak*

behaves like an ordinary *wh*-phrase, in that it permits the associated Q-element to be placed in clause-final scope position:

(73) Ranjit [Chitra kiiy-ak geuwa **də** kiyəla] dannəwa.
Ranjit Chitra how.much paid-A Q that know-A
Ranjit knows how much Chitra paid.

The minimally contrasting *wh*-form *kiiya* 'how much' behaves differently from *kiiy-ak* 'how much':

(74) *Ranjit [Chitra kiiya geuwa **də** kiyəla] dannəwa.
Ranjit Chitra how.much paid-A Q that know-A
Ranjit knows how much Chitra paid.

In (74), *də* cannot be moved to the end of the embedded clause. In this respect, *kiiya* 'how much' patterns with *mokə* 'why'.[30]

With this difference in mind, let us see whether or not they permit the long distance construal of *wh*-scope. In the case of *kiiya* 'how much', the matrix scope interpretation is not available when it is embedded in a subordinate clause:

(75) ?*Ranjit [Chitra kiiya **də** geuwa kiyəla] kiiwe?
Ranjit Chitra how.much Q paid-A that said-E
How much did Ranjit say that Chitra paid?

In contradistinction, the scope of *kiiy-ak* 'how much' can readily go beyond the local clause where it is located:

(76) Ranjit [Chitra kiiy-ak **də** geuwa kiyəla] kiiwe?
Ranjit Chitra how.much Q paid-A that said-E
How much did Ranjit say that Chitra paid?

It goes without saying that the local construals of these two *wh*-phrases are allowed. If they take embedded scope, the sentences are acceptable, as shown in (77):

[30] The sole morphological difference between *kiiy-ak* 'how much' and *kiiya* 'how much' lies in the fact that while the former is accompanied by *-ak*, the latter is not. In Sinhala, the same distinction is manifested in the morphology of *wh*-phrases *mokə* 'why' and *mok-ak* 'what'. (The *wh*-word *mokə* originally means 'what', but it is no longer used in this sense.) Interestingly, these *wh* phrases are similar to *kiiya* and *kiiy-ak*, in that while *mokə* is not associated with a detachable Q-element, *mok-ak* accompanies a separable Q-element.

(77) a. Ranjit [Chitra kiiy-ak **də** geuwe kiyəla] dannəwa.
Ranjit Chitra how.much Q paid-E that know-A
Ranjit knows how much Chitra paid.

b. Ranjit [Chitra kiiya **də** geuwe kiyəla] dannəwa.
Ranjit Chitra how.much Q paid-E that know-A
Ranjit knows how much Chitra paid.

Notice that the difference in the possibility of long distance construal is not determined configurationally, since both *wh*-phrases occupy the direct object position of the verb *geuwa* 'paid'. Obviously, the difference should be reduced to the question of whether or not a *wh*-phrase is associated with a detachable Q-element.[31]

The difference in the behavior of the *wh*-words *kiiya* and *kiiy-ak* is expected in the present analysis. In the first place, with *kiiy-ak*, the relevant operator-variable structure can be created by raising *də* to its scope position, so both long and short distance construals are allowed. In the second, in the case of *kiiya*, the Q-element forms part of the lexical item, and the option of raising *də* is not available. In this case, Sinhala has recourse to the strategy of base-generating a null operator, so only a local construal is permitted.

Interestingly, the long distance construal of relativization is not blocked from the direct object of the verb *geuwa*, as indicated by the well-formedness of (78):

(78) [Ranjit [Chitra e_i geuwa kiyəla] kiiwə] mudəla$_i$
Ranjit Chitra paid-A that said money
the money that Ranjit said that Chitra paid

Example (75) shows that when the Q-particle *də* originated from the direct object of *geuwa* cannot be detached, a null operator is inserted into its local scope position. But (78) suggests that this is a context in which the deletion of a formal feature is in principle possible without inserting a null operator. Thus, we can confirm that in *wh*-questions, the deletion of [+Q] alone does not yield a legitimate LF representation, and that an operator element (to bind a *wh*-phrase) must be placed in the scope position. The scope facts observed above can

[31] The data presented here suggest that the two types of *wh*-words cannot be distinguished by either the 'argument/adjunct' distinction (Lasnik and Saito 1984, inter alia) or the 'nominal/non-nominal' distinction (Tsai 1994; Huang 1982), since using either of these criteria, *kiiy-ak* 'how much' and *kiiya* 'how much' belong to the same class.

be explained naturally if an operator-variable structure to fix the scope of a *wh*-word must be formed by either raising *də* or inserting a null operator into the scope position (due to LF interface conditions).[32]

One more question to be answered is why the embedded verb in (65) retains the special *-e* ending on the surface even if a null operator is located in the embedded [Spec, C_2]. In the present framework, this fact may be captured by breaking down the checking operation into two steps, that is, the checking of a feature and its deletion, as suggested by Chomsky (1995b), and further, by imposing different requirements on them.

To be more concrete, since the feature [+Q] motivating movement of *də* is [-Interpretable], let us assume that the deletion of [+Q] must occur by the LF output. Further, since the strength of features determines the locus where checking occurs, let us assume that if [+Q] is strong, it calls for feature checking in overt syntax, but that if [+Q] is weak, feature checking takes place in LF. Under the current view, we can say that the checking of a weak [+Q] occurs in LF, because the derivation does not crash at PF even if a weak feature enters into PF without checking in overt syntax. But a strong [+Q] feature must be checked in the overt component; an unchecked strong feature leads to a crash in the derivation if it feeds into PF (Chomsky 1993).

Suppose further that the deletion of a strong feature [+Q] at the point of feature checking is preferable to its delayed deletion in LF, since the latter, but not the former, forces the relevant operations to occur in two different components. If [+Q] is strong, then both checking and deletion, in unmarked cases, take place at the same time in overt syntax. This is what happens when *də* is overtly moved to the clause-final scope position. However, the deletion of the strong feature [+Q] is only required for LF convergence by assumption. Thus, its deletion may be delayed until LF, provided that no convergent derivation is available when both checking and deletion take place in overt syntax.

Recall here that the Q-particle *də*, when it is placed clause-finally, signals the scope of its host *wh*-phrase, taking over a 'scope' marking function from the special verbal marking (instead of serving as a delimiter). Since 'visible' scope marking indicates the locus where an

[32] The 'null operator' strategy is not utilized for ordinary *wh*-words which accompany a detachable Q-element. I assume that this is due to the fact that these *wh*-words do not select null operators in the Numeration.

operator acquires scope and is an essential ingredient of scope-marking constructions, let us assume that the lack of an overt scope marking on the verb in such constructions leads to a crash on the PF side. In *wh*-questions, then, scope must be encoded phonologically either by the *-e* ending (i.e., the [+Q] feature) on the verb or by a clause-final Q-particle affixed to the verb.

Given these assumptions, we can naturally account for the fact that the verb in (79) must bear the *-e* ending (even in the presence of a null operator in [Spec, C_2]):

(79) $[_{CP_2}[_{C'}$ Chitra æi$_i$ potə kieuwe/*kieuwa] **OP**$_i$]?
Chitra why book read-E/read-A
Why did Chitra read the book?

In (79), since a null operator is merged in overt syntax, the [+Q] feature on the verb is checked overtly. If [+Q] is deleted at the time of checking, the verb does not yield the *-e* marking. But no 'visible' elements can take over the 'scope marking' function of the *-e* affix on the verb, so the deletion of [+Q] in overt syntax leads to a crash on the PF side. Here, the existence of the *-e* ending is required in overt syntax, and therefore, the deletion of [+Q] must be deferred until LF even if it is checked in the overt component. This explains why the *-e* marking is retained on the verb in (79).

This analysis can also explain the fact that in the pseudo-cleft construction, the verb retains the *-e* ending even if it involves overt movement to [Spec, C_2]:

(80) $[_{CP_2}[_{C'}$ Ranjit t$_i$ kieuwe] ee potə$_i$]
Ranjit read-E that book
It was that book that Ranjit read.

The rightward movement of the focused element in (80) can be assumed to be triggered by the strong [+Q] feature. If so, [+Q] is checked in overt syntax. But if it is deleted in overt syntax, no scope marker is affixed to the verb (i.e., *ee potə* 'that book' is a full-fledged phrasal constituent, but not a dependent element affixed to the verb), and the derivation crashes on the PF side. To avoid a PF crash, i.e., for the verb to yield a legitimate 'scope' marking, the [+Q] feature must be retained in overt syntax. This analysis explains why the *-e* ending obtains in a pseudo-cleft sentence like (80) even if a DP is overtly moved to [Spec, C_2]. The present analysis allows the distribution of the *-e* marking to be characterized optimally.

To summarize, the discussion has shown that a *wh*-phrase can take not only a local construal but also a long distance construal when its associated Q-element can be launched off. When movement of *də* is not an option for generating the scope of *wh*-in-situ, an invisible operator is inserted in the local scope position, and in this case, only the local construal is allowed. In Sinhala *wh*-questions, an operator-variable structure must be formed by either raising *də* or inserting a null operator, in order to assign scope to *wh*-forms properly. I also proposed a mechanism to account for the distribution of the special *-e* marking with full generality.

5. Conclusion

I have argued that with ordinary *wh*-phrases, Sinhala implements movement of a Q-element (which counts as a non-projected head) to fix their scope in *wh*-interrogatives. A detailed look at Sinhala *wh*-questions has shown that movement of a Q-element to form an operator-variable structure with a *wh*-form is an instance of phrasal category movement, which may be induced either in overt syntax or in LF. The Sinhala data have provided evidence that even when a Q-particle, which shows the behavior of a phrasal category for the purpose of movement, is moved in LF, island conditions are observed.

In Sinhala *wh*-questions, *wh*-phrases are always assigned scope by operators external to them. Ordinary *wh*-phrases are associated with a Q-element which can serve as a scope assigner, and their scope is determined by the LF position of the Q-element. For *wh*-phrases which do not invoke movement of a Q-element, their scope is assigned by a null operator which is base-generated in the closest scope position. The discussion has revealed that in Sinhala, *wh*-phrases always serve as variables and are never moved throughout the derivation, and that even if *wh*-phrases are deeply embedded in islands, they can be assigned scope as long as external operators can legitimately bind them.

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