

# INTERROGATIVE FEATURES

by

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DEDICATION

To Junko and Rachel.

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## ABSTRACT

There has been a great deal of work examining the structures of yes/no and *wh*-constructions that has led to many important developments in linguistic theory. In this dissertation, I extend this work by developing a theory that explains how the behavior of Qu-morphemes (question morphemes) and *wh*-phrases in interrogative constructions in several different languages is influenced by ‘interrogative features.’ The interrogative features are 1) a Qu-feature, which is responsible for typing a clause as an interrogative, 2) a *wh*-feature, which is responsible for giving a *wh*-phrase scope, and 3) a Focus-feature, which is responsible for focusing certain relevant phrases. The main focus of this work is on explaining the influence of these interrogative features on the positions of question morphemes and *wh*-phrases. In the first part of this work, I examine the behavior of Qu-morphemes. I account for why a Qu-morpheme must appear in the clause periphery in certain languages, such as Japanese, whereas it can appear in a non-clause-peripheral position in other languages, such as Sinhala. I explain how a Qu-feature associated with a Qu-morpheme types a clause and why there is variation in the positions of Qu-morphemes. The second part of this work focuses on the behavior of *wh*-phrases. I account for why *wh*-constructions can be formed with an in-situ *wh*-phrase (for example, in Japanese), with movement of a *wh*-phrase to a scope position (for example, in English), or with movement of a *wh*-phrase to a non-scopal position (for example, in some dialects of German). I also examine other phenomena involving *wh*-phrases. I show how *wh*-feature movement can influence well-formedness of a *wh*-construction. I explain why, in certain cases, what would normally be an ill-formed construction can be repaired via the addition of a *wh*-phrase. I examine why some languages, but not others, allow multiple *wh*-constructions. Lastly, I investigate the odd behavior of the *wh*-phrase *why*, which behaves differently from other *wh*-phrases. This work is

novel in that it provides a unified analysis of cross-linguistic and language internal variation in the structures of yes/no and *wh*-constructions.

## ABBREVIATIONS

2p = 2nd person pronoun  
3p = 3rd person pronoun  
ACC = accusative marker  
ASP = aspect marker  
COMP = complementizer  
CONC = conclusive  
CONJ = conjunct inflection  
CL = classifier  
D = Determiner  
DAT = Dative  
DECL = Declarative  
DIR = direct voice  
e = empty category  
EMPH = emphatic  
ERG = Ergative marker  
FOC = focus  
FUT = future tense  
GEN = genitive  
HON = honorific  
IND = indicative  
INF = infinitive  
LOC = locative  
NEG = negation  
NOM = nominative marker  
PAST = past tense

PERF = perfective

PL = plural

PRES = present tense

Qu = question

S = sentence

t = trace

TL = title prefix

TOP = topic marker

Notes: Throughout this work, for the sake of consistency, I have made slight changes to example sentences from various sources. Unless otherwise indicated, English and Japanese examples are my own.

## CHAPTER 1

## Introduction

The purpose of this dissertation is to account for why there is cross linguistic, as well as language internal, variation in the formation of interrogative constructions. I use ‘interrogative constructions’ to refer to *yes/no* and *wh*-questions, which request responses of a listener, and also to embedded *yes/no* and *wh*-constructions, which do not request a response.<sup>1</sup> Working within the framework of the Minimalist Program (cf. Chomsky 1995b), I attempt to answer the following questions. 1) Why can interrogative constructions be formed with overt question morphemes (for example, in Sinhala and Japanese) or with no overt question morpheme (for example, in English and Persian)? 2) Why is there cross-linguistic and language internal variation in the positions of question morphemes? For example, in Japanese a question morpheme must appear in a clause-peripheral position, but in Sinhala a question morpheme can appear in a non-peripheral clause-internal position. 3) Why can *wh*-constructions be formed with an in-situ *wh*-phrase (for example, in Japanese), with movement of a *wh*-phrase to a scope position (for example, in English), or with movement of a *wh*-phrase to a non-scopal position (for example, in some dialects of German, and in Malay)? 4) Why do some languages, but not others, allow multiple *wh*-constructions? While finding the answers to these questions, the goal of the work presented here is to provide a unified analysis of *yes/no* and *wh*-constructions that demonstrates the following.

- what *yes/no* and *wh*-constructions have in common.

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<sup>1</sup>Although these embedded constructions are not questions, I consider them to be interrogatives since they share many similarities in form with matrix *yes/no* and *wh*-constructions.

- why there is cross-linguistic and language internal variation in the structures of yes/no constructions.
- why there is cross-linguistic and language internal variation in the structures of *wh*-constructions.

I set about achieving these explanatory goals by examining the roles of interrogative features.

Interrogative features are elements that play a role in the formation of interrogative constructions. I focus on two distinct interrogative features: *wh*-features and Qu-features (question features).<sup>2</sup> A third type of feature, a Focus-feature, also plays an important role in the formation of certain interrogative constructions. I discuss evidence for the existence of these features in various languages and I attempt to show how these features influence the syntactic structures of interrogative constructions.

Following work by Katz & Postal (1964), Aoun & Li (1993) argue that the presence or absence of *wh*- and Qu-features in a clausal typing projection results in different types of clauses, as shown in (1).

- (1) (a) [+Qu, +wh] = *wh*-question  
 (b) [+Qu, -wh] = yes/no question  
 (c) [-Qu, -wh] = statement  
 (d) [-Qu, +wh] = exclamatory statements (e.g., **How good he is!**)  
 (Aoun & Li 1993:232-233)

In this work, I focus on the types of constructions described by (1a) and (1b). When a single Qu-feature occurs in a clausal typing projection, which I refer to as a TypP,<sup>3</sup>

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<sup>2</sup>Question features and question morphemes are often referred to in the literature with ‘Q’ instead of ‘Qu.’ In order to avoid confusion with quantificational elements, which sometimes are also referred to with a ‘Q,’ I borrow the term “Qu” from Aoun & Li (1993) and Denham (2000).

<sup>3</sup>See chapter 2.5 for discussion of TypP.

and there is no *wh*-feature, then a yes/no construction results. When a Qu-feature and a *wh*-feature co-occur in TypP, then a *wh*-construction results. A Qu-feature is responsible for a construction becoming an interrogative. A *wh*-feature is responsible for a *wh*-phrase having scope.

The first part of this work focuses on the properties and behavior of Qu-morphemes in yes/no constructions.<sup>4</sup> Typical yes/no constructions are formed with one of the three types of Qu-morphemes given in (2).

(2)

	Overt	Affix
Qu <sub>1</sub>	✓	∅
Qu <sub>2</sub>	∅	✓
Qu <sub>3</sub>	∅	∅

Qu<sub>1</sub> is an overt Qu-morpheme that is an independent lexical item, and occurs in languages such as Japanese. Qu<sub>2</sub> is a null Qu-morpheme that is an affix, and occurs in languages such as English. Qu<sub>3</sub> is a null Qu-morpheme that is not an affix. This type of Qu-morpheme results in a yes/no construction that is formed via intonation alone, as in languages such as Hopi. The Qu-morpheme, depending on the language, either 1) appears in the clause periphery (e.g., Japanese), or 2) in a lower clause-internal position (e.g., Sinhala). When in the clause periphery, I argue that the Qu-morpheme is in a clausal typing projection that I refer to as TypP. Variation in the position of the Qu-morpheme depends on whether a Qu-morpheme contains only a Qu-feature as in (3a), or both a Qu-feature and a Focus-feature, as in (3b). The Qu-morpheme in (3a) occurs in a clause-peripheral position and the Qu-morpheme in (3b) occurs in a non-peripheral position within a clause.

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<sup>4</sup>I examine yes/no constructions that have a mono-clausal structure. I do not discuss yes/no constructions which may have a bi-clausal structure, such as Mandarin A-not-A questions (cf. Huang 1982, Hagstrom 2006, among others).

- (3) (a)  $\text{Qu}_{[F_{Qu}]}$   
 (b)  $\text{Qu}_{[F_{Qu}, F_{Foc}]}$

These two different types of Qu-morphemes differ with respect to their semantic effects. The Qu-morpheme in (3a) serves the purpose of typing a clause as an interrogative, whereas that in (3b) both types a clause as an interrogative and focuses a phrase within the clause.

The second part of this dissertation focuses on *wh*-constructions. A *wh*-construction is formed with the same types of Qu-morphemes used in yes/no constructions. The Qu-morpheme surfaces as an overt element, a null affix, or intonation, as in (2) above. In addition, a *wh*-construction crucially requires the presence of a *wh*-phrase that either appears in-situ (in the position in which it receives its theta-role), or undergoes movement. For example, in Japanese, a *wh*-phrase may remain in-situ, whereas in English a single *wh*-phrase must move. In some cases, such as in some dialects of German, a *wh*-phrase may even move to a non-scopal position and have its scope marked by another element.

I begin my analysis of *wh*-constructions by examining the position of a Qu-morpheme in a *wh*-construction. As in yes/no constructions, a Qu-morpheme can occur in a clause-peripheral position. There are also languages that allow (and sometimes require) a Qu-morpheme to occur in a non-peripheral position. I argue that this distinction is dependent on whether the Qu-morpheme has a Focus-feature, as shown in (3b) above, or lacks a Focus-feature, as shown in (3a). A Focus-feature forces a Qu-morpheme to appear in a position adjacent to a focused in-situ *wh*-phrase. Otherwise, if it lacks a Focus-feature, it appears in the clause-periphery.

Next, I examine the role of a *wh*-feature in a *wh*-construction. I argue that the means by which a *wh*-feature establishes a relationship with the clausal typing projection TypP accounts for whether or not the *wh*-phrase remains in-situ or moves. The *wh*-feature can undergo an Agree relation with the head of TypP. In this case, there is no movement of the *wh*-feature or *wh*-phrase to TypP. The other option

is for the *wh*-feature to move to TypP. When this movement occurs, either the *wh*-feature moves alone, or it moves together with its associated *wh*-phrase. This movement is argued to be a different operation from Agree. These three options are shown below.

(4)

Operation	Description
Agree	No movement of <i>wh</i> -feature or <i>wh</i> -phrase
Move	<i>Wh</i> -feature moves alone
Move	<i>Wh</i> -phrase moves

In the following chapters, I discuss the formation of yes/no and *wh*-constructions and the roles that Qu-, *wh*-, and Focus-features play in their formation. I attempt to provide a unified analysis that accounts for what yes/no and *wh*-constructions have in common, why some yes/no constructions have overt Qu-morphemes and others do not, why there is variation in the positions of Qu-morphemes, and why there is variation in the positions of *wh*-phrases.

The organization of this dissertation is as follows. In chapter 2, I explain the basic theoretical background that I utilize in this work. I begin by providing a brief overview of important assumptions of the Minimalist Program about how an utterance is formed. Then I explain the basic clause structure that I utilize. This is followed by discussion of syntactic phenomena that play an important role in my analysis. In chapter 3, I explain what a Qu-feature is and why it surfaces in yes/no and *wh*-constructions. In chapter 4, I examine the role of the Qu-morpheme in the formation of yes/no constructions. I argue that features contained within a Qu-morpheme account for cross-linguistic differences in the surface structure of yes/no constructions. These features determine whether or not a Qu-morpheme is pronounced and whether or not it is an affix. I next account for the fact that a Qu-morpheme must occur in a clause-peripheral position in some languages, but can

occur TP-internally in other languages. In chapter 5, I account for cross-linguistic variation in the positions of Qu-morphemes in *wh*-constructions. I examine languages in which a Qu-morpheme must appear in the clause-periphery in a *wh*-construction, and I examine languages in which a Qu-morpheme may either appear in the clause-periphery or in a non-peripheral position adjacent to an in-situ *wh*-phrase. In chapter 6, I argue that the means by which a *wh*-feature values a probe in the head of a clausal typing projection, TypP, determines whether or not there is movement of a *wh*-element, and thus influences the form of a *wh*-construction. I argue that there are three ways in which a *wh*-feature can form a relationship with a probe in TypP. It can form an Agree relation, it can move to Typ, or there can be movement of a *wh*-phrase to the specifier of TypP, in which case the *wh*-feature values the probe in Typ via a Spec-head relation. In chapter 7, I discuss how, in certain cases, a *wh*-feature can turn a larger phrase into a *wh*-phrase. I examine how this *wh*-feature movement can circumvent potential island effects. In chapter 8, I discuss the roles of interrogative features in the formation of certain multiple *wh*-constructions. In particular, I examine how multiple *wh*-features establish a relationship with a probe in the clausal typing projection TypP. In chapter 9, I examine the behavior of the *wh*-phrase *why*, which behaves differently from other *wh*-phrases in a number of languages. Chapter 10 is the conclusion.

## CHAPTER 2

### Theoretical background

#### 2.1 Introduction

This work is written within the Principles and Parameters framework, in which there is claimed to be an innate module of the brain that contains a universal set of principles (a Universal Grammar) that humans use to produce and understand language. One of the main ideas within the Principles and Parameters program is that languages do not differ very much underlyingly. The apparent differences in languages result from minor variations in the settings of principles contained within the language module.

The Minimalist Program (Chomsky 1995b) is a modern approach to Generative Grammar. According to Chomsky (1999:1), the Minimalist Program has the goal of answering the following question: “to what extent is the faculty of language FL an optimal solution to minimal design specifications, conditions that must be satisfied for language to be usable at all?”. The Minimalist Program relies on the assumptions that the properties of the faculty of language are minimalistic; they are as simple as they can be in order to carry out their functions.

In this chapter, I discuss the basic assumptions about language that I rely on in this work. Section 2.2 explains, from the perspective of the Minimalist Program, the operations that are utilized by the human mind to construct phrases. Section 2.3 discusses the structures of phrases and clauses. Section 2.4 explains Rizzi’s (1997, 2001) view of the elaborated left-periphery of a clause; the part of a clause where clausal typing occurs and where a *wh*-phrase obtains scope. Section 2.5 explains the clause structure that I utilize in this work. Section 2.6 discusses what island

effects are and how they have been accounted for in syntactic theory, and section 2.7 does the same for intervention effects. Section 2.8 briefly discusses head movement. Section 2.9 is the conclusion.

## 2.2 Operations of the faculty of language

The innate faculty of language contains a set of features that are combined to form lexical items and phrases. I use the term ‘feature’ to refer to something akin to an ‘atom’ of language that, when combined with other features, is used to construct human language. Chomsky (1999:7) writes:

FL [the faculty of language] specifies the features  $\mathbf{F}$  that are available to fix each particular language . . . We adopt the conventional (usually tacit) assumption that L [a language] makes a one-time selection  $[\mathbf{F}_L]$  from  $\mathbf{F}$ . These are the features that enter into L; others can be disregarded in use of  $\mathbf{L}$ .

A subset of the universal set of features is utilized in a particular language, and the other features are essentially ‘set aside’ and not used in that language.

There are several operations, given in (1), that I assume are used to construct utterances from these features. These operations are built into the language faculty; they are part of what makes the language faculty what it is.

- (1) (a) Form lexical items: Combine features into bundles that become lexical items at Spell-Out.
- (b) Form a numeration: Construct a numeration from lexical items.
- (c) Select: Select lexical items from the numeration.
- (d) Merge: Combine two objects together.

These operations (1a-d) always occur to form all utterances.<sup>1</sup>

---

<sup>1</sup>Chomsky (2006) claims that a single word utterance, such as *No!*, does not involve Merge. However, it could be that even in a single word utterance, the single lexical item Merges with

### 2.2.1 Lexical items

First of all, a language contains a set of lexical items. A lexical item is essentially a bundle of features that is pronounced as *dog*, *cat*, etc., when an utterance is pronounced (at Spell-Out). Chomsky (1999:7) writes:

L [a language] assembles [ $F_L$ ] [the features that have been selected for use in a particular language] to lexical items LI of a lexicon Lex, the LIs then entering into computations as units.

These features that make up a lexical item determine its properties, such as its interpretation, where it can occur in an utterance, how it is pronounced, etc.

### 2.2.2 Numeration

Once lexical items are formed, a numeration is constructed. The language faculty selects lexical items (actually, the feature bundles that correspond to lexical items at Spell-Out) that it needs in order to produce a particular utterance that expresses something akin to what the speaker desires to express. This collection of lexical items is referred to by Chomsky (1999, 2004) as a “lexical array” if each lexical item only occurs once, or as a “numeration” if one or more lexical items are selected from the lexicon more than once. For example, the sentence *I am hungry* is formed from the lexical array {I, am, hungry} since each lexical item only occurs once, but the sentence *She ate the food on the table* is formed from the numeration {she, ate, the<sub>2</sub>, food, on, table}, where the subscript 2 refers to two occurrences of *the*, because *the* occurs twice.<sup>2</sup> For the sake of simplicity I use the term *numeration* regardless of whether or not a lexical item is selected more than once.

---

another element, but the other element is null. For example, perhaps *no* merges with a null Tense element.

<sup>2</sup>A lexical array is a set; it only contains distinct lexical items. A numeration, as I understand it, is not a set because it contains one or more lexical items that occur more than once. A numeration, though, could be a set if each occurrence of a single lexical item is distinct;

### 2.2.3 Select

The lexical items in the numeration of an utterance are Selected for insertion into a derivation. This is an operation that Chomsky (1995b:226) refers to as *Select*. A lexical item that is Selected is inserted into a derivation via the operation Merge.

### 2.2.4 Merge, Move, and Agree

Merge, at least on the surface, is fairly simple: two elements combine. Chomsky (1999:2) describes Merge as an operation that:

... takes two syntactic objects  $\alpha$  and  $\beta$  and forms the new object  $\gamma = \{\alpha, \beta\}$ . We assume further that  $\gamma$  is of some determinate type: it has label  $LB(\gamma)$ . In the best case,  $LB(\gamma) = LB(\alpha)$  or  $LB(\beta)$ , determined by general algorithm.

Basically, when two elements are combined via Merge, the Merged structure has the label of one of the elements that has been combined. This label refers to what the phrase type is. For example, when a verb combines with a Determiner Phrase (DP), the resulting structure is a verb phrase (VP), not a DP, and so the phrase has the label of the verb.

Merge can apply in two situations. The first type of Merge is when an element is selected from a Numeration and Merged to another element in the process of a derivation. Chomsky (2004, 2006) refers to this as ‘external Merge.’ The second type of Merge is when an element that has already been Merged into a derivation is Merged again in a new position. Chomsky (2004, 2006) refers to this as ‘internal Merge.’ The term ‘internal’ refers to the fact that internal Merge is an operation in which an element Merges onto a syntactic object that it is already a part of, i.e., internal to, at least in its base position. Chomsky (2004:110) writes that when two  


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for example, if  $the_1$  and  $the_2$  are distinct elements. If this view is correct, then there is no need to make a distinction between a lexical array and a numeration.

elements  $\alpha$  and  $\beta$  are Merged, “[u]nder external Merge,  $\alpha$  and  $\beta$  are separate objects, under internal Merge, one is part of the other, and Merge yields the property of “displacement”.” Crucially, internal Merge is an operation that has generally been referred to as ‘movement’ in the literature. In this work, I refer to ‘movement’ instead of to ‘internal Merge,’ as the notion of movement clearly describes the fact that internal Merge results in displacement. Note that movement involves Merge of an element that has already been Merged, a view captured by Epstein *et al.* (1998), who refer to this process as ‘Remerge.’ In current work in the Minimalist Program, movement is generally thought to involve copying of an element from one position and then re-Merging it to a new position (Chomsky 1993), (also see Cover & Nunes 2007).

Once an element has been Merged into a derivation, it can form an Agree relation with another element in a syntactic structure. Chomsky (1999:3) refers to Agree as a relation that holds ‘between  $\alpha$  and  $\beta$ , where  $\alpha$  has interpretable inflectional features and  $\beta$  has uninterpretable ones, which delete under Agree.” It has been claimed, for example by Chomsky (1999, chomsky00) that Agree is subject to locality effects (i.e., Agree can be blocked by intervening elements) and, that movement is triggered by Agree. I take a different position in this work, arguing that Agree is not subject to locality effects and that movement need not be triggered by Agree. Specifically, there are certain configurations in which movement is blocked; movement can be blocked by intervening elements, and movement out of certain types of clauses is barred. Agree, on the other hand, is not subject to these blocking effects. Furthermore, movement is a distinct operation from Agree. I give an overview of the two types of important locality effects discussed in this work; island and intervention effects in sections 2.6-2.7. Movement is discussed in chapter 4, and all subsequent chapters. The distinction between Agree alone versus, Agree followed by Move is discussed in detail in chapter 6, and this distinction plays an important role in the subsequent chapters.

The operations of Merge, Agree, and Move differ in terms of Economy, where Economy refers to how much work the faculty of language must put out for any given operation. The less work an operation involves, the more economical it is. Chomsky defines the Principle of Economy as follows, where *convergence* refers to a derivation that is successful (i.e., well-formed).

(2) *Principle of Economy*

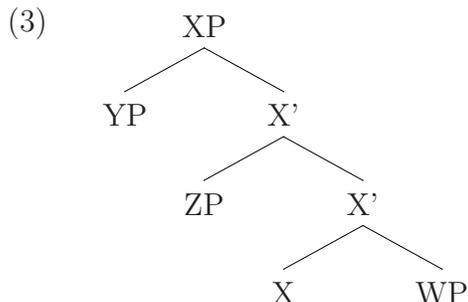
At each stage of a derivation, apply the most economical operation that leads to convergence. (Chomsky 1995b:367)

Merge (external Merge) is the most economical operation, Move is the least economical, and Agree falls in-between. Merge of an element from a numeration into a derivation must occur for any element to appear in a derivation and so it is the simplest operation. According to Chomsky (2001b:3), Merge “comes free.” Agree, on the other hand, involves Merging an element followed by an Agree relation to check an uninterpretable feature. Movement is the most complex operation. It involves several steps; an element  $\alpha$  is Merged into a derivation, an element  $\beta$  attracts *alpha* and forces it to be Merged again in a new position. A single element may undergo this Move operation several times, when moving through different clauses, etc. If it is the case that the most economical operations are preferred, then Merge alone is preferable to Agree or Move, and Agree is preferable to Move. Agree and Move occur only when they have to. Due to its complexity, Chomsky (2000:102) refers to Move as a “last resort.”

### 2.3 Phrase structure

The operations Select, Merge, Agree, and Move construct phrases. I represent phrases using a typical  $\bar{X}$ -notation such as that in (3) (cf. Chomsky 1967, Jackendoff

1974, Jackendoff 1977, among others) as a convenience to the reader.<sup>3</sup>



Probably the most important phrase structural relationship is that of *c-command* (cf. Klima 1964, Langacker 1969, Lasnik 1976, Reinhart 1976, Stowell 1981, Aoun & Sportiche 1981, among others), and the notion of *c-command* relies on the concept of *domination*. A node dominates any nodes that are contained within its branches. For example, in (3), the XP node branches into YP and X'. Therefore, it dominates these nodes. Furthermore, XP dominates any nodes that these nodes dominate. YP has no branches and does not dominate anything. But the higher X' node dominates ZP and the lower X', as well as everything within X'. In this manner, XP actually dominates all of the nodes in the tree, except for possibly itself (depending on how domination is defined). The structural relationship of *c-command* is defined by Chomsky & Lasnik (1995:35) as follows.

(4) *c-command*

$\alpha$  *c-commands*  $\beta$  if  $\alpha$  does not dominate  $\beta$  and every  $\gamma$  that dominates  $\alpha$  dominates  $\beta$ . (Chomsky & Lasnik 1995:35)

According to this definition, in (3), YP *c-commands* all of the nodes in the tree except for XP. XP is the only node that dominates YP, and XP also dominates all of the nodes in the tree. Therefore, every node that dominates YP dominates all of

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<sup>3</sup>Within the Minimalist Program, phrase structure is generally thought to have a structure in accord with the ideas developed in Chomsky (1995a).

the other nodes, and YP then *c*-commands all of the other nodes, except for XP.<sup>4,5</sup>

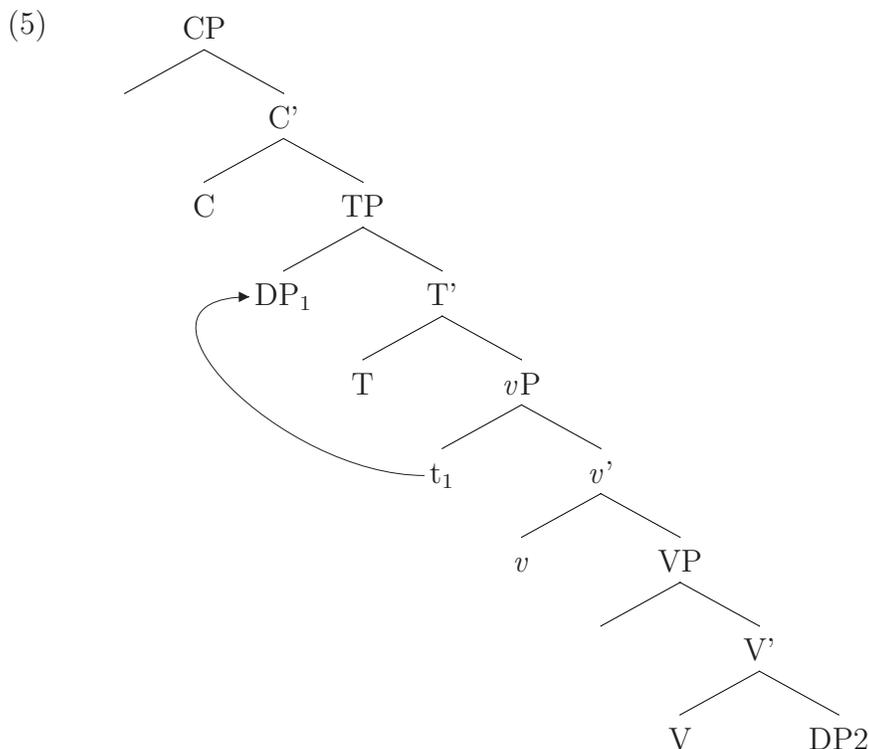
Another important concept involving phrase structure is that of the Extended Projection Principle (EPP). The EPP was originally formulated as the requirement that all clauses have a subject (Chomsky 1981:27). Chomsky & Lasnik (1995:55) write that “The *Extended Projection Principle* (EPP) states that [Spec, IP] is obligatory, perhaps as a morphological property of I or by virtue of the predicational character of VP.” The notion that the EPP is associated with IP (or TP) has been extended to include other categories, which may or may not have an EPP feature (Chomsky 2000). This view is summed up by Miyagawa (2001:295) as follows: “the EPP-feature is associated with “core functional categories,” which are C, T, and *v*.” Thus, the EPP feature is viewed as a requirement that certain functional heads have a filled specifier. Furthermore, Alexiadou & Anagnostopoulou (1998) argue that in some cases, the EPP feature can be a requirement that a head position, and not necessarily a specifier, be filled (also see Miyagawa 2001). For example, a C head can have an EPP feature that is satisfied by movement of an element to C rather than to [Spec, CP]. This EPP feature will play an important role in my analyses of *wh*-constructions.

I next turn to clause structure. Within the Minimalist Program, a clause is generally assumed to contain the following basic projections: Complementizer Phrase (CP), Tense Phrase (TP), verb phrase (*v*P), and Verb Phrase (VP). These are shown in (5).

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<sup>4</sup>See Epstein *et al.* (1998) for arguments that *c*-command results from Merge and Move.

<sup>5</sup>See Chomsky (2006) for discussion of eliminating the notion of *c*-command.



In (5), there is a split-VP shell (cf. Larson 1988, Hale & Keyser 1993, and Chomsky 1995b, among others). Also, a Determiner Phrase (DP) has raised from [Spec,  $v$ P] to [Spec, TP], in accord with the VP-internal subject hypothesis (Koopman & Sportiche 1991).

According to Phase Theory (Chomsky 1999, 2000), a clause is derived via phases that are constructed separately. Lexical items are Selected and are grouped into sub-numerations (or subarrays). A sub-numeration is part of a numeration that consists of just the lexical items in a particular phase. Chomsky (1999:9) defines phases as “verbal phrases with full argument structure and CP with force indicators.” Chomsky (2006:143) writes that CP “is shorthand for the region that Rizzi (1997) calls the “left-periphery” (see section 2.4). Furthermore, Chomsky notes, following work by Svenonious (2004) and Hiraiwa (2005), that DP might also be a phase, although he does not take a position on this issue.

The lexical items in a sub-numeration are Merged into a derivation to form a phase. The faculty of language continues to construct phases from sub-numerations until the numeration is emptied; all lexical items have been Selected. Once a phase is completed, only the elements located in the head and specifier positions of the highest projection of a phase can be accessed, as stated in the Phase-Impenetrability Condition given in (6), where  $\alpha$  is a phase. The head H refers to the head of the highest projection in the phase and the *edge* refers to the specifier(s) of this projection (Chomsky 2000:108).

(6) *Phase-Impenetrability Condition*

In phase  $\alpha$  with head H, the domain of H is not accessible to operations outside  $\alpha$ , only H and its edge are accessible to such operations. (Chomsky 2000:108)

Chomsky (2000:108) further writes:

[O]perations cannot “look into” a phase below its head H. H itself must be visible for selection and head movement; hence, its Specs must be as well.

Once a derivation is complete, then Spell-Out applies. Chomsky (1995b:189) refers to Spell-Out as an operation “which switches to the PF [Phonological Form] component.” At this stage, the phases that have been produced are pronounced. Interestingly, they are pronounced in the reverse of the order that they were formed; i.e., the phase that produced last is pronounced first. Beyond Spell-Out there is the level of Logical Form (LF) which is where meaning is interpreted.

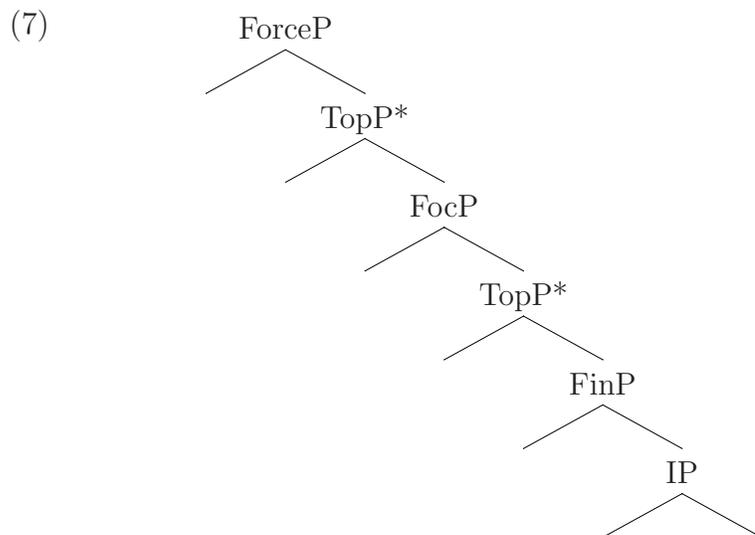
The notions of probes and goals are also of importance within Phase Theory. A probe is a feature inside of a head that ‘probes for’ a ““matching” feature[ ] that establish[es] agreement (Chomsky 2000:122).” The matching feature is a goal. When the probe and the goal match, the probe is erased. When there is an Agree relation, an uninterpretable feature on a probe is eliminated without any movement.

In this work, I will also take the position that movement of a goal, without an Agree relation, can eliminate an uninterpretable feature on a probe.

## 2.4 The left periphery

The phrase structure that I utilize in this work follows closely that proposed by Rizzi (1997, 2001). In this section, I discuss Rizzi's proposed 'left-periphery' of a clause, and in the next section, I explain the clause structure that I utilize.

Rizzi (1997, 2001) argues for the existence of an elaborated CP that consists of a number of separate projections. Rizzi's proposal hinges on the idea that a single CP projection cannot account for the structure of the part of the clause that he refers to as "the left periphery" (the top part) of a clause. According to Rizzi, a CP projection contains specifications for Force and Finiteness. Force is associated with clause typing; whether a clause is a statement, interrogative, etc. Finiteness determines whether a clause is finite or non-finite. These Force and Finiteness specifications may occur together on a single C head, in which case there is no elaborated CP projection, or they may split into different projections when necessary. When a focused and/or topicalized phrase occurs, then CP splits into several projections. Similarly, when there are separate Force and Finite elements, then CP must take on an elaborated structure. At the highest end of this split CP structure is a Force Phrase (ForceP). At the lowest position is a Finite Phrase (FinP). Between these two projections is one or more Topic Phrases (TopP). There may also be a single Focus Phrase (FocP), which can be sandwiched between TopP projections. Rizzi's proposed left-periphery clause structure (Rizzi 1997:297) is shown below. The Kleene star after each TopP represents the possibility that there may be multiple TopP projections.



Under Rizzi's analysis, an elaborated CP occurs when there is a topicalized and/or focused phrase that is fronted to clause-initial position in languages such as Italian. A topicalized element presents old information and a focused element presents new information. Rizzi (1997:285) writes:

The topic is a preposed element characteristically set off from the rest of the clause by “comma intonation” and normally expressing old information, somehow available and salient in previous discourse. . . [A] preposed element, bearing focal stress, introduces new information. . .

In (8), *your book* is a topic, presumably occurring in [Spec, TopP], and presents old information. The rest of the construction presents new information.

(8) **Your book**<sub>1</sub>, you should give t<sub>1</sub> to Paul (not to Bill). (Rizzi 1997:285)

In (9), the focused element *YOUR BOOK*, which occurs in [Spec, FocP], presents new information, and the rest of the construction is “. . . contextually given information, knowledge that the speaker presupposes to be shared with the hearer (285).”

(9) YOUR BOOK you should give t to Paul (not mine). (Rizzi 1997:285)

Rizzi points out that in Italian, elements in TopP and FocP show different syntactic behavior, which is further evidence that they are different projections. First of all, a topicalized phrase may occur with a coreferential resumptive clitic, but a focused phrase may not. Secondly, a topicalized phrase is not subject to weak-crossover effects, but a focused phrase is. And thirdly, quantificational elements can be focused, but not topicalized. Also, a clause may contain multiple topicalized phrases, but only a single focused phrase. Rizzi argues that these facts are a result of focused elements being quantificational, whereas topicalized elements are not quantificational.

Rizzi argues that the existence of a ForceP and FinP at opposite ends of an articulated CP projection accounts for the asymmetric behavior of complementizers in Italian. For example, he argues that the finite complementizer *che* occurs in ForceP and the non-finite complementizer *di* occurs in FinP. Example (10a) contains the finite complementizer *che* and (10b) contains the non-finite complementizer *di*.

(10) Italian:

(a) *Credo [che loro apprezzerebbero molto il tuo libro].*

‘I believe that they would appreciate your book very much.’

(b) *Credo [di apprezzare molto il tuo libro].*

‘I believe ‘of’ to appreciate your book very much.’ (Rizzi 1997:288)

In each of these examples the complementizer occurs at the beginning of the embedded clause. However, when there is a Clitic Left Dislocated (CLLD) argument, the distribution of the complementizers differs. The finite complementizer *che* must precede a topicalized phrase and the non-finite complementizer *di* must follow a topicalized phrase. In (11a), *che* precedes and in (11b), *di* follows, the CLLD phrase *il tuo libro* ‘your book.’

(11) Italian:

(a) *Credo [**che** il tuo libro, loro lo apprezzerebbero molto].*

‘I believe that your book, they would appreciate it a lot.’

(b) *Credo [il tuo libro **di** apprezzarlo molto].*

‘I believe, your book, ‘of’ to appreciate it a lot.’ (Rizzi 1997:288)

The examples in (12) below show that ill-formedness results when the finite *che* follows and when the non-finite *di* precede the CLLD argument.

(12) Italian:

(a) \**Credo [il tuo libro **che** loro lo apprezzerebbero molto].*

‘I believe, your book, that they would appreciate it a lot.’

(b) \**Credo [**di** il tuo libro apprezzarlo molto].*

‘I believe ‘of’ your book to appreciate it a lot.’ (Rizzi 1997:288)

Rizzi accounts for these data by arguing that the finite *che* occurs in the ForceP head and the non-finite *di* occurs in the FinP head. The finite *che* must precede a topicalized phrase because TopP is in a lower position than ForceP, which is the highest projection in a clause. The non-finite *di* may follow a topicalized phrase because it is in the lowest position of the left periphery, below any TopP projections.

I next turn to Rizzi’s view of the position of a *wh*-phrase. When there is an elaborated CP, a *wh*-phrase clearly cannot occur in [Spec, CP], as there is no unique CP projection. Rather, a *wh*-phrase must occur in some position within the left-periphery. Rizzi argues that this position is [Spec, FocP]. Evidence from Italian shows that a *wh*-phrase may co-occur with a topicalized phrase, but not with a focused phrase. For example, in (13a), the topicalized phrase *A Gianni* ‘to Gianni’ precedes the *wh*-phrase *che* ‘what,’ and the result is well-formed. On the other hand, (13b) shows that the focused phrase *A GIANNI* ‘to Gianni’ cannot co-occur with a *wh*-phrase regardless of whether the *wh*-phrase precedes or follows it.

(13) Italian:

(a) *A Gianni, **che** cosa gli hai detto*

‘To Gianni, what did you tell him?’

(b) *(\*A GIANNI) **che** cosa(\*A GIANNI) hai detto (, non a Pero)*

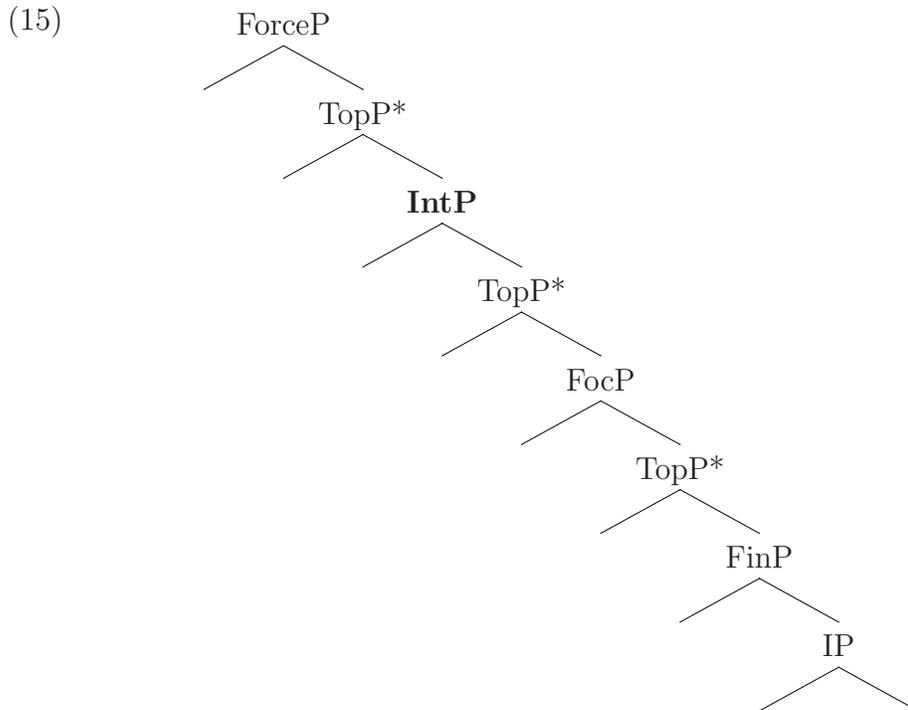
‘(TO GIANNI) what (TO GIANNI) did you tell(, not to Pero)? (Rizzi 1997:291)

These facts can be accounted for if a *wh*-phrase moves to [Spec, FocP]. Since there can only be one FocP projection and it has a single specifier, a *wh*-phrase and a focused phrase cannot co-occur. A *wh*-phrase and a topicalized phrase occur in separate projections, and so they may co-occur.

Rizzi revises this analysis in Rizzi (2001) by arguing for the existence of a unique interrogative projection (Int) that is located between ForceP and FocP. This Int projection may be sandwiched between TopP projections, as shown in (14).

(14) Force (Top\*) Int (Top\*) Foc (Top\*) Fin IP (Rizzi 2001:289)

Following Rizzi (2001), (7) can then be revised as in (15) below, with an added IntP projection.



Evidence for IntP comes from the appearance of an interrogative yes/no particle *se* in embedded clauses in Italian. This particle may be followed by the focused phrase *questo* ‘this,’ as shown in (16a) but it may not be preceded by *questo* ‘this,’ as shown in (16b).

(16) Italian:

- (a) *Mi domando se QUESTO gli volessero dire (non qualcos' altro).*  
 ‘I wonder if THIS they wanted to say to him, not something else.’
- (b) *\*Mi domando QUESTO se gli volessero dire (non qualcos' altro).*  
 ‘I wonder THIS if they wanted to say to him, not something else.’  
 (Rizzi 2001:289)

Because *se* can only be followed, and not preceded, by a focused phrase, Rizzi argues that it must be higher than FocP. Furthermore, *se* can be preceded and followed by a topic, an indication that it can occur between TopP projections, as shown below.

(17) Italian:

(a) *Non so **se**, a Gianni, avrebbero potuto dirgli la verità.*

‘I don’t know if to Gianni, they could have said the truth.’

(b) *Non so, a Gianni, **se** avrebbero potuto dirgli la verità.*

‘I don’t know, to Gianni, if they could have said the truth.’ (Rizzi 2001:289)

Rizzi provides evidence that *se* must occur in a projection separate from ForceP. The particle *se* can be preceded by a topic as shown in (17b) above, but an element in Force cannot. For example, the declarative complementizer *che*, which Rizzi argues is in Force, cannot be preceded by a topic. Example (18a) is fine because the topic *a Gianni* ‘to Gianni’ follows *che*. However, example (18b) is ill-formed because the topic *a Gianni* ‘to Gianni’ precedes *che*.

(18) Italian:

(a) *Credo **che** a Gianni, avrebbero dovuto dirgli la verità.*

‘I believe that to Gianni, they should have said the truth to him’

(b) *\*Credo, a Gianni, **che** avrebbero dovuto dirgli la verità.*

‘I believe, to Gianni, that they should have said the truth to him’ (Rizzi 2001:289)

If *se* were in Force, then it should not be able to follow a topic. Further evidence that IntP is separate from ForceP is, according to Rizzi, that Spanish contains constructions in which both the heads of ForceP and IntP are filled. In (19), *que* ‘that’ is in Force and *si* ‘if’ is in Int.

(19) Spanish:

*Maria decía **que si** debièramos dejarlas en paz.*

‘Maria was saying that if we shouldn’t leave them in peace.’ (Plann 1982:300, per Rizzi 2001:290)

As discussed above, Rizzi (1997) argues that most *wh*-phrases occur in [Spec, FocP], as they are not compatible with a focused phrase. In Rizzi (2001) this view is altered to the idea that, at least in Italian, *wh*-arguments occur in [Spec, FocP] but *wh*-adverbials occur in [Spec, IntP]. Whereas *wh*-arguments cannot co-occur with focused phrases, as shown in (13) above, a *wh*-adverbial can occur with a focused phrase. For example, in (20a), the *wh*-adverbial *perchè* ‘why’ precedes the focused phrase *questo* ‘this.’ (20b) shows that the *wh*-adverbial cannot follow the focused phrase. If the *wh*-adverbial is in IntP, then the IntP projection must be in a position above, and separate from, FocP.

(20) Italian:

(a) ***Perché QUESTO*** *avremmo dovuto dirgli, non qualcos’ altro.*

‘Why THIS we should have said to him, not something else?’

(b) *\*QUESTO perché* *avremmo dovuto dirgli, non qualcos’ altro.*

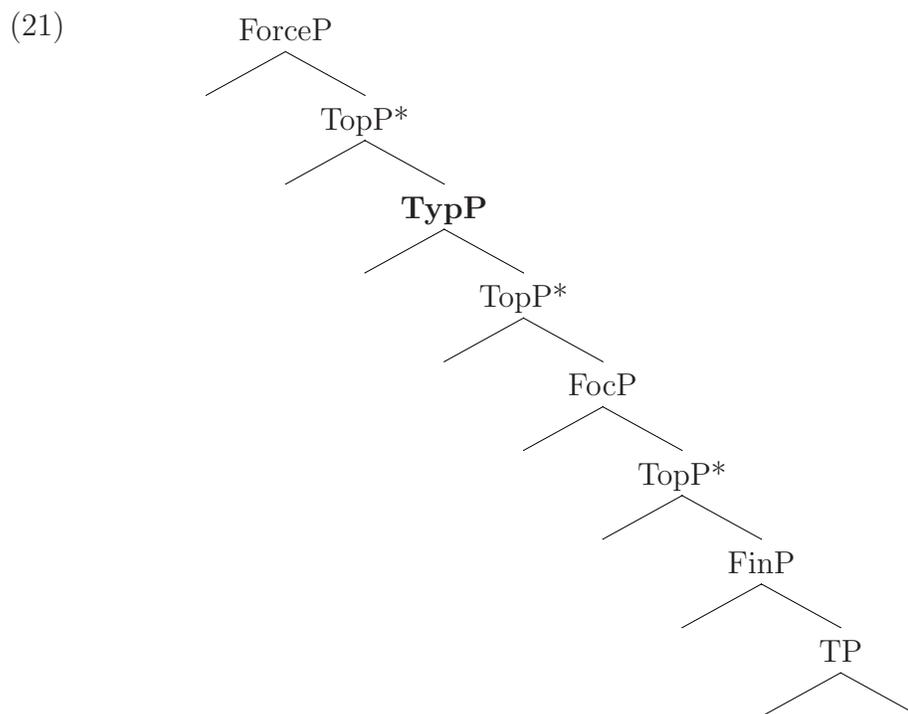
‘THIS is why we should have said to him, not something else?’ (Rizzi 2001:294)

In summary, Rizzi (1997) argues that a CP can split into a ForceP (the locus of clause typing), a FinP (the locus of finiteness), one or more TopP projections, as well as at most one FocP projection. The later analysis in Rizzi (2001) adds an IntP projection to the left-periphery that can house an interrogative particle in its head position and a *wh*-adverbial in its specifier position. This IntP occurs between ForceP and FocP, and it may be sandwiched between TopP projections.

I next turn to a discussion of the basic clause structure that I utilize, which is similar to that developed by Rizzi.

## 2.5 Basic clause structure

The clause structure that I utilize in this work follows closely that of Rizzi (2001) except that I use what I refer to as a Type Phrase (TypP) instead of Rizzi's IntP.<sup>6</sup> I use TypP,<sup>7</sup> since I believe that this projection is where clausal typing elements, and not just interrogative complementizers, occur. Rizzi argues that ForceP, not IntP, is where clausal typing occurs. My view differs in that I see a Force head as containing an element that indicates that a clause is embedded (and possibly also matrix),<sup>8</sup> whereas a Typ head contains an element that indicates whether a clause is a statement, interrogative, etc. The basic clause structure that I assume in this work is shown in (21).

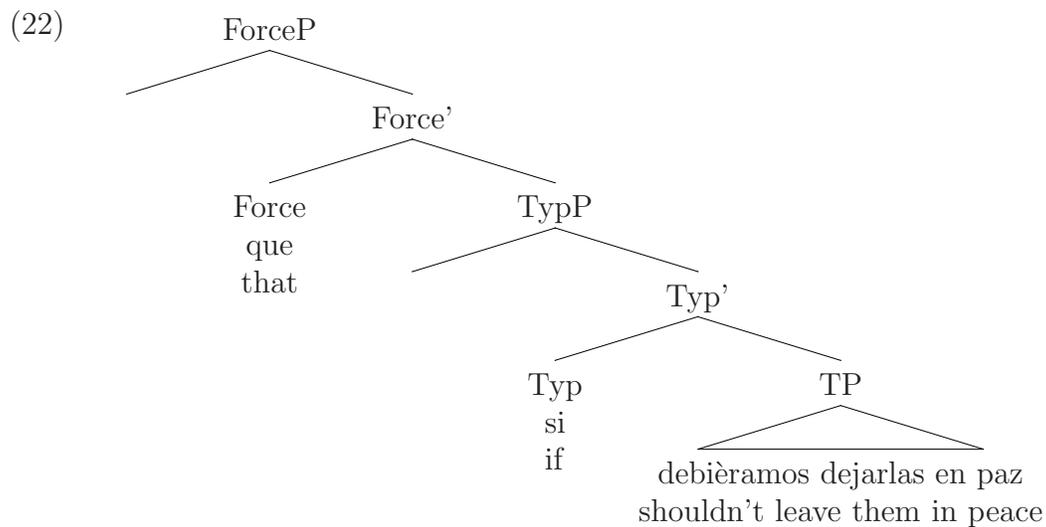


<sup>6</sup>Also, in accord with recent work in the Minimalist Program, I use TP instead of IP.

<sup>7</sup>I am essentially borrowing Denham's (2000) clausal typing projection TypP.

<sup>8</sup>It is not clear to me whether or not matrix clauses have a ForceP. I briefly discuss this issue below.

The separate ForceP and TypP projections account for the fact that in some languages, a complementizer can precede a question morpheme (Qu-morpheme), as in (19) above. Under the proposed phrase structure in (21) above, the embedded clause has the following structure in which *que* ‘that’ is in Force and *si* ‘if’ is in Typ. Under Rizzi’s proposal, *si* ‘if’ would be in Int.



Kishimoto (2005) gives the following example from Sinhala<sup>9</sup> in which the embedded clause contains a Qu-morpheme *də* followed by the complementizer *kijəla* ‘that.’

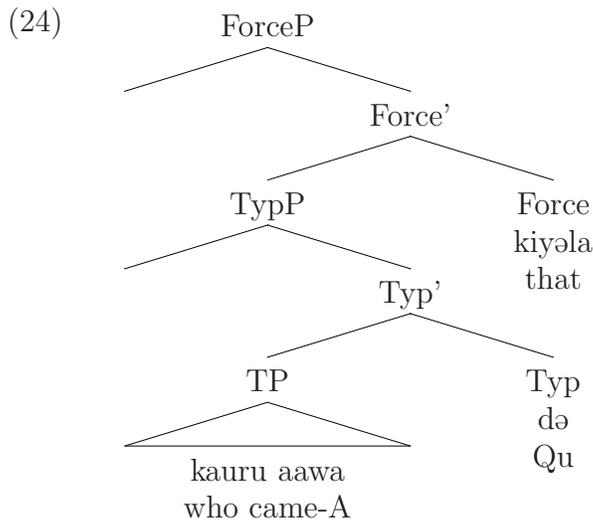
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<sup>9</sup>This is an Indo-Aryan language that is spoken in Sri Lanka (Gair & Sumangala 1991:93).

(23) Sinhala:

*Ranjit [kauru aawa də kiyəla] dannəwa.*  
 Ranjit who came.A Qu that know.A  
 ‘Ranjit knows who came.’ (Kishimoto 2005:6)

The embedded clause has the following structure, in which *də* is in Typ and *kiyəla* ‘that’ is in Force.

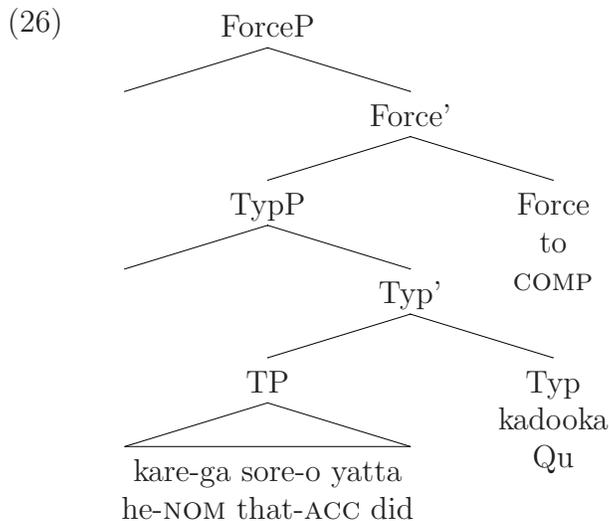


Japanese also can contain a Qu-morpheme followed by a complementizer, as in (25), in which *kadooka* ‘Qu’ is followed by *to* ‘COMP.’

(25) Japanese:

*Watashi-wa [kare-ga sore-o yatta kadooka to] tazunemashita.*  
 I-TOP he-NOM that-ACC did Qu COMP asked  
 ‘I asked if he did that.’

In this case, *kadooka* ‘Qu’ is in Typ and *to* is in Force.



In each of these examples, the embedded complementizer co-occurs with a Qu-morpheme. This fact can be accounted for if the complementizer is in Force and the Qu-morpheme is in Typ.

Note that in the examples (19), (23), and (25), evidence for a Force head comes from embedded clauses. In the matrix clauses of these constructions, there is clearly no overt Force head, and it is not clear to me whether or not there is a Force head in a matrix clause, although if ForceP exists in an embedded clause, it would not be surprising if it exists in matrix clauses. However, since all clauses have some particular type (statement, interrogative, etc.), I think that it is reasonable to assume that if a matrix clause has no overt Typ head, there is a null Typ head.

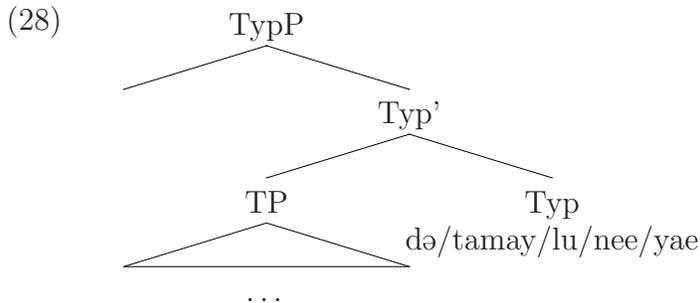
I use TypP instead of Rizzi's IntP because there is evidence that the element that occurs in this projection does not necessarily have to be an interrogative complementizer, and the label 'IntP' suggests a phrase that is only for interrogative elements. Rather, the head of TypP is an element that is associated with typing a clause as a statement, interrogative, exclamative, etc. This can be seen clearly in Sinhala, in which the Qu-morpheme is in complementary distribution with various clausal typing morphemes. For example, the morphemes *tamay* 'certainty,' *lu* 'reportative,' *nee* 'tag-Q,' and *yae* 'dubitative' (Sumangala 1992:131) are all in complementary

distribution with the interrogative Qu-morpheme *də*, as shown in (27a-e).

(27) Sinhala:

- (a) *Gunəpaalə heTə gaalu yanəva də?*  
 Gunapaala tomorrow Galle go.A Qu  
 ‘Is Gunapala going to Galle tomorrow?’
- (b) *Gunəpaalə heTə gaalu yanəva tamay.*  
 Gunapaala tomorrow Galle go.A CERTAINTY  
 ‘It is for sure that Gunapala is going to Galle tomorrow.’
- (c) *Gunəpaalə heTə gaalu yanəva lu.*  
 Gunapaala tomorrow Galle go.A REPORTATIVE  
 ‘They say that Gunapala is going to Galle tomorrow.’
- (d) *Gunəpaalə heTə gaalu yanəva nee?*  
 Gunapaala tomorrow Galle go.A TAG-QU  
 ‘Gunapala is going to Galle tomorrow, isn’t that so?’
- (e) *Gunəpaalə heTə gaalu yanəva yae!*  
 Gunapaala tomorrow Galle go.A DUBITATIVE  
 ‘It is doubtful that Gunapala is going to Galle tomorrow!’ (Sumangala 1992:131)

If all of these morphemes occur in the same projection, then the label IntP is not accurate, as these are morphemes associated with clausal typing. I therefore use the label TypP to indicate the position of a clausal typing morpheme. For example, the clausal typing morphemes in (27a-e) occur in Typ, as shown in (28). Since there is no overt Force element, I leave out ForceP.



One remaining issue is that of the position of a fronted *wh*-phrase in a *wh*-construction. Rizzi argues that in Italian, a fronted *wh*-argument is in [Spec, FocP] and a fronted *wh*-adjunct is in [Spec, IntP]. In this work, I take the position that *wh*-movement is to [Spec, TypP], not to [Spec, FocP]. Thus, a fronted *wh*-phrase in a language such as English is in [Spec, TypP]. In some languages, a *wh*-phrase can move to [Spec, FocP] if movement is driven by a Focus-feature. For example, in some languages a *wh*-phrase can either remain in-situ or move to a clause-peripheral focus-position. I assume that this is not *wh*-movement. I discuss *wh*-phrasal movement in chapters 6 through 8.

## 2.6 Island effects

The presence and absence of island effects involving *wh*-phrases plays an important role in the analyses in the following chapters. In this section, I briefly discuss what islands are and some reasons why they may occur.

An island is essentially a phrase out of which another phrase cannot be extracted; it is like an island from which something cannot escape. The study of ‘islands’ originated with Ross (1967) and has led to an extensive amount of further research. Some types of islands for extraction of *wh*-elements are shown in (29a-e).<sup>10</sup>

(29) (a) *Wh*-island:

\***What**<sub>1</sub> do you wonder [who bought **t**<sub>1</sub>]? (Huang 1982:456)

(b) *Whether/If* island

??**What**<sub>1</sub> do you wonder [whether/if John saw **t**<sub>1</sub>]? (adapted from Lasnik & Saito 1992:11)

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<sup>10</sup>Note that I have labeled (29b) as a *whether/if* island, although it is generally referred to as a *wh*-island in the literature (e.g., see Lasnik & Saito (1992)). I think that the label *wh*-island is inappropriate since the embedded clause is not a *wh*-construction, unlike (29a) which contains an embedded *wh*-construction. I return to this issue in the next section.

(c) Complex NP/DP-island:

??**What**<sub>1</sub> did you read [a report [that John bought **t**<sub>1</sub>]]? (Lasnik & Saito 1992:12)

(d) Adjunct island:

\***Which book**<sub>1</sub> did John go to class [after he read **t**<sub>1</sub>]? (Lasnik & Saito 1992:12)

(e) Subject island:

?\***Who**<sub>1</sub> did [a story about **t**<sub>1</sub>] amuse you? (Lasnik & Saito 1992:42)

These examples contain phrases that function as islands from which a *wh*-phrase cannot escape. The exact cause(s) of island effects has been the subject of much research and much debate, and the issue is far from resolved. Below I discuss a few of these accounts.

### 2.6.1 Government and Binding Theory accounts

The notion of Subjacency, which was originally proposed by Chomsky (1973), and further developed in Chomsky (1977, 1981, 1986) and Lasnik and Saito (1984, 1992), among others, is one of the clearest proposals that accounts for island effects. Hornstein *et al.* (2007:150) give the following definition of Subjacency, which is a revised version of a definition given by Chomsky (1977:73).

(30) A cyclic rule cannot move a phrase from position Y to position X (or conversely) in (i), where  $\alpha$  and  $\beta$  are cyclic nodes (NP and S).

(i) ...X ... [ $\alpha$  ... [ $\beta$  ...Y ...] ...] ...

Lasnik & Saito (1992:11) describe Subjacency as “one general constraint prohibiting one step of movement from crossing two bounding nodes, where the bounding nodes are S and NP.”

Subjacency effects can be seen in (31a-e), which are identical to (29a-e) above except for the more detailed phrase structure labels.

- (31) (a) *Wh*-island:  
 \***What**<sub>1</sub> do ([<sub>S</sub>) you wonder [who<sub>2</sub> ([<sub>S</sub>) t<sub>2</sub> bought t<sub>1</sub>]]]? (Huang 1982:456)
- (b) *Whether/If* island  
 ??**What**<sub>1</sub> do ([<sub>S</sub>) you wonder [whether/if ([<sub>S</sub>) John saw t<sub>1</sub>]]]? (adapted from Lasnik & Saito 1992:11)
- (c) Complex NP/DP-island:  
 ??**What**<sub>1</sub> did you read ([<sub>NP</sub>) a report [t<sub>1</sub> that ([<sub>S</sub>) John bought t<sub>1</sub>]]]? (Lasnik & Saito 1992:12)
- (d) Adjunct island:  
 \***Which book**<sub>1</sub> did ([<sub>S</sub>) John go to class [after t<sub>1</sub> ([<sub>S</sub>) he read t<sub>1</sub>]]]? (Lasnik & Saito 1992:12)
- (e) Subject island:  
 ??\***Who**<sub>1</sub> did ([<sub>S</sub>) ([<sub>NP</sub>) a story about t<sub>1</sub>] amuse you]? (Lasnik & Saito 1992:42)

In the *wh*-island and *whether/if* island constructions (31a-b), the *wh*-phrase crosses two S bounding nodes. In the complex-NP/DP island construction (31c), the *wh*-phrase crosses S and an NP bounding node. In the adjunct island (31d), the *wh*-phrase crosses two S bounding nodes and in the subject island (31e), the *wh*-phrase crosses an NP and an S bounding node.

Interestingly, the specific bounding nodes appear to be subject to cross-linguistic variation. In (32), from Spanish, the *wh*-phrase *que libro* ‘what book’ moves over two S nodes but the result is well-formed.

- (32)  $[_{S'} [Que \textit{libro}]_1 [_{S} no \quad \quad \quad sabes [_{S'} [por \textit{que}]_2 [_{S} te \quad \quad \quad han$   
           what book          NEG (you) know          why          to-you have  
*regalado t<sub>1</sub> t<sub>2</sub>?*  
 given  
 ‘[What book]<sub>1</sub> don’t you know [why they have given to you t<sub>1</sub>]?’ (Lasnik & Saito 1992:12)

The *wh*-phrase, however, only moves over one S’ node. Thus if S’ is a bounding node instead of S, then the well-formedness of (32) is accounted for. Therefore, in languages such as Spanish and Italian, the lack of *wh*-island effects has been attributed to S’ (not S) and NP being bounding nodes (cf. Rizzi 1980, Sportiche 1981/82, Torrego 1984, Lasnik & Saito 1992, among others).

Although the Subjacency Condition can account for adjunct and subject island effects, as in (31d-e), another constraint, Huang’s (1982) Condition on Extraction Domain, given in (33), has traditionally been utilized for these effects.

(33) *Condition on Extraction Domain*

A phrase A may be extracted out of a domain B only if B is properly governed. (Huang 1982:506)

The requirement that extraction can only occur if a phrase is properly governed results in a “condition that allows extraction out of maximal projections that are complements, but prohibits movement out of noncomplements (i.e., subjects and adjuncts) (Lasnik & Saito 1992:12).” Subject clauses and adjunct clauses are clauses that are not complements. Thus, they cannot be properly governed (cf. Chomsky 1981)<sup>11</sup> and *wh*-phrases cannot be extracted out of them.

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<sup>11</sup>Government is a complex notion that has been defined in various ways. Below is a typical definition of Government from (Lasnik & Saito 1992:14) that follows the works cited within the definition.

- (i)  $\alpha$  properly governs  $\beta$  iff  $\alpha$  governs  $\beta$  and  
 (a)  $\alpha$  is a lexical category X<sup>0</sup> (lexical government), or

### 2.6.2 Minimalist Program accounts

Subjacency relies on the notion that there are bounding nodes and the Condition on Extraction Domain relies on the notion of Government. Bounding nodes and Government, however, have been eliminated from the framework of the Minimalist Program (cf. Chomsky 1995b), as being unnecessary. How to account for island effects in the Minimalist Program is problematic. Uriagereka (1999a) sums up recent attempts.

The Minimalist Program has no general account of islands. In part, this is because the system is designed in such a streamlined fashion - and with the assumption that computational mechanisms exist to meet the requirements of external interfaces - that little room is left for the apparently *ad hoc* considerations involved in formulating island conditions. (Uriagereka 1999a:404)

In the Minimalist Program, however, there are several theories that can account for certain island effects.

Following Rizzi's (1990) work on Relativized Minimality, Chomsky (1995b) proposes the Minimal Link Condition (MLC), given in (34).

(34) *Minimal Link Condition* (MLC)

K attracts  $\alpha$  if there is no  $\beta$ ,  $\beta$  closer to K than  $\alpha$ , such that K attracts  $\beta$ . (Chomsky 1995b:311)

The MLC requires attraction of the closest element of the relevant type. The MLC straightforwardly accounts for the *wh*-island effect in (29a), repeated below.

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(b)  $\alpha$  is coindexed with  $\beta$  (antecedent government).

(ii)  $\alpha$  governs  $\beta$  iff every maximal projection dominating  $\alpha$  also dominates  $\beta$  and conversely. (Aoun & Sportiche 1981)

(29) (a) *Wh*-island

**What**<sub>1</sub> do you wonder [who bought **t**<sub>1</sub>]? (Huang 1982:456)

In (29a) an attractor in the matrix CP<sup>12</sup> attracts the closest *wh*-phrase, *who*, which prevents *what* from moving to the matrix specifier of CP. Thus if *what* moves, there is a violation of the MLC.

The MLC, however, does not appear to account for constructions in which a *whether/if* clause functions as an island, as in (29b), repeated below.

(29) (b) *Whether/If* island

??**What**<sub>1</sub> do you wonder [whether/if John saw **t**<sub>1</sub>]? (adapted from Lasnik & Saito 1992:11)

Although the embedded clause of this type of construction is generally considered a *wh*-island (at least when it begins with *whether*), I am not sure if the label *wh*-island is appropriate. This is because whereas in a true *wh*-island construction such as (29a), a *wh*-phrase is extracted out of an embedded *wh*-construction, in (29b) a *wh*-phrase is extracted out of an embedded yes/no construction. The lexical item *if* clearly is not a *wh*-phrase, although the facts are not so clear with respect to *whether* (see discussion below). If *if* or *whether* are complementizers that occur in C of the embedded clause, they should not block movement of *what*. In other words, if *if* or *whether* are not specifiers, then there is nothing in (29b) to block movement of *what* and result in an MLC violation. The ill-formedness of (29b) then requires another explanation.

There is evidence suggesting that *whether* actually might be an XP element in a specifier position, [Spec, CP]. There are certain instances in which *if* and *whether* cannot occur in the same environment; *whether* can be followed by PRO (cf. Chomsky 1981 for discussion of PRO), but *if* cannot, as shown in (35a-b).

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<sup>12</sup>In this section I use the term CP, as it is what is generally used in the literature discussed here. However, as noted above, in this work, CP corresponds to what I refer to as TypP.

- (35) (a) He doesn't know [**whether** PRO to go to the movies].  
 (b) \*He doesn't know [**if** PRO to go to the movies]. (Kayne 1991:665)

Kayne (1991), following work by Katz & Postal (1964) and Larson (1985), argues that *whether* is a *wh*-phrase that occurs in [Spec, CP], and he proposes that *if*, unlike *whether*, is a head that occurs in C. Kayne accounts for the fact that *if* cannot directly precede PRO, as in (35b), within the framework of Government and Binding Theory (Chomsky 1981). PRO must be ungoverned, in accord with Chomsky (1981). When PRO is preceded by the complementizer *if* in C, it is governed, therefore resulting in ungrammaticality. In (35a), PRO is preceded by *whether* in [Spec, CP]. PRO is not lexically governed by *whether*, because *whether* is not a head, nor is it antecedent governed because *whether* is not its antecedent. In this way, *whether* is not an appropriate governor of PRO. Within the framework of the Minimalist Program, Kayne's proposal can no longer be upheld without some modification, since the notion of Government no longer exists. Importantly though, *if* and *whether* behave differently and this fact could be an indication that *if* is a head and *whether* is a specifier. If this is the case, then the presence of *whether* in the embedded clause of (29b) does result in an MLC violation. Still, the facts surrounding (29b) with *if* remain the same; there is no MLC violation because *if* is a head.

Interestingly, there is evidence that suggests that both *whether* and *if* really are heads. There is, in my opinion, a fairly clear well-formedness distinction between a *wh*-island construction such as (29a) and a *whether/if*-island construction such as (29b), repeated below.

- (29) (a) *Wh*-island:  
 \***What**<sub>1</sub> do you wonder [who bought **t**<sub>1</sub>]? (Huang 1982:456)

(b) *Whether/If* island

??**What**<sub>1</sub> do you wonder [whether/if John saw **t**<sub>1</sub>]? (adapted from Lasnik & Saito 1992:11)

Both (29a) and (29b) are ill-formed, but (29a) is much worse than (29b), regardless of whether or not *whether* or *if* appears in the embedded clause of (29b). This distinction supports the idea that a *wh*-island differs from a *whether/if* island, and it might be an indication that Kayne's proposal that *whether* is a specifier is not correct; i.e., it is a head in the same way that *if* is; although, then the fact that *if* cannot co-occur with PRO requires explanation. If this is the case, then there is no MLC violation in (29b), and ill-formedness must have another cause. I return to this issue below.

Overall, the MLC is useful for accounting for *wh*-island effects as in (29a), as well as for other properties of languages, such as Superiority Effects (Chomsky 1973) and intervention effects (see section 2.7), but it does not necessarily account for *whether/if* island effects. Nor does it account for island effects involving complex-DPs, adjunct-clauses, and subject-clauses, as in these cases, there is no clear element in a specifier position that blocks movement of the *wh*-phrase and leads to an MLC violation. Other proposals, however, can account for these latter types of island effects.

Uriagereka's (1999b) theory of Multiple Spell-Out (MSO) can account for Condition on Extraction Domain effects (adjunct and subject islands). This MSO theory relies on the notion that subjects and adjuncts are formed separately from other elements in a clause. Essentially, subjects and adjuncts are complete syntactic objects before they are Merged with other elements in a syntactic structure. Thus, nothing can be extracted out of them.

The idea behind MSO is that a phrase consists of an unordered set of elements that at a certain point in a derivation is linearized, along the lines of Kayne's (1994) Linear Correspondence Axiom (LCA), and sent to Spell-Out. According

to the LCA, linear order is established by asymmetric c-command. Asymmetric c-command refers to a situation in which  $\alpha$  c-commands  $\beta$  but  $\beta$  does not c-command  $\alpha$ . Below is a definition of the LCA that is utilized by Nunes & Uriagereka (2000:23).

(36) *Linear Correspondence Axiom*

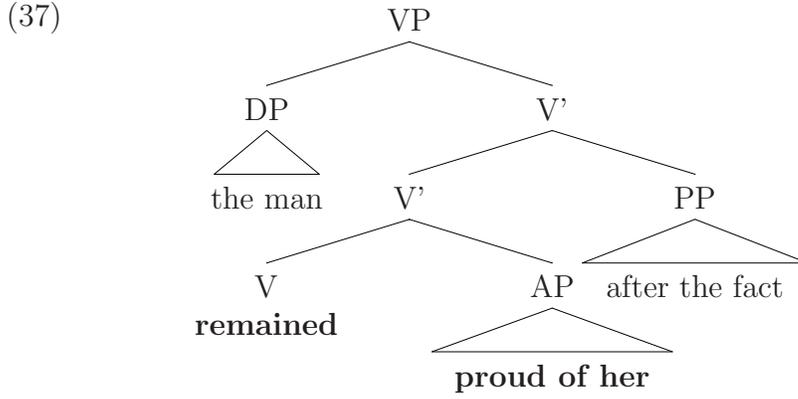
A lexical item  $\alpha$  precedes a lexical item  $\beta$  iff  $\alpha$  asymmetrically c-commands  $\beta$ .

The term ‘linearized’ refers to the elements of an unordered set becoming ordered. Uriagereka (1999b:257) writes that “if a phrase marker  $\{\alpha, \{L, K\}\}$  collapses through Spell-Out, the rest is  $\{\alpha, \langle L, K \rangle\}$ .” The brackets  $\{\}$  represent an unordered set, and the brackets  $\langle \rangle$  signify that the elements of the set have become ordered. The element  $\alpha$  represents the label of the phrase. Uriagereka (1999b:251) describes the process of linearization as follows.

A visual image to keep in mind is a mobile by Calder. The hanging pieces relate in a fixed way, but are not *linearly ordered* with respect to one another; one way to linearize the mobile (e.g., so as to measure it) is to lay it on the ground. The substantive part of Kayne’s axiom does for the complex linguistic object what the ground does for the mobile: it tells us how to map the unordered set of terms into a sequence of PF slots.

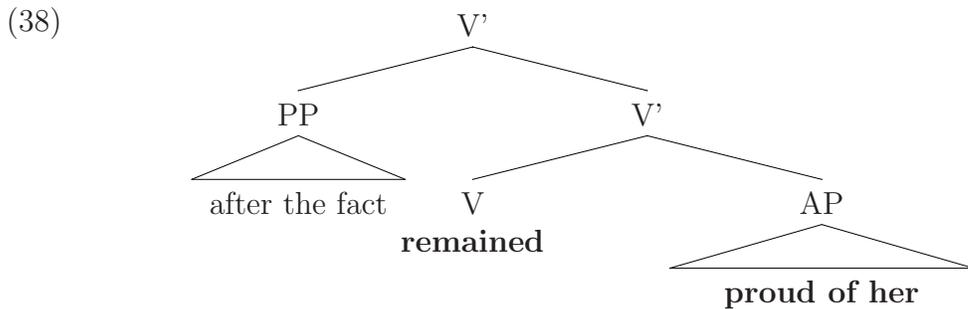
Thus an unordered set of lexical items becomes ordered at Spell-Out.

The MSO account forces a non-complement to be sent to Spell-Out before it is Merged with another element. In (37), from Nunes & Uriagereka (2000:22), if the DP subject were not sent to Spell-Out before it Merged with the  $V'$ , then the lexical items contained within the DP would not asymmetrically c-command the other elements of the clause; *the* c-commands *man*, and vice-versa, but neither lexical item asymmetrically c-commands the other elements in the verb phrase.



If the elements of the DP are linearized and sent to Spell-Out, then they form a single DP, and the DP label asymmetrically c-commands the other elements of the clause, thereby deriving the appropriate word order.

The facts regarding the PP adjunct *after the fact* in (37) are virtually identical, although with the added complexity that the PP be Merged to the left of its sister V'. The lexical items contained within the PP are linearized and the PP label asymmetrically c-commands the lexical items in its V' sister. Since the PP asymmetrically c-commands the V', it must precede the V' in the underlying structure, or else there will be a violation of the LCA (if  $\alpha$  asymmetrically c-commands  $\beta$  then  $\alpha$  must precede  $\beta$ ). A diagram is shown in (38).



To obtain the appropriate word order, the V' must move to a position above the PP *after the fact*. The MSO account thus requires that a non-complement be Merged in a position to the left of whatever it Merges with.

The MSO requires that a non-complement be sent to Spell-Out before Merging with another element, thus accounting for subject and adjunct island effects. A non-complement that has been linearized is essentially treated as a lexical item. Nunes & Uriagereka (2000:24) write that once an element is linearized, “the computational system treats it as a lexical item.” Once a non-complement, such as a subject or adjunct is linearized, then nothing can move out of it. For example, in (29e), repeated below, the clausal subject *a story about who* is constructed via Merge and sent to Spell-Out before it is Merged with *amuse you*. Therefore, extraction of the *wh*-phrase *who* cannot occur.

(29) (e) Subject island:

?\***Who**<sub>1</sub> did [a story about **t**<sub>1</sub>] amuse you? (Lasnik & Saito 1992:42)

Under the MSO approach, a complement is not an island because it is able to establish an asymmetric *c*-command relation without being linearized. For example, in (37) above, the verb *remained* asymmetrically *c*-commands all of the elements of the AP, and thus the AP complement does not need to be sent to Spell-Out until after Merging with the verb.

One disadvantage of the MSO account, from my perspective, is that it relies on the LCA. In order to maintain the simple notion that linear order follows from asymmetric *c*-command, a great deal of extra complexity is required to account for surface word order. In a language that (at least on the surface) is head-final, there must be a tremendous amount of leftward movement of constituents, and even in the head-initial English, there are instances in which leftward movement must occur. For example, in (37) above, the PP must be base-generated to the left of the element that it Merges with, and then its sister must move to a higher position. Thus, I find the LCA, and MSO which relies on the LCA, to be problematic.

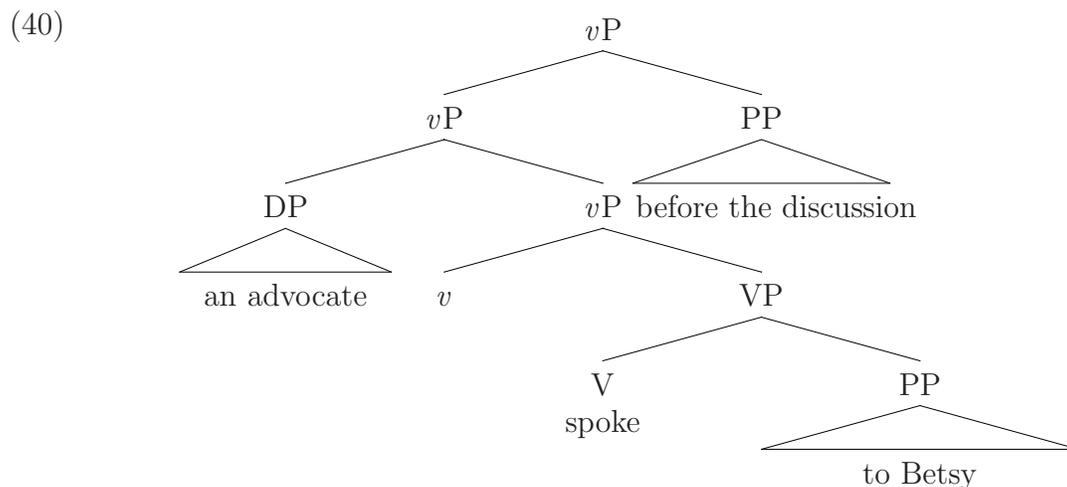
Johnson (2002) has another account of subject and adjunct island effects, which is very similar to Uriagereka’s MSO account. However, it has the advantage of not relying on the LCA. Johnson uses the term ‘renumeration’ to refer to the process of

putting an assembled constituent back into a numeration. Renumeration, like MSO, relies on the notion that a non-complement is linearized separately from the element that it is Merged with. Under the MSO account, a linearized phrase is sent to Spell-Out, whereas under the renumeration account, a linearized phrase is placed back into the numeration. Subjects and adjuncts are, according to Johnson (2002:13), a natural class because “they are the phrases that are required to renumerate.”

Johnson relies on the following definition of an adjunct, which groups together non-complements (adjuncts and subjects).<sup>13</sup>

- (39) An adjunct is a phrase whose sister is also a phrase and whose mother is not its projection. (Johnson 2002:1)

For example, in (40), from (Johnson 2002:2), the subject DP *an advocate* and the PP *before the discussion* are adjuncts; they are each sisters to a phrase and their mothers are different projections.<sup>14</sup>



An adjunct is an island, as stated in (41).

<sup>13</sup>This is essentially the view of adjuncts proposed by Chomsky (1995a).

<sup>14</sup>If one were to represent this bare phrase structure with X' notation, then a phrase that is a sister to to a specifier would be a bar-level projection. For example, in (40), the *vP* sister of the subject DP would be a *v'*.

- (41) When a phrase's underlying position in a phrase marker is such that it is a sister to another phrase but doesn't project, it is an island for extraction (Johnson 2002:3).

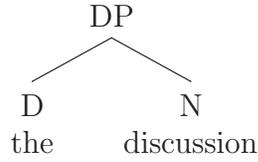
In (40), the subject DP *an advocate* and the PP *before the discussion* are islands because they must be constructed in their own separate derivational workspaces and linearized before they can be Merged with the other elements of the numeration. Their islandhood results from their being built in a separate workspace and being renumerated. Johnson argues that an adjunct is an island because if it were not renumerated, then it would violate the following constraint, which requires whatever merges with a head to be its complement.

- (42) If an  $X^0$  merges with a YP, then YP must be its argument. (Johnson 2002:5)

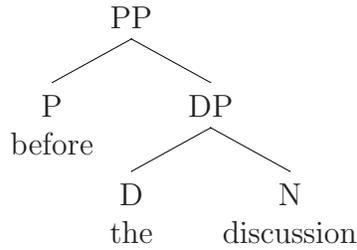
(42) prevents a non-complement from Merging with a head and requires a complement to Merge with a head. A complement, at least structurally, is defined as a sister to a head, a configuration that allows the head to assign a theta-role to the complement.

Example (43) demonstrates what happens if the non-complement PP *before the discussion*, from (40), is not renumerated. (43a) shows the underlying numeration. (43b) shows the DP that is formed when *the* and *discussion* are selected from the numeration and Merged. (43b) also shows what remains in the numeration after the DP is formed. (43c) shows formation of the PP *before the discussion*. The derivation falls apart at (43d). The PP *before the discussion* is Merged with the noun *Betsy*. This operation violates (42), because the  $X^0$  noun *Betsy* Merges with a phrase, a PP, that is not its complement.

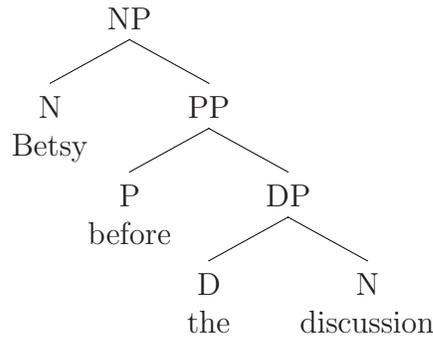
- (43) (a) N = {an, advocate, *v*, spoke, to Betsy, before, the, discussion}  
 (b) N = {an, advocate, *v*, spoke, to Betsy, before}



(c)  $N = \{\text{an, advocate, } v, \text{ spoke, to, Betsy}\}$



(d)  $N = \{\text{an, advocate, } v, \text{ spoke, to}\}$

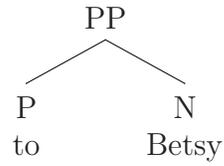


Similarly, if the subject *an advocate* is not constructed separately from the rest of the *vP* and renumerated, the derivation crashes. (44a) is the underlying numeration.<sup>15</sup> In (44b), the PP is formed. In (44c) the *vP* is formed. In (44d), the VP merges with *v* to form a *vP*. At (44e), the derivation crashes because the noun, an  $X^0$  element, merges with a phrase, in this case a *vP* that is not its complement, thereby violating (42).

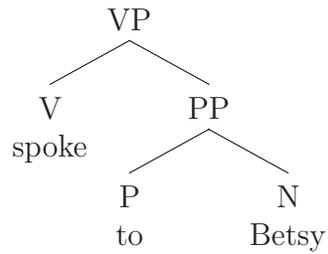
(44) (a)  $N = \{\text{an, advocate, } v, \text{ spoke, to, Betsy}\}$

(b)  $N = \{\text{an, advocate, } v, \text{ spoke}\}$

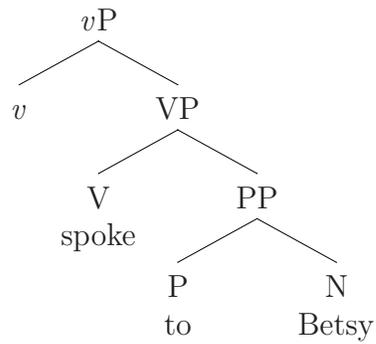
<sup>15</sup>I have left out the lexical items forming the adjunct PP for the sake of simplicity.



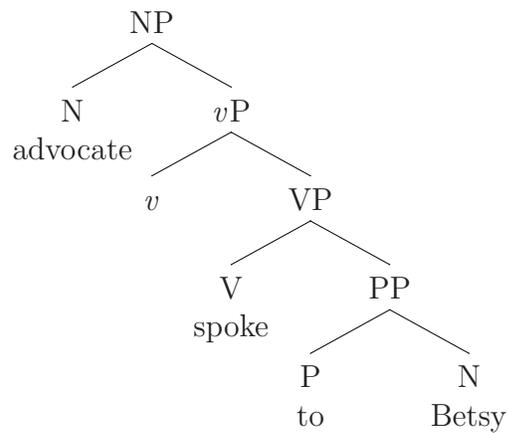
(c)  $N = \{ \text{an, advocate, } v \}$



(d)  $N = \{ \text{an, advocate} \}$



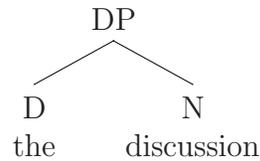
(e)  $N = \{ \text{an} \}$



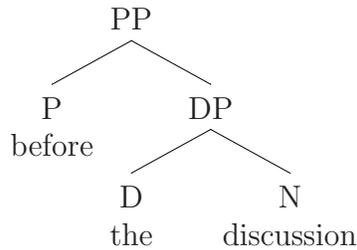
When adjuncts are reenumerated, then a derivation can proceed successfully, as I demonstrate below for example (40). The PP *before the discussion* is formed via

Merge, as shown in (45a-c) below, and then it is renumerated, as shown in (45d). It is reinserted into the numeration as a linearized object that essentially corresponds to a single lexical item.

- (45) (a)  $N = \{\text{an, advocate, } v, \text{spoke, to, Betsy, before, the, discussion}\}$   
 (b)  $N = \{\text{an, advocate, } v, \text{spoke, to, Betsy, before}\}$



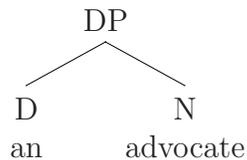
- (c)  $N = \{\text{an, advocate, } v, \text{spoke, to, Betsy}\}$



- (d)  $N = \{\text{an, advocate, } v, \text{spoke, to, Betsy, } [_{PP} \text{ before the discussion}]\}$

In a separate derivational space, the DP *an advocate* is formed, as shown in (46a-b).<sup>16</sup> Then it is renumerated, as shown in (46c).

- (46) (a)  $N = \{\text{an, advocate, } v, \text{spoke, to, Betsy, } [_{PP} \text{ before the discussion}]\}$   
 (b)  $N = \{v, \text{spoke, to, Betsy, } [_{PP} \text{ before the discussion}]\}$



- (c)  $N = \{[_{DP} \text{ an advocate}], v, \text{spoke, to, Betsy, } [_{PP} \text{ before the discussion}]\}$

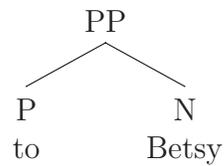
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<sup>16</sup>Although the PP appears as a linearized element in (46a), it is not necessarily the case that it is formed and renumerated before the DP is formed.

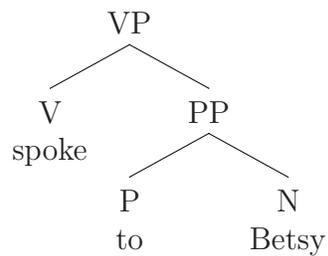
The full *vP* then is formed as shown in (47a-f). The PP complement *to Betsy* is formed and Merged with the verb and *v*. Then the renumerated subject and adjunct Merge with the *vP*.

(47) (a)  $N = \{[_{DP} \text{ an advocate}], v, \text{spoke}, \text{to}, \text{Betsy}, [_{PP} \text{ before the discussion}]\}$

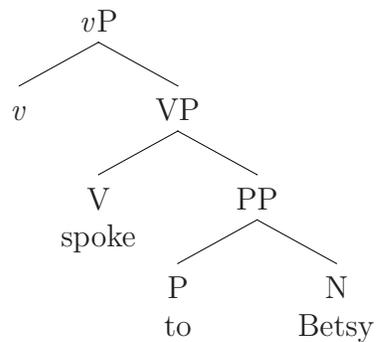
(b)  $N = \{[_{DP} \text{ an advocate}], v, \text{spoke}, [_{PP} \text{ before the discussion}]\}$

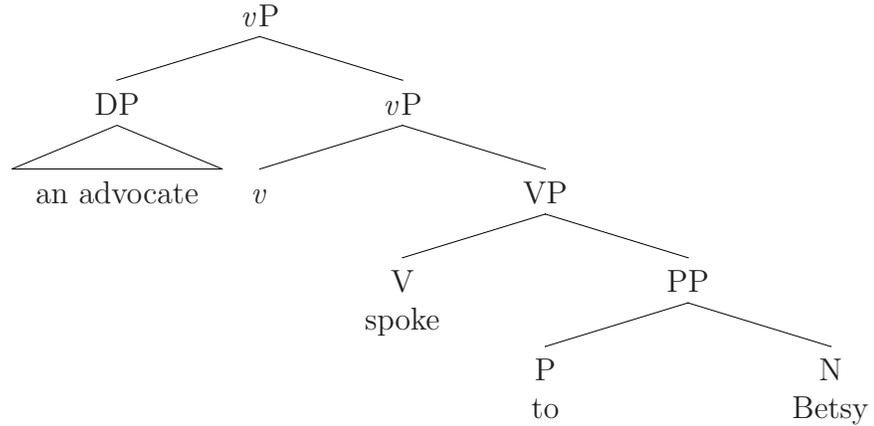
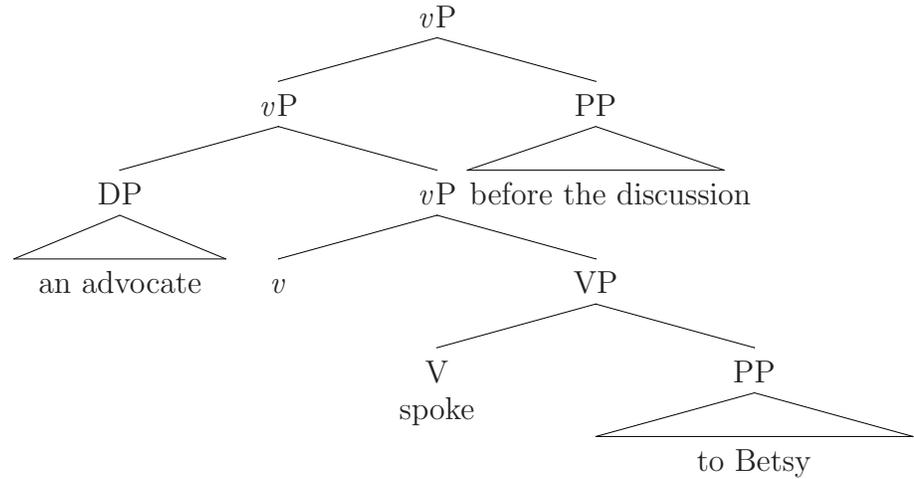


(c)  $N = \{[_{DP} \text{ an advocate}], v, [_{PP} \text{ before the discussion}]\}$



(d)  $N = \{[_{DP} \text{ an advocate}], [_{PP} \text{ before the discussion}]\}$



(e)  $N = \{[_{PP} \text{ before the discussion}]\}$ (f)  $N = \{ \}$ 

In this manner, renumeration requires a non-complement to be linearized and reinserted into a numeration. As with the MSO account, a linearized element can be manipulated as a whole, but the lexical items contained within it are not accessible to further operations. Therefore, a *wh*-phrase contained within a renumerrated non-complement cannot move from within it, and subject and adjunct island effects are accounted for.

Certain complex-DP island effects create a problem for the MSO and renumeration accounts. In (29c), repeated below, if the subordinate clause is an adjunct, then

these accounts can explain the island effect. The subordinate clause must be sent to Spell-Out or renumerated. However, if the subordinate clause is a complement, then it should not function as an island, and extraction of a *wh*-phrase should be possible.

- (29) (c) Complex NP/DP-island:  
 ??**What**<sub>1</sub> did you read [a report [that John bought t<sub>1</sub>]]? (Lasnik & Saito 1992:12)

There is evidence suggesting that a subordinate clause in certain complex-DPs is a complement. For example, the subordinate clause within the complex-DP of (29c) is quite similar to the object clause of the verb *report* in (48) which clearly is a complement.

- (48) He reported that John bought a book.

Similarly, the subordinate clause in (49a) corresponds to the complement of the verb *claim* in (49b).

- (49) (a) \***What**<sub>1</sub> do you believe [the claim [that John bought t<sub>1</sub>]]? (Lasnik & Saito 1992:22)  
 (b) He claimed that John bought the book.

Nichols (2003) provides an explanation for these complex-DP effects by arguing that the subordinate clause in this type of complex-DP really is an adjunct, despite appearances. Nichols (2003:156) writes the following.

... the standard argument that (deverbal) nouns may (optionally) assign theta roles is in actuality based on the stipulation that the complement theta role is carried over from the verb. There is no direct evidence for this position in the case of subordinate clauses, and, moreover ... there are other ways in which instances of apparent theta assignment by nouns may be explained.

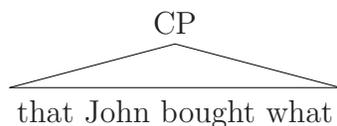
Nichols points out that, in constructions such as (29c), the evidence that the embedded clause is a complement to the noun comes from the resemblance between the noun and its verbal form. However, she notes that the nouns *story*, *idea* and *fact* behave in the same way as *claim*, even though they do not have verbal forms. For example, (50a) demonstrates that these nouns which do not have a verbal form can be followed by a subordinate clause. (50b) shows that extraction of a *wh*-phrase from this clause results in a complex-DP island effect.

- (50) (a) I believe [the claim/report/**story/idea/fact** [that John bought the book]]?  
 (b) ??What<sub>1</sub> do you believe [the claim/report/**story/idea/fact** [that John bought t<sub>1</sub>]]? (Lasnik & Saito 1992:22)

Nichols claims that because these nouns do not have transitive verbal forms, it is not clear that their subordinate clauses, as in (50a-b) are complements. Without going into more details (see Nichols (2003) for further arguments that this type of subordinate clause is an adjunct), I will assume that Nichols is correct and that this type of subordinate clause is an adjunct.

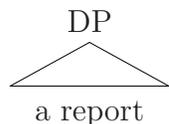
With the assumption that the subordinate clause is an adjunct, under the renumeration account, the complex-DP island effect in (29c) is accounted for as shown in (51a-e). Beginning with the numeration in (51a), the CP adjunct clause *that John bought what* is assembled and renumerated as shown in (51b-c). The DP *a report* is assembled and the renumerated subordinate clause is Merged with it, as shown in (51d-e).

- (51) (a) N = {a, report, that, John, bought, what}  
 (b) N = {a, report}

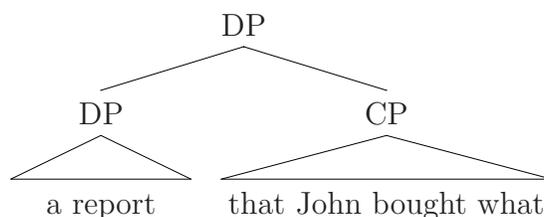


(c)  $N = \{a, \text{report}, [_{CP} \text{that John bought what}]\}$

(d)  $N = \{[_{CP} \text{that John bought what}]\}$

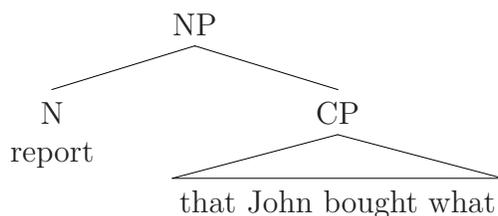


(e)  $N = \{ \}$



Since the subordinate clause is renumerated, nothing can be extracted from it, thereby accounting for why the *wh*-phrase cannot move out of the complex-DP. A derivation in which there is no renumeration is blocked because then the CP would Merge with a head, the noun *report*. As shown in (52), at the point in which the noun *report* is Merged with the CP, an  $X^0$  element is a sister to an XP that is not its complement, thus violating (42).

(52)



Lastly, I note that *whether/if* island effects as in (29b), repeated below, which as discussed above pose a problem for the MLC account, also pose a problem for a renumeration/MSO account.

(29) (b) *Whether/If* island

??**What**<sub>1</sub> do you wonder [whether/if John saw **t**<sub>1</sub>]? (adapted from Lasnik & Saito 1992:11)

If the *whether/if* clause is a complement of *wonder*, then it should not be linearized and sent to Spell-Out or renumerated. On the other hand, if it is an adjunct then the ill-formedness of this construction is accounted for; the *whether/if* clause is renumerated. At this point, I do not know of any clear evidence that a *whether/if* clause is an adjunct, and thus the cause of this type of island effect requires further examination.

In summary, the Minimalist Program requires an eclectic approach to island effects because ‘an island’ is not a uniform element. An island is a phrase from which an element cannot be extracted, but the cause of an island effect differs depending on the type of island. The MLC accounts nicely for *wh*-island effects. MSO and renumeration account for subject and adjunct island effects. They also can apply to complex-DP island effects, assuming that a subordinate clause within a complex-DP is an adjunct. A *whether/if* island effect, however, remains problematic; I briefly return to this issue in chapter 6. In the remainder of this dissertation, I will rely on the MLC and renumeration to account for relevant island effects. I use renumeration instead of MSO because of its advantage, as noted above, of not relying on the LCA.

### 2.6.3 The absence of island-effects

It is well-known that there are languages in which one can observe a lack of one or more of the various types of island effects given in (29a-e) above. As pointed out by Huang (1982), this lack of island effects is generally found in instances in which a *wh*-phrase remains in-situ. (53a-e) are well-formed, despite corresponding to the ill-formed (29a-e) above.

(53) Mandarin:

(a) No *wh*-island effect:

*Ni xiang-zhidao [shei mai-le **sheme**]?  
 you wonder who buy-ASP what  
 ‘What<sub>1</sub> do you wonder [who bought t<sub>1</sub>]? (Huang 1982:479)*

(b) No *whether/if* island effect

*Ni xiang-xhidao [ta xi-bu-xihuan shei]?  
 you wonder he whether-or-not like who  
 ‘Who<sub>1</sub> do you wonder [whether he likes t<sub>1</sub>]?’ (Lasnik & Saito 1992:32)*

(c) No complex-DP island effect:

*Ni xihuan [DP **shei** xie de shu]?  
 you like who write GEN book  
 ‘Who<sub>1</sub> do you like [the book t<sub>1</sub> wrote]?’*

(d) No adjunct island effect:

*Ta [T<sub>ypP</sub> yinwei ni shuo **shenme** hua] hen shengqi?  
 he because you say what word very angry  
 ‘What<sub>1</sub> was he angry [because you said t<sub>1</sub> words]?’ (Aoun & Li 1993:203)*

(e) No subject island:

*[DP **shei** xie de shu] zui youqu?  
 who wrote GEN book most interesting  
 ‘Who<sub>1</sub> are [books that t<sub>1</sub> wrote] most interesting?’ (Lasnik & Saito 1992:122)*

These types of instances in which a *wh*-phrase is contained within a clause that functions as an island in certain languages, but not in others, will be of importance in the following analysis, in which I examine the presence and absence of island effects to determine if movement of interrogative features has occurred.

## 2.7 Intervention effects

The island effects discussed in the previous section occur when a *wh*-phrase cannot move out of a particular type of clause. Another type of locality effect in which movement of a *wh*-element is blocked is an ‘intervention effect.’ This phenomenon also plays an important role in my analyses.

I use the term ‘intervention effect’ in accord with Beck (1996) and Beck & Kim (1997) to refer to ill-formedness that results when a particular scope bearing phrase, which is a quantificational and/or focus element, c-commands a *wh*-phrase. Pesetsky (2000:67) summarizes intervention effects as follows.

(54) *Intervention effect (universal characterization)*

A semantic restriction on a quantifier (including *wh*) may not be separated from that quantifier by a scope-bearing element.

Beck (1996:38) proposes the generalization that quantifiers block LF movement based on German constructions such as those in (55a-b). In (55a), the negative element *niemanden* ‘nobody,’ c-commands the *wh*-phrase *wo* ‘where.’ When the *wh*-phrase appears in a position preceding *niemanden* ‘nobody’ in (55b), the result is well-formed.

(55) German:

(a) ??*Wer hat niemanden wo angetroffen?*  
 who has nobody where met  
 ‘Who didn’t meet anybody where?’

(b) *Wer hat wo niemandem angetroffen?*  
 who has where nobody met  
 ‘Who didn’t meet anybody where?’ (Beck 1996:6)

Below are intervention effects from Japanese. In (56a), the Negative Polarity Item *sika* ‘only’ c-commands the *wh*-phrase *nani-o* ‘what-ACC.’ In (56b), the *wh*-phrase precedes *sika* ‘only,’ and the result is well-formed.

(56) Japanese:

(a) *?\*Taroo-sika nani-o yoma-nai no?*  
 Taroo-only what-ACC read-NEG Qu  
 ‘What did only Taro read?’ (Tanaka 1997:159)

(b) *Nani-o<sub>1</sub> Taroo-sika t<sub>1</sub> yoma-nai no?*  
 what-ACC Taroo-only read-NEG Qu  
 ‘What did only Taro read?’ (Tanaka 1997:162)

Interveners were originally classified as quantificational elements, including negation, by Beck (1996) for German. However, Beck & Kim (1997:370-371) point out that some focus phrases, which are not obviously quantificational, such as *man* ‘only’ and *to* ‘also’ in Korean cause intervention effects, while some quantificational phrases such as *taepupun* ‘most,’ *hangsang* ‘always,’ and *chachu* ‘often’ do not cause intervention effects. Tomioka (2007:1574) similarly points out that the Japanese *subete-no/zenbu-no-NP* ‘all (the) NP’ are quantificational, yet they do not cause intervention effects, whereas some DPs that are not quantificational, such as the Japanese *NP-mo/NP-to* ‘NP also’ are interveners. Kim (2002, 2006) deals with this apparently nonuniform class of interveners by taking the position that interveners in Korean are focused phrases (a class that crucially includes Negative Polarity Items). This view is further elaborated on by Beck (2006). Tomioka (2007) refers to the class of interveners as ‘Anti-Topic Items’ since they consist of elements that he argues cannot be topicalized in Japanese and Korean. As Tomioka notes, this view is compatible with the notion that interveners are focused elements. For the sake of simplicity, in this work I generally refer to interveners as scope bearing elements.

Karimi & Taleghani (2007) argue that the Minimal Link Condition (MLC) (see (34) above) accounts for intervention effects. This makes sense if either a *wh*-phrase undergoes covert movement over an intervening scope bearing element, or if an element associated with the *wh*-phrase undergoes movement of some sort, and this movement is blocked by the intervening element; for example, supposing K attracts

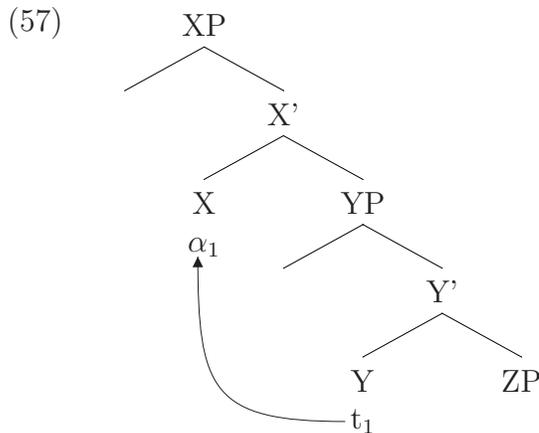
an element associated with a *wh*-phrase  $\alpha$ , but there is a closer scope bearing element  $\beta$  to K that blocks this movement.

Note that under this proposal, there is a parallelism between certain *wh*-island effects and intervention effects in that they both result from violations of the MLC. When there is a *wh*-island, a higher *wh*-phrase blocks a lower *wh*-phrase from obtaining scope. When there is an intervention effect, a scope bearing element blocks a *wh*-phrase from obtaining scope. In each case, a scope relation is blocked by an intervening element.

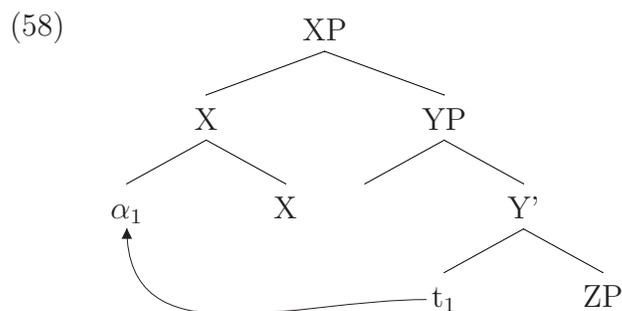
In order to investigate movement of interrogative features, I examine intervention effects later in this work. Of importance is the fact that intervention effects appear to indicate that movement has occurred.

## 2.8 Head movement

Head movement plays an important role in the analyses presented in this work in that I claim that movement of  $X^0$  category elements can occur in interrogative constructions. Head movement, as discussed in this work, refers to movement of an element from the head position of one maximal projection to the head position of another, as shown in (57).



The nature of head movement within the Minimalist Program is controversial. Under the view that a moved head adjoins to another head, there is a violation of the Extension Condition (Chomsky 1995b), which is the notion that movement, via Merge, must be to the top of a tree (thereby extending it). For example, if  $\alpha$  is a head that adjoins to another head X, as shown in (58), movement of *alpha* does not extend the tree. Rather, movement is to a position within the already constructed spine of the tree.



Furthermore, if a head adjoins to another head, as in (58), then the moved head does not c-command its trace (cf. Matsushansky 2006).

There have been proposals that deal with these problems. Notably, Chomsky (1995b) proposes that head movement occurs at PF. Harley (2004) proposes that head movement results from the passing of phonological features of a head up a tree (notably, before PF), without actual movement of the head. Since these proposals do not involve movement of a head, they get around the problematic issues of the Extension Condition and c-command. However, both Chomsky's and Harley's proposals rely on movement of phonological features alone, and thus predict that head movement should not influence the semantics of a construction. Matsushansky (2006), on the other hand, proposes that a head adjoins to a maximal projection and that there is a morphological operation whereby the head of the maximal projection and the moved head merge. This latter analysis involves actual movement of a head, and thus does not necessarily rule out semantic effects of head movement (see Matsushansky 2006 for discussion of this issue). In the following chapters, the

head movement that I propose has semantic effects and thus this latter analysis is most compatible with my work.

In this work, I represent head movement as shown in (57) above, without examining whether or not head movement involves adjunction, etc. There is much that can be examined with respect to head movement and the proposals presented in the following chapters. However, I leave aside these important issues (as my focus is on other matters) and simply assume that head movement of some form can exist whereby either a head or a feature contained within a head moves to another head position.

## 2.9 Conclusion

In this chapter, I have discussed the basic assumptions about language that will be of importance in the following chapters. I explained the operations that the faculty of language uses to construct lexical items and phrases. I discussed the importance of the clausal-periphery for interrogative constructions and clausal typing, and I described the basic phrase structure that I assume in this work. I then discussed two types of phenomena; island- and intervention-effects, which I utilize as diagnostics of movement in the following chapters. Lastly, I noted some problematic issues concerning head movement. I next turn to analyses of interrogative constructions.

## CHAPTER 3

### Qu-features and Qu-morphemes

#### 3.1 Introduction

I next turn to a discussion of Qu-features and the Qu-morphemes that house them. The existence of a Qu (question) element in interrogative constructions has been argued for by Katz & Postal (1964), Aoun & Li (1993), Chomsky (1995b), and Denham (2000), among others. In this chapter, I support these views by presenting evidence that there is a Qu-element, specifically, a Qu-morpheme that contains a Qu-feature in all yes/no and *wh*-constructions. I argue that this Qu-feature is crucial to the formation of yes/no and *wh*-constructions because it is responsible for typing a clause as an interrogative.

The organization of this chapter is as follows. Section 3.2 discusses evidence that there is a Qu-feature that is present in yes/no and *wh*-constructions. Section 3.3 shows that a single language can have multiple Qu-morphemes which differ in certain semantic and syntactic ways, but which still serve the same purpose of typing a clause as an interrogative. Section 3.4 is the conclusion.

#### 3.2 Evidence for a Qu-feature

Evidence for the existence of a Qu-feature is seen most clearly in languages that have overt Qu-morphemes. For example, in some languages, such as Japanese, Korean, Yavapai, and Luiseño, a matrix yes/no construction is formed simply by adding a Qu-morpheme to a corresponding non-interrogative construction. Furthermore, an identical Qu-morpheme in the same position may occur in *wh*-constructions. I take the appearance of an identical Qu-morpheme in yes/no and *wh*-constructions

as evidence that a Qu-feature contained within a Qu-morpheme is responsible for typing a clause as an interrogative.

The Japanese Qu-morpheme *ka* is one of several Qu-morphemes in Japanese that occurs in both yes/no and *wh*-constructions. For example, the statement in (1a) becomes a yes/no construction when the Qu-morpheme *ka* is added to clause-final position, as shown in (1b).

(1) Japanese:

- (a) *Kare-wa ie-ni kaerimashita.*  
 He-TOP home-DAT went  
 ‘He went home.’
- (b) *Kare-wa ie-ni kaerimashita ka?*  
 He-TOP home-DAT went Qu  
 ‘Did he go home?’

This same Qu-morpheme *ka* occurs in *wh*-constructions, as can be seen in (2). In this example, the *wh*-phrase *doko* ‘where’ occurs together with *ka* ‘Qu’ to form a *wh*-construction. Note that *ka* occurs in sentence-final position, just as in the yes/no construction (1b) above.

(2) Japanese:

- Kare-wa doko-ni ikimashita ka?*  
 He-TOP where-DAT went Qu  
 ‘Where did he go?’

The Korean Qu-morpheme *ni* also occurs in both yes/no and *wh*-constructions, and like the Japanese *ka*, it occurs in clause-final position. When the Qu-morpheme *ni* replaces the declarative morpheme *ta* found in (3a), a yes/no construction results, as shown in (3b).

(3) Korean:

(a) *Mary ka o ass ta.*  
 Mary NOM come PAST DECL  
 ‘Mary has come.’

(b) *Mary ka o ass ni?*  
 Mary NOM come PAST Qu  
 ‘Has Mary come?’ (Jang 1999:849)

When this Qu-morpheme *ni* co-occurs with a *wh*-phrase, such as *nwukwu* ‘who,’ as in (4), a *wh*-construction results, as shown below.

(4) Korean:

*Nwukwu i ni?*  
 who be Qu  
 ‘Who is it?’ (Jang 1999:851)

Yavapai<sup>1</sup> is another language that contains a Qu-morpheme, in this case the morpheme *e*;, which occurs in clause-final position of both *yes/no* and *wh*-constructions. Replacing the incompletive aspect morpheme *km* in (5a) with the Qu-morpheme *e*; in (5b) results in a *yes/no* construction.

(5) Yavapai:

(a) *Ma:-c m-ckʷat-km.*  
 2-pl 2-chop-incompletive  
 ‘You are/were chopping it.’

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<sup>1</sup>This is a Yuman language spoken in Arizona.

- (b) *Ma:-c m-ckʷat-e:?*  
 2-pl 2-chop-Qu  
 ‘Are/were you chopping it?’ (Kendall 1976:107)

Similarly, the Qu-morpheme *e:* occurs in clause-final position in *wh*-constructions. For example, in (6), *e:* occurs in a clause along with the *wh*-phrase *kavyu* ‘why’ to form a *wh*-question.

- (6) Yavapai:

***Kavyu-m***                      *θivo:y m-qaly-e:?*  
 why-AllocentricReferent onion 2p-dislike-Qu  
 ‘Why don’t you like onions?’ (Kendall 1976:109)

The Luiseño<sup>2</sup> Qu-morpheme *ʃu* occurs after the initial lexical item of a clause in both yes/no and *wh*-constructions. Compare (7a) and its corresponding yes/no counterpart in (7b).<sup>3</sup>

- (7) Luiseño

- (a) *Xwaan ‘aamoq.*  
 Juan hunting  
 ‘Juan is hunting.’
- (b) *Xwaan ʃu ‘aamoq?*  
 Juan Qu hunting  
 ‘Is Juan hunting?’ (Hyde 1971:20)

In (8), the Qu-morpheme occurs after the *wh*-phrase *hax* ‘who,’ thereby forming a *wh*-construction.

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<sup>2</sup>This is a Uto-Aztecan language spoken in Southern California.

<sup>3</sup>The examples given in Hyde (1971) do not contain word-for-word glosses, so I have provided glosses based on other examples from the same source with identical lexical items.

## (8) Luiseño

*Hax* *ʃu* *‘owo‘aq?*  
 who Qu working  
 ‘Who is working?’ (Hyde 1971:23)

The above examples show that interrogatives in some languages are formed with a Qu-morpheme that shows up in identical positions in both yes/no and *wh*-constructions. In Japanese, Korean, and Yavapai, a Qu-morpheme occurs in clause-final position. In Luiseño, a Qu-morpheme occurs in clause-second position. I take these facts to be evidence that a Qu-feature, contained within a Qu-morpheme, occurs in yes/no and *wh*-constructions in these, and possibly all, languages. In those languages that lack an overt Qu-morpheme, a null Qu-morpheme is present and is responsible for an interrogative interpretation.<sup>4</sup>

## 3.3 Multiple Qu-morphemes in a single language

A Qu-morpheme is not identical to a Qu-feature. Rather, it is a morpheme that contains a Qu-feature. If a Qu-morpheme were simply the overt representation of a Qu-feature, then a single language would probably not be able to have more than one Qu-morpheme, or if it had more than one, all of the Qu-morphemes would behave identically. This is not the case, as a single language may have multiple

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<sup>4</sup>This view is in agreement with Katz & Postal (1964), Aoun & Li (1993), and Denham (2000), who argue that English, Mandarin, and Babine Witsuwit’en, respectively, contain null Qu-morphemes. Cheng (1997) argues that a language either contains a *wh*-particle, which is essentially equivalent to a Qu-morpheme, or it has overt *wh*-movement, but it does not have both. Therefore, a *wh*-in-situ language has a *wh*-particle and a *wh*-movement language does not. My view, contra Cheng, is that a Qu-morpheme is always present in a yes/no or *wh*-construction, regardless of whether or not a language forms *wh*-constructions via a *wh*-in-situ strategy. I base this assumption on the existence of languages that have both overt Qu-morphemes and *wh*-phrasal movement. See chapter 6 for further discussion.

Qu-morphemes that differ in their semantics and in their syntactic behavior, as I show in the following discussion. These differences are a result of Qu-morphemes containing other features in addition to a Qu-feature.

Thai is a language with several Qu-morphemes that differ semantically and syntactically. I briefly illustrate a few of these differences.<sup>5</sup> The Qu-morpheme *máy* “is used to ask about information that belongs exclusively to the addressee (Iwasaki & Ingkaphirom 2005:280)” including questions about emotions, as shown in (9).

(9) Thai:

*Dii-cay máy?*  
glad Qu  
‘Are/were you glad?’ (Iwasaki & Ingkaphirom 2005:280)

According to Iwasaki & Ingkaphirom (2005), this Qu-morpheme cannot be used with a nominal predicate. However, the Qu-morpheme *rǎ-plàaw* can be used with a nominal predicate, as shown in (10), in which the Qu-morpheme co-occurs with the nominal predicate *fɛn khun-àphíchâat* ‘girlfriend TL-Apichat.’

(10) Thai:

*Kháw pen fɛn khun-àphíchâat rǎ-plàaw?*  
3p is girlfriend TL-Apichat Qu  
‘Is she Mr. Apichat’s girlfriend?’ (Iwasaki & Ingkaphirom 2005:283)

This morpheme *rǎ-plàaw* is used when the speaker considers information “to be more public (Iwasaki & Ingkaphirom 2005:283).” Note that this is contrary to *máy*, shown in (9) above, which is used when the speaker “considers the information to belong solely to the addressee (Iwasaki & Ingkaphirom 2005:283).” Thai also contains the Qu-morpheme *rǎ-yaŋ*, which can be used to indicate the perfective aspect.

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<sup>5</sup>See Iwasaki & Ingkaphirom (2005) for a more extensive discussion of the differences among these morphemes.

(11) Thai:

*Kin rǎi-yaŋ?*  
eat Qu

‘Have you eaten yet?’ (Iwasaki & Ingkaphirom 2005:284)

The Qu-morpheme *lǎ* is used when the speaker “... has intense curiosity regarding the information he has at hand (Iwasaki & Ingkaphirom 2005:285).”

(12) Thai:

*Nǐi khǎŋ lǎek lǎ?*  
this time first Qu

‘Is this your first time (experience of an earthquake)?’ (Iwasaki & Ingkaphirom 2005:285)

All of these Qu-morphemes are used to form yes/no constructions, yet they differ in their semantics and in the types of constructions they can occur in. These differences can be accounted for if each morpheme has its own distinct set of features, in addition to a Qu-feature.

Korean contains several Qu-morphemes that differ in terms of politeness. Examples (13a-c) all correspond to *Is it raining?* in English.

(13) Korean:

(a) *Pi ka o-ni?*  
rain NOM come-Qu<sub>plain</sub>

(b) *Pi ka o-na?*  
rain NOM come-Qu<sub>familiar</sub>

- (c) *Pi ka o-nya?*  
 rain NOM come-Qu<sub>neutral</sub> (Sohn 1999:269-270)

Although the meanings of examples (13a-c) are essentially the same, they each differ in formality to the addressee. The Qu-morphemes *ni*, *na*, and *nya* show what Sohn (1999) refers to as *plain*, *familiar*, and *neutral* levels of formality. These differences can be accounted for if each of these Qu-morphemes has a different feature for politeness. More specifically, *ni*, *na*, and *nya* have different features that give them the qualities that Sohn (1999) refers to as *plain*, *familiar*, and *neutral*.

Japanese also has Qu-morphemes that differ in their syntactic behavior and in their semantics.

Japanese Qu-morphemes differ with respect to whether they can occur in only a yes/no construction, only a *wh*-construction, or both a yes/no and *wh*-construction. The Qu-morphemes *ka* and *no* can both occur in either yes/no or *wh*-constructions. Examples (14a-b) show these two morphemes in yes/no constructions.

(14) Japanese:

- (a) *Gohan-o tabeta ka?*  
 food-ACC ate Qu  
 ‘Did you eat a meal?’
- (b) *Gohan-o tabeta no?*  
 food-ACC ate Qu  
 ‘Did you eat a meal?’

Examples (15a-b) show these morphemes in *wh*-constructions.

(15) Japanese:

- (a) *Nani-o tabeta ka?*  
 what-ACC ate Qu  
 ‘What did you eat?’

- (b) *Nani-o tabeta no?*  
 what-ACC ate Qu  
 ‘What did you eat?’

In contrast, the Qu-morpheme *kai* can only occur in yes/no constructions. The yes/no construction ending with *kai* in (16a) is fine, but the *wh*-construction ending in *kai* in (16b) is ill-formed.

(16) Japanese:

- (a) *Kare-ga ie-ni kaetta kai?*  
 He-NOM home-DAT went Qu  
 ‘Did he go home?’

- (a) *\*Dare-ga ie-ni kaetta kai?*  
 who-NOM home-DAT went Qu  
 Intended: ‘Who went home?’ (Junko Ginsburg, p.c.)

The Qu-morpheme *ndai* can only occur in *wh*-constructions. This morpheme is fine at the end of the *wh*-construction in (17a), but is ill-formed at the end of the yes/no construction in (17b).

(17) Japanese:

- (a) *Dare-ga kuru ndai?*  
 who-NOM come Qu  
 ‘Who will come?’ (Hagstrom 1998:16)

- (b) *\*Kare-ga kuru ndai?*  
 he-NOM come Qu  
 Intended: ‘Is he coming?’ (Junko Ginsburg, p.c.)

Japanese Qu-morphemes also differ with respect to whether or not they can occur in a matrix or embedded clause. The above examples in (14-17) show the morphemes *ka*, *no*, *kai*, and *ndai* all in matrix clauses. Of these Qu-morphemes,

only *ka* can also occur in an embedded clause. Example (18a) below is fine with *ka* at the edge of the embedded clause. However, (18b-d) with *no*, *kai*, and *ndai* at the edge of embedded clauses are all ill-formed.

(18) Japanese:

- (a) *Watashi-wa [kare-ga nani-o tabeta ka] wakaranai.*  
 I-TOP he-NOM what-ACC ate Qu don't know  
 'I don't know what he ate.'
- (b) \**Watashi-wa [kare-ga nani-o tabeta no] wakaranai.*  
 I-TOP he-NOM what-ACC ate Qu don't know  
 Intended: 'I don't know what he ate.'
- (c) \**Watashi-wa [kare-ga nani-o tabeta kai] wakaranai.*  
 I-TOP he-NOM what-ACC ate Qu don't know  
 Intended: 'I don't know what he ate.'
- (d) \**Watashi-wa [dare-ga kuru ndai] wakaranai.*  
 I-TOP who-NOM come Qu don't know  
 Intended: 'I don't know what he ate.'

Japanese also contains a Qu-morpheme *kadooka* that can only occur in an embedded yes/no construction. (19a) is fine with *kadooka* at the edge of the embedded yes/no construction, but (19b) is ill-formed because the embedded clause contains a *wh*-phrase, and (19c) is ill-formed because *kadooka* cannot occur in a matrix clause.

(19) Japanese:

- (a) *Watashi-wa [kare-ga sore-o tabeta kadooka] wakaranai.*  
 I-TOP he-NOM that-ACC ate Qu don't know  
 'I don't know if he ate that.'
- (b) \**Watashi-wa [kare-ga nani-o tabeta kadooka] wakaranai.*  
 I-TOP he-NOM what-ACC ate Qu don't know  
 Intended: 'I don't know what he ate.'

- (c) \**Kare-ga sore-o tabeta kadooka?*  
 he-NOM that-ACC ate Qu  
 Intended: ‘Did he eat that?’ (Junko Ginsburg, p.c.)

These Japanese Qu-morphemes also differ in terms of politeness, with *ka* being more polite than *no*, and *no* being more polite than *kai* or *ndai*. The embedded clause Qu-morpheme *kadooka* appears not to be specified for politeness. I base this assumption on native speaker intuition that *kadooka* is neither polite nor impolite (Junko Ginsburg, p.c.).

The differences in these Qu-morphemes are summarized in (20). *Ka* and *no* occur in both yes/no and *wh*-constructions. *Kai* and *kadooka* occur in only yes/no constructions and *ndai* only occurs in *wh*-constructions. Only *ka* can occur in both an embedded and matrix clause. All of the other Qu-morphemes except for *kadooka* must occur in matrix clauses. *Kadooka* can only occur in an embedded clause. Furthermore, *ka* is more polite than *no*, and *no* is more polite than *kai* or *ndai*. In the chart, these three levels of politeness are referred to as *polite*, *plain*, and *informal*. I have not specified *kadooka* for politeness.

(20)

Morpheme	yes/no	<i>wh</i>	matrix	embedded	polite	plain	informal
ka	✓	✓	✓	✓	✓		
no	✓	✓	✓			✓	
kai	✓		✓				✓
ndai		✓	✓				✓
kadooka	✓			✓			

I assume that each Japanese Qu-morpheme differs in its syntactic behavior and semantics because it contains a unique set of features. Despite these differences, these Qu-morphemes all contain a Qu-feature.

The Qu-morpheme data from Thai, Korean, and Japanese show that a single language may have more than a single Qu-morpheme, and that these Qu-morphemes are not identical to each other, since they show up in different environments. These facts are evidence that a Qu-morpheme contains more than just a Qu-feature. Each Qu-morpheme has its own unique set of features that differs in some way from the features that make up other Qu-morphemes.

### 3.4 Conclusion

If the claims made here are correct, then the languages discussed in this chapter have Qu-morphemes; i.e., a morpheme that contains a Qu-feature, as well as other features. A *yes/no* or *wh*-construction requires the presence of a Qu-feature, and a Qu-feature can only enter a derivation via attachment to a Qu-morpheme. In the following chapters, I will argue that the Qu-feature, contained within either an overt or covert Qu-morpheme, plays an important role in the formation of *yes/no* and *wh*-constructions.

## CHAPTER 4

### Yes/no constructions

#### 4.1 Introduction

In this chapter, I examine the formation of yes/no constructions. I argue that cross-linguistic variation in yes/no constructions results primarily from properties of Qu-morphemes. I begin by demonstrating that there are various types of Qu-morphemes which differ in terms of whether or not they are pronounced, and whether or not they are free morphemes. Next, I examine why some Qu-morphemes appear in the clause periphery and others in a TP-internal position. I argue that a Qu-morpheme appears in a TP-internal position if it has a Focus-feature.

This chapter is organized as follows. In section 4.2, I propose that certain features determine whether a Qu-morpheme is pronounced, and whether or not it is an affix. Section 4.3 discusses languages in which a Qu-morpheme must appear in the clause-periphery. I argue that these Qu-morphemes are Merged directly in Typ. Section 4.4 discusses languages in which a Qu-morpheme can either appear TP-internally or at the clause-periphery. Section 4.5 is the conclusion.

#### 4.2 Types of Qu-morphemes

In this section, I propose that certain features contained within Qu-morphemes account for cross-linguistic variation in yes/no construction formation. Specifically, I account for why languages form yes/no constructions in the following ways: 1) with an overt Qu-morpheme that is an independent lexical item, 2) with an overt Qu-morpheme that affixes onto another lexical item, 3) with movement of a lexical item but no overt Qu-morpheme, and 4) with only intonation.

There are several types of Qu-morphemes. Some languages use overt Qu-morphemes in yes/no constructions and others do not, and a single language may even allow yes/no constructions to be formed either with or without an overt Qu-morpheme. As discussed in chapter 3, I assume that a Qu-morpheme is present in all yes/no constructions. When it is not pronounced, it is null. Some languages then have an overt Qu-morpheme, some have a null Qu-morpheme, and others have both types of Qu-morpheme, one that is overt and another that is null. A Qu-morpheme may also be an affix or an independent lexical item. I argue that the source of these differences in Qu-morphemes lies in the  $[\pm]$  values of [OVERT] and [AFFIX] features.

The table in (1) lists four possible types of Qu-morphemes in terms of the features that they contain.

(1)

	FEATURES
(a)	[+OVERT], [+AFFIX]
(b)	[+OVERT], [-AFFIX]
(c)	[-OVERT], [+AFFIX]
(d)	[-OVERT], [-AFFIX]

(1a) describes a Qu-morpheme that is an overtly pronounced affix, (1b) an overt free morpheme, (1c) a null affix, and (1d) a Qu-morpheme that is neither overt nor an affix, but an intonation pattern.

In summary, a Qu-feature surfaces inside of a Qu-morpheme that is overt or null, and that is an affix, an independent lexical item, or a particular intonation pattern. These properties of Qu-morphemes result from the features they have. In the following subsections, I explain how these Qu-morpheme features account for cross-linguistic variation in the forms of yes/no constructions.

### 4.2.1 Overt Qu-morphemes

There are several different types of overt Qu-morphemes. Tohono O’odham and Haida have overt Qu-morphemes that are affixes, whereas Japanese and English have overt Qu-morphemes that are free morphemes. Example (2) shows these Qu-morphemes in terms of the features that they have.

(2)

LANGUAGE	FEATURES
Tohono O’odham, Haida	[+OVERT], [+AFFIX]
Japanese, English	[+OVERT], [-AFFIX]

I discuss these Qu-morphemes below.

Yes/no constructions in Tohono O’odham<sup>1</sup> are formed with an overt Qu-morpheme that is an affix. For example, in (3a), the subject *mistol* ‘cat’ occurs in clause-initial position followed by what is generally considered to be an auxiliary (AUX) *’o* (cf. Zepeda 1983, Hale 1983, Hale & Selkirk 1987, Payne 1987, Hale 2002). In the yes/no construction (3b), the subject no longer occurs in sentence initial position. Instead, this position is filled with the Qu-morpheme *n* followed by the AUX *o*.<sup>2</sup>

(3) Tohono O’odham:

- (a) *Mistol ’o ko:ʂ.*  
 cat AUX sleeping  
 ‘The cat is/was sleeping.’

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<sup>1</sup>This is a Uto-Aztecan language spoken in southern Arizona and northern Mexico. I use the term Tohono O’odham in accord with Hale (2002) and the conventions adopted by the tribe. Tohono O’odham is also referred to in the linguistics literature as Papago (Hale 2002).

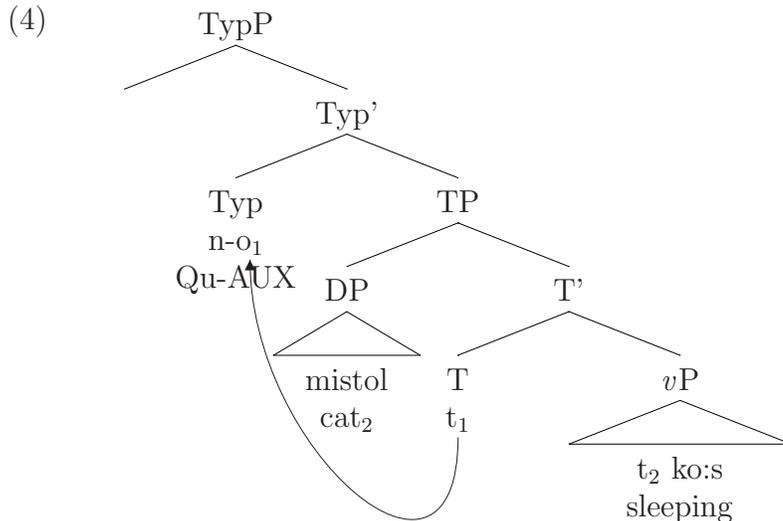
<sup>2</sup>The subject *mistol* ‘cat’ is preceded by a determiner in (3b), but not in (3a) because “the *g* determiner never occurs at the beginning of a sentence (Zepeda 1983:8).”

- (b) *N-o*      *g*      *mistol* *ko:s?*  
 Qu-AUX    DET    cat      sleeping  
 ‘Is/was the cat sleeping?’ (Zepeda 1983:13)

The Tohono O’odham Qu-morpheme *n* is pronounced and so it clearly has a [+OVERT] feature. It also appears to be an affix.

Evidence that *n* ‘Qu’ is an affix is given by Zepeda (1983:14), who writes that in a yes/no question, “since the auxiliary combines with the **n-**, it loses its initial glottal stop.” In (3a), the ‘ at the beginning of ‘o ‘AUX’ represents a glottal stop. This glottal stop shows that the AUX is an independent phonological word. When the AUX combines with the Qu-morpheme in an interrogative construction, as in (3b), the glottal stop disappears, indicating that the AUX is no longer an independent phonological word, but has combined with the Qu-morpheme. The AUX combines with the Qu-morpheme because the Qu-morpheme has a [+AFFIX] feature.

The Tohono O’odham Qu-morpheme is an affix, and therefore, it requires an element to host it. The [+AFFIX] feature forces the Qu-morpheme to attract the AUX which is the closest head, forcing the AUX to suffix onto it. In (3b), if the Qu-morpheme *n* is in Typ, then the AUX raises from T to Typ, as shown in (4).



The fact that the Tohono O’odham Qu-morpheme is a prefix is dependent on the [+AFFIX] feature of the Qu-morpheme and a requirement that the AUX appear in second position in a clause. This phenomenon whereby a clitic appears in second position is known as Wackernagel’s law, which Hale (2002:303) describes as “the principle of Second Position Placement of certain elements.”<sup>3</sup> Importantly, if the Qu-morpheme were to suffix onto the AUX, then the AUX would end up in clause-initial position, which is not allowed.

Haida<sup>4</sup> also contains a Qu-morpheme that is an overt affix. Enrico (1986:103) writes that yes/no constructions “require the clitic particle *gu* after the first constituent.” In other words, the Qu-morpheme *gu* must appear after the clause-initial element, unlike the Tohono O’odham Qu-morpheme which must precede the clause-initial element. Compare the statement in (5) with the yes/no construction in (6), which is formed by adding the Qu-morpheme *gu* to the end of the initial lexical item.

(5) Haida:

*Bill ’la qing-gan.*

Bill 3p see-Past

‘She saw Bill/Bill saw her.’ (Enrico 2003:151)

(6) Haida:

*Daa-gu 0 gudang?*

you-Qu 3p understand

‘Do you understand it?’ (Enrico 2003:132)

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<sup>3</sup>For discussion of why Wackernagel’s law exists, see Anderson (1993), among others.

<sup>4</sup>This is a language spoken in the Queen Charlotte Islands of British Columbia, and Dall and the southern Prince of Wales Islands in Alaska (Enrico 2003).

The Haida Qu-morpheme attaches onto whatever is in clause-initial position, and notably, there is a lot of freedom as to what can appear in clause-initial position. In (7a), the Qu-morpheme *gu* attaches onto a pronoun, which is ambiguous between the subject or object. In (7b), the Qu-morpheme attaches onto a locative, and in (7c) it attaches onto a pronominal subject.

- (7) (a) *ʔlaa-gu dang sʔudaa-yaa?*  
 3rdper-Qu you punch-nw  
 ‘Did you punch him?’ or ‘Did he punch you?’
- (b) *ʔanaa-gu Bill ʔis?*  
 inside-Qu Bill copula  
 ‘Is Bill inside?’
- (c) *daa-gu ʔing?*  
 you-Qu see  
 ‘Do you see it?’ (Enrico 1986:104)

One limitation is that the clause initial element cannot be a verb (Enrico 1986).

Enrico (2003:131) considers the Haida Qu-morpheme to be an affix, as he glosses it as an affix and describes it as an “interrogative clitic.” There is syntactic evidence to support this idea. When there is no non-verbal lexical item for the Qu-morpheme to affix onto in clause-initial position, then the dummy element *huu* is inserted to serve as a host. Enrico (1986:105) writes that *huu* is an adverbial that has “the demonstrative meaning ‘there,’” but when used with the Qu-morpheme “*huu* . . . is meaningless and it is *gu* that is in some sense basic.” In (8), note that *gu* ‘Qu’ follows this dummy *huu*.

- (8) Haida:
- Huu-gu tajuu?*  
 Dummy-Qu be blowing/windy  
 ‘Is it windy?’ (Enrico 1986:105)

These facts indicate that the Haida Qu-morpheme has a [+AFFIX] feature.

Note that the Haida Qu-morpheme functions as a suffix. Like in Tohono O’odham, I assume that this is due to facts that are external to the Qu-morpheme. Specifically, the clause-initial element precedes the Qu-morpheme. This is likely because it is in a higher projection, such as TopP, than where the Qu-morpheme is. The clause initial element, like the Qu-morpheme, is in the periphery of a clause, whereas the elements following the Qu-morpheme are located within the TP. Therefore, it may be that the Qu-morpheme suffixes onto the clause-initial element simply because it is closest.

I next turn to the Japanese Qu-morpheme *ka*, which is also overt, but unlike the Tohono O’odham and Haida Qu-morphemes, it is not an affix. The Japanese Qu-morpheme thus contains [+OVERT] and [-AFFIX] features. Example (1) from chapter 3, repeated below as (9), demonstrates that *ka* is a Qu-morpheme. The statement in (9a) becomes a yes/no construction when the Qu-morpheme *ka* is added to clause-final position as shown in (9b).

(9) Japanese:

- (a) *Kare-wa ie-ni kaerimashita.*  
 He-TOP home-DAT went  
 ‘He went home.’
- (b) *Kare-wa ie-ni kaerimashita ka?*  
 He-TOP home-DAT went Qu  
 ‘Did he go home?’

Evidence that *ka* ‘Qu’ is an independent lexical item is that it is not possible to pause before a suffix, but it is possible to pause before *ka* ‘Qu.’ Examples (10a-b) show two verbs with the present tense suffix *-masu*. The verb *iki-masu* ‘go’ is composed of *iki* ‘go’ and the suffix *-masu* ‘PRES,’ and *tabe-masu* ‘eat’ consists of *tabe* ‘eat’ and *-masu* ‘PRES.’ The verbs in (10a-b) are single phonological words that each consists of two morphemes.

(10) Japanese:

(a) *iki-masu*  
go-PRES  
'go'

(b) *tabe-masu*  
eat-PRES  
'eat'

It is ill-formed to pause when speaking between the verb roots and *-masu*, as shown in (11a-b) because *-masu* is an affix. It is possible to pause before *ka* 'Qu' as shown in (11c). Although it may be a bit odd to pause before *ka* 'Qu,' it is not nearly as bizarre as pausing before *-masu*. This is then evidence that *ka* 'Qu' is not an affix.

(11) Japanese:

(a) *\*iki-PAUSE-masu*  
go-PAUSE-PRES  
'go'

(b) *\*tabe-PAUSE-masu*  
eat-PAUSE-PRES  
'eat'

(c) *?(Anata-wa) ikimasu PAUSE ka?*  
(You-TOP) go PAUSE Qu  
'Are you going?'

English contains an [+OVERT] [-AFFIX] Qu-morpheme *if* that appears in embedded yes/no constructions.<sup>5</sup> It cannot appear in *wh*-constructions, nor in matrix interrogatives. Example (12a) shows a matrix statement. In its yes/no counterpart, (12b), the auxiliary *should* is fronted to clause-initial position where a null matrix Qu-morpheme attaches onto it (see the next subsection for a discussion of why the

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<sup>5</sup>See Baker (1970) for arguments that *if* is the overt realization of a Qu-morpheme.

auxiliary moves and attaches onto the Qu-morpheme). When this yes/no construction is placed in an embedded clause, as in (12c-d), the auxiliary cannot front to clause-initial position; instead the overt Qu-morpheme *if* is required.<sup>6</sup> I hypothesize that the auxiliary cannot front because an embedded clause cannot contain a null Qu-morpheme in English. Example (12c) in which the embedded clause contains a fronted auxiliary is ill-formed.<sup>7</sup> The embedded clause functions as a well-formed embedded yes/no construction when it contains the overt Qu-morpheme *if*, as shown in (12d).

- (12) (a) She should go.  
 (b) **Should**<sub>1</sub> she t<sub>1</sub> go?  
 (c) \*I wonder [**should**<sub>1</sub> she t<sub>1</sub> go].  
 (d) I wonder [**if** she should go].

This Qu-morpheme *if* contains a set of features that requires it to only appear in an embedded clause.

The Qu-morpheme *if* is not an affix. Just as it is possible to pause before the Japanese Qu-morpheme *ka*, it is possible to pause before, as well as after, *if*. For example, in (13), it is possible to pause between *wonder* and *if*, and between *if* and *it's*. Even with a pause, this construction is understandable.

- (13) I wonder (PAUSE) [**if** (PAUSE) it's true].

Compare this example with a word that contains a clear affix, such as *cat-s*. It is extremely odd to pause between *cat* and the plural morpheme *-s*, because *-s* is an affix that attaches onto *cat*.

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<sup>6</sup> *Whether* may also occur in this position. *Whether* differs in its behavior from *if* and thus it is not clear to me whether or not it is a *wh*-phrase or a Qu-morpheme, although I suspect that it is a Qu-morpheme. See Katz & Postal (1964), Larson (1985), and Kayne (1991), as well as the discussion of *whether* and *if* in chapter 2.6.

<sup>7</sup> This construction is ill-formed in 'standard' English. In some dialects of English, an auxiliary can appear in the initial position of an embedded clause. See section 4.2.3.

## 4.2.2 Covert Qu-morphemes

I next discuss several different types of null Qu-morphemes; morphemes with a [-OVERT] feature. English and Spanish have Qu-morphemes that are null affixes. Dholuo, Hopi, Swati, Mandarin Chinese, and Persian have Qu-morphemes that show up as intonation. These Qu-morphemes and their relevant features are given in (14).

(14)

LANGUAGE	FEATURES
English, Spanish	[-OVERT], [+AFFIX]
Dholuo, Hopi, Swati, Mandarin, Persian	[-OVERT], [-AFFIX]

English does not have an overt Qu-morpheme in matrix clauses, and so its matrix Qu-morpheme clearly must be null, indicating it has a [-OVERT] feature. Furthermore, the Qu-morpheme causes the element in Tense to raise to Typ. This is because the Qu-morpheme is an affix. In the statement in (15a) below, the Tense head contains the auxiliary *could*. In the yes/no version (15b), *could* has raised to Typ to serve as a host for the Qu-morpheme. The Qu-morpheme's affix property forces the element in T, in this case *could*, to raise to Typ.

(15) (a) He [<sub>T</sub> **could** drink the wine] .(b) [<sub>TypP</sub> [<sub>Typ</sub> **Could**<sub>1</sub>- $\emptyset_{Qu}$  he [<sub>TP</sub> [<sub>T</sub> t<sub>1</sub> drink the wine]]]]?

When there is no element in T, then a form of *do* appears. Compare (16a-b). In a statement such as (16a), the Tense head, with a value of [PAST] is pronounced as part of the verb *ate*. In (16b), the Tense head raises to Typ where it attaches onto the null Qu-morpheme. Since it has moved away from the verb, it can no longer be pronounced as part of the verb, and English resorts to a form of the dummy element *do*.

(16) (a) He [<sub>T</sub>  $\emptyset_{PAST}$  ate the food].

(b) [ $T_{ypP}$  [ $T_{yp}$  **Did**<sub>1</sub>- $\emptyset_{Qu}$  [ $TP$  he [ $T$   $t_{PAST1}$  eat the food]]]]?

Spanish also has a null Qu-morpheme that is an affix. The statements in (17-18a) become yes/no constructions, as shown in the corresponding (b) examples, when the verbal elements raise to clause-initial position.

(17) Spanish:

(a) *Usted es americano.*  
 you are American  
 ‘You are American.’

(b) **Es**<sub>1</sub> *usted t<sub>1</sub> americano?*  
 are you American  
 ‘Are you American?’ (Stein 2005:184)

(18) Spanish:

(a) *Linda viene tarde.*  
 Linda is coming late  
 ‘Linda is coming late.’

(b) **Viene**<sub>1</sub> *Linda t<sub>1</sub> tarde?*  
 is coming Linda late  
 ‘Is Linda coming late?’

(Stein 2005:184)

In Spanish yes/no constructions, as in English, the Tense morpheme raises to Typ where it affixes onto a null Qu-morpheme. However, unlike in English, Tense can raise to Typ along with a main verb that it is affixed to. In (18b), the main verb *viene* ‘is coming’ raises to Typ.

Some languages can form yes/no constructions merely with intonation.<sup>8</sup> I propose that these languages contain a Qu-morpheme with [-OVERT] and [-AFFIX]

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<sup>8</sup>Some languages of this type can also form yes/no constructions with Qu-morphemes. For example, Japanese has overt Qu-morphemes, as discussed above, but yes/no constructions can

features. The Qu-morpheme is neither overt, nor is it an affix, as there is no apparent movement of lexical items to indicate affixation. These Qu-morphemes have a particular intonation pattern that influences the pronunciation of a construction. I do not examine the exact intonation patterns here, but if Greenberg (1966) is correct, then the question intonation pattern always, or usually, shows up at the end of a clause. Greenberg (1966:80) writes that the following is a language universal.

When a yes-no question is differentiated from the corresponding assertion by an intonational pattern, the distinctive intonational features of each of these patterns are reckoned from the end of the sentence rather than from the beginning.

Intonation is used to form interrogatives in a number of languages. For example, in Dholuo,<sup>9</sup> according to Omondi (1982:137), “[yes/no] questions are formed from statements or indicative sentences by a change in intonation. Whereas statements end in a final fall, questions end in a final rise.”

(19) Dholuo:

(a) *Nyathi madho chak.* [Final fall]

‘[The/a] baby is drinking milk.’

(b) *Nyathi madho chak.* [Final rise]

‘Is [the/a] baby drinking milk?’ (Omondi 1982:138)

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also be formed with intonation alone. Similarly, a yes/no construction in English can be formed with intonation, without movement of an auxiliary. For example, ‘You’re sick?’ can function as a yes/no construction if said with the appropriate intonation, although it is not clear to me that this is the same type of question as one with auxiliary movement, such as ‘Are you sick?’. ‘You’re sick?’ is more likely to be used as an echo question asking for confirmation about information previously heard than as a standard yes/no construction asking for new information.

<sup>9</sup>This is a language spoken in Western Kenya (Omondi 1982).

Kalectaca (1978:102) writes that “[u]se of special intonation is the normal way in Hopi<sup>10</sup> of forming questions answerable by ‘yes’ or ‘no.’” For example, (20) means *The blanket is red.* or *Is the blanket red?* depending on the intonation.

(20) Hopi:

*Taapalo paalangpu./?*

blanket red

‘The blanket is red./Is the blanket red?’ (Kalectaca 1978:102)

Swati<sup>11</sup> is another language that uses intonation to form yes/no constructions. Ziervogel & Mabuza (1976:219) write that a yes/no construction is formed via “a change of intonation in the interrogative clause” version of the following example.

(21) Swati:

*Usaphila./?*

‘He is still well./‘Is he still well?’ (Ziervogel & Mabuza 1976:219)

Mandarin Chinese also can use intonation alone to form a yes/no question. Tie & Lance (1986:56) write that “[a] simple “yes/no” question can be formed merely by raising the pitch of one’s voice at the end of a statement.” For example, (22) could be a statement or yes/no construction, depending on the intonation.

(22) Mandarin:

*Nǐ mǎi shū./?*

You buy book

‘You buy books./Did you buy books?’ (Tie & Lance 1986:56)

Persian also forms yes/no constructions with intonation, as shown below. Rising intonation signals a yes/no construction.

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<sup>10</sup>This is a Uto-Aztecan language spoken in northern Arizona (Kalectaca 1978).

<sup>11</sup>This is a language spoken in Swaziland and South Africa (Ziervogel & Mabuza 1976).

(23) Persian:

(a) *Kimea madres a-st.* [*Falling intonation*]

Kimea school is

‘Kimea is at school.’

(b) *Kimea madres a-st?* [*Rising intonation*]

Kimea school is

‘Is Kimea at school?’ (Simin Karimi, p.c.)

In examples (19-23), a statement and a yes/no construction are identical except for a change in intonation. This intonation change may influence the way that phonemes are pronounced, but it does not change the actual string of lexical items that occur in a statement and a corresponding yes/no construction. Note that there is no movement of a lexical item. I take this to be evidence that a Qu-morpheme in these languages is not an affix.

#### 4.2.3 An overt or covert Qu-morpheme

Notably, there are some English dialects that allow either an overt or a covert Qu-morpheme to appear in an embedded clause.

Hiberno English has a null Qu-morpheme that occurs in embedded clauses. In examples (24a-d), the element in Tense raises to adjoin to a null Qu-morpheme.

(24) Hiberno English:

(a) Ask your father [<sub>T<sub>ypP</sub></sub> [<sub>T<sub>yp</sub></sub> **does**<sub>1</sub>-∅<sub>Qu</sub> [<sub>T<sub>P</sub></sub> he [<sub>T</sub> t<sub>PRES1</sub> want his dinner]]]]].

(b) I was wondering [<sub>T<sub>ypP</sub></sub> [<sub>T<sub>yp</sub></sub> **would**<sub>1</sub>-∅<sub>Qu</sub> [<sub>T<sub>P</sub></sub> he [<sub>T</sub> t<sub>1</sub> come home for the Christmas]]]]].

- (c) Do you remember  $[_{T_{yp}P} [_{T_{yp}} \mathbf{did}_1-\emptyset_{Qu} [_{TP} \text{they} [_{T} t_{past1} \text{live in Rosemount}]]]]$ ?
- (d) I've never found out  $[_{T_{yp}P} [_{T_{yp}} \mathbf{would}_1-\emptyset_{Qu} [_{TP} \text{he} [_{T} t_1 \text{really have come with me}]]]]$ . (McCloskey 1991:294)

Furthermore, Hiberno English also contains the overt Qu-morpheme *if*. (25a) shows that Tense can raise to Typ and attach onto a null Qu-morpheme, and (25b) shows that the overt Qu-morpheme *if* can appear. Both Qu-morphemes cannot co-occur, as shown in (25c), since a single head cannot be filled with two Qu-morphemes.

(25) Hiberno English:

- (a) Ask your father  $[_{T_{yp}P} [_{T_{yp}} \mathbf{does}_1-\emptyset_{Qu} [_{TP} \text{he} [_{T} t_{pres1} \text{want his dinner}]]]]$ .
- (b) Ask your father  $[_{T_{yp}P} [_{T_{yp}} \mathbf{if}_{Qu} \text{he wants his dinner}]]$ .
- (c) \*Ask your father  $[_{T_{yp}P} [_{T_{yp}} \mathbf{if}_{Qu} \mathbf{does}_1-\emptyset_{Qu} \text{he } t_{pres1} \text{want his dinner}]]$ .  
(McCloskey 1991:295)

The fact that both a null Qu-morpheme and an overt Qu-morpheme can appear in an embedded clause is evidence that Hiberno English contains two types of embedded clause Qu-morphemes which differ in terms of their featural makeup. Specifically, *if* is an overt independent lexical item and the other Qu-morpheme is a null affix.

Ozark English also allows both an overt and a covert Qu-morpheme in embedded yes/no constructions, as in (26a-b), although note that, according to Rusty Barrett (p.c.), (26b) is not as natural as (26a).

- (26) (a) I don't know  $[_{T_{yp}P} [_{T_{yp}} \mathbf{is}_1-\emptyset_{Qu} [_{TP} \text{she} [_{T} t_1 \text{going}]]]]$ .
- (b) I don't know  $[_{T_{yp}P} [_{T_{yp}} \mathbf{if}_{Qu} \text{she is going}]]$ . (Barrett 2008)

As in Hiberno English, both the overt and covert Qu-morphemes cannot co-occur, as indicated by the ill-formedness of (27) below. This is to be expected since Typ cannot simultaneously contain two Qu-morphemes.

(27) \* I don't know [<sub>TypP</sub> [<sub>Typ</sub> **if**<sub>Qu</sub> **is**<sub>1</sub>- $\emptyset$ <sub>Qu</sub> she t<sub>pres1</sub> going]]. (Barrett 2008)

One factor that determines the use of the two possible Qu-morphemes in an embedded yes/no construction in Hiberno and Ozark English likely involves the semantics of the Qu-morpheme. Rusty Barrett (p.c.) notes that when a yes/no construction follows *unless*, as in (28a-b), there is a clear semantic difference. (28a), which I assume contains a [+AFFIX] Qu-morpheme, emphasizes doubt that she will go, whereas (28b) does not emphasize doubt.

- (28) (a) I won't go unless [is she going too]. (emphasizing doubt that she will go)  
 (b) I won't go unless [she is going too]. (Rusty Barrett, p.c.)

More examination of the semantic differences between overt and covert Qu-morphemes in Hiberno and Ozark English is required, but the evidence from Ozark English is suggestive that a speaker uses the overt Qu-morpheme in a different situation than the covert Qu-morpheme. This is to be expected, since if a language has multiple Qu-morphemes they are unlikely to be completely identical. If they were identical, then why would a language need multiple ones? Also, as discussed in chapter 3.3, a number of languages have multiple Qu-morphemes which, although identical in that they serve the function of typing a clause as an interrogative, differ in their semantic and syntactic behavior.

#### 4.2.4 Summary

In this section, I have argued that the features that a Qu-morpheme has play important roles in the formation of yes/no constructions. A Qu-morpheme has [ $\pm$ ] valued [OVERT] and [AFFIX] features. A [ $\pm$ OVERT] feature determines whether

or not a Qu-morpheme is overt, and a [ $\pm$ AFFIX] feature determines whether it shows up as an affix or an independent lexical item. Notably, a Qu-morpheme that is an affix can force movement of a tense element, as is the case in English and Spanish. If a Qu-morpheme has [-] values of both of these features, then it shows up as a particular intonation pattern that indicates a yes/no construction. Thus the particular features contained within a Qu-morpheme influence the structure of a yes/no construction.

### 4.3 Qu-morphemes in Typ

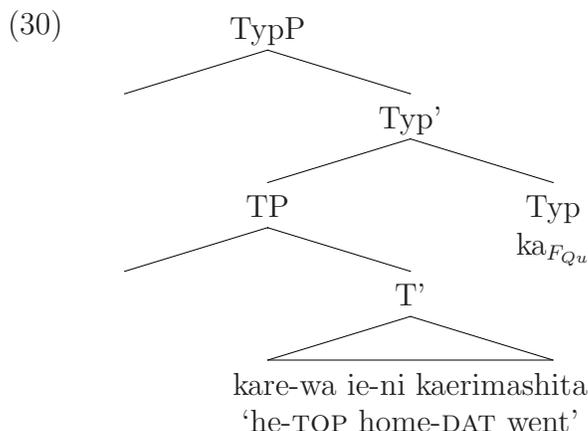
Cross-linguistically, in yes/no constructions, Qu-morphemes frequently appear in a clause-peripheral position. As discussed in chapter 2.5, I claim that TypP is associated with clause typing. Typing of a clause as a yes/no construction occurs when the Qu-feature of a Qu-morpheme checks an uninterpretable feature in Typ. Since TypP occurs in a clause peripheral position, a clause-peripheral Qu-morpheme is likely Merged directly in Typ. All of the languages discussed in the previous section appear to contain clause-peripheral Qu-morphemes, assuming that a Qu-morpheme that surfaces as intonation alone is also in a clause-peripheral position. In this section I demonstrate that a Qu-morpheme in Modern Japanese and English occurs directly in Typ. The purpose of this discussion is to show that in general (although not always, as I discuss in section 4.4), a Qu-morpheme is Merged directly in Typ.

#### 4.3.1 Modern Japanese

In Modern Japanese, a Qu-morpheme must appear at the end of a clause. In the following Japanese example, the Qu-morpheme *ka* occurs in clause-final position. If it is in any other position, the result is an ill-formed yes/no construction.

- (29) *Kare-wa* (\**ka*) *ie-ni*            (\**ka*) *kaerimashita* ***ka?***  
 He-TOP            home-DAT            went            Qu  
 ‘Did he go home?’

This example can be accounted for as shown in (30), with the Qu-morpheme Merged directly in Typ. The  $F_{Qu}$  subscript on the Qu-morpheme represents a Qu-feature.



Furthermore, the Japanese Qu-morpheme can only take scope in the clause in which it appears. Example (31a) shows a yes/no construction with an embedded clause. The Qu-morpheme *ka* is in the matrix clause, which it types as a yes/no construction. Example (31b) with a Qu-morpheme in the embedded clause is ill-formed since the Qu-morpheme cannot take matrix scope.<sup>12</sup>

- (31) (a) *Anata-wa [kare-ga gohan-o suki datta to] omottimasu ka?*  
 you-TOP he-NOM food-ACC like did COMP think Qu  
 ‘Do you think he liked the food?’
- (b) \**Anata-wa [kare-ga gohan-o suki-datta ka to] omottimasu?*  
 you-TOP he-NOM food-ACC like-PAST Qu COMP think  
 ‘Do you think he liked the food?’

Example (32) below contains an embedded yes/no construction. The Qu-morpheme *ka* appears at the end of the embedded clause and it cannot take matrix scope. The embedded clause can only be interpreted as a yes/no construction, and the matrix clause can only be interpreted as a non-interrogative.<sup>13</sup>

<sup>12</sup>The embedded clause requires that there be a complementizer *to*. I assume that *to* is in the head of ForceP. See chapter 2.5 for discussion of clause structure.

<sup>13</sup>If the matrix clause ends in rising intonation, it can be construed as an interrogative yes/no construction. In this case, the meaning is ‘Do you know if he came?’. But this interrogative

- (32) *Anata-wa [kare-ga kitta ka] shiteiru.*  
 you-TOP he-NOM came Qu know  
 (i) ‘You know if he came.’  
 (ii) \*Do you know (that) he came?

These facts indicate that the Qu-morpheme is Merged directly in the Typ head in which it has scope.

#### 4.3.2 English

The English Qu-morpheme, like the Japanese Qu-morpheme, occurs in a fixed position, a fact that is accounted for if it is Merged directly in Typ of the clause in which it has scope.

The English Qu-morpheme can only appear in a clause-peripheral position corresponding to Typ. In (33-34a) the auxiliary element in T has raised to clause-initial position to affix onto a null Qu-morpheme, as shown in the corresponding (b) examples.

- (33) (a) **Could** he drink the wine?  
 (b)  $\emptyset_{Qu}$ -**Could**<sub>1</sub> he t<sub>1</sub> drink the wine?
- (34) (a) **Did** he eat the food?  
 (b)  $\emptyset_{Qu}$ -**Did**<sub>1</sub> he t<sub>past1</sub> eat the food?

This auxiliary is confined to clause initial position. It cannot follow the subject as in (35) and result in a yes/no construction.

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interpretation must, at least under my analysis, result from the presence of a null Qu-morpheme in the matrix clause that is separate from the Qu-morpheme of the embedded clause, as the embedded clause must still be an interrogative.

- (35) (a) \*  $\emptyset_{Qu}$ - he did eat the food?  
 (b) \*  $\emptyset_{Qu}$ - he could drink the wine?

Similarly, in an embedded clause the overt Qu-morpheme *if* must occur at the beginning of the clause, preceding the subject.<sup>14</sup> Example (36a) is fine because *if* precedes the subject *he*, but (36b) is ill-formed because *if* follows the subject.

- (36) (a) I wonder [**if** he ate the food].  
 (b) \*I wonder [he **if** ate the food].

These facts suggest that the Qu-morpheme occurs in a clause peripheral TypP head. It cannot be preceded by a subject, since a subject occurs below Typ in [Spec, TP].

Furthermore, a Qu-morpheme in an embedded clause cannot have matrix scope. Example (37a) contains a statement with an embedded declarative clause. Example (37b) shows that if the embedded clause contains the Qu-morpheme *if*, then *if* cannot make the matrix clause into a yes/no construction. Note that the Qu-morpheme can have embedded scope as shown in (36a) above. But in (37), the verb *think* selects for a statement, and so the embedded clause cannot be an interrogative. (37c) shows that a null Qu-morpheme in an embedded clause cannot have matrix scope, although this is also ill-formed because a null Qu-morpheme simply cannot appear in an embedded clause in Standard English. Example (37d) is the only way to form a matrix yes/no construction in this case; there must be a Qu-morpheme in the matrix clause.

- (37) (a) You think [that she should go].  
 (b) \*You think [**if** she should go].  
 (c) \*You think [ $\emptyset_{Qu}$ -**should**<sub>1</sub> she t<sub>1</sub> go].

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<sup>14</sup>See section 4.2.1 for arguments that *if* is a Qu-morpheme.

- (d)  $\emptyset_{Qu}$ -**Do**<sub>1</sub> you  $t_{past1}$  think [(that) she should go]?

The fact that the Qu-morpheme in the embedded clause cannot have matrix scope is evidence that the Qu-morpheme must be in Typ of the clause in which it has scope.

The English data then show that the English Qu-morpheme is simply Merged directly in Typ where its Qu-feature types a clause as an interrogative.

#### 4.4 TP-internal Qu-morphemes

As I discuss in chapter 2.2, it is less work to Merge a syntactic object into a derivation than it is to Merge a syntactic object and then move it (i.e., remerge it in a new position). Therefore, it is most economical for a Qu-morpheme to be Merged directly in Typ from where its Qu-feature can type a clause. As discussed in section 4.3, this option appears to be the only one in languages such as Japanese and English.

There are languages, however, that do not always require a Qu-morpheme to be directly Merged in Typ in a yes/no construction. In these languages, a Qu-morpheme can appear in a TP-internal position; i.e., a position below TP. In the following examples from Sinhala, the Qu-morpheme *də* appears in TP-internal positions (see section 4.4.1 for evidence that the Qu-morpheme actually is in a TP-internal position).

(38) Sinhala:

- (a) *Chitra [eə potə]-də kieuwe?*

Chitra that book-Qu read.E

‘Was it that book that Chitra read?’ (Kishimoto 2005:11)

- (b) *Siri hetə-də wəduwədə kərənne?*

Siri tomorrow-Qu woodworking do-PRES.E

‘Is it tomorrow that Siri does woodworking?’ (Gair & Sumangala 1991:96)

When the Qu-morpheme is Merged in a position below Typ as in (38a-b) then an operation in addition to the initial Merge of the Qu-morpheme is required for the Qu-feature to type a clause. This raises the following question: why can a Qu-morpheme be Merged in a position other than Typ in languages such as Sinhala? I claim that the answer involves a Focus-feature.

I propose that there are two types of Qu-morpheme, shown in (39a-b).

- (39) (a)  $\text{Qu}_{[F_{Qu}]}$   
 (b)  $\text{Qu}_{[F_{Foc}, F_{Qu}]}$

Languages such as Japanese and English contain only the Qu-morpheme in (39a), which has a Qu-feature  $F_{Qu}$  and is Merged directly in Typ. This Qu-morpheme merely serves the purpose of typing a clause as an interrogative. Other languages contain the Qu-morpheme (39b), which has a Focus-feature  $F_{Foc}$  in addition to a Qu-feature  $F_{Qu}$ .

A Qu-morpheme that has both Qu- and Focus-features serves two functions; 1) it types a clause as an interrogative and, 2) it focuses a particular phrase within a clause. The Qu-feature is responsible for typing a clause and the Focus-feature is responsible for focusing a phrase. I propose that this type of Qu-morpheme is Merged in a position adjoined to a focused phrase, as shown in (40).



The Qu-morpheme's Focus-feature moves to the head of a Focus Phrase (FocP), where it focuses its associated phrase, and the Qu-feature moves to Typ where it types a clause. Following Alexiadou & Anagnostopoulou's (1998) view that an EPP feature can motivate head movement (see chapter 2.3), I propose that EPP features in FocP and TypP force movement of Qu- and Focus-features.

Evidence for this proposal that a Focus-feature forces a Qu-morpheme to be Merged TP-internally comes from the interpretation of constructions with TP-internal Qu-morphemes. The phrase that the Qu-morpheme is adjacent to is emphasized in a manner consistent with the notion of ‘focus.’

Focus is an emphasized part of a sentence that presents new information (Rizzi 1997). By ‘emphasized’ I refer to an element that stands out from the rest of the sentence via its syntactic position, pronunciation, or adjacency to a particular morpheme that marks focus (this is the phenomenon examined in this section). A Qu-morpheme with a Focus-feature emphasizes a particular phrase contained within a yes/no construction, and furthermore, this type of focus appears to be what Kiss (1998) refers to as “identificational focus.”

Kiss (1998) argues that there are two types of focus: identificational focus (which is interpreted as contrastive focus in some languages) and information focus. According to Kiss, both types of focus refer to new information that is emphasized,<sup>15</sup> but their primary differences are 1) that an identificational focus refers to an exhaustive set (all elements of a set), whereas information focus does not, and 2) an identificational focus appears in the specifier of a Focus Phrase (FocP) projection in the left periphery of a clause, whereas information focus is not associated within any particular syntactic position. For example, an identificational focus occurs in a preverbal position in Hungarian, and as a cleft in English, whereas an information focus occurs in a postverbal position in Hungarian and in a non-clefted construction in English.<sup>16</sup>

Examples (41a-b) demonstrate information focus.

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<sup>15</sup>Although the information is new, it can make reference to old information by referring to a presupposed set. I thank Andrew Carnie for pointing this out to me.

<sup>16</sup>See Kiss (1998) for further discussion of the differences between these types of focus.

(41) Hungarian:

- (a) *Mari ki nézett magának egy kalapot és egy kabátot.*  
 Mary out picked herself.DAT a hat.ACC and a coat.ACC  
 ‘Mary picked **a hat and a coat** for herself.’
- (b) *Mari ki nézett magának egy kalapot.*  
 Mary out picked herself.DAT a hat.ACC  
 ‘Mary picked **a hat** for herself.’ (Kiss 1998:250)

In (41a), *a hat and a coat*, in both Hungarian and English, is new information that is emphasized, but it does not refer to an exhaustive set. Therefore, (41b) can be a logical consequence of (41a). Note that the information focus does not occur in a special position within a clause.

The examples in (42a-b) from Hungarian, along with their corresponding English glosses, demonstrate identificational focus.

(42) Hungarian:

- (a) *Mari egy kalapot és egy kabátot nézett ki magának.*  
 Mary a hat.ACC and a coat.ACC picked out herself.to  
 ‘It was **a hat and a coat** that Mary picked for herself.’
- (b) *Mari egy kalapot nézett ki magának.*  
 Mary a hat.ACC picked out herself.to  
 ‘It was **a hat** that Mary picked for herself.’ (Kiss 1998:250)

In (42a), Kiss argues that *a hat and a coat* is an identificational focus both in Hungarian and in the corresponding English gloss. Kiss points out that (42b) is not a “logical consequence” of (42a), because *a hat and a coat* is a contrastive focus that refers to an exhaustive set.<sup>17</sup> The idea here is that if one says (42a), that person expresses the idea that Mary must have picked both a hat and a coat, whereas (42b) indicates that Mary only picked a hat, and so (42a) does not imply that (42b) is

<sup>17</sup>Kiss attributes this type of test for exhaustivity to Szabolcsi (1981).

true. (42a) thus refers to an exhaustive set. In (42a), *a hat and a coat* in both Hungarian and English is argued to be in [Spec, FocP], which corresponds to a preverbal position in Hungarian and a cleft in English.<sup>18</sup> Thus (42a) has an element, *a hat and a coat* that for semantic and syntactic reasons, is an identificational focus.

When a Qu-morpheme occurs in a TP-internal position, as I discuss in the following subsections, the resulting constructions correspond to clefted yes/no constructions in English, such as (43) below.

(43) Was it Bob's book and Mary's book that Harold read?

Assuming that Kiss' claims are correct, then the clefted phrase *Bob's book and Mary's book* in (43) is an identificational focus. For example, if one answers this question with a *yes*, then the implication is that (44) is true, and the clefted phrase here refers to an exhaustive set, as in (42a) above.

(44) It was Bob's book and Mary's book that Harold read.

My analysis differs from Kiss' analysis with respect to the FocP. Kiss argues that a phrase that is an identificational focus must appear in [Spec, FocP]. However, I argue that this need not be the case. A phrase with an adjacent Qu-morpheme can be an identificational focus without appearing in FocP. The focus interpretation is obtained via movement of a Focus-feature. Specifically, a Focus-feature associated with a Qu-morpheme that is adjoined to a salient phrase raises to the head of FocP and gives the phrase an identificational focus interpretation; the phrase itself need not appear in FocP. I elaborate on this proposal in the following subsection.

Below, I argue that Sinhala, Premodern Japanese, Okinawan, Tupí, and Ewen are languages that have the two types of Qu-morphemes in (39a-b), one with and one without a Focus-feature. The Qu-morpheme without a Focus-feature (this is essentially the 'default' type of Qu-morpheme) simply is Merged in Typ and types

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<sup>18</sup>See Kiss (1998) for further discussion of the clause structure of this type of construction.

a clause as an interrogative. The Qu-morpheme with a Focus-feature is Merged TP-internally, and serves the dual function of typing the clause as an interrogative and focusing an adjoined phrase.

Before I begin my investigation of TP-internal Qu-morphemes, I note that in the following discussion I do not discuss the [OVERT] and [AFFIX] features of the Qu-morphemes. All of the Qu-morphemes that I examine are overt. This is simply because it is difficult to determine if a [-OVERT] Qu-morpheme is in a TP-internal position.<sup>19</sup> Also, although some of the Qu-morphemes in these languages may be affixes, to the best of my knowledge an [AFFIX] feature does not force movement of any element, and thus an [AFFIX] feature does not play a particularly important role in determining the syntactic structure of these constructions.

#### 4.4.1 Sinhala

Sinhala is a language with a Qu-morpheme *də* that can appear in clause-final position. For example, the statement in (45a) becomes a yes/no construction when *də* ‘Qu’ is added to the end of the clause, as shown in (45b). The fact that the addition of *də* results in a yes/no construction is evidence that *də* is a Qu-morpheme. Also, note that the verb ends in *-a*, glossed as ‘-A.’<sup>20</sup> The importance of this fact will become evident in the following discussion.

(45) Sinhala:

- (a) *Koləmbətə basekaka tienəwa.*  
 Colombo bus be.A  
 ‘There is a bus to Colombo.’

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<sup>19</sup>One way of determining if there is a [-OVERT] Qu-morpheme in a TP-internal position would be to examine intonation patterns (Heidi Harley, p.c.), which is outside the scope of this work.

<sup>20</sup>I follow Sumangala (1992) in glossing *-a* as ‘-A.’

- (b) *Koləmbətə basekaka tienəwa də?*  
 Colombo bus be.A Qu  
 ‘Is there a bus to Colombo.’ (Gair 1970:139)

Notably, the Sinhala Qu-morpheme is not confined to clause-final position; it can occur in a TP-internal position as a suffix on a focused phrase. In (46a), the Qu-morpheme appears in the typical clause-final position, but in (46b), it appears as an affix on the nominal *ee potə* ‘that book,’ and a yes/no construction results. The semantics of (46a) and (46b) differ in that in (46b) the phrase *ee potə* ‘that book,’ to which the Qu-morpheme is affixed, is focused, as evidenced by the clefted English gloss. Also, when the Qu-morpheme appears in a TP-internal position, the verb occurs with an *-e* ending, which I gloss as ‘-E.’<sup>21</sup> This verbal ending differs from the ‘-A’ verbal suffix that occurs when a Qu-morpheme appears in clause-final position, as in (45a) above.

(46) Sinhala:

- (a) *Chitra ee potə kieuwa də?*  
 Chitra that book read.A Qu  
 ‘Did Chitra read that book?’
- (b) *Chitra [ee potə]-də kieuwe?*  
 Chitra that book-Qu read.E  
 ‘Was it that book that Chitra read?’ (Kishimoto 2005:11)

Example (47) below shows that the Qu-morpheme may even attach onto adjuncts such as *hetə* ‘tomorrow.’

(47) Sinhala:

- Siri hetə-də wəduwədə kərənne?*  
 Siri tomorrow-Qu woodworking do-PRES.E  
 ‘Is it tomorrow that Siri does woodworking?’ (Gair & Sumangala 1991:96)

<sup>21</sup>I follow Sumangala (1992) in glossing *-e* as ‘-E.’

Three descriptive facts about these constructions are of importance for this analysis. First, the presence of the Qu-morpheme is responsible for a yes/no interrogative interpretation. Second, when the Qu-morpheme attaches onto a TP-internal phrase, as in (46b) and (47), this phrase becomes focused, as indicated by the clefted glosses. As discussed in the previous section, this appears to be identificational focus. The third fact about these constructions is that the verb ending differs depending on where the Qu-morpheme is pronounced. When the Qu-morpheme occurs in clause-final position, the verb has an ‘-A’ suffix. The verb also appears with this suffix in non-interrogative constructions such as (45a) above. When the Qu-morpheme appears in a TP-internal position, the verb of the clause that the Qu-morpheme is associated with occurs with the ‘-E’ ending. I next turn to an explanation for these facts.

When a Qu-morpheme occurs in a clause-peripheral position, it is most likely directly Merged in Typ. First of all, direct Merge in Typ is the most economical operation (see chapter 2.2.4). Secondly, the Typ head in Sinhala occurs clause-finally. Sinhala is an SOV language with head-final projections (Sumangala 1992). For example, the noun *minissu* ‘people’ and the verb *bivva* ‘drink-PAST’ follow their complements in (48a-b) respectively.<sup>22</sup>

(48) Sinhala:

(a) *NP*: *gamee*        ***minissu***  
           village-GEN people  
           ‘people of the village’

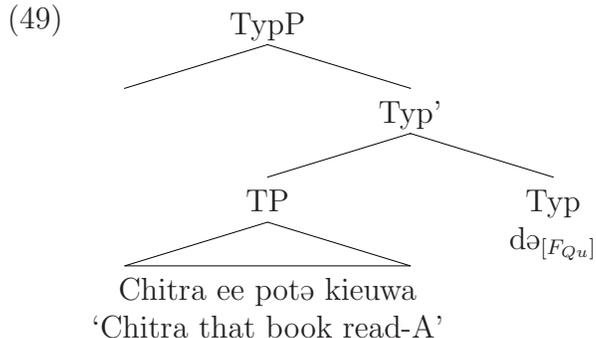
(b) *VP*: *tee*    ***bivva***  
           tea    drink-PAST  
           ‘drank tea’ (Sumangala 1992:41)

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<sup>22</sup>Sinhala allows scrambling. When there is scrambling, a complement need not precede its head. However, if one considers the underlying word order of scrambled constructions to be SOV, then the head must follow its complement in the underlying structure.

Since the Qu-morpheme occurs at the end of the clause in constructions such as (46a), a natural assumption would be that it occurs in Typ, as I claimed in section 4.3 was the case in Japanese and English.

Thus, example (46a) with a clause-final Qu-morpheme can be accounted for as shown in (49). The Qu-morpheme is Merged directly in Typ, where the Qu-feature values an uninterpretable clausal typing feature and types the clause as an interrogative.



When a Qu-morpheme does not appear at the clause-periphery, as in (46b) repeated below, I have claimed that it is in a TP-internal position.

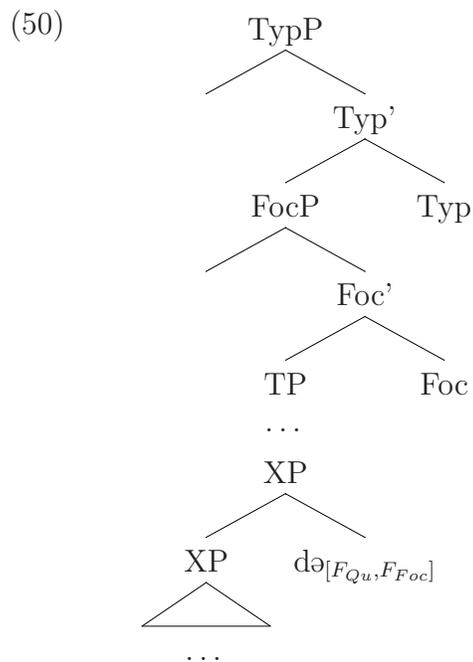
(46) Sinhala:

- (b) *Chitra [ee potə]-də kieuwe?*  
 Chitra that book-Qu read.E  
 ‘Was it that book that Chitra read?’ (Kishimoto 2005:11)

As noted above, projections in Sinhala are head-final. Therefore, if the Qu-morpheme *də* in (46b) were in Typ, then everything preceding it would have to be in a higher position, such as the specifier of [TypP]. But if this were the case, then it is not clear where the verb *kieuwe* ‘read-E’ would occur, since Typ linearly follows the *vP* projection housing the verb. The verb would have to undergo rightward movement, or be a remnant of a complex series of leftward movements. On

the other hand, if the Qu-morpheme occurs below the TP in a position adjoined to the object, then the facts are accounted for straightforwardly.

In constructions such as (46b), I propose that the presence of a Focus-feature within a Qu-morpheme forces it to be Merged TP-internally adjacent to a phrase that is the focus of the interrogative. For example, in (50), the Qu-morpheme *də* is adjoined to an XP that is contained in a TP-internal position in a clause.



In order to focus a phrase, the Focus-feature associated with the Qu-morpheme must move to the head of a FocP projection. A Qu-morpheme with a Focus-feature cannot be Merged directly in Typ because then its Focus-feature 1) would not be associated with any phrase that needs to be focused, and 2) would not be in a position to check the feature in a FocP head, assuming that TypP is above FocP (see the discussion of clause structure in chapter 2.5).

Other clausal typing morphemes in Sinhala can also appear TP-internally and focus an adjacent phrase. The following examples show that *tamay* ‘certainty’ can either appear in the clause periphery (51a) or clause internally (51b). When it

occurs TP-internally in (51b), if focuses *hetə* ‘tomorrow’ in the same manner that the Qu-morpheme does in (47).

(51) Sinhala

(a) *Gunəpaalə heTə gallu yanəva-tamay?*  
 Gunapaala tomorrow Galle go-A-CERTAINTY  
 ‘It is for sure that Gunapala is going to Galle tomorrow.’

(b) *Gunəpaalə heTə-tamay gallu yanne?*  
 Gunapaala tomorrow-CERTAINTY Galle go.E  
 ‘It is certainly tomorrow that Gunapala is going to Galle.’ (Sumangala 1992:131)

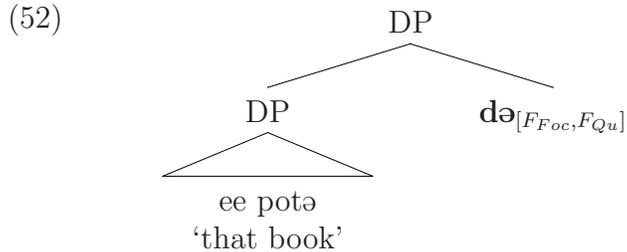
Also, *lu* ‘reportative,’ *nee* ‘tag question’ and *yæ* ‘dubitative’ can occur either clause peripherally or clause internally (cf. Sumangala 1992:131-132). Sinhala clausal typing morphemes, including the Qu-morpheme, thus are capable of turning a constituent into an identificational focus.

I am now in a position to account for constructions such as (46b), repeated below, in which the Qu-morpheme occurs as an affix on the TP-internal phrase *ee potə* ‘that book.’

(46) Sinhala:

(b) *Chitra [ee potə]-də kieuwe?*  
 Chitra that book-Q read.E  
 ‘Was it that book that Chitra read?’ (Kishimoto 2005:11)

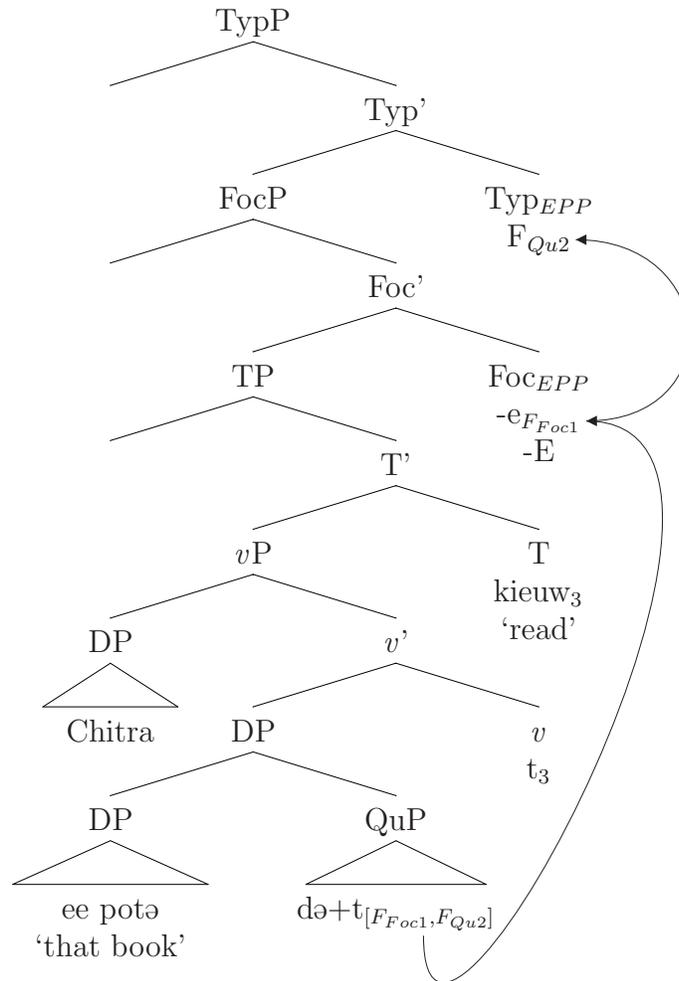
In (46b) the Qu-morpheme is Merged in a position adjoined to the object *ee potə* ‘that book’ as shown in (52).



When a Qu -morpheme is Merged TP-internally in a position below FocP, as in (46b), its Focus-feature needs to check an uninterpretable feature in the head of FocP to focus a phrase and the Qu-feature needs to check an uninterpretable feature in Typ to type a clause. There are at least two possible ways for the features to do this; one is via Agree between the features and Typ, and another is via movement. I will take the position that movement is involved. This is because, as I will discuss in chapter 5, Agree is not subject to island effects, whereas relationships between the Qu-morpheme and Typ in Sinhala are subject to island effects. If movement is the crucial operation, then either the Qu- and Focus-features must raise along with the Qu-morpheme, or they must undergo feature movement (movement without an associated lexical item). Since the Qu-morpheme clearly does not move overtly to the clause-periphery, the most likely possibility is that its Qu- and Focus-features undergo feature movement. Motivation for movement of these features can be attributed to EPP features that serve the purpose of forcing these features to move.

Thus, if this analysis is correct, then in (46b), the Focus- and Qu-features associated with the Qu-morpheme undergo feature-movement that leaves the Qu-morpheme in-situ. A diagram is shown in (53). The  $t_{[F_{Foc1}, F_{Qu2}]}$  within the QuP refers to the traces of the Focus- and Qu-features. I assume that the ‘-E’ verbal ending is the overt pronunciation of a Focus-feature in Foc, and thus I have placed the ‘-E’ in Foc (I discuss the verbal ending in more detail below). I also assume that the verb raises to T (I return to this issue below). Note that there are EPP features in Foc and Typ that force movement of the Focus- and Qu-features, respectively.

(53)



In (53), the Focus-feature and Qu-feature raise together as a feature-bundle to Foc, where the Focus-feature remains, and then the Qu-feature excorporates and raises on to Typ.

Verbal agreement in Sinhala provides further evidence for the proposal that a Focus-feature undergoes feature movement. Verbal endings are dependent on the position of the Qu-morpheme, or other clausal-typing morpheme. As mentioned above, in Sinhala yes/no constructions, when the Qu-morpheme occurs clause-finally, the verb occurs with the '-A' ending. The '-A' ending is something akin to a default verbal ending, as suggested by Gair and Sumangala's (1991:94) statement that the '-A' affix "is the most common [verbal affix] in finite independent

sentences.” Below is an example of a declarative sentence with the default ‘-A’ ending on the verb.

(54) Sinhala:

*Chitra potə gatta.*  
 Chitra book bought.A  
 ‘Chitra bought the book.’ (Kishimoto 2005:4)

When the Qu-morpheme occurs TP-internally, the verb shows up with the ‘-E’ ending, which I assume is the pronunciation of the Focus-feature in Foc. Specifically, movement of the Focus-feature to Foc triggers this ‘-E’ suffix. When there is no Focus-feature in Foc, then the default ‘-A’ ending surfaces on the verb. Only tensed verbs appear with these suffixes (Gair & Sumangala 1991). Therefore, a reasonable assumption is that a tensed verb raises as high as T, as is claimed by Gair & Sumangala (1991), and that the default ‘-A’ ending is in T. When the verb appears with the Focus-suffix, either the verb remains in T or it raises to Foc. Which actually occurs is not crucial to my analysis, thus I do not investigate this issue.

This feature movement analysis requires that features (specifically, Qu- and Focus-features) raise either over or through intervening projections that are filled, as can be seen in (53) above. The Focus- and Qu-features associated with the Qu-morpheme raise over a *v*P head and a TP head (not shown in the diagram). This movement, however, appears to be a violation of the Head Movement Constraint (HMC) (Travis 1984), which states that “a head cannot be separated from its trace by an intervening head (Lasnik 2003:70).” Within the Minimalist Program, if movement of an element is blocked by an intervening head, there is a violation of the Minimal Link Condition (see (34) in chapter 2.6). Hagstrom (1998:61) accounts for why this long head movement may be possible, as follows:

... feature attraction drives movement of the closest element with the relevant feature. If a feature F is being attracted and a head H carries the



features may proceed through *v* and T because these projections lack Qu- and Focus-type features.<sup>24</sup>

This analysis also accounts for the fact that a Qu-morpheme in Sinhala can take scope outside of the clause that it appears in. In (57), the Qu-morpheme *də* is attached to *nimal-Tə* ‘Nimal-DAT’ in the embedded clause and a matrix yes/no construction results; the embedded clause is not a yes/no construction. In this case, the verb of the embedded clause has the ‘-A’ ending and the matrix verb, which is the verb of the clause in which the Qu-morpheme has scope, has the ‘-E’ ending; the verb of the clause that is typed as an interrogative by the Qu-morpheme appears with the ‘-E’ ending.

(57) Sinhala:

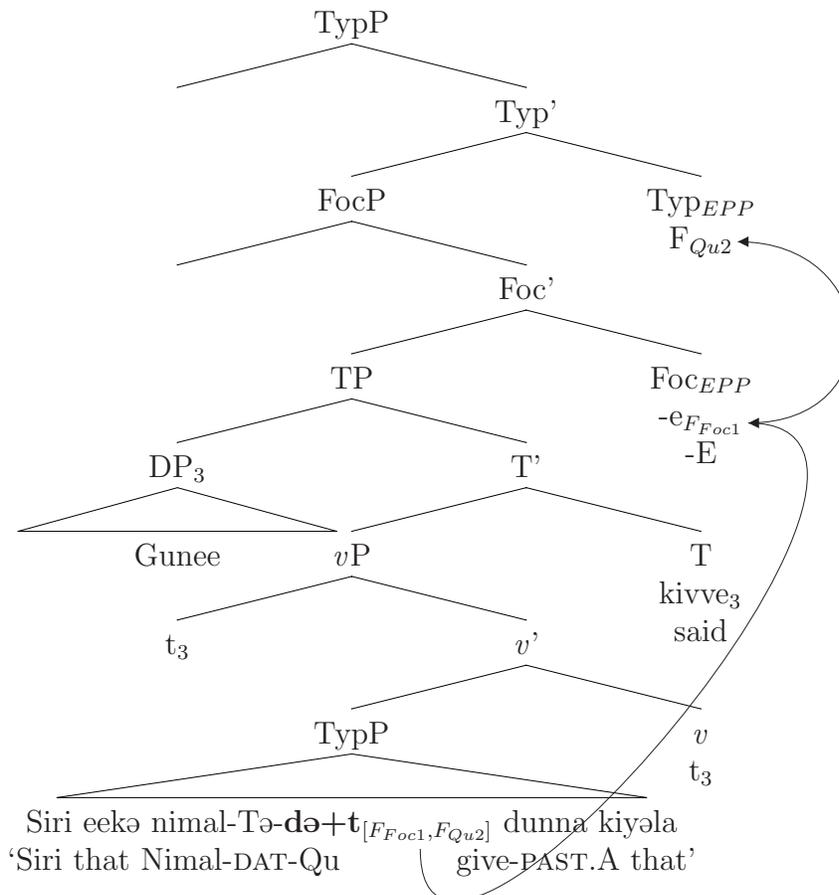
*Gunee [Siri eekə nimal-Tə-də dunna kiyəla] kivve?*  
 Gune Siri that Nimal-DAT-Q give-PAST.A that] say-PAST.E  
 ‘Is it to Nimal that Gune said that Siri gave it?’ (Sumangala 1992:135)

Example (57) can be accounted for as follows. The Qu-morpheme adjoins to the phrase *nimal-Tə* ‘Nimal-DAT.’ The Focus- and Qu-features of the Qu-morpheme raise to the matrix Foc and Typ projections, and the Qu-morpheme remains in-situ. This allows *nimal-Tə* ‘Nimal-DAT’ to obtain matrix scope as a focused element and the Qu-morpheme to type the matrix clause. Also, the Focus-feature in the matrix Foc shows up as the ‘-E’ ending on the matrix verb. A diagram is shown below. For the sake of simplicity, I have indicated movement of the Qu- and Focus-features as skipping over intervening heads. However, as discussed above, these features actually move through intervening heads, but that this movement is simply not blocked.

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<sup>24</sup>Note that I differ on this point from Rivero (1991) who argues that long head movement can skip over intervening heads. Whether or not there is movement through or over intervening heads is not that crucial to my analysis, however, it is an important issue that requires further investigation than I have been able to give it here.

(58)



Even though the Focus- and Qu-features move through the embedded clause in (57), the '-E' ending is not triggered on the embedded verb. The '-E' ending only occurs on the verb of the clause that contains the final landing sites of the Focus- and Qu-features. This fact is accounted for straightforwardly if the '-E' ending is the Spell-out of a Focus-feature. The Focus-feature of the Qu-morpheme does not sit in the embedded FocP, and thus it should not trigger the '-E' ending on the embedded verb.

Lastly, there is the issue of how the Qu- and Focus-features in the embedded clause in (57) can be attracted by elements in the matrix clause. If the Phase Theory view that only elements in the edge of a phase are accessible to higher operations, and the embedded TypP, being at the clause periphery, is a phase, then

the Qu- and Focus-features must move to the edge of the embedded clause before they can be accessible to further movement to the matrix clause. On this point, I assume that EPP features in the Foc and Typ heads in the embedded clause attract the Qu- and Foc-features. Since the Foc and Typ projections are at the periphery of the embedded clause, they are at the phase edge and thus features in the embedded Foc and Typ are accessible to attraction by EPP features in the matrix clause.

In summary, I have taken the position that the Sinhala *də* is a Qu-morpheme that types a clause as an interrogative and that where it occurs in a construction boils down to whether or not it contains a Focus-feature. Furthermore, my analysis relies on the notion that there is a fixed FocP projection in the clausal periphery. My analysis differs in several ways from the earlier analysis of Sumangala (1992).

Sumangala (1992) argues that the Sinhala Qu-morpheme, along with other clausal-typing morphemes, is a “focus marker” that occurs in the head of a FocP projection. This FocP notably is not confined to one particular clausal position. It may occur in the clause-periphery or TP-internally. The focused phrase is the complement of the Focus head and there is a null operator in the specifier of the FocP. The null operator is required due to “The Focus-Criterion” given below.

(59) The Focus-Criterion

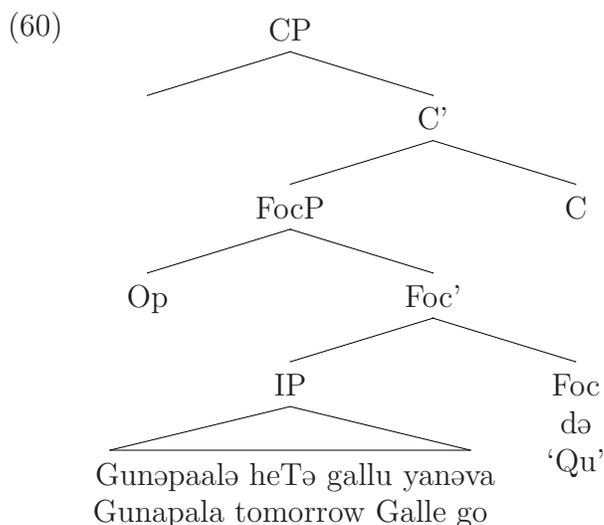
- (a) A Focus operator must be in a Spec head configuration with an  $X^0$  [Focus].
- (b) An  $X^0$  [Focus] must be in a Spec-head configuration with a focus operator. (Sumangala 1992:162).

This focus operator triggers verbal agreement. Specifically, when the FocP is located in a TP-internal position, its operator raises to [Spec, CP]. When it passes through the specifier of IP (Sumangala uses IP instead of TP), it triggers the *-e* ending on the verb.

Sumangala's analysis works as follows. (27a), repeated below, is a yes/no construction with a clause-peripheral Qu-morpheme.

- (27) (a) *Gunəpaalə heTə gaalu yanəva də?*  
 Gunapala tomorrow Galle go Qu  
 'Is Gunapala going to Galle tomorrow?' (Sumangala 1992:131)

Sumangala argues that the structure of this construction is as shown in (60), adapted from Sumangala (1992:165). The Qu-morpheme is base-generated in the head of a FocP,<sup>25</sup> which is in the clause-periphery. Its complement is the IP and there is a null operator in its specifier position.



Sumangala argues that because the entire IP is the complement of Foc, the entire IP is focused.

In a construction, such as (61), which is identical to (27a) except that the Qu-morpheme appears TP-internally, Sumangala claims that the Qu-morpheme is also base generated in the head of a FocP projection. However, in this case FocP is in a TP-internal position.

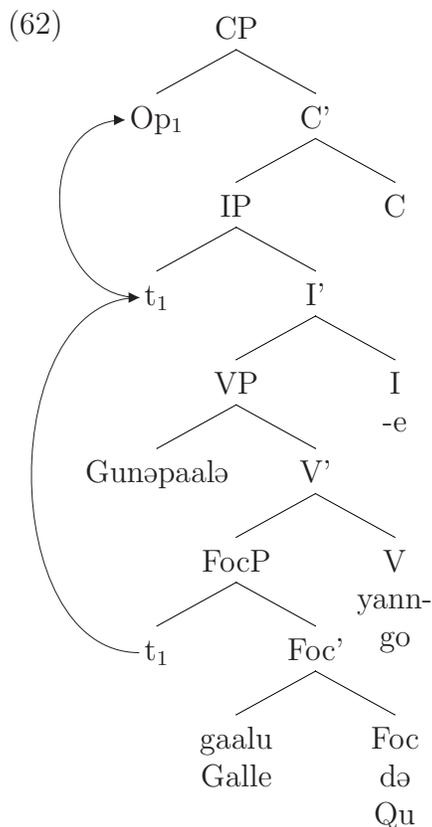
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<sup>25</sup>Sumangala uses FP.

(61) *Gunəpaalə heTə gaalu də yanne?*  
 Gunapala tomorrow Galle Qu go.E

‘Is it to Galle that Gunapala is going tomorrow?’ (Sumangala 1992:163)

The underlying structure of (61) is shown in (62), adapted from Sumangala (1992:165). The adverbial *heTə* ‘tomorrow’ is left out of the diagram, but presumably it is adjoined to the verb phrase. In this case, because the FocP projection is TP-internal, Sumangala argues that the null operator in [Spec, FocP] raises to [Spec, CP] to give the focused phrase scope. Furthermore, movement of the operator through IP triggers the ‘-E’ ending on the verb.



Sumangala’s analysis differs from mine in several ways. Sumagala’s important claims are that in Sinhala, the Qu-morpheme is always a Focus-morpheme, a FocP can appear in various positions, and there is a null operator in the specifier of

FocP. First of all, I agree with respect to the Qu-morpheme essentially being a Focus-morpheme when it occurs TP-internally. However, it is not clear that it is a Focus-morpheme when it occurs in the clause-periphery, where it merely appears to serve the function of typing a clause as an interrogative. Under my analysis, the clause-peripheral Qu-morpheme lacks a Focus-feature. Secondly, Sumangala argues that a FocP occurs wherever the Qu-morpheme is. However, a fixed FocP projection in the clause periphery (see discussion of Rizzi (1997, 2001) in chapter 2.4) straightforwardly accounts for a focused phrase obtaining scope, and is in accord with research on identificational focus (see discussion of Kiss (1998) in section 4.4). Another aspect of Sumangala's analysis is that it makes recourse to a null Focus operator. The idea that movement of the Focus-operator triggers the verbal *-E* ending works nicely, but under my analysis there is no need for movement of a null operator. There is simply movement of a Focus-feature, and this Focus-feature surfaces as the *-E* ending. Also, although Sumangala's analysis accounts for focus effects, it does not account for the fact that a Qu-morpheme types a clause as a yes/no construction. Since in non-focus yes/no constructions, the Qu-morpheme appears in the clause-periphery, and this clause-peripheral position appears to be the default position for Qu-morphemes in a number of languages, I think that clausal typing is associated with the clause periphery, and not a TP-internal FocP position. I account for clausal typing as resulting from Qu-feature movement. Thus, the advantages of my analysis are as follows: 1) it accounts for the fact that both clausal typing and identificational focus are associated with a Qu-morpheme, 2) there is only a single FocP projection in the clausal periphery, and 3) there is no postulation of null Focus operator movement.

#### 4.4.2 Okinawan

Okinawan is another language that has a TP-internal Qu-morpheme that co-occurs with verbal agreement, similar to the Sinhala Qu-morpheme.

*Ga* is a Qu-morpheme that occurs in clause-final position in *wh*-constructions. Example (63a) is a statement. When the subject *John* is replaced with the *wh*-phrase *taa* ‘who’ and *ga* ‘Qu’ is added to clause-final position, a *wh*-construction results, as shown in (63b).<sup>26</sup>

(63) Okinawan:

- (a) *John-ga ich-u-n.*  
 John-NOM go-PRES-IND  
 ‘John is going.’
- (b) *Taa-ga ich-u-ga?*  
 who-NOM go-PRES-Qu  
 ‘Who is going?’ (Miyara 2001:27)

Although *ga* can appear in clause-final position in a *wh*-construction, it cannot appear in this position in a yes/no construction. Instead, the Qu-morpheme *-mi* is used. Compare (63a) above with (64). The indicative suffix *n* of (63a) has been replaced with *mi* in (64), resulting in a yes/no construction.

(64) Okinawan:

- John-ga ich-u-mi?*  
 John-NOM go-PRES-Qu  
 ‘Is John going?’ (Miyara 2001:27)

Basically, the set of features that make-up *ga* are such that *ga* is not permitted to appear clause-finally in a yes/no construction.<sup>27</sup>

The Qu-morpheme *ga*, however, can appear in a TP-internal position in a yes/no construction. In this case, it behaves like the TP-internal Qu-morphemes of Sinhala and Premodern Japanese. Examples (65a-b) are yes/no constructions in which the

<sup>26</sup>The nominative case marker *ga* is a different morpheme from the Qu-morpheme *ga*.

<sup>27</sup>See chapter 5 for discussion of the use of the Okinawan Qu-morpheme *ga* in *wh*-constructions.

TP-internal Qu-morpheme *ga* focuses the subject *John-ga* ‘John-NOM’ and types the clause as an interrogative. Miyara’s (2001) gloss of (65a) begins with *I wonder*, but it ends in a question mark indicating that it is a question, but one with a focused phrase. Since this is an interrogative construction and *John* is focused, the gloss most likely corresponds to ‘Is it John who is going?’. Similarly, the focused *John* in (65b) suggests that this construction corresponds to ‘Is it John who bought a car?’. Also, note that the verbs end in *-ra* ‘-RA,’ which according to Miyara (2001), is required when *ga* appears in a TP-internal position. I take this fact to be evidence that *ra* is verbal agreement, similar to the verbal ending that occurs with a TP-internal Qu-morpheme in Sinhala.<sup>28</sup>

(65) Okinawan:

- (a) *John-ga-ga ich-u-ra?*  
 John-NOM-Qu go-PRES-RA  
 ‘I wonder if JOHN is going?’ (Miyara 2001:27)
- (b) *John-ga-ga kurumaa koo-ta-ra?*  
 John-NOM-Q car buy-PAST-RA  
 ‘Did JOHN buy a car?’ (Miyara 2001:42)

Miyara glosses the Qu-morpheme *ga* in (65a-b) as an emphasis marker (I gloss it as ‘Qu’). I take this to be an indication that *ga* is responsible for focusing the subjects in these examples. Also, *ga* is identical in form to the clause final Qu-morpheme *ga* that appears in (63b), which suggests that it is a Qu-morpheme.

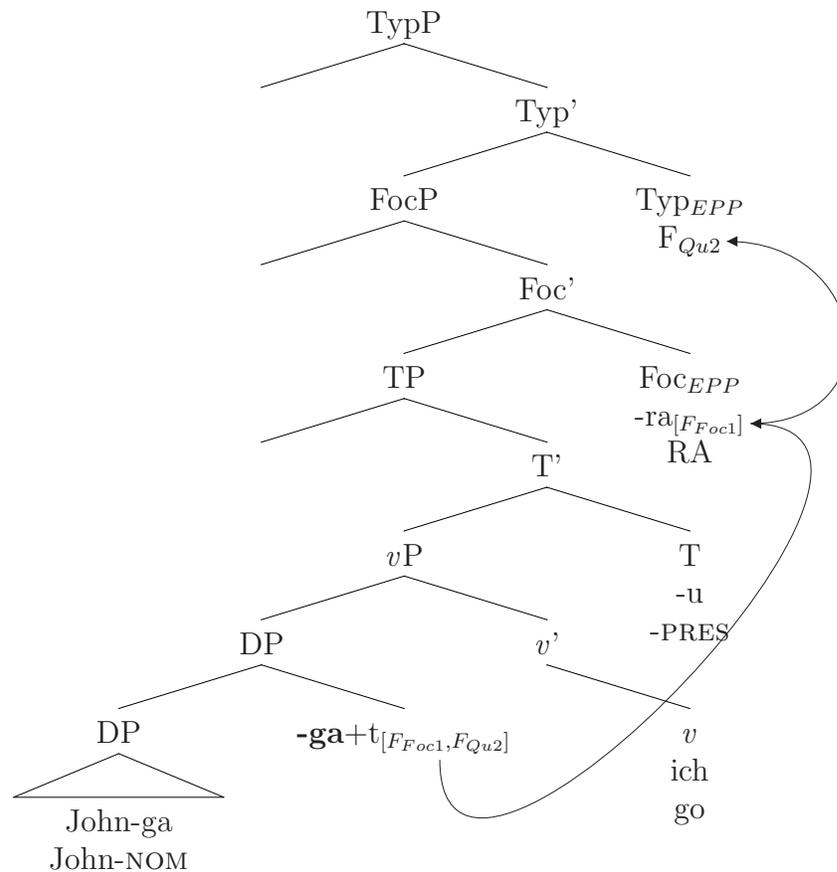
According to my analysis, the TP-internal *ga* ‘Qu’ contains a Focus-feature. When *ga* is Merged in a TP-internal position, it focuses a phrase and its Focus- and Qu-features raise to Foc and Typ, respectively. For example, (65a) has the structure in (66). I assume that the present tense ending *-u* is in T. Also, although I leave the

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<sup>28</sup>Miyara glosses *ga* in this case as an emphasis marker and *-ra* as a Qu-morpheme. Since *ga* appears to be responsible for typing a clause as a yes/no construction and *-ra* only appears when *-ga* is in a TP-internal position, I assume that *ga* is a Qu-morpheme and *-ra* is verbal agreement.

verb in *v*, it is possible that it moves to T. Movement of the Qu- and Focus-features is motivated by EPP features.

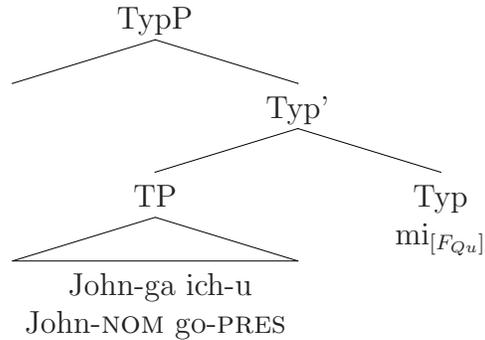
(66)



The Qu-morpheme adjoins onto the subject within the [Spec, *vP*] position. The Focus- and Qu-features feature raises to Foc, where the Focus-feature is pronounced as the '-RA' ending, and the Qu-feature moves to Typ, where it types the clause as an interrogative.

When the Qu-morpheme in a yes/no construction lacks a Focus-feature, it simply surfaces in clause-final position as *mi*. In this case, there is no special verbal ending. The Qu-morpheme is Merged directly in Typ, as shown in the following simplified diagram of (64).

(67)



Okinawan thus is a language in which the form of the Qu-morpheme that occurs in a yes/no construction differs depending on whether or not it has a Focus-feature. The default Qu-morpheme is Merged directly in Typ and surfaces as *mi*. The Qu-morpheme with a Focus-feature surfaces as *ga* and is Merged in a TP-internal position adjoined to a focused phrase.

#### 4.4.3 Premodern Japanese

In Premodern Japanese, unlike in Modern Japanese (see section 4.3.1), a Qu-morpheme can also occur both in TP-internal and clause-peripheral positions. The TP-internal Qu-morpheme, like the TP-internal Qu-morphemes of Sinhala and Okinawan, focuses an adjacent phrase. According to my analysis, Premodern Japanese then contains two types of Qu-morphemes: one with a Focus-feature that is Merged TP-internally and one without a Focus-feature that is Merged directly in Typ.

There are two Qu-morphemes in Premodern Japanese that can appear in a TP-internal position: *ya* and *ka*. In (68), the Qu-morpheme *ya* occurs in a TP-internal position attached to the phrase *ama-to* ‘fisherman-as.’ In (68), the verb *mira-mu* ‘see’ appears with an adnominal ending, which occurs when the Qu-morpheme is in a TP-internal position. This type of verbal ending is referred to as *musubi* in traditional Japanese grammar, and I gloss it as ‘M’ following Hagstrom (1998).

- (68) *Shirotahe-no Fujie-no ura-ni izari-suru ama-to-ya*  
 epithet-GEN Fujie-GEN beach-LOC fishing-do fisherman-as-Qu  
*mira-mu tabi-yuku ware-wo?*  
 see-M travel me-ACC  
 ‘Will people take me on a trip to be a fisherman who is fishing in the gulf or Fujie?’ (Man’youshuu no. 3607, per Watanabe 2002:188)

I assume that *ama-to* ‘fisherman-as’ is focused based on Watanabe’s (2002) claim that “the focus of yes/no questions is marked by ya (180).” Thus (68) corresponds to a rather complex, and in English somewhat marginal, clefted yes/no construction such as ‘Is it a fisherman who is fishing in the gulf or in Fujie that the people will take me on a trip to be?’. In (69) below, the Qu-morpheme *ya* follows the TP-internal nominal phrase *tatu no kubi no tama* ‘dragon GEN head GEN gem’ and it types the clause as an interrogative. The verb *torite* ‘take’ appears with the *musubi* endings *-i-te* and the verb *oφas-i-tar-u* ‘come’ appears with the *musubi* endings *-i* and *-u*.<sup>29</sup>

- (69) *Ofotomo no Dainagon φa [tatu no kubi no tama ya]*  
 Otomo GEN Councillor TOP dragon GEN head GEN gem Qu  
*tor-i-te oφas-i-tar-u?*  
 take-M-M come.HON-M-PERF-M  
 ‘Did Otomo-no-Dianagon get the gems on the dragon’s head?’ (*Taketori Monogatari*: 859, per Whitman 1997:161)

This construction presumably corresponds to ‘Was it the gems on the dragon’s head that Otomo-no-Dainagon got?’. Similarly, the Premodern Japanese Qu-morpheme *ka*, which unlike *ya* retains its use as a Qu-morpheme in Modern Japanese, can also appear next to a focused phrase in a TP-internal position. In (70), *ka* directly follows the TP-internal nominal phrase *atamitaru tora* ‘irritated tiger.’ Note that Watanabe’s clefted gloss indicates that *atamitaru tora* ‘irritated tiger’ is focused. Also, the verb *hojuru* has a *musubi* ending *ru*.

<sup>29</sup>It is interesting that the *musubi* endings appear on both verbs. Why exactly this would be the case is not clear to me.

(70) ... *atamitaru tora-ka hoyuru?* ...  
 irritated tiger-Q roar-M

‘Is it an irritated tiger that is roaring?’ (Man’youshuu #199, per Watanabe 2002:180)

These Qu-morphemes can also appear in clause-final position. In (71), *ya* occurs in clause-final position where it follows the non-*musubi* conclusive form of the verb; the verb *sira-zu* ‘know’ ends in the conclusive form *zu*.

(71) *Ware wo ba sira-zu ya?*  
 me ACC TOP know-not.CONC Qu

‘Don’t you know me?’ (*Ise Monogatari*, per Whitman 1997:165)

(72) shows that *ka* can also occur in clause-final position to form a yes/no construction. Unlike *ya*, the Qu-morpheme *ka* follows a verb with a **musubi** ending; *φaradati-tamaφ-er-u* ‘squabble-HON-PERF-M’ ends with the *musubi* ending *-u*.

(72) *Waraφabe-to φaradati-tamaφ-er-u ka?*  
 children-with squabble-HON-PERF-M Qu

‘Have you been fighting with the children?’ (*Genji Monogatari*, per Whitman 1997:165)

The Premodern Japanese facts thus are as follows. There are two Qu-morphemes, *ka* and *ya*, that can either appear in the clause-periphery or TP-internally. When they occur TP-internally, they focus an associated phrase and the verb shows up with a *musubi* ending. When *ya* appears clause-finally, it does not trigger the *musubi* ending on the verb, but the clause-final *ka* does.

Just as in Sinhala, the clause-final Qu-morpheme marks a yes/no construction and the TP-internal Qu-morpheme both marks a yes/no construction and focuses a phrase. Thus, my proposal that the clause-final Qu-morpheme lacks a Focus-feature and the TP-internal Qu-morpheme contains a Focus-feature accounts for the data. The clause-final Qu-morpheme is Merged directly in Typ, where its Qu-feature types a clause as a yes/no construction and the TP-internal Qu-morpheme

adjoins to a focused phrase. Its Qu-feature raises to Typ where it types a clause and its Focus-feature raises to Foc, where it focuses the relevant TP-internal phrase.

The facts regarding the *musubi* verbal endings though, are not so clear. When both *ya* and *ka* occur TP-internally, they trigger the *musubi* endings on the verbs. As I argued was the case in Sinhala, it is likely the case that movement of the Focus-feature to Foc surfaces as the *musubi* ending. However, a problem for this analysis is what occurs when these Qu-morphemes appear in clause-final position. When *ya* occurs in clause-final position, it does not occur with the *musubi* ending. This would be expected if the *musubi* ending is a Focus-feature, since the clause-final Qu-morpheme lacks a Focus-feature. However, when *ka* occurs clause-finally, unlike *ya*, it triggers the verbal ending. Thus, regardless of whether *ka* occurs TP-internally or clause-peripherally, it triggers the *musubi* ending. The fact that the clause-peripheral Qu-morpheme triggers the *musubi* ending could be evidence that this ending is not actually a Focus-feature. Another possibility is that the clause peripheral *ka* actually originates in a TP-internal position adjoined to a focused phrase, from where it undergoes movement to the clause-periphery, and in the process leaves a Focus-feature in Foc that surfaces as the *musubi* ending.

In summary, the Premodern Japanese facts suggest the presence of two types of Qu-morphemes. One type contains a Focus-feature and is Merged in a TP-internal position adjacent to a focused phrase. The Focus- and Qu-features raise to Foc and Typ, where they focus a phrase and type a clause. The other type of Qu-morpheme is Merged directly in Typ and does not focus any TP-internal element. Although there is a relationship between these Qu-morphemes and *musubi* verbal endings, it is not clear whether or not feature movement triggers these endings, since a clause-final *ka* can trigger them. This issue requires further analysis.

## 4.4.4 Tupí

The Tupí languages<sup>30</sup> of Sateré-Mawé and Assurini have the same phenomenon as Sinhala, Okinawan, and Premodern Japanese, whereby a Qu-morpheme can appear adjacent to a TP-internal phrase. According to Brandon & Seki (1984:83), in yes/no constructions in Sateré-Mawé and Assurini, “the question particle may be placed after any major phrase (NP, VP, or PP) (83).”

The following examples in (73) are from Sateré-Mawé. In (73a-b), the Qu-morpheme *apo* occurs in clause-final position after a subject and an adverb, respectively, and in (73c), it occurs TP-internally after a verb.

(73) Sateré-Mawé:

- (a) *i-kahu        rikat u'i    apo?*  
 3-beautiful NOM flour Qu  
 ‘Is the flour good?’ (i.e., a good thing)
- (b) *Ere-ket kahato apo?*  
 2s-sleep very Qu  
 ‘Do you sleep well?’
- (c) *Etu-nug kahu        teran apo ui-yat?*  
 2s-make beautiful want Qu 1s-house  
 ‘Do you want to fix my house?’ (Summer Institute of Linguistics 1978,  
 per Brandon & Seki 1984:83-84)

Similarly, the Qu-morpheme *pa* can appear in various positions in Assurini, as shown in (74). In (74a-b) it occurs in clause-final position after a verb. In (74c-d) it appears TP-internally, after a verb and an object, respectively.

(74) Assurini:

- (a) *Karoa o-ata a-ha pa?*  
 Karoa 3-hunt 3-go Qu  
 ‘Is Karoa hunting?’

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<sup>30</sup>These are languages spoken in Central and South America (Cable 2007:189).

- (b) *O-ma'esiroa oe-raha pa?*  
 3-things 3-take Qu  
 'Did she take her own things?'
- (c) *n-a-ha-ihī pa ne-mena ka'a-pe?*  
 NEG-3-go-NEG Qu 2s-husband jungle-to  
 'Didn't your husband go to the jungle?'
- (d) *Itasoa pa ere-reke?*  
 triangle Qu 2s-have  
 'Do you have a triangle?' (Nicholson 1978, per Brandon & Seki 1984:84)

According to my analysis, in a TP-internal position, the Qu-morpheme contains a Focus-feature that forces it to adjoin to a focused element. Note that it is not clear from the discussion provided by Brandon & Seki (1984) whether or not the phrases that the Qu-morpheme attaches onto are focused, but if my analysis is correct, then I predict this to be the case. The TP-internal Qu-morpheme adjoins to a focused-phrase and its Focus- and Qu-features raise to Foc and Typ, respectively. The clause-final Qu-morpheme lacks a Focus-feature and is Merged directly in Typ. I have not been able to confirm whether or not there is verbal agreement that co-occurs with the Qu-morpheme, but this is an issue that is worthy of further analysis.

#### 4.4.5 Ewen

Ewen (Lamut)<sup>31</sup> has a Qu-morpheme *gu* that can appear either in clause-final or in TP-internal position. Whitman (1997:174) writes that *gu* 'Qu' "marks the focus element in yes/no questions (Benzing 1955:111) internally to the clause; it also marks the clause type in clause-final position."

Example (75) shows *gu* 'Qu' in clause-final position. More specifically, there are two Qu-morphemes, each associated with a separate clause. The first Qu-morpheme is attached onto the verb *hør-jin* 'go-FUT' and the second Qu-morpheme is attached onto *ətə-n* 'not-FUT.'

<sup>31</sup>This is a Tungusic language spoken in Siberia (Vovin 2006:143).

(75) Ewen:

*Aman-si timina hør-jin-gu, ətə-n-gu?*  
 father-2S tomorrow go-FUT-Q not-FUT-Qu

‘Is your father going tomorrow or not?’ (Robbek 1989:148, per Whitman 1997:174)

Just as *not* in the English gloss represents an elided clause corresponding to *Is your father not going tomorrow*, the same is likely the case in (75). There is a biclausal structure with *gu* ‘Qu’ in the final position of each clause. This clause-final Qu-morpheme is most likely Merged directly in Typ where it types a clause as an interrogative.

In (76), the Qu-morpheme is attached onto the TP-internal phrase *asal* ‘women.’

(76) Ewen:

*Asal-gu olra-w bəci-r*  
 women-Q fish-ACC catch-3PL

‘Do the women catch fish?’ ((Benzing 1955:121, per Whitman 1997:173)

I assume that this phrase is focused based on Whitman’s statement that the Qu-morpheme marks a “focus element (174),” in which case (76) actually corresponds to ‘Is it the women who catch fish?’ in English. The Qu-morpheme then is focusing a phrase and typing a clause, indicating that the TP-internal Qu-morpheme contains a Focus-feature.

Although the data are sparse, *gu* ‘Qu’ appears to have two versions, as in the other languages discussed in this section. One form has a Focus-feature and occurs TP-internally, and the other form lacks a Focus-feature and occurs in Typ. Unlike in Sinhala, Premodern Japanese, and Okinawan, there is no clear verbal marking that co-occurs with this Qu-morpheme (Whitman 1997:174). Feature movement in Ewen then does not appear to trigger any special verbal endings.

#### 4.4.6 Summary

In this section, I have examined languages which allow a Qu-morpheme to either appear in a TP-internal position or a clause-final position. I have argued that a clause-final Qu-morpheme is Merged directly in Typ. A TP-internal Qu-morpheme contains a Focus-feature that forces it to be Merged in a TP-internal position adjoined to a focused phrase. From this position its Qu- and Focus-features undergo movement to the clause periphery. Note that all of the languages discussed in this section allow both a Qu-morpheme with and without a Focus-feature. The evidence here suggests that if a language has a Qu-morpheme that contains a Focus-feature, it also contains a Qu-morpheme that lacks a Focus-feature. On the other hand, there could be languages in which a Qu-morpheme must always contain a Focus-feature. Further investigation of this issue is required.

#### 4.5 Conclusion

In this chapter, I have argued that cross-linguistic variation in yes/no constructions results from properties of Qu-morphemes. Specifically, variation depends on whether or not a Qu-morpheme is overt or covert, or an affix or an independent lexical item. I argued that these differences result from  $[\pm\text{OVERT}]$  and  $[\pm\text{AFFIX}]$  features. Furthermore, the formation of a yes/no construction is dependent on where a Qu-morpheme is Merged into a derivation. By default, a Qu-morpheme is Merged directly in Typ, since it is most economical for the Qu-morpheme to be Merged directly in the position where its Qu-feature can type a clause, presumably by valuing an uninterpretable clausal typing feature in Typ. However, some Qu-morphemes in certain languages contain a Focus-feature which forces the Qu-morpheme to be Merged in a TP-internal position, from where its Qu- and Focus-features undergo movement.

In the next chapter, I examine the positions of Qu-morphemes in *wh*-

constructions. I show that the analysis of clause-peripheral and TP-internal Qu-morphemes developed in this chapter can be applied straightforwardly to account for the positions of Qu-morphemes in *wh*-constructions.

## CHAPTER 5

Qu-morphemes in *wh*-constructions

## 5.1 Introduction

As discussed in chapter 4, in a yes/no construction, a Qu-morpheme either must appear in a clause-peripheral position or in a TP-internal position, and I took the position that TP-internal Merge is motivated by a Focus-feature contained within a Qu-morpheme. In this chapter, I extend the analysis of the positions of Qu-morphemes in yes/no constructions to account for the positions of Qu-morphemes in *wh*-constructions. The essential facts regarding yes/no constructions are identical, except that in a *wh*-construction, when a Qu-morpheme appears in a TP-internal position, it is adjoined to a TP-internal *wh*-phrase. Specifically, a Qu-morpheme with a Focus-feature adjoins to a *wh*-constituent. As in a yes/no construction, in a *wh*-construction, a Qu-morpheme by default is Merged directly in Typ, unless a Focus-feature forces it to be Merged TP-internally. In this chapter, I account for the position of the Qu-morpheme as being determined by whether or not it contains a Focus-feature.

The possible positions of a Qu-morpheme are represented in (1a-c), which represents a language in which there is a clausal typing projection that is head-final at Spell-Out.

- (1) (a) [<sub>TypP</sub> ... *wh*-phrase **Qu** ...]  
 (b) [<sub>TypP</sub> ... [<sub>TypP</sub> ... *wh*-phrase ...] **Qu** ...]  
 (c) [<sub>TypP</sub> ... *wh*-phrase ... **Qu** ]

When the Qu-morpheme is in a TP-internal position, it either appears adjacent to a *wh*-phrase, as in (1a), or adjacent to an embedded clause containing a *wh*-phrase, as

in (1b). The other option is for the Qu-morpheme to appear in the clause periphery as in (1c).

Hagstrom (1998) argues that in a *wh*-construction in *wh*-in-situ languages such as Sinhala, Okinawan, Premodern Japanese, and Modern Japanese, a Qu-morpheme is base generated in a position adjacent to a *wh*-phrase. From this position the Qu-morpheme moves to C. This movement can be overt, in which case the Qu-morpheme must appear in the clause periphery, as in (1a) above, or this movement can be at LF, in which case the Qu-morpheme appears in a TP-internal position as in (1b) and (1c). I follow Hagstrom's view that when a Qu-morpheme appears in a TP-internal position, there is movement from the position of the Qu-morpheme. However, whereas Hagstrom argues that there is LF movement of a Qu-morpheme, I argue that there is movement of Qu- and Focus-features. Furthermore, unlike Hagstrom, I take the position that a clause-final Qu-morpheme is base-generated in Typ, and does not move to the clause periphery.

It is generally assumed in the literature that a *wh*-phrase receives focus. Karimi & Taleghani (2007:173), following work by Rochemont (1978, 1986), Horvath (1986), Bresnan & Mchombo (1987), and Kiss (1998), among others, claim "that a *wh*-element is inherently focused." This inherent focus likely corresponds to Kiss' notion of an information focus (see chapter 4.4), since a *wh*-phrase is emphasized and it refers to new information, as the value of the *wh*-phrase is new information. In the following discussion, a *wh*-phrase is by default assumed to be an information focus. However, when a *wh*-phrase appears with an adjacent Qu-morpheme, it receives 'extra focus.' In this case, I assume that it functions as an identificational focus, in the same manner that I argued that a TP-internal clause with an adjacent Qu-morpheme is an identificational focus in chapter 4.4. The *wh*-phrase receives a special focus interpretation, comparable to a cleft in English, and it refers to an exhaustive set. Therefore, it corresponds to Kiss's (1998) definition of an identificational focus (see chapter 4.4).

The organization of this chapter is as follows. In section 5.2, I discuss Mandarin and Japanese, which are languages in which a Qu-morpheme must appear in a fixed clause-peripheral position. In section 5.3, I discuss Qu-morphemes in English, which also must appear in the clause periphery. I examine the interesting asymmetries in English that exist between subject and non-subject matrix *wh*-constructions and between matrix and embedded *wh*-constructions. I also account for some dialect differences found in the formation of *wh*-constructions in English. In section 5.4, I examine *wh*-constructions in which a Qu-morpheme can appear either in a clause-peripheral or a TP-internal position. Where the Qu-morpheme occurs is dependent on whether or not it contains a Focus-feature. In section 5.5, I discuss the fact that although a Qu-morpheme can appear in a TP-internal position in languages such as Sinhala and Okinawan, when it occurs in certain embedded clauses, there are island effects due to the blocking of movement of Qu- and Focus-features. In section 5.6, I examine some problematic constructions in Sinhala in which a Qu-morpheme must appear in a fixed TP-internal position. In section 5.7, I compare my analysis of the facts concerning Qu-morphemes in *wh*-constructions with some previous analyses. Section 5.8 is the conclusion.

## 5.2 Clause-peripheral Qu-morphemes

As with the formation of yes/no constructions, in *wh*-constructions, a Qu-morpheme generally appears in a clause-peripheral position.

### 5.2.1 Mandarin

Mandarin contains a Qu-morpheme *ne* that can appear in a *wh*-construction.<sup>1</sup> It is optional in matrix *wh*-constructions, and it is absent in embedded *wh*-constructions (Cheng 1997:26).<sup>2</sup>

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<sup>1</sup>There is a different yes/no Qu-morpheme *ma*.

<sup>2</sup>I have added the parenthesis around *ne* to indicate that it is optional.

(2) Mandarin:

*Qiaofeng mai-le shenme (ne)?*  
 Qiaofeng buy-ASP what Qu  
 ‘What did Qiaofeng buy?’ (Cheng 1997:22)

As in chapter 4, the position that I take is that when an overt Qu-morpheme is absent, a null Qu-morpheme is present, and so when *ne* is absent, a null version occurs.<sup>3</sup>

In Mandarin, the Qu-morpheme cannot occur in a TP-internal position. For example, the Mandarin example (3) is ill-formed if *ne* does not appear in clause-final position, as shown below.

(3) Mandarin:

*Qiaofeng (\*ne) mai-le (\*ne) shenme (ne)?*  
 Qiaofeng buy-ASP what Qu  
 ‘What did Qiaofeng buy?’ (Sunjing Ji, p.c.)

These facts can be accounted for straightforwardly if the Qu-morpheme is Merged directly in Typ, assuming that Typ appears in a clause-final position in Mandarin, which is an SVO language that appears to otherwise have head-initial projections (cf. Huang (1982), among others).

### 5.2.2 Japanese

The Japanese Qu-morpheme *ka* is also confined to clause-final position in *wh*-constructions. It cannot appear TP-internally, as shown in (4). The parentheses around *ka* indicate that it can be dropped; i.e. there is a null version of the Qu-morpheme *ka*.

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<sup>3</sup>See Cheng (1997) for arguments supporting the claim that a null Qu-morpheme is present in Mandarin *wh*-constructions.

(4) Japanese:

*Hideya-wa* (\**ka*) ***nani-o*** (\**ka*) *kaimashita* (*ka*)?  
 Hideya-TOP what-ACC bought Qu.  
 ‘What did Hideya buy?’

Evidence in Japanese clearly shows that in a *wh*-construction, the Qu-morpheme can only occur in the clause in which a *wh*-phrase has scope. Examples (5a-b) demonstrate this.

(5) Japanese:

- (a) *Sinbun-wa* [***dare-ga*** *erab-areta* ***ka***] *tutaete-imasen*.  
 newspapers-TOP who-NOM elected-was Qu report-is not  
 ‘Newspapers do not report who was elected.’
- (b) *Sinbun-wa* [***dare-ga*** *erabare-ta* *to*] *tutaete-imasu* ***ka***?  
 newspapers-TOP who-NOM elected-was that report-is Qu  
 ‘Who<sub>1</sub> do the newspapers report t<sub>1</sub> was elected?’ (Nishigauchi 1990:9)

In (5a) the Qu-morpheme is in the embedded clause, which it types as an interrogative and the *wh*-phrase has embedded scope. In (5b), the Qu-morpheme types the matrix clause as an interrogative, and therefore the *wh*-phrase must have matrix scope. This latter example shows that a *wh*-phrase in an embedded clause can have matrix scope as long as there is a Qu-morpheme at the edge of the matrix clause. These facts are accounted for straightforwardly if the Qu-morpheme is Merged directly in Typ of the clause where it has scope.

Furthermore, note that whereas a matrix Qu-morpheme can be dropped in Japanese, as in (4) above, an embedded clause Qu-morpheme cannot be dropped. For example, the Qu-morpheme *ka* in the embedded clause in (5a) must be present. In a matrix clause, when a Qu-morpheme is dropped, special intonation occurs; the clause ends with a rise. One possibility is that this interrogative intonation is not allowed in an embedded clause, and thus the Qu-morpheme is required.<sup>4</sup>

<sup>4</sup>I thank Heidi Harley (p.c.) for suggesting this to me.

### 5.2.3 Summary

The positions of the Qu-morphemes discussed in this section have been straightforward. Languages such as Mandarin and Japanese contain a Qu-morpheme with a Qu-feature that is simply Merged in the optimal position in Typ, where its Qu-feature is able to directly type a clause.

## 5.3 English

The English Qu-morpheme also must appear in the periphery of a *wh*-construction. In this section, I show that the English Qu-morpheme is Merged directly in Typ of the clause in which it has scope. However, there is a certain degree of complexity involved in the formation of *wh*-constructions in English. First of all, in a matrix clause *do*-support can occur when there is movement of a non-subject *wh*-phrase, but *do*-support cannot occur when there is movement of a subject *wh*-phrase. Also, in a matrix clause a tense element must move, but this is not allowed in an embedded clause in ‘standard English,’ although some other dialects of English allow tense movement. I account for these facts in terms of the properties of the English Qu-morpheme.

### 5.3.1 The standard American English facts

Below I discuss the facts regarding the formation of *wh*-constructions in standard American English.<sup>5</sup> These facts do not hold of all dialects of English, an issue that I return to.

As with English yes/no constructions (see chapter 4.3.2), a tense element moves in a *wh*-construction. This can be seen clearly when a non-subject *wh*-phrase undergoes *wh*-movement. Compare the statement in (6a) with the corresponding *wh*-

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<sup>5</sup>I use ‘standard’ to refer loosely to the prominent dialects of English spoken in the United States.

construction in (6b).

- (6) (a) Reginald **has** eaten dinner.  
 (b) What **has** Reginald eaten?

Whereas the auxiliary *has* follows the subject *Reginald* in the statement in (6a), it precedes the subject in the *wh*-construction (6b), which is evidence that the auxiliary has moved. When there is no overt auxiliary a form of *do* is inserted, as in (7).

- (7) What **did** she eat?

The facts become more complex when a *wh*-construction is formed with a fronted subject *wh*-phrase. Compare (8a) and (8b).

- (8) (a) John **has** eaten dinner.  
 (b) Who **has** eaten dinner?

Note that unlike in (6a-b), where it can be seen that the auxiliary moves, there is no clear auxiliary movement in (8). In both the statement in (8a) and the corresponding *wh*-construction (8b), the auxiliary follows the subject. One possibility, which I argue is the case below, is that the auxiliary *has* moves, but that the *wh*-phrasal subject moves to a position higher than the auxiliary.

Examples (9a-b) are well-formed *wh*-constructions with subject *wh*-phrases. Compare these with (7) above, which contains *did*.

- (9) (a) Who ate dinner?  
 (b) What lives in forests?

Furthermore, a form of the dummy auxiliary *do* cannot occur. Although (10a-b) are well-formed as emphatic *wh*-constructions when *did* receives special stress, they are not well-formed as standard non-emphatic *wh*-constructions.<sup>6</sup>

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<sup>6</sup>I assume that the fact that the emphatic interpretations requires *do*-support, most likely in Foc, is unrelated to the formation of a *wh*-construction.

- (10) (a) \*Who **did** eat dinner?  
 (b) \*What **did** live in forests?

In an embedded *wh*-construction, there does not appear to be auxiliary movement. For example, when ‘What did she eat?’ occurs in an embedded clause, it surfaces as (11a) which lacks an auxiliary, and not as (11b).

- (11) (a) I wonder [what she ate].  
 (b) \*I wonder [what **did** she eat].

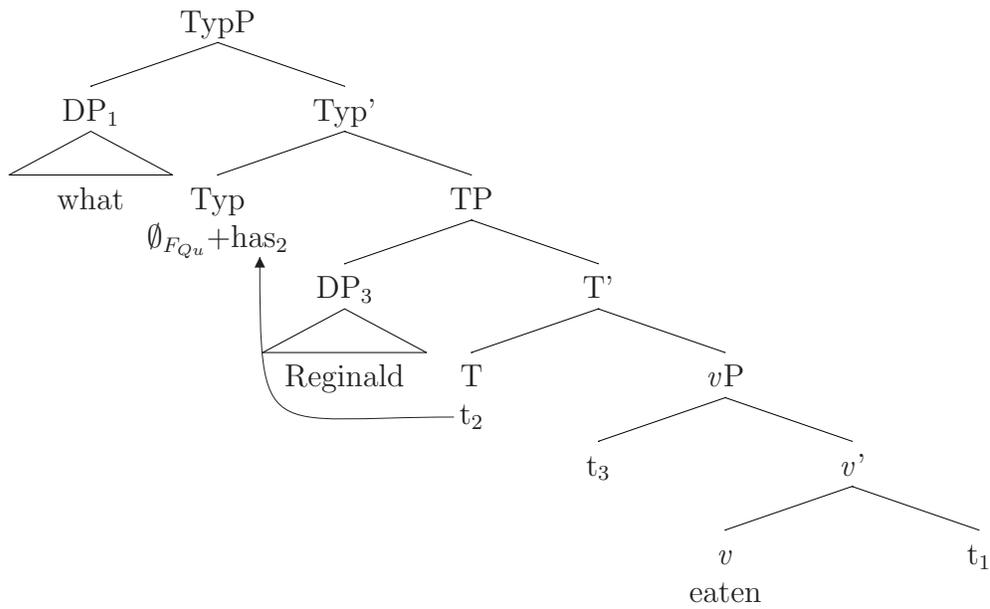
I next turn to an analysis of these facts. In chapter 4, I argued that an English matrix yes/no construction contains a null [+AFFIX] Qu-morpheme. The same is true in a *wh*-construction. There is a null [+AFFIX] Qu-morpheme in Typ, which is responsible for giving a clause an interrogative interpretation. The [+AFFIX] feature of the Qu-morpheme attracts the tense element to Typ. Furthermore, I assume that there is *wh*-phrasal movement to [Spec, TypP]. Here, I focus on the Qu-morpheme, and although extremely important, I leave aside discussion of *wh*-movement until chapter 6.

This analysis accounts straightforwardly for constructions such as (6b) and (8b), repeated below as (12a-b).

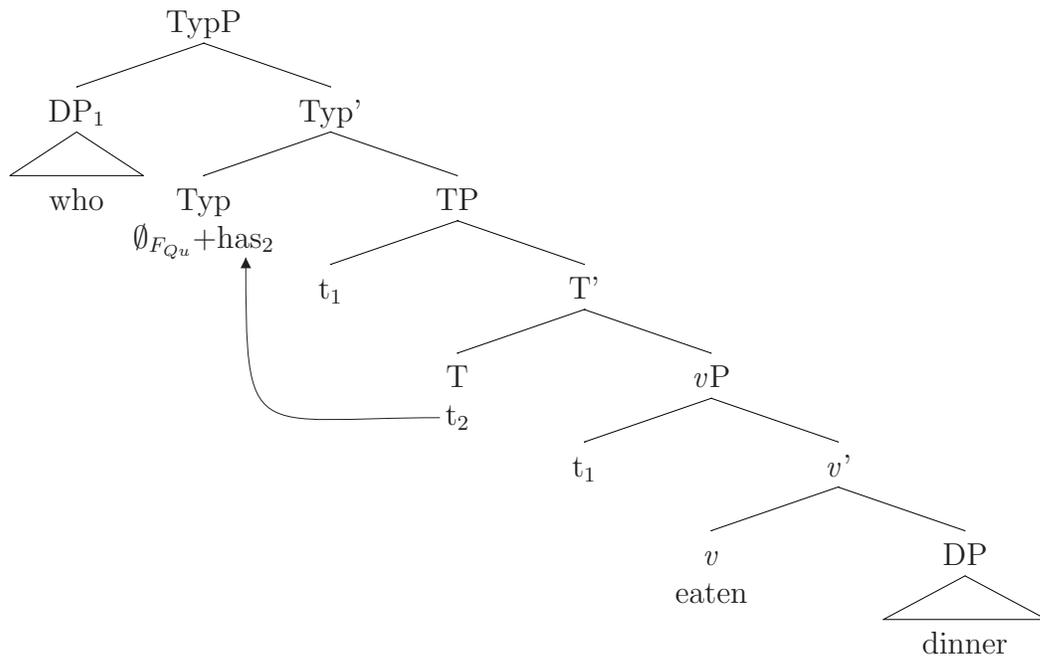
- (12) (a) What **has** Reginald eaten?  
 (b) Who **has** eaten dinner?

The null [+AFFIX] Qu-morpheme in Typ attracts the Tense element. In these constructions, T contains the auxiliary *has*, which raises to Typ. Diagrams of (12a-b) are shown below in (13) and (14), respectively.

(13)



(14)



As noted above, the facts concerning when *do*-support is allowed are complicated. When a non-subject *wh*-phrase fronts to clause-initial position, a form of *do* must occur if there is no other auxiliary element, as shown in (7), repeated below as (15a). However, when a subject *wh*-phrase fronts to clause-initial position, a form of *do* does not occur even if there is no auxiliary element, as in (9a), repeated below as (15b).

- (15) (a) What **did** she eat?  
 (b) Who ate dinner?

This subject-object asymmetry, whereby a non-subject *wh*-phrase requires *do*-support, but a subject *wh*-phrase does not thus requires an explanation.

### 5.3.2 Accounts of the subject/non-subject *wh*-construction asymmetry

There have been a number of analyses that have examined the asymmetry between subject and non-subject *wh*-phrases in English. In this subsection, I briefly review these analyses, before I present my own analysis in the following subsection.

Within the framework of Government and Binding Theory, Koopman (1983, 1984) proposes that the Empty Category Principle (ECP) accounts for the English *wh*-subject extraction facts. According to Koopman (1983), a *wh*-subject that fronts to clause-initial position, [Spec, CP], must antecedent govern its trace. This antecedent government is blocked if an overt tense element appears in C. An object *wh*-phrase can be followed by an overt tense element in C because it need not be antecedent governed, since it is lexically governed by a verb. One problem with this proposal is that it requires parametrization. Specifically, a tense element does not appear to block antecedent government in languages such as Dutch. A fronted *wh*-subject can be directly followed by a moved auxiliary, as in (16) below.

(16) Dutch:

*Wie*<sub>1</sub> *heeft*<sub>2</sub> *t*<sub>1</sub> *hem/Jan* *gezien* *t*<sub>2</sub>?  
 who has him/John seen  
 ‘Who saw him/John?’ (Koopman 1983:349)

Another problem with this analysis is that the notion of government and the ECP do not exist within the framework of the Minimalist Program.

Agbayani (2000) takes a different view of the subject *wh*-extraction facts; he relies on the notion that a subject *wh*-phrase remains in [Spec, TP]. Following George (1980) and Chomsky (1986), Agbayani argues for the Vacuous Movement Hypothesis, which is “the notion that in English local overt *wh*-movement takes place except for subjects (703).” Agbayani’s proposal relies on the notion that feature movement and phrasal (XP) movement (which he refers to as ‘category movement’) proceed separately. Agbayani (2000:707) writes the following.

I propose that Universal Grammar allows feature attraction and category movement to apply separately. Attract F adjoins a set of formal features (F) to an attracting head. A second operation, Move Cat(egory), raises the category to a specifier position where it is in a local relation with its formal features adjoined to the attracting head.

According to this proposal, a feature and its category have to be adjacent, where adjacency is defined as follows.

(17) X and Y are adjacent if no elements that are visible at the interface intervene between X and Y (Agbayani 2000:707)

Agbayani follows Chomsky’s (1995b) view that elements that are visible at the interface are “phonological features and XP- and X<sup>0</sup>- level categories, but not segments or X’-level categories (Agbayani 2000:707).”

With these assumptions, Agbayani argues that the following occurs in an English *wh*-construction. A *wh*-feature of a non-subject *wh*-phrase adjoins to C. It is not adjacent to its category (the *wh*-phrase that it originated in) because there is visible material intervening between the feature and the *wh*-phrase. Therefore, the *wh*-phrase must raise to [Spec, CP]. When a *wh*-feature of a subject *wh*-phrase raises to C, it is adjacent to its category in [Spec, TP]. There are no visible elements between the feature and the subject. Thus, the subject need not move. It can remain in [Spec, TP] and be adjacent to its feature.

This analysis accounts for the subject/non-subject asymmetry as resulting from whether or not a *wh*-phrase moves to [Spec, CP]. However, as I understand it, it does not account for T to C movement in non-subject *wh*-constructions. *Wh*-movement in a matrix clause requires T to C movement, but why exactly it requires T to C movement is not clear. It is also not clear why there is no T to C movement in an embedded clause.

Pesetsky & Torrego (2000) provide an analysis that relies on the notion that the English matrix C has an uninterpretable Tense feature, *uT*, which has an “EPP property” (360). This *uT* feature needs to be deleted via movement of another *uT* into C. Specifically, the *uT* on C forms an Agree relation with another *uT* feature which then moves to C. Movement, they argue, is driven by the EPP property that is contained by the *uT* feature on C. Under this analysis, the EPP is referred to as a “subfeature of a feature” that “is a property of a *feature* of a head-not a property of the head itself (359).” Pesetsky and Torrego assume that nominative case, which a subject contains, is a *uT* feature that can delete a *uT* feature in C.

Pesetsky & Torrego argue that when a *wh*-phrasal subject moves to [Spec, CP] to check an uninterpretable *wh*-feature, its nominative case feature deletes the *uT* on C. For example, the structure of (18a) with a fronted subject *wh*-phrase is that in (18b).

(18) (a) Who bought the book?

- (b) [C, *uT*, *uWh*] [<sub>TP</sub>[Who, *uT*] T [<sub>VP</sub> bought the book]] (Pesetsky & Torrego 2000:363)

The *wh*-subject moves to [Spec, CP] to check the *uWh* feature. Also, the subject contains a *uT* feature because it has nominative case. Therefore, the subject deletes the *uT* feature on C. Since the *uT* feature on C is deleted, there is no need for movement of a tense element to C.

When a non-subject *wh*-phrase moves into [Spec, CP], the *uT* feature on C remains unchecked, since a non-subject lacks nominative case. T contains a *uT* feature (nominative case) which it obtains from movement of a subject into its specifier. T then must move to C to delete the *uT* feature. For example, the *wh*-construction (19a) with a fronted object *wh*-phrase has the underlying structure in (19b).

- (19) (a) What did Mary buy?

- (b) [C, *uT*, *uWh*] [<sub>TP</sub>[Mary, *uT*] T [<sub>VP</sub> bought what]] (Pesetsky & Torrego 2000:363)

The *wh*-phrase *what* moves to [Spec, CP] to check the uninterpretable *wh*-feature *uWh* on C. Then T moves to C to check the uninterpretable Tense feature *uT*. In this manner, when a non-subject *wh*-phrase undergoes *wh*-movement, “C must delete its *uWh* and its *uT* in two separate operations (Pesetsky & Torrego 2000:363).”

Pesetsky and Torrego argue that in embedded *wh*-constructions, there is no T to C movement because the *uT* feature on C does not contain an EPP feature. They write that the “[s]tandard English embedded interrogative C lacks the EPP property for *uT* (380).” For example, (20a) is well-formed because T has not been attracted to C. (20b) is ill-formed because there is no EPP feature on C to attract the moved tense element *did*.

- (20) (a) Bill asked what Mary bought.

(b) \*Bill asked [what did Mary buy]. (Pesetsky & Torrego 2000:378)

In an embedded *wh*-construction, because the EPP feature does not attract a *uT* feature, Pesetsky & Torrego claim that the *uT* feature is satisfied via an Agree relation with T. In other dialects that allow T to C movement in an embedded clause, such as Hiberno English, the embedded C can contain an EPP feature.

Pesetsky and Torrego's analysis accounts nicely for the data, but there is a great deal of complexity involved with the notion that C contains a *uT* feature that requires nominative case. It is not clear why C would require nominative case, as nominative case is generally associated with T.

Bobaljik (1994) provides an analysis that I find to be most appealing due to its simplicity. This analysis relies on the notion that *do*-support is dependent on whether or not tense and the verb are adjacent to each other. Bobaljik argues that the *do*-support facts result from the need for tense to be adjacent to the verb in cases in which there is no auxiliary that houses tense. According to Bobaljik, in English, when tense and a verb are adjacent, even if they are in different projections, tense shows up on the verb. When tense is not adjacent to a verbal element, then *do*-support is required to house tense. Bobaljik follows Halle & Marantz's (1993) view that in a simple declarative sentence in English "inflectional affixes and verbal heads may *merge* under (some form of) adjacency (Bobaljik 1994:5)." When an inflectional affix and a verb are adjacent, then the affix can attach onto the verb, even if they are in different projections. For example, Bobaljik proposes that in the configuration in (21), the heads X and Y are adjacent. The trace intervening between these heads does not block adjacency.

(21) ... **X** [<sub>YP</sub> trace [<sub>Y'</sub> **Y** ... (Bobaljik 1994:2)

According to my understanding of Bobaljik's analysis, a matrix non-subject *wh*-construction such as (22a) has the structure in (22b).

(22) (a) When **did** Sam eat the horseradish? (Bobaljik 1994:7)

(b) [<sub>CP</sub> When **do+INFL**<sub>PAST1</sub> [<sub>IP</sub> Sam t<sub>1</sub> [<sub>VP</sub> eat the horseradish]]]?

An inflectional head INFL raises to C. The subject *Sam* intervenes between INFL and the verb *eat*, thereby preventing INFL from affixing onto *eat*. Thus, a form of *do* must be inserted in C to house INFL.

When a subject *wh*-phrase moves, the results differ notably in that the adjacency relation between INFL and the verb is not disrupted. This can be seen in (23a-b).

(23) (a) Who ate my horseradish? (Bobaljik 1994:7)

(b) [<sub>CP</sub> Who<sub>1</sub> **INFL**<sub>PAST2</sub> [<sub>IP</sub> t<sub>1</sub> t<sub>2</sub> [<sub>VP</sub> **eat** my horseradish]]]?

(23b) shows the underlying structure of (23a). The INFL head raises to C and the subject *who* raises to [Spec, CP]. Since there is no intervening subject, adjacency is established between INFL in C and the verb in the VP. Therefore, INFL is able to show up on the verb. The trace of the subject does not block adjacency, and so there is no need for insertion of *do*.

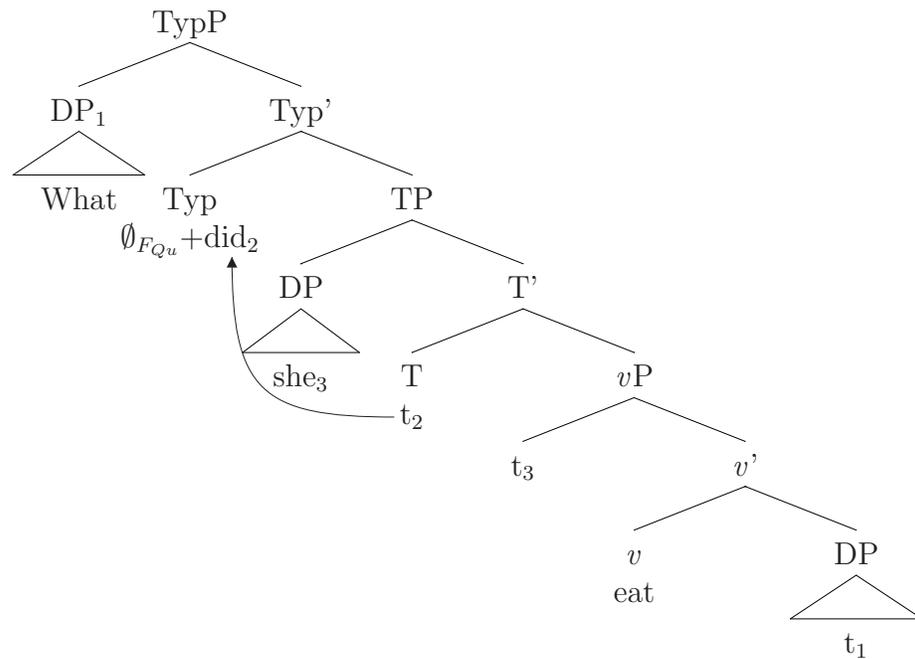
### 5.3.3 Analysis of English facts

With a slight reformulation to fit with my proposals, Bobaljik's analysis accounts for the *wh*-construction facts as follows. When a non-subject *wh*-phrase raises to [Spec, TypP], adjacency between the Tense element which has moved to Typ and *v* is blocked by the intervening subject. Thus, if there is no auxiliary to house the tense element, a form of *do* is inserted (*do*-support). Below is a diagram of (15a). The *wh*-phrase raises to [Spec, TypP] and the tense element raises to Typ. Since Typ is not adjacent to *v*, due to the intervening subject *she*, a form of *do* is inserted to house the tense element.<sup>7</sup>

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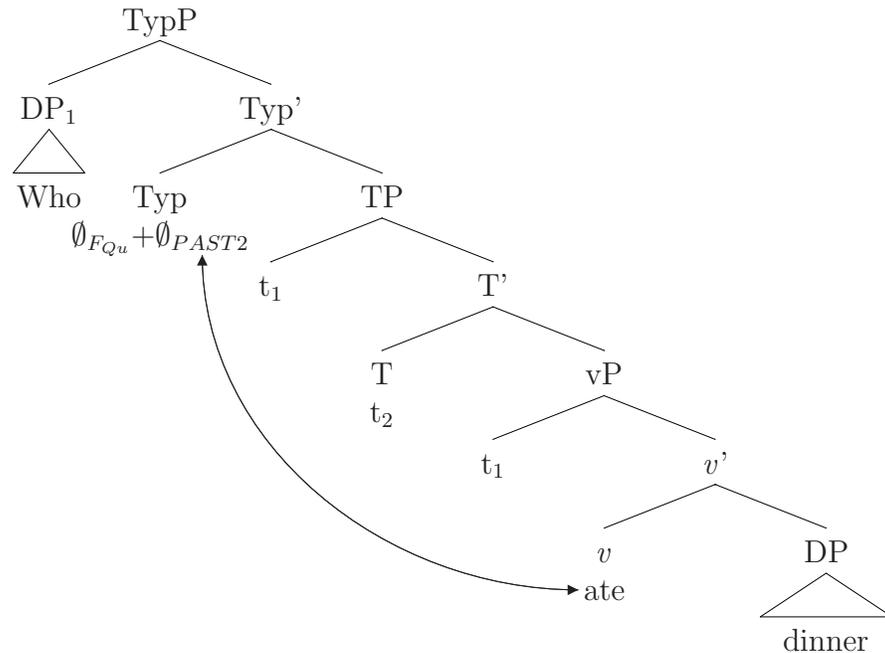
<sup>7</sup>Note that in a matrix yes/no construction, there always will be a subject intervening between the Qu-morpheme and T. Thus, *do*-support is always required when there is no auxiliary that carries tense.

(24)



When a subject *wh*-phrase moves, there is no element intervening between the tense element in **Typ** and *v* (the trace of the subject does not count as an intervener). Therefore, tense is able to show up on the matrix verb in cases in which there is no auxiliary. A diagram of (15b) is shown below. Adjacency is indicated by the double-headed arrow between **Typ** and *v*.

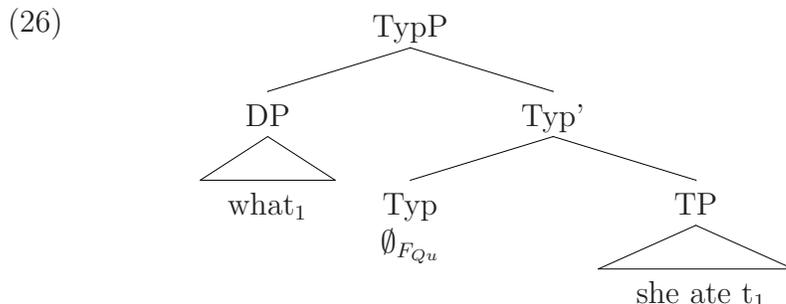
(25)



I next turn to embedded *wh*-constructions. Remember that in these constructions there is no movement of a tense element, as can be seen in (11a-b), repeated below. Example (11b) is ill-formed as a non-emphatic *wh*-construction.

- (11) (a) I wonder [what she ate].  
 (b) \*I wonder [what **did** she eat].

I propose that an embedded *wh*-construction in English contains a different type of Qu-morpheme from a matrix clause. The Qu-morpheme is [-AFFIX]. Therefore, it does not force a tense head to move to **Typ**. A simplified diagram of the embedded clause of (11a) is shown below in (26).



An embedded clause and a matrix clause thus differ with respect to the type of Qu-morpheme that occurs; a matrix clause contains a [+AFFIX] Qu-morpheme and an embedded clause contains a [-AFFIX] Qu-morpheme. This difference between Qu-morphemes relies on the features that these Qu-morphemes contain. The matrix Qu-morpheme has a [+AFFIX] feature and a feature that I loosely refer to as [+MATRIX] that requires it to only occur in a matrix clause, as shown in (27a). The embedded Qu-morpheme has a [-AFFIX] feature and a [-MATRIX] feature that requires it to occur in an embedded clause, as shown in (27b). It should also be noted that both the matrix and embedded clause Qu-morphemes that occur in *wh*-constructions are [-OVERT], unlike the [+OVERT] Qu-morpheme that occurs in embedded yes/no constructions (see chapter 4.2.1-4.2.2).

(27)

	Clause	Features
(a)	Matrix	[+MATRIX], [+AFFIX], [-OVERT]
(b)	Embedded	[-MATRIX], [-AFFIX], [-OVERT]

The particular features contained within the matrix and embedded English Qu-morphemes determine their syntactic behavior. A language could have Qu-morphemes with different sets of features. As discussed in chapter 4.2.3, there are dialects of English that differ from standard English with respect to allowing a [+AFFIX] Qu-morpheme to occur in an embedded clause in a yes/no construction. In the next section, I discuss how in *wh*-constructions, dialects such as Ozark

English and Belfast English allow a [+AFFIX] Qu-morpheme to appear in an embedded clause, and dialects such as South African Indian English allow a [-AFFIX] Qu-morpheme to occur in a matrix clause.

#### 5.3.4 Ozark English

In Ozark English, *wh*-constructions can be formed differently than in standard American English. In this section, I argue that these differences result from Ozark English containing a different set of Qu-morphemes than found in Standard American English.

Ozark English, unlike in ‘standard English,’ allows both [+AFFIX] and [-AFFIX] Qu-morphemes in an embedded *wh*-construction. Example (28a) shows a complex sentence with an embedded *wh*-construction that is formed with movement of an auxiliary element, as would occur in a matrix *wh*-construction. I assume that the structure is as shown in (28b) with a [+AFFIX] Qu-morpheme that attracts the tense element to Typ.

- (28) (a) I want to find out who is she cheating with. (Barrett 2008)  
 (b) I want to find out [<sub>TypP</sub> who<sub>2</sub> [<sub>Typ</sub>  $\emptyset_{Qu}$ -is<sub>1</sub> [<sub>TP</sub> she [<sub>T</sub> t<sub>1</sub> cheating with t<sub>2</sub>]]]].

Ozark English also allows an embedded *wh*-construction to be formed as in standard English with no movement of a tense element, as shown in (29a). In this case, the embedded clause contains a [-AFFIX] Qu-morpheme that does not attract the tense element, as shown in (29b).

- (29) (a) I want to find out who she is cheating with. (Barrett 2008)  
 (b) I want to find out [<sub>TypP</sub> who<sub>1</sub> [<sub>Typ</sub>  $\emptyset_{Qu}$  she is cheating with t<sub>1</sub>]].

Ozark English then appears to contain two types of Qu-morphemes that can occur in an embedded clause, as shown in (30a-b). These Qu-morphemes differ in terms of their [AFFIX] feature.

- (30) (a)  $\text{Qu}_{[+AFFIX]}$   
 (b)  $\text{Qu}_{[-AFFIX]}$

A matrix non-subject *wh*-construction in Ozark English also requires subject-auxiliary inversion (Barrett 2008). Thus, as in standard American English, a matrix clause contains a  $[+AFFIX]$  Qu-morpheme. Unlike in standard English, in Ozark English, the  $[+AFFIX]$  Qu-morpheme can also occur in embedded clauses. Example (31a) shows the  $[+AFFIX]$  Qu-morpheme. It has no features determining what type of clause it can occur in. It is free to occur in either a matrix or embedded clause. (31b), on the other hand, shows the  $[-AFFIX]$  Qu-morpheme, which has a feature that requires it to occur in an embedded clause.

- (31) (a)  $\text{Qu}_{[+AFFIX]}$   
 (b)  $\text{Qu}_{[-AFFIX, -MATRIX]}$

Not surprisingly, these Qu-morphemes also differ in their semantics.

According to Rusty Barrett (p.c), when there is inversion (under my analysis, ‘inversion’ is caused by a  $[+AFFIX]$  Qu-morpheme), then the embedded *wh*-construction refers to something that need not be true - there is no specified truth value. When there is no inversion, the content of the embedded clause is believed to be true. For example, Barrett (2008) writes that the embedded *wh*-construction in (28a) above, which contains inversion, implies “that she might not be cheating.” On the other hand, the embedded *wh*-construction in (29a) above, which lacks inversion, implies that “it is certain she is cheating.” Barrett notes that this semantic distinction also accounts for the data in (32a-b). (32a) is fine because, in all likelihood, it is true that ‘he’ has a name. (32b) is ill-formed because the embedded clause, which is dependent on the assumption that ‘he’ has a name, is incompatible with a Qu-morpheme that does not imply truth.

- (32) (a) I wonder what his name is.

(b) \*I wonder what is his name. (Barrett 2008)

These facts suggest that the [+AFFIX] embedded clause Qu-morpheme in Ozark English does not carry with it a truth value, whereas a [-AFFIX] Qu-morpheme indicates that a *wh*-construction refers to something that a speaker believes to be true.

Several examples demonstrate some differences between *wh*-constructions with and without inversion. According to Barrett, (33a), which I claim has the structure in (33b) with a [+AFFIX] Qu-morpheme, indicates that the speaker “can’t understand a word she is saying.”

(33) (a) I don’t understand what is she saying. (can’t understand a word she is saying) (Barrett 2008)

(b) I don’t understand [ $_{TypP}$  what<sub>2</sub> [ $_{Typ}$   $\emptyset_{Qu}$ -**is**<sub>1</sub> [ $_{TP}$  she [ $_T$  t<sub>1</sub> saying t<sub>2</sub> ]]]].

On the other hand, (34a), which I assume has the structure in (34b) with a [-AFFIX] Qu-morpheme, indicates that the speaker thinks “her meaning/intention is unclear.”

(34) (a) I don’t understand what she is saying. (her meaning/intention is unclear) (Barrett 2008)

(b) I don’t understand [ $_{TypP}$  what<sub>1</sub> [ $_{Typ}$   $\emptyset_{Qu}$  she is saying t<sub>1</sub>]].

(35a), which I assume has the structure in (35b) with a [+AFFIX] Qu-morpheme is an insult.

(35) (a) I wonder where does she buy her clothes. (insult) (Barrett 2008)

(b) I wonder [ $_{TypP}$  where<sub>2</sub> [ $_{Typ}$   $\emptyset_{Qu}$ -**does**<sub>1</sub> [ $_{TP}$  she [ $_T$  t<sub>1</sub> buy her clothes t<sub>2</sub> ]]]].

(36a), with the structure in (36b) with a [-AFFIX] Qu-morpheme, however, is a compliment.

(36) (a) I wonder where she buys her clothes. (compliment) (Barrett 2008)

(b) I wonder [ $T_{ypP}$  where<sub>1</sub> [ $T_{yp}$   $\emptyset_{Qu}$  she buys her clothes t<sub>1</sub>]].

The Ozark Qu-morphemes are summarized in (37a-c).

(37)

	Features	Meaning
(a)	[+AFFIX]	No truth value
(c)	[-AFFIX], [-MATRIX]	True

(37a) is a Qu-morpheme that occurs in both embedded and matrix clauses, as it lacks any specification for the type of clause that it can occur in, and it does not carry a truth value. (37b) occurs in embedded clauses only. It is not an affix, and thus does not trigger inversion, and it implies truth of the embedded clause.

In this section, I have only discussed Ozark English, but note that there are other English dialects which also differ from ‘standard English’ with respect to *wh*-construction formation. Belfast English and Hiberno English allow auxiliary movement in an embedded clause, as shown in (38) and (39).

(38) Belfast English:

I wonder [what street **does** he live in]. (Henry 1992:288)

(39) Hiberno English:

Did he tell you [how **did** he do it]? (McCloskey 1991:294)

These dialects thus appear to contain a [+AFFIX] Qu-morpheme that can occur in an embedded clause. Also, South African Indian English does not require tense movement in a matrix clause, as shown in (40).

(40) **What I must do?** If my father say I must go an’ plough today, **what I can do?**(Mesthrie 1992:47)

This dialect then appears to contain a matrix clause [-AFFIX] Qu-morpheme.

### 5.3.5 Summary

On the one hand, the facts regarding the Qu-morpheme in English *wh*-constructions are straightforward. The Qu-morpheme is Merged directly in Typ. On the other hand, there are certain complexities involving the [ $\pm$ AFFIX] value of the Qu-morpheme, and also concerning where a tense element occurs. In ‘standard English,’ a matrix *wh*-construction contains a [+AFFIX] Qu-morpheme. The [+AFFIX] feature forces the tense head to move to Typ. Tense must either surface on an auxiliary or on a main verb; in the latter case, Tense must be adjacent to the verb. When a non-subject *wh*-phrase raises to [Spec, TypP], the tense head, which has moved to Typ is not adjacent to the verb in *v* because of the intervening subject. Thus, if the tense head does not already occur on an auxiliary, then a form of *do* must be inserted. When a subject *wh*-phrase raises to [Spec, TypP], then the tense head is adjacent to the verb. Therefore, if there is no auxiliary, tense is able to occur on the verb, and no form of *do* is required. An embedded *wh*-construction in ‘standard English’ contains a [-AFFIX] Qu-morpheme, and so there is no movement of a tense element. In Ozark English, unlike in ‘standard English,’ an embedded clause allows both [+AFFIX] and [-AFFIX] Qu-morphemes to occur. These Qu-morphemes also differ in their semantics. Other English dialects such as Belfast, Hiberno, and South African Indian English similarly differ from ‘standard English’ with respect to the types of Qu-morphemes that they contain. Note that various dialects of English demonstrate variation with respect to the requirements they place on the Qu-morphemes in matrix and embedded clauses. A matrix Qu-morpheme must be [+AFFIX] in standard English, but not in South African Indian English. A Qu-morpheme must be [-AFFIX] in embedded clauses in Standard English, but not in Ozark English or Belfast English.

#### 5.4 Qu-morphemes in various positions

In certain *wh*-constructions in Sinhala and Okinawan, a Qu-morpheme can either appear adjacent to a *wh*-phrase in a TP-internal position, as in (41a), or separate from it, as in (41b).<sup>8</sup>

- (41) (a) [<sub>TypP</sub> ... *wh*-phrase **Qu** ... ]  
 (b) [<sub>TypP</sub> ... *wh*-phrase ... **Qu** ]

As I argued was the case in certain yes/no constructions discussed in chapter 4, in this section I argue that when a Qu-morpheme contains a Focus-feature, it must occur adjacent to a *wh*-phrase, as in (41a). Otherwise it is Merged directly in a clause peripheral position corresponding to Typ, as shown in (41b).

In Sinhala, a Qu-morpheme can either appear adjacent to (in a TP-internal position) or separated from (in a clause-peripheral position) certain types of *wh*-adjuncts.<sup>9</sup> These *wh*-adjuncts are referred to by Hagstrom (2004:230) as “scalar *wh*-words.” They include *kiidenek* ‘how many (animate),’ *kiiyak* ‘how many (inanimate),’ and *koccərə* ‘how much.’ Example (42a) shows the Qu-morpheme in clause-final position separated from the in-situ *wh*-adjunct *koccərə* ‘how much.’ In this case, the default ‘-A’ ending appears on the verb. In (42b), the Qu-morpheme appears adjacent to the *wh*-phrase and the special ‘-E’ ending shows up on the verb.

(42) Sinhala:

- (a) *Salli koccərə danna də?*  
 money how much give.A Qu  
 ‘How much money did (you) give?’

<sup>8</sup>In some languages, the position of the Qu-morpheme directly after the *wh*-phrase in (41a) and at the end of the clause in (41b) may be the opposite, with the Qu-morpheme directly preceding the *wh*-phrase or appearing at the beginning of a clause.

<sup>9</sup>I discuss *wh*-arguments in Sinhala in the following sections.

- (b) *Salli koccərə də dunne?*  
 money how much Qu give.E  
 ‘How much money was it that (you) gave?’ (Sumangala 1992:248)

As can be seen in the glosses, the interpretations of these examples differ. A standard *wh*-question interpretation arises when the Qu-morpheme appears in clause-final position. When the Qu-morpheme appears TP-internally, the *wh*-phrase functions as an identificational focus, as indicated by the English gloss containing a cleft (see chapter 4.4 for discussion of focus).

In Okinawan, the facts are similar. The Qu-morpheme *ga* may either appear adjacent to or separated from a matrix *wh*-phrase. Note that unlike in Sinhala in which variability in the position of the Qu-morpheme in matrix clauses only occurs with some *wh*-adjuncts, in Okinawan, this variability is allowed with *wh*-arguments. Examples are shown in (43a-b). When the Qu-morpheme is adjacent to the *wh*-phrase in (43b), the matrix verb occurs with the special verbal agreement ending ‘-RA.’<sup>10</sup>

(43) Okinawan:

- (a) *Taa-ga ich-u-ga?*  
 who-NOM go-PRES-Qu  
 ‘Who is going?’
- (b) *Taa-ga-ga ich-u-ra?*  
 who-NOM-QU go-PRES-RA  
 ‘I wonder who on earth is going?’ (Miyara 2001:27)

The gloss provided by Miyara for (43b) indicates, via the phrase *who on earth*, that when the Qu-morpheme is adjacent to the *wh*-phrase, the *wh*-phrase is focused.

<sup>10</sup>As discussed in Chapter 4.4.2, I assume that *ga* is always a Qu-morpheme, contrary to Miyara (2001) who claims that when *ga* occurs TP-internally it is an emphatic marker. I also assume that the ‘-RA’ ending is verbal agreement, unlike Miyara who claims that it is a Qu-morpheme.

This appears to be the same type of phenomenon found in Sinhala. The *wh*-phrase with an adjacent Qu-morpheme is an identificational focus.

In Sinhala, when a *wh*-phrase occurs within an embedded clause that is not an island and the *wh*-phrase has embedded scope, there can be two possible positions for the Qu-morpheme. The Qu-morpheme can occur adjacent to the embedded *wh*-phrase, as shown in (44a), or it can occur at the edge of the embedded clause as in (44b).

- (44) (a) [<sub>TypP</sub> ... [<sub>TypP</sub> ... *wh*-phrase **Qu** ... ] ... ]  
 (b) [<sub>TypP</sub> ... [<sub>TypP</sub> ... *wh*-phrase ... **Qu** ] ... ]

However, only certain matrix verbs allow the Qu-morpheme to appear in these two positions within an embedded *wh*-complement clause. Some of these verbs are “*dannəwa* ‘know,’ *hoya bəṛənəwa* ‘examine,’ *parikṣaa kəṛənəwa* ‘look into, inspect,’ and *teerenəwa* ‘understand’ (Kishimoto 2005:8).”<sup>11</sup> In (45a) below, the Qu-morpheme *də* follows the *wh*-phrase *kau* ‘who’ in the embedded clause, whereas in (45b), it occurs at the embedded clause-periphery, following the verb *aawa*, but preceding the complementizer *kīyəla* ‘that.’<sup>12</sup> In this way, the Qu-morpheme may either be adjacent to or separated from the *wh*-phrase.<sup>13</sup>

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<sup>11</sup>I discuss these verbs in more detail in section 5.6, where I also discuss verbs such as ‘*ahanəwa* ‘ask,’ *prasnə kəṛənəwa* ‘question,’ and *hitenəwa* ‘consider’ (Kishimoto 2005:8)” that require the Qu-morpheme to appear adjacent to a *wh*-phrase in a complement clause.

<sup>12</sup>These examples contain the complementizer *kīyəla* ‘that’ in addition to a Qu-morpheme in the embedded clause. This fact can be accounted for if *kīyəla* is in ForceP and the Qu-feature of the Qu-morpheme is in TypP. See chapter 2.5 for discussion of clause structure.

<sup>13</sup>Note that the form of the subject meaning ‘who’ differs. It is *kau* in (45a) and *kauru* in (45b). According to Kishimoto (2005:6), “[t]he *wh*-word meaning ‘who’ is *kauru*, but when *də* is adjacent to the *wh*-word, *-ru* is dropped, as in *kau də*.”

(45) Sinhala:

(a) *Ranjit [kau də aawe kiyəla] dannəwa.*  
 Ranjit who Q came.E that know.A  
 ‘Ranjit knows who came.’ (Kishimoto 2005:7)

(b) *Ranjit [kauru aawa də kiyəla] dannəwa.*  
 Ranjit who came.A Qu that know.A  
 ‘Ranjit knows who came.’ (Kishimoto 2005:6)

As expected, there is a meaning difference depending on the position of the Qu-morpheme. When the Qu-morpheme is adjacent to the *wh*-phrase, the *wh*-phrase is an identificational focus, and when the Qu-morpheme is separated from the *wh*-phrase, the *wh*-phrase is not an identificational focus. In other words (45a) means something along the lines of ‘Ranjit knows who it is that came.’ Although these differences in interpretation are not indicated in the glosses by Kishimoto, they are supported by Gair & Sumangala (1991), who write that the *wh*-phrase in an embedded clause such as (46) below is focused when it is adjacent to a Qu-morpheme (Gair & Sumangala 1991:98). This example is comparable to (45a) above.

(46) Sinhala:

*[Siri mokak də keruwe kiyəla] amma kalpənaa-keruwa.*  
 Siri what Qu do-PAST.E COMP mother think-PAST.A  
 ‘Mother thought (about) what Siri did. (Gair & Sumangala 1991:98)

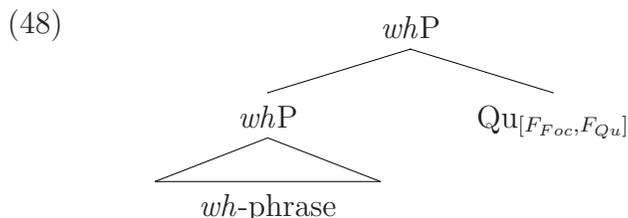
In (47) below, which is comparable to (45b), Gair & Sumangala (1991:96) write that the *wh*-phrase is not focused.

(47) Sinhala:

*[Eekə kauru həduwa də] danne nəə.*  
 that who did.A Qu know not  
 ‘I don’t know who could have done that.’ (Gair & Sumangala 1991:96)

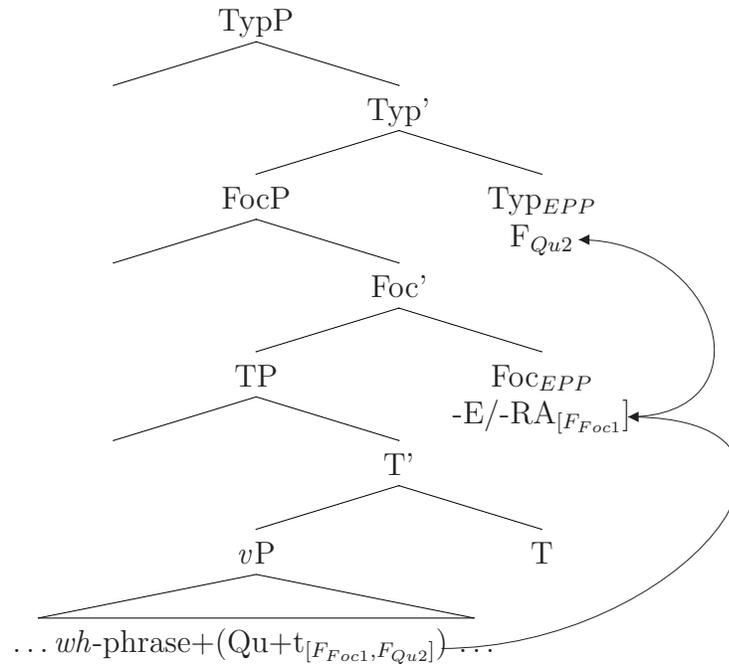
Gair & Sumangala (1991:96) attribute the lack of focus in this type of construction to what they refer to as “general doubt.”

If this analysis is on the right track, the Sinhala data indicate that when a Qu-morpheme is adjacent to a *wh*-phrase, that phrase is an identificational focus. I propose that in this case, the Qu-morpheme contains a Focus-feature. This is the same type of Qu-morpheme that I argued occurs TP-internally in yes/no constructions in these languages, as discussed in chapter 4.4. The Focus-feature forces the Qu-morpheme to focus a TP-internal element. The *wh*-phrase must have scope in a particular clause, and as such, if anything is focused, it must be the *wh*-phrase, and so the Qu-morpheme adjoins to it. The structure of a *wh*-phrase with an adjoined Qu-morpheme is given in (48).



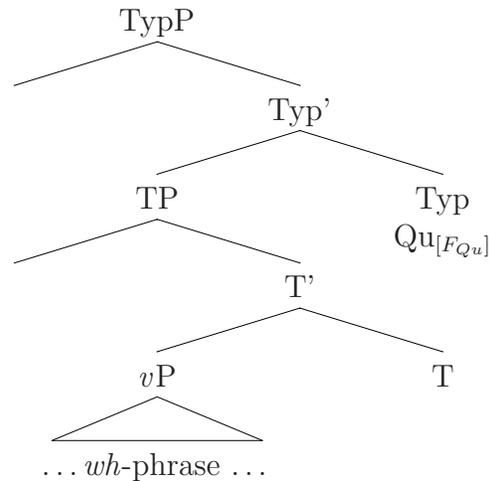
The Qu- and Focus-features raise as a feature bundle from the Qu-morpheme, and the Qu-morpheme remains in-situ. These features raise to Foc, where the Focus-feature remains and focuses the *wh*-phrase, and the Qu-feature raises to Typ where it types the clause as an interrogative. Movement of these features is motivated by EPP features. A diagram is shown in (49). The Focus-feature in Foc shows up as the verbal agreement ending ‘-E’ in Sinhala and ‘-RA’ in Okinawan.

(49)



When the Qu-morpheme occurs at the edge of a clause in these languages, the *wh*-phrase does not receive an identificational focus interpretation. Rather, there is a standard *wh*-construction interpretation in which the *wh*-phrase is an information focus. In this case, the Qu-morpheme lacks a Focus-feature. It is Merged directly in Typ where it types a clause as an interrogative. A diagram is shown in (50). Because there is no Focus-feature in Foc, the verb does not show up with the special agreement ending.

(50)



Also, in these constructions, a *wh*-feature (which is a distinct element from a Qu-feature) associated with a *wh*-phrase establishes a relationship with Typ, thereby giving the *wh*-phrase scope. I examine the behavior of *wh*-features in the next chapter.

I next turn to embedded clauses which contain a *wh*-phrase that has matrix scope. In both Sinhala and Okinawan, when a *wh*-phrase in an embedded clause has matrix scope, a Qu-morpheme either occurs adjacent to or separated from the *wh*-phrase. When separated from the *wh*-phrase, the Qu-morpheme can either occur at the edge of the embedded clause, or at the edge of the matrix clause. The three possible positions of the Qu-morpheme are shown in (51a-c).

(51) (a) [ $T_{ypP}$  ... [ $T_{ypP}$  ... *wh*-phrase **Qu** ...] ...]

(b) [ $T_{ypP}$  ... [ $T_{ypP}$  ... *wh*-phrase ...] **Qu** ...]

(c) [ $T_{ypP}$  ... [ $T_{ypP}$  ... *wh*-phrase ...] ... **Qu** ]

Examples (52a-b) from Sinhala show that the Qu-morpheme can occur adjacent to the *wh*-phrase or at the edge of the embedded clause. In the latter case, note that the Qu-morpheme follows the embedded clause complementizer, suggesting that the Qu-morpheme is adjoined to the entire embedded clause. I assume that

the complementizer *kiyəla* ‘that’ is in ForceP (see the discussion of clause structure in chapter 2.5).

(52) Sinhala:

- (a) *Chitra [kau də aawa kiyəla] kiiwe?*  
 Chitra who Qu came.A that said.E  
 ‘Who did Chitra say came?’
- (b) *Chitra [kauru aawa kiyəla] də kiiwe?*  
 Chitra who came.A that Qu said.E  
 ‘Who did Chitra say came?’ (Kishimoto 2005:21)

Example (53b) shows that the Qu-morpheme can also appear at the edge of the matrix clause. Compare this with (53a) in which the Qu-morpheme is adjacent to the *wh*-phrase in the embedded clause.

(53) Sinhala:

- (a) *Ranjit [Chitra kiidenek də dækka kiyəla] danne?*  
 Ranjit Chitra how.many Qu saw.A that know.E  
 ‘How many (people) does Ranjit know that Chitra saw?’ (Kishimoto 2005:7)
- (b) *Ranjit [kiidenek enəwa kiyəla] dannəwa də?*  
 Ranjit how.many come.A that know.A Qu  
 ‘How many (people) does Ranjit know will come?’ (Kishimoto 2005:6)

As discussed in chapter 4.4, when a Qu-morpheme in an embedded clause has matrix scope, the special verbal agreement only shows up in the matrix clause. Thus, in examples (52a) and (53a), only the matrix verb appears with the special verbal ending ‘E.’ In (53b), in which the Qu-morpheme appears in clause-final position of the matrix clause, the matrix verb appears with the default ‘A’ ending.

In these examples, the Qu-morpheme focuses different constituents. In (52a), the Qu-morpheme focuses the *wh*-phrase and in (52b), it focuses the embedded

clause. These differences are not indicated in Kishimoto's glosses, but they are indicated in his descriptions of the meanings of these examples. Kishimoto (2005:21) explains that an answer to (52a) can "provide just the value of the *wh*-phrase as a minimal answer." However, when answering (52b), "it is necessary to repeat the embedded clause with the complementizer, alongside the value of the *wh*-phrase." In (52a) the answer must refer to the *wh*-phrase, but not necessarily to the embedded clause, because the *wh*-phrase is an identificational focus, and the embedded clause is not. In (52b), the answer must refer to the entire embedded clause because the embedded clause is focused. Example (53b) with the Qu-morpheme at the edge of the matrix clause presumably does not contain any TP-internal identificational focus. This example functions like example (42a) above, which also has a clause final Qu-morpheme, and lacks an identificational focus.

Similar examples in Okinawan are shown in (54). In (54a), the Qu-morpheme is adjacent to the embedded clause subject *taa-ga* 'who-NOM' and the matrix verb shows the special '-RA' ending. As in Sinhala, when a Qu-morpheme in an embedded clause has matrix scope, the special verbal agreement only shows up in the matrix clause (see chapter 4.4). In (54b), the Qu-morpheme is at the edge of the embedded clause, and the matrix verb again shows the '-RA' ending. In (54c), the Qu-morpheme is at the edge of the matrix clause and the '-RA' verbal ending is absent.

(54) Okinawan:

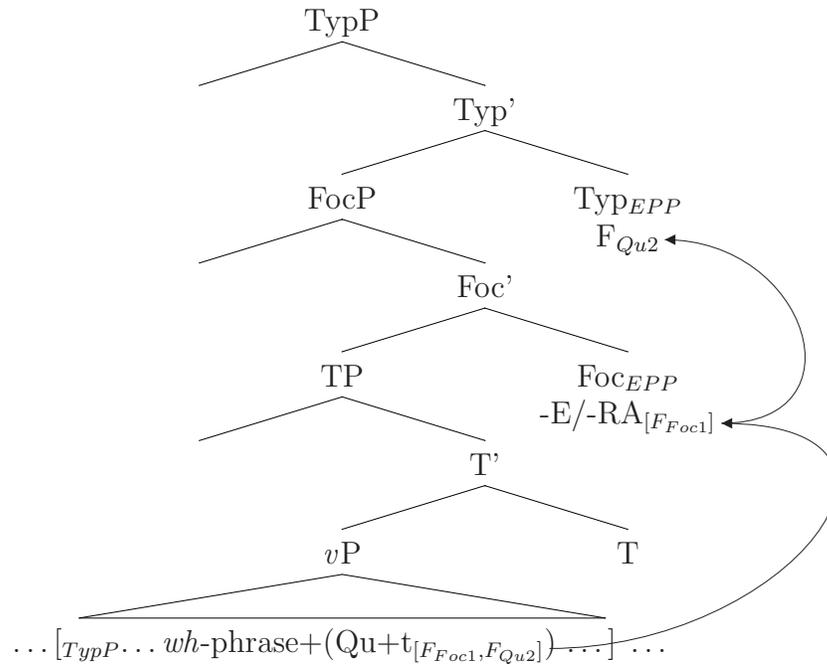
- (a) [<sub>CP</sub> *Taa-ga-ga*    *suba*    *kada-n-di*]    *John-oo*    *umutoo-ra?*  
       who-NOM-Qu    noodles    ate-IND-COMP    John-TOP    think-RA  
       'Who the hell does John think ate the noodles?' (Miyara 2001:52)
- (b) [<sub>CP</sub> *Taa-ga*    *suba*    *kada-n-di*]-*ga*    *John-oo*    *umutoo-ra?*  
       who-NOM    noodles    ate-IND-COMP-Qu    John-TOP    think-RA  
       'Who the hell does John think ate the noodles?' (Miyara 2001:38)

- (c) [<sub>CP</sub> *Taa-ga* *suba* *kada-n-di*] *John-oo* *umutoo-ga?*  
 who-NOM noodles ete-IND-COMP John-TOP think-Qu  
 ‘Who does John think ate the noodles?’ (Miyara 2001:52)

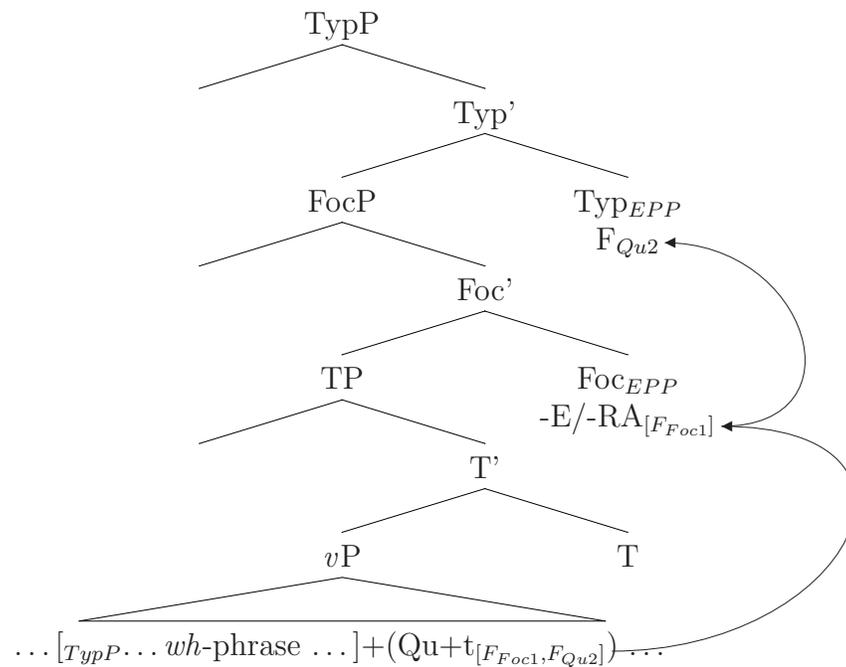
My analysis given in chapter 4 that a Qu-morpheme with a Focus-feature appears in a TP-internal position and focuses an adjacent phrase predicts the differences in the glosses of (54a-b) when compared with (54c). In (54a-b), the glosses containing *who the hell* indicate identificational focus. Although the glosses for (54a-b) are the same, I assume that the differing positions of the Qu-morphemes indicates that different constituents are focused. In (54c), there is no focused phrase within the clause, and thus there is no focused element in the gloss.

I account as follows for these Sinhala and Okinawan examples with an embedded *wh*-phrase that obtains matrix scope. A TP-internal Qu-morpheme contains a Focus-feature that forces it to be Merged in a position adjoined to either the *wh*-phrase or the embedded clause containing the *wh*-phrase. In each case, the Qu- and Focus-features of the Qu-morpheme move on to the matrix Foc and Typ projections. Movement is driven by EPP features. The Focus-feature in the matrix Foc is pronounced as the verbal affix *-E* in Sinhala and *-RA* in Okinawan. The verb raises at least to T, although possibly even to Foc. In the simplified diagram in (55), the Qu-morpheme is adjoined to the *wh*-phrase within the embedded TypP and in (56), the Qu-morpheme is adjoined to the embedded TypP.

(55)



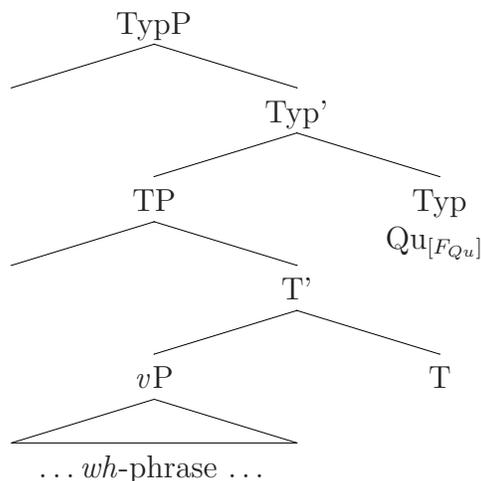
(56)



The Focus-feature raises to the matrix Foc and focuses the *wh*-phrase, as in (55), or it focuses the embedded clause containing the *wh*-phrase, as in (56), and the Qu-feature raises to Typ where it types the matrix clause as an interrogative. When the

Qu-morpheme occurs in a clause-peripheral position, it lacks a Focus-feature and is simply Merged in the matrix Typ. A diagram is shown below.

(57)



If this analysis is on the right track, in a *wh*-construction in languages such as Sinhala and Okinawan, a Qu-morpheme with a Focus-feature adjoins to a *wh*-phrase. Movement of the Focus-feaure to Foc gives the *wh*-phrase scope and also focuses it. The Qu-morpheme's Qu-feature also moves to Typ. When a Qu-morpheme appears in a clause-peripheral position, it lacks a Focus-feature and is Merged directly in Typ.

### 5.5 Qu-morphemes and island effects

I next turn to *wh*-constructions in Sinhala and Okinawan that require the Qu-morpheme to appear at the edge of an embedded clause. When a Qu-morpheme occurs inside of certain types of embedded clauses, such as a complex-DP, *whether/if*-clause, or adjunct clause, then there is an island effect (see chapter 2.6). If the Qu-morpheme occurs at the edge of this type of clause, then there is no island effect. The configuration in (58a) is ill-formed but that in (58b) is acceptable.

(58) (a) \* $[_{TypP} \dots [_{complex-DP/whether/if-clause/adjunct-clause} \dots wh\text{-phrase} \mathbf{Qu} \dots ] \dots ]$

- (b) [ $_{TypP}$  ... [ $_{complex-DP/whether/if-clause/adjunct-clause}$  ... *wh*-phrase ...] **Qu** ...]

In this section, I show that these island effects result from Qu-feature movement.

In (59a), the Qu-morpheme is adjacent to *kaa-tə* ‘who-DAT’ inside of a complex-DP, and ill-formedness results. The complex-DP then functions as an island. In (59b), the Qu-morpheme is adjacent to the complex-DP, and the result is well-formed.

(59) Sinhala:

- (a) \**Oyaa* [ $_{DP}$  [ $_{TypP}$  *Chitra kaa-tə də dunnə*] *potə*] *kieuwe?*  
 you Chitra who-DAT Qu gave book read.E  
 ‘You read the book that Chitra gave to whom?’
- (b) *Oyaa* [ $_{DP}$  [ $_{TypP}$  *Chitra kaa-tə dunnə*] *potə*] **də** *kieuwe?*  
 you Chitra who-DAT gave book Qu read.E  
 ‘You read the book that Chitra gave to who?’ (Kishimoto 2005:29)

The same is true for adjunct clauses. In the ill-formed (60a) the Qu-morpheme is inside of the adjunct clause (the embedded TypP), and in the well-formed (60b), the Qu-morpheme is at the edge of the clause.

(60) Sinhala:

- (a) \* $[_{TypP}$  *Chitra monəwa də kanə koʔə*] *Ranjit pudumə*  
 Chitra what Qu ate time Ranjit surprise  
*unee?*  
 became.E  
 ‘What<sub>1</sub> was Ranjit surprised when Chitra ate t<sub>1</sub> ?’ (Kishimoto 2005:29)
- (a)  $[_{TypP}$  *Chitra monəwa kanə koʔə*] **də** *Ranjit pudumə unee?*  
 Chitra what ate time Qu Ranjit surprise became.E  
 ‘What<sub>1</sub> was Ranjit surprised when Chitra ate t<sub>1</sub>?’ (Kishimoto 2005:30)

Similarly, when a *wh*-phrase with an adjacent Qu-morpheme occurs within an embedded *whether/if*-clause the result is ill-formed, as in (61a). Otherwise, when the Qu-morpheme is at the edge of the *whether/if*-clause, the result is well-formed, as shown in (61b).

(61) Sinhala:

- (a) *?\*Ranjit* [<sub>TypP</sub> *Chitra monəwa də kieuwa də-nəddə kiyəla*]  
 Ranjit Chitra what Qu read.A whether that  
*danne?*  
 know.E  
 ‘What<sub>1</sub> does Ranjit know whether Chitra read t<sub>1</sub>?’
- (b) *Ranjit* [<sub>TypP</sub> *Chitra monəwa kieuwa də-nəddə kiyəla*] *də*  
 Ranjit Chitra what read.A whether that Qu  
*danne?*  
 know.E  
 ‘What<sub>1</sub> does Ranjit know whether Chitra read t<sub>1</sub>? (Kishimoto 2005:29-30)’

The facts are identical in Okinawan. Example (62a) shows a *wh*-phrase and adjacent Qu-morpheme in a complex-DP. This is ill-formed, but when the Qu-morpheme is at the edge of the complex-DP, well-formedness results, as in (62b).

(62) Okinawan:

- (a) *\*[DP* [<sub>TypP</sub> *taa-ga-ga ka-chee-ru*] *shimuchi*]  
 who-NOM-Qu write-have-NOM book(-ACC)-TOP  
*John-oo yuda-ra?*  
 John-TOP read-RA  
 ‘[Who the hell]<sub>1</sub> did John read the book that t<sub>1</sub> had written?’
- (b) [<sub>DP</sub> [<sub>TypP</sub> *taa-ga ka-chee-ru*] *shimuchi*]-*ga*  
 who-NOM write-have-NOM book(-ACC)-TOP-**ga**  
*John-oo yuda-ra?*  
 John-TOP read-RA

‘[Who the hell]<sub>1</sub> did John read the book that t<sub>1</sub> had written?’ (Miyara 2001:52)

When the Qu-morpheme is within an adjunct clause as in (63a), ill-formedness results. When it is at the edge of the adjunct clause as in (63b), the result is well-formed.

(63) Okinawan:

- (a) <sup>\*</sup><sub>[*TypP*]</sub> **Nuu-ga** *chichi-gachiinaa*] *John-oo* *benkyoosa-ra?*  
 what(-ACC)-Qu listening-while John-TOP studied-RA

‘[What the hell]<sub>1</sub> did John study while listening to t<sub>1</sub>?’

- (b) [<sub>[*TypP*]</sub> **Nuu** *chichi-gachiinaa*]-**ga** *John-oo* *benkyoosa-ra?*  
 what(-ACC) listening-while-Qu John-TOP studied-RA

‘[What the hell]<sub>1</sub> did John study while listening to t<sub>1</sub>?’ (Miyara 2001:38)

These constructions suggest that it is the position of the Qu-morpheme that determines whether or not there is an island effect. Specifically, when a Qu-morpheme appears in certain types of clauses such as a complex-DP, *whether/if*-clause, or adjunct clause, there is an island effect. When the Qu-morpheme appears at the edge of these types of clauses, there is no island effect. Hagstrom (1998) argues that when the Qu-morpheme is contained within an island it undergoes covert movement that causes an island effect. I adopt this analysis, in a slightly modified version. I claim that the Qu-morpheme does not undergo LF movement. Instead, it remains in-situ, but its’ Qu- and Focus-features move at Spell-Out. The Qu-morpheme does not move because in these languages, Qu- and Focus-features are able to separate from it. These features, however, are subject to blocking effects that result in the island effects discussed here.

First of all, I propose that the complex-DP and adjunct-island effects have the same cause, which is the inability to extract a feature out of an adjunct because the adjunct has been renumerated (see discussion of renumeration in chapter 2.6.2).

In (59a) and (62a), the Qu-morpheme is contained within an adjunct modifier of a nominal within a Complex-DP. In (60a) and (63a), the Qu-morpheme is within an adjunct clause. According to Johnson's (2002) notion of renumeration, an adjunct is assembled and reinserted into a numeration. It essentially functions as a fixed lexical item, and nothing can be extracted from it. Therefore, Qu- and Focus-features cannot escape from an adjunct and raise to Typ and Foc. For example, in (59a), repeated below, the adjunct clause is assembled via Merge.

(59) Sinhala:

- (a) \**Oyaa* [<sub>DP</sub> [<sub>TypP</sub> *Chitra kaa-tə də dunnə*] *potə*] *kieuwe?*  
 you Chitra who-DAT Qu gave book read.E  
 'You read the book that Chitra gave to whom? (Kishimoto 2005:29)

(64) shows the numeration of (59a), after the adjunct has been assembled and renumerrated.

(64) N = {*Oyaa*, < *Chitra kaa-tə də dunnə*>, *potə*, *kieuwe* }

The adjunct clause functions as a lexical item that is selected from the numeration and Merged with the nominal *potə* 'book' within the complex-DP. Since the adjunct clause is a fixed lexical item, Qu- and Focus-features cannot move out of it.

In a construction such as (60a), repeated below, the Qu-morpheme is also contained within an adjunct clause that is renumerrated.

(60) Sinhala:

- (a) \*<sub>[TypP</sub> *Chitra monəwa də kanə koʔə*] *Ranjit pudumə*  
 Chitra what Qu ate time Ranjit surprise  
*unee?*  
 became.E  
 'What<sub>1</sub> was Ranjit surprised when Chitra ate t<sub>1</sub>? (Kishimoto 2005:29)

The adjunct clause is formed via Merge and then put back into the numeration as a single lexical item. (65) shows the numeration of (60a), once the adjunct clause is renumerated.

(65)  $N = \{ \langle \text{Chitra monəwa də kanə koʔə} \rangle, \text{Ranjit, pudumə, unee} \}$

This numeration results in an ill-formed construction because the Qu- and Focus-features are unable to move out of the adjunct-clause.

When the Qu-morpheme appears at the edge of a complex-DP or adjunct-clause, it is an element that is base-generated outside of the clause. For example, the Numeration of (59b), repeated below, is as shown in (66).

(59) Sinhala:

(b) *Oyaa* [<sub>DP</sub> [<sub>TypP</sub> *Chitra kaa-tə dunnə*] *potə*] **də** *kieuwe?*  
 you Chitra who-DAT gave book Qu read.E  
 ‘You read the book that Chitra gave to who? (Kishimoto 2005:29)

(66)  $N = \{ \text{Oyaa, } \langle \text{Chitra kaa-tə dunnə} \rangle, \text{də, potə, kieuwe} \}$

The Qu-morpheme is not part of the complex-DP. The Qu-morpheme Merges with the Complex-DP, and its Qu- and Focus-features are able to move freely to Typ and Foc. The same is true when the Qu-morpheme appears outside of the adjunct-clause in (60b), repeated below. It is outside of the adjunct clause, as shown in the Numeration in (67). The Qu-morpheme is able to Merge with the adjunct-clause and its Qu- and Focus-features can move freely to Typ and Foc.

(60) Sinhala:

(b) [<sub>TypP</sub> *Chitra monəwa kanə koʔə*] **də** *Ranjit pudumə unee?*  
 Chitra what ate time Qu Ranjit surprise became.E  
 ‘What was Ranjit surprised when Chitra ate? (Kishimoto 2005:30)

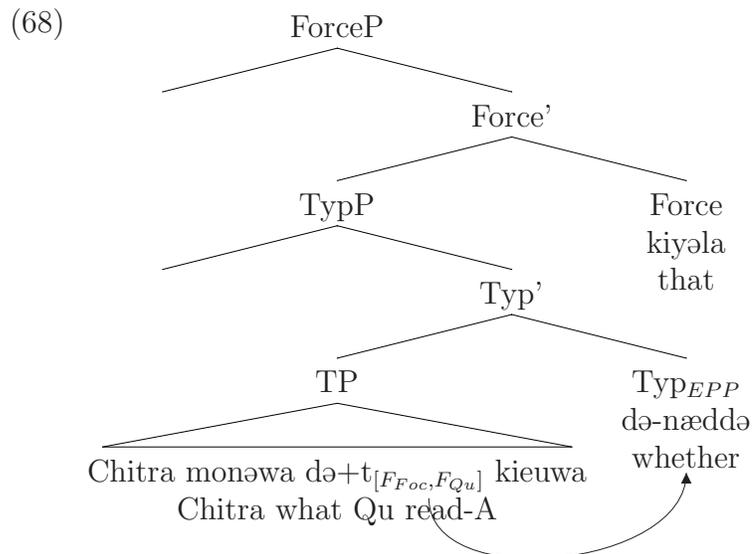
(67)  $N = \{ \langle \text{Chitra monəwa kanə koʔə} \rangle, \text{də, Ranjit, pudumə, unee} \}$

In a construction such as (61a), repeated below, the Qu-morpheme is contained within a *whether/if*-clause. In this case, unlike with an adjunct clause, ill-formedness results from a violation of the Minimal Link (MLC) condition (see chapter 2.6 and 2.7 for discussion of the MLC).

(61) Sinhala:

- (a) *?\*Ranjit* [<sub>TypP</sub> *Chitra monəwa də kieuwa də-nəddə kiyəla*]  
 Ranjit Chitra what Qu read.A whether that  
*danne?*  
 know.E  
 ‘What<sub>1</sub> does Ranjit know whether Chitra read t<sub>1</sub>?’

Movement of the Qu- and Focus-features to Typ is blocked by *də-nəddə* ‘whether’ in the embedded clause. This blocking effect can be accounted for as resulting from *də-nəddə* ‘whether’ being an element of the same type (having a quantificational element) as a Qu- and Focus-feature. I propose that movement of these features is driven by an EPP feature in the embedded Typ, but *də-nəddə* ‘whether’ blocks the features from landing in Typ, thus preventing them from moving on to the matrix clause. A simplified diagram is shown below.



In summary, a Qu-morpheme cannot appear adjacent to a *wh*-phrase in certain types of embedded clauses such as complex-DPs, adjunct clauses, and *whether/if*-clauses because movement of Qu- and Focus-features from the Qu-morpheme cannot occur, either due to renumeration or an MLC effect. If my proposal that a Focus-feature forces TP-internal Merge of a Qu-morpheme is correct, then when a *wh*-phrase is within an island, a Qu-morpheme cannot focus the *wh*-phrase. The clause containing the *wh*-phrase, however, can be focused by an adjacent Qu-morpheme. Thus, when a Qu-morpheme appears at the edge of this type of clause, the clause functions as an identificational focus.<sup>14</sup>

## 5.6 Remaining problems regarding TP-internal Qu-morphemes in Sinhala

In this section, I examine some perplexing facts regarding Qu-morphemes that must appear in a TP-internal position in Sinhala. First of all, I discuss the fact that certain verbs impose restrictions on the position of the Qu-morpheme. Specifically, certain verbs require a Qu-morpheme to appear adjacent to a *wh*-phrase, when the *wh*-phrase occurs in a clausal complement to the verb. Secondly, in a matrix clause, a Qu-morpheme generally has to appear adjacent to a *wh*-phrase.

### 5.6.1 Embedded *wh*-constructions

As discussed in section 5.4, in Sinhala, a Qu-morpheme may either appear adjacent to or separate from a *wh*-phrase when the *wh*-phrase is in an embedded clausal complement of certain verbs, such as “*dannəwa* ‘know,’ *hoya bəɾənəwa* ‘examine,’ *parikfaa kəɾənəwa* ‘look into, inspect,’ and *teerenəwa* ‘understand’ (Kishimoto 2005:8).” However, not all verbs that can take an interrogative complement clause allow this freedom in the position of the Qu-morpheme.

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<sup>14</sup>In a well-formed construction of this sort in which a Qu-feature appears at the edge of a potential island, the embedded *wh*-phrase obtains scope without incurring an island effect. I address this issue in chapter 6.

When verbs such as “*ahanəwa* ‘ask,’ *prasnə kəṛənəwa* ‘question,’ and *hitenəwa* ‘consider’ (Kishimoto 2005:8),” have a complement clause that is a *wh*-construction, the Qu-morpheme must appear adjacent to the *wh*-phrase in the configuration in (69a). (69b) is ill-formed.

- (69) (a) [ $T_{ypP}$  ... [ $T_{ypP}$  ... *wh*-phrase **Qu** ...] ...]  
 (b) \* $[T_{ypP}$  ... [ $T_{ypP}$  ... *wh*-phrase ... **Qu** ] ...]

For example, (70a-b) show that this requirement holds when the matrix verb is *əhuwa* ‘asked.’ When the Qu-morpheme is adjacent to the *wh*-phrase in (70a), the result is well-formed, but when it is separated from the *wh*-phrase in (70b), the result is ill-formed.

(70) Sinhala:

- (a) *Ranjit [kauru də aawe kiyəla] əhuwa.*  
 Ranjit who Qu came.E that asked.A  
 ‘Ranjit asked who came.’  
 (b) \**Ranjit [kauru aawa də kiyəla] əhuwa.*  
 Ranjit who came.A Qu that asked.A  
 ‘Ranjit asked who came.’ (Kishimoto 2005:8)

Whether or not a Qu-morpheme in a complement clause can separate from an associated *wh*-phrase then is dependent on the matrix verb. The following examples make this clear. Compare (70a-b) above with (45a-b), repeated below, in which the matrix verb is *dannəwa* ‘know.’ Whereas the Qu-morpheme can be separated from the *wh*-phrase *kauru* ‘who’ in (45b), the same is not true in the virtually identical (70b) above. The only difference between these constructions is the matrix verb.

(45) Sinhala:

- (a) *Ranjit [kau də aawe kiyəla] dannəwa.*  
 Ranjit who Qu came.E that know.A  
 ‘Ranjit knows who came.’ (Kishimoto 2005:7)

- (b) *Ranjit [kauru aawa də kiyəla] dannəwa.*  
 Ranjit who came.A Qu that know.A  
 ‘Ranjit knows who came.’ (Kishimoto 2005:6)

Assuming that when the Qu-morpheme is adjoined to the *wh*-phrase, as in (70a), the *wh*-phrase is an identificational focus, as I have claimed is the case in the previous section, then a *wh*-phrase in the complement clause of certain verbs must be an identificational focus.

In order to determine why a *wh*-phrase in the complement of certain verbs must be an identificational focus, it is necessary to examine the distinction between verbs that require a Qu-morpheme to appear adjacent to a *wh*-phrase in a complement clause and those that do not. (71) shows verbs that fall into these two categories. This list is by no means exhaustive. *Qu-separate* refers to verbs that allow the Qu-morpheme to separate from a *wh*-phrase in a complement clause and *Qu-adjacent* refers to verbs that require the Qu-morpheme to be adjacent to a *wh*-phrase.

(71)

Qu-separate	Qu-adjacent
“ <i>dannəwa</i> ‘know’	‘ <i>ahanəwa</i> ‘ask’
<i>hoya bəṛənəwa</i> ‘examine’	<i>prasnə kəṛənəwa</i> ‘question’
<i>parikfaa kəṛənəwa</i> ‘look into, inspect’	<i>hitənəwa</i> ‘consider’
<i>teerenəwa</i> ‘understand’	

Unfortunately, it is not clear what the distinction between these two types of verbs is. Kishimoto (2005:9) writes that “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 example, both *dannəwa* ‘know’ and *hoya bəṛənəwa* ‘examine’ allow the Qu-morpheme to appear both adjacent to the *wh*-phrase and clause-finally in the complement clause, yet *dannəwa* ‘know’ allows a declarative complement, but *hoya bəṛənəwa* ‘examine’

does not, as shown below.

(72) Sihhala:

*Ranjit [Chitra aawa kiyəla] dannəwa/\*hoya bəranəwa.*  
 Ranjit Chitra came that know-A/examine-A  
 ‘Ranjit knows/examines that Chitra came.’ (Kishimoto 2005:9)

The distinction between the two types of verbs likely has to do with their semantics. Gair & Sumangala (1991:96) write that when a Qu-morpheme can occur separated from a *wh*-phrase in an embedded clause, the embedded clause refers to “general doubt.” If this is the case, then the class of verbs that does not allow an embedded clause to express general doubt requires the Qu-morpheme to be adjoined to a *wh*-phrase, and the class of verbs that allows a complement clause to express general doubt allows the Qu-morpheme to be separated from a *wh*-phrase. The verbs in the first column of (73) allow a complement to express general doubt, whereas the verbs in the second column do not.

(73)

Qu-separate: permit general doubt	Qu-adjacent
“ <i>dannəwa</i> ‘know’	‘ <i>ahanəwa</i> ‘ask’
<i>hoya bəranəwa</i> ‘examine’	<i>prasnə kəranəwa</i> ‘question’
<i>parikfaa kəranəwa</i> ‘look into, inspect’	<i>hitenəwa</i> ‘consider’
<i>teerenəwa</i> ‘understand’	

However, if general doubt is involved, why certain verbs allow an interrogative complement to express general doubt and other verbs do not becomes an issue. Further examination of the semantic distinction between these two types of verbs is required.

5.6.2 Matrix *wh*-constructions

I next turn to another instance in Sinhala in which a Qu-morpheme must appear adjacent to a *wh*-phrase. In a matrix clause, a Qu-morpheme generally must be adjacent to its associated *wh*-phrase,<sup>15</sup> as shown in (74a-b).

- (74) (a) [<sub>TypP</sub> ... *wh*-phrase **də** ...]  
 (b) \*<sub>[TypP</sub> ... *wh*-phrase ... **də** ]

For example, the Qu-morpheme must attach onto the matrix *wh*-phrase in (75a) below. The verb also shows up with the special ‘-E’ ending. When the Qu-morpheme is separated from the *wh*-phrase in (75b), ill-formedness results.

(75) Sinhala:

- (a) *Oyaa mokak də dække?*  
 you what Q see-PAST.E  
 ‘What did you see?’
- (b) \**Oyaa mokak dække də?*  
 you what see-PAST.E Qu (Sumangala 1992:212)

One possibility is that in a matrix clause, a *wh*-phrase of this sort simply must be an identificational focus. If this is the case, then the Qu-morpheme contains a Focus-feature which forces it to adjoin to the *wh*-phrase. There is a problem for this analysis though. According to Sumangala, (75a) has two possible meanings, both given in (76). Meaning (i) is a standard *wh*-construction in which the *wh*-phrase presumably only receives an information focus interpretation, and in (ii) the *wh*-phrase functions as an identificational focus, as can be seen in the clefted gloss.

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<sup>15</sup>The exception are scalar *wh*-words such as *kiidenek* ‘how many (animate),’ *kiiyak* ‘how many (inanimate),’ and *koccerə* ‘how much.’ See example (42) above.

(76) Sinhala:

*Oyaa mokak-də dække?*  
 you what-Q see-PAST.E

(i) ‘What did you see?’

(ii) ‘What is it that you saw?’ (Sumangala 1992:212)

The fact that an identificational focus-interpretation is permitted, as indicated by meaning (ii) is accounted for straightforwardly. The Qu-morpheme contains a Focus-feature and adjoins to the *wh*-phrase. The Focus- and Qu-features then undergo movement to Foc and Typ. However, if Sumangala is correct about meaning (i) being permitted, then focus is not always the reason why the Qu-morpheme must appear adjacent to the *wh*-phrase.

Why exactly a Qu-morpheme must adjoin to a non-scalar *wh*-phrase in a matrix clause thus remains to be explained. Gair & Sumangala (1991) suggest that an explanation for this distinction between scalar and non-scalar *wh*-phrases has to do with the semantics of the *wh*-phrase, although they also express their lack of understanding of this distinction. Gair & Sumangala (1991:97) write the following.

At present, we have no explanation for why quantifier [scalar] WHs should be exceptions to the general rule [that requires a Qu-morpheme to be adjacent to a *wh*-phrase], though we assume that it is a function of their semantic character.

Note that the requirement that a Qu-morpheme occur adjacent to a non-scalar *wh*-phrase clearly is not universal. In Okinawan, a language that like Sinhala allows some variability in the positions of Qu-morphemes in *wh*-constructions, the Qu-morpheme can be separated from a non-scalar matrix *wh*-phrase, as can be seen in (43a-b) above.

### 5.6.3 Summary

In summary, the Sinhala Qu-morpheme must appear adjacent to a *wh*-phrase in the two following situations given in (77a-b).

- (77) (a) an embedded clausal complement of certain matrix verbs such as  
       ‘*ahanəwa* ‘ask,’ *prasnə kəɾənəwa* ‘question,’ and *hitenəwa* ‘consider’
- (b) a matrix clause with a non-scalar *wh*-phrase

These facts leave much unexplained. I have argued that in situation (77a), the Qu-morpheme must occur adjacent to the *wh*-phrase because the *wh*-phrase must be an identificational focus. Why this is the case is an issue that I leave unresolved, but the explanation appears to have to do with the semantics of a matrix verb. If Sumangala’s claim that a *wh*-phrase in situation (77b) need not have an identificational focus interpretation is correct, then there may be some constraint that requires the Qu-morpheme to be adjacent to a non-scalar *wh*-phrase in a matrix clause, regardless of whether or not the Qu-morpheme has a Focus-feature. Furthermore, if Sumangala is correct, then whereas if a Qu-morpheme has a Focus-feature it must be adjacent to a *wh*-phrase, as discussed in section 5.4, the converse is not necessarily true. If a Qu-morpheme is adjacent to a *wh*-phrase there may be instances in which the Qu-morpheme lacks a Focus-feature. Further examination of this issue is required.

## 5.7 Comparison with previous analyses

Previous analyses of TP-internal Qu-morphemes have relied on notions of operator and LF movement to account for the facts. I briefly compare some of these analyses with my own.

Kishimoto (2005) claims that in a *wh*-construction, a Qu-morpheme is always Merged in a TP-internal position adjoined to a *wh*-constituent. Kishimoto writes

that “the Q-particle *də* serves primarily to delimit a *wh*-constituent in a *wh*-question (16).” As I understand this, the term ‘delimit’ refers essentially to focusing an element, as Kishimoto (2005:16-17) writes that *də* “serves to pick out a focused constituent in a *wh*-question.” Evidence for this proposal is that when a Qu-morpheme occurs in clause-final position as in (78a), a minimal answer of (78b) is fine.

- (78) (a) *Q: Chitra kiidenek dækka də?*  
           Chitra how.many saw.A Qu  
           ‘How many (people) did Chitra see?’
- (b) *A: tundenek.*  
           two  
           ‘Two (people).’ (Kishimoto 2005:19)

Kishimoto argues that if the Qu-morpheme were initially Merged in a clause-peripheral position it would delimit the entire *wh*-construction, and thus a minimal answer that just refers to the *wh*-phrase should not be allowed. However, under my analysis, a clause-final Qu-morpheme is Merged directly in Typ and it simply lacks a Focus-feature. Therefore, in a construction such as (78a), the Qu-morpheme does not focus the entire clause, and a minimal answer that only refers to the *wh*-phrase should be acceptable.

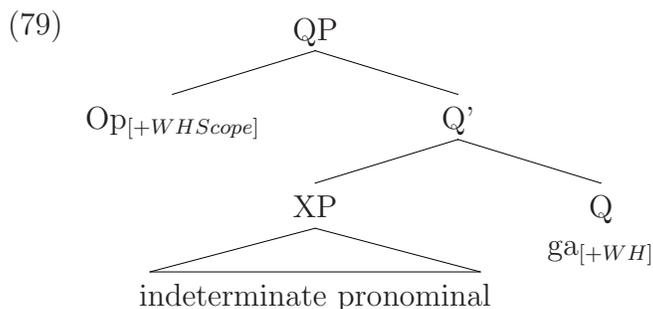
Kishimoto argues that a Qu-morpheme is an operator that raises to the scope position of the *wh*-phrase. Notably, this movement can occur either at PF, in which case the Qu-morpheme appears in a clause-peripheral position, or at LF, in which case the Qu-morpheme remains in a TP-internal position adjoined to a delimited *wh*-constituent. Kishimoto proposes that a verb in the clause where the *wh*-phrase has scope has a [+Q] feature that is either strong or weak. When the [+Q] feature is weak, the verb shows up with the *-E* ending, and the Qu-morpheme remains in-situ adjoined to a *wh*-constituent. A weak [+Q] feature can be checked at LF. Therefore, the Qu-morpheme moves to [Spec, CP] at LF and checks the [+Q] feature. When the [+Q] feature is strong, it forces overt movement of the Qu-morpheme to the

clause-periphery. Movement of the Qu-morpheme checks the strong [+Q] feature on the verb. If I understand correctly, the verb raises to C where its [+Q] feature is eliminated via “a Spec-head configuration (23)” between the verb in C and the Qu-morpheme in [Spec, CP].

My analysis differs from Kishimoto’s in several respects with regard to the nature of a Qu-morpheme and with regard to what triggers Qu-morpheme movement. First of all, I assume that a Qu-morpheme is a head and not a specifier. Specifiers in Sinhala appear to precede their heads. Thus, if the Qu-morpheme were a specifier, one would expect that when in the clause periphery, it would come at the beginning of a clause. The notion that the Qu-morpheme is a head accounts straightforwardly for its clause-final position when it is not in a TP-internal position. Also, Kishimoto accounts for whether a Qu-morpheme appears in a TP-internal or a clause-peripheral position, and for the appearance of the verbal ending ‘-E’ in terms of a strong or weak [+Q] feature on a verb. As I see it, a Qu-feature is responsible for typing a clause and is associated with a clause peripheral Typ projection, not with a verb. My analysis accounts for the ‘E’ ending on a verb as simply being a moved Focus-feature, and whether or not a Qu-morpheme appears in a TP-internal or clause-peripheral position is dependent on whether or not a Qu-morpheme has a Focus-feature. An advantage of my analysis is that it directly connects the position of the Qu-morpheme with the presence of a focus-interpretation when the Qu-morpheme is in a TP-internal position, and with the lack of a focus interpretation when the Qu-morpheme is in a clause-peripheral position.

I next turn to Okinawan. Sugahara (1996) argues that what I have been referring to as a Qu-morpheme, *ga*, is actually a [+WH] element that is the head of a quantificational phrase QP. This particle *ga* takes as its complement a *wh*-phrase, which Sugahara argues is an indeterminate pronominal that is bound by a null operator that has a [+WH Scope] feature, and that is located in the specifier of the QP. The structure of a *wh*-phrase with an adjacent Qu-morpheme is given as follows, from

Sugahara (1996:239).



Furthermore, Sugahara argues that the verbal agreement ending ‘-RA’ has a [+WH Scope] feature and is the head of a Modal Phrase (MP) that is located in a position above TP, which accounts for why it follows tense. The null [+WH Scope] operator in the [Spec, QP] position moves to the specifier of the modal phrase to check the [+WH Scope] feature of ‘-RA.’

Sugahara’s analysis has several aspects that I find problematic. First of all, if the Qu-morpheme is the head of a TP-internal QP, then it is not clear where it is when it appears in a clause-peripheral position. Also, this analysis does not make a connection between the fact that the TP-internal *ga* is homophonous with the *ga* that occurs in a yes/no construction. As I see it, *ga* occurs in yes/no and *wh*-constructions because it is a Qu-morpheme. It is not a *wh*-element. Lastly, I account for the special verbal ending ‘-RA’ as being the pronunciation of a Focus-feature, as ‘-RA’ occurs when there is a TP-internal Qu-morpheme adjoined to a focused *wh*-phrase. There is no need to postulate movement of a null *wh*-operator to explain its existence.

Miyara (2001) takes a different view of the nature of the Okinawan Qu-morpheme *ga*. Miyara assumes that the clause-final *ga* is a Qu-morpheme, but the TP-internal *ga* is an emphatic particle. Thus, there are two distinct *ga* elements. Furthermore, Miyara assumes that the special verbal agreement ending ‘-RA’ that occurs when a Qu-morpheme appears in a TP-internal position is a Qu-morpheme. This can be seen in the glosses of the following constructions. In (80a), the clause final *ga*

is glossed as a Qu-morpheme, but in (80b), the TP-internal *ga* is glossed as an emphatic particle and the ‘-RA’ ending is glossed as a Qu-morpheme.

- (80) (a) *Taa-ga ich-u-ga?*  
 who-NOM go-PRES-Qu  
 ‘Who is going?’
- (b) *Taa-ga-ga ich-u-ra?*  
 who-NOM-EMPH go-PRES-Qu  
 ‘Who is going?’ (Miyara 2001:27)

The glossing of the TP-internal *ga* as an emphatic particle is in agreement with my notion that the TP-internal Qu-morpheme has a Focus-feature, but it misses the connection between the TP-internal and the clause-peripheral occurrences of *ga*. Both versions of *ga* serve the function of typing a clause as an interrogative, and so I think that the Qu-morpheme label is appropriate. Furthermore, I do not think there is any clear evidence that ‘-RA’ is a Qu-morpheme, since it only occurs when there is a TP-internal *ga*, whereas *ga* occurs in all *wh*-constructions.

Hagstrom (1998) argues that in a *wh*-construction in *wh*-in-situ languages such as Sinhala, Okinawan, Premodern Japanese, and Modern Japanese, a Qu-morpheme is base generated in a position adjacent to a *wh*-phrase. From this position the Qu-morpheme moves to C. This movement can be overt, in which case the Qu-morpheme must appear in the clause periphery, or this movement can be at LF, in which case the Qu-morpheme appears in a TP-internal position. There are two aspects of this analysis that I think can be revised. First of all, although Hagstrom acknowledges that a TP-internal Qu-morpheme focuses a constituent in a yes/no construction, if I understand correctly, his analysis does not account for the focus facts. My analysis accounts for these facts with the notion that a TP-internal Qu-morpheme contains a Focus-feature and focuses a particular *wh*-phrase. Secondly, if a Qu-morpheme is always base generated as part of a *wh*-phrase in a *wh*-construction, then the issue arises of what happens in a yes/no construction. In yes/no constructions in

which there is no focused phrase, the Qu-morpheme appears in the clause-periphery. Thus, in these cases, it seems most likely that the Qu-morpheme is base generated in Typ, as there is no TP-internal phrase for it to be base generated next to. Under my analysis, the *wh*-construction facts are identical; if there is no identificationally focused *wh*-phrase, then the Qu-morpheme is base generated in Typ. Thus, it is not clear that a Qu-morpheme must always be base generated in a position adjacent to a *wh*-phrase.

Another aspect that I differ from Hagstrom on is with respect to the special verbal endings in Sinhala. Hagstrom writes that when the Sinhala Qu-morpheme remains adjoined to a *wh*-phrase, the ‘-E’ suffix indicates that it will move at LF. When the Qu-morpheme moves overtly, then the ‘-E’ suffix does not occur. Hagstrom (1998:33) writes the following.

... the ‘-E’ suffix is a morphological reflection of an “unsatisfied property” of the surface representation. ‘-E’ reflects a feature which is “checked” or “satisfied” by the movement of the focus or interrogative particle to the clause periphery. If this movement has not taken place overtly, ‘-E’ appears indicating that this movement is “yet to occur,” i.e. occurs covertly.

In other words, ‘-E’ indicates that the Qu-morpheme will move at LF. If the Qu-morpheme moves overtly, then the ‘-E’ suffix does not occur on the verb. Therefore, “[t]he unsatisfied property marked by ‘-E’ is only resolved by a suffixation of the focus/question particle to the verb (33).” As I see it, there is no LF movement involved. The special verbal agreement ending is simply a Focus-feature that has moved overtly from a TP-internal Qu-morpheme to Foc, where it is Spelled-Out as ‘-E.’

In summary, although the analyses discussed in this section make interesting claims that are worthy of closer examination, they have problems. They rely on notions that a Qu-morpheme is a specifier, null operator movement, strong and

weak Qu-features, and/or LF movement. My analysis does not require any of these elements. Furthermore, these analyses do not, for the most part, account for the focusing effects involving Qu-morphemes, whereas my analysis does; a Qu-morpheme with a Focus-feature focuses an associated phrase. Lastly, these analyses account for Qu-morpheme positions in *wh*-constructions, but they do not extend to yes/no constructions. My analysis has the advantage of accounting for *wh*-construction facts in the same manner as in yes/no constructions. The position of a Qu-morpheme in a yes/no or *wh*-construction is dependent on whether or not it contains a Focus-feature.

## 5.8 Conclusion

In this chapter, I examined cross-linguistic variation in the positions of Qu-morphemes in several different types of *wh*-constructions. In an optimal derivation of a *wh*-construction, a Qu-morpheme should be Merged directly in Typ, where its Qu-feature can type a clause without any movement. However, this ‘optimal derivation’ clearly does not always occur, as there are constructions in which a Qu-morpheme does not appear in Typ. I have accounted for this variation as primarily resulting from whether or not a Qu-morpheme contains a Focus-feature.

I have examined the two types of languages listed in (81). A Type 1 language requires its Qu-morpheme to be Merged directly in Typ in the clause-periphery. A Type 2 language allows a Qu-morpheme to either be Merged in Typ or in a TP-internal position.

(81)

Language Type	Typ	TP-internal
1	✓	
2	✓	✓

In the Type 2 languages that I discussed (Sinhala and Okinawan), the position of the Qu-morpheme depends on whether or not it has a Focus-feature. If it has a Focus-feature, it must be Merged in a TP-internal position adjoined to a *wh*-phrase or a constituent containing a *wh*-phrase. If it lacks a Focus-feature, then it is Merged in the clause-periphery in Typ. As discussed in section 5.6, Sumangala claims that a standard non-identificational focus interpretation of a *wh*-phrase is possible even when a Qu-morpheme is adjoined to a matrix non-scalar *wh*-phrase. If true, this is an exception to this last claim that a Qu-morpheme without a Focus-feature is Merged in the clause-periphery. However, this issue requires further examination.

In Sinhala and Okinawan, although a Qu-morpheme can appear in a TP-internal position, it cannot occur inside of an ‘island’ because movement of its Qu- and Focus-features cannot proceed out of the relevant clause, either because the clause has been renumerated or because an intervening element causes an MLC violation. However, in these languages a Qu-morpheme can be Merged in a position adjacent to a potential island, and in this case it serves the function of focusing the island, as well as typing the clause.

This analysis has several positive aspects. It accounts for the special focus-interpretations associated with TP-internal Qu-morphemes that occurs in *wh*-constructions. This analysis is also compatible with the analysis of yes/no constructions in the previous chapter, and thus it accounts for similarities between yes/no and *wh*-construction formation.

In this chapter, I accounted for the syntactic distribution of Qu-morphemes in certain *wh*-constructions. Crucially, a *wh*-construction contains a *wh*-phrase. In the next chapter, I account for the syntactic distribution of *wh*-phrases by examining the role of another interrogative feature; a *wh*-feature.

## CHAPTER 6

*Wh*-features in single *wh*-constructions

## 6.1 Introduction

In this chapter I focus on how a *wh*-feature establishes a relationship with Typ in single *wh*-constructions. I argue that it is this relationship that accounts for much of the crosslinguistic variation in *wh*-constructions.

A *wh*-construction obviously requires a *wh*-element. When a Qu-morpheme occurs and there is no *wh*-phrase, as in (1a) from Japanese, a yes/no construction results. Example (1b) is a *wh*-construction because the Qu-morpheme *ka* co-occurs with a *wh*-phrase.

(1) Japanese:

(a) *Anata-wa kono-hon-ga suki desu ka?*  
 you-TOP this-book-NOM like be Qu  
 ‘Do you like this book?’

(b) *Anata-wa nani-ga suki desu ka?*  
 You-NOM what-NOM like be Qu  
 ‘What do you like?’

I essentially adopt the view argued for by Katz & Postal (1964), Aoun & Li (1993), and Denham (2000), among others, that a *wh*-construction contains a unique *wh*-feature that is separate from a Qu-feature. In order for a *wh*-construction to be formed, Typ must contain a Qu-feature to type the clause as an interrogative, and in addition, a *wh*-feature must value a probe in Typ. I will argue that in a *wh*-construction, a single Typ head contains both a Qu-feature and also a probe that is valued by a *wh*-feature. This probe is responsible for giving a *wh*-phrase scope.

Evidence that both a Qu-feature and a *wh*-feature co-occur in TypP can be seen in languages that have both an overt Qu-morpheme and a *wh*-phrase that occur in a single TypP projection. In Sharanahua,<sup>1</sup> the Qu-morpheme *mun* occurs in clause final position and a *wh*-phrase must occur at the beginning of a clause (Scott & Frantz 1974), as shown in (2).

(2) Sharanahua:

**Ahuua**      *min* *rutu-a-mun*?  
 What-thing you kill-compl-Qu  
 ‘What did you kill?’ (Scott & Frantz 1974:84)

Similarly, Tlingit<sup>2</sup> requires a Qu-morpheme and a *wh*-phrase to appear in a clause-peripheral position (Cable 2007). In (3), the *wh*-phrase *daa* ‘what’ occurs in clause-initial position, followed by the Qu-morpheme *sá* ‘Qu.’

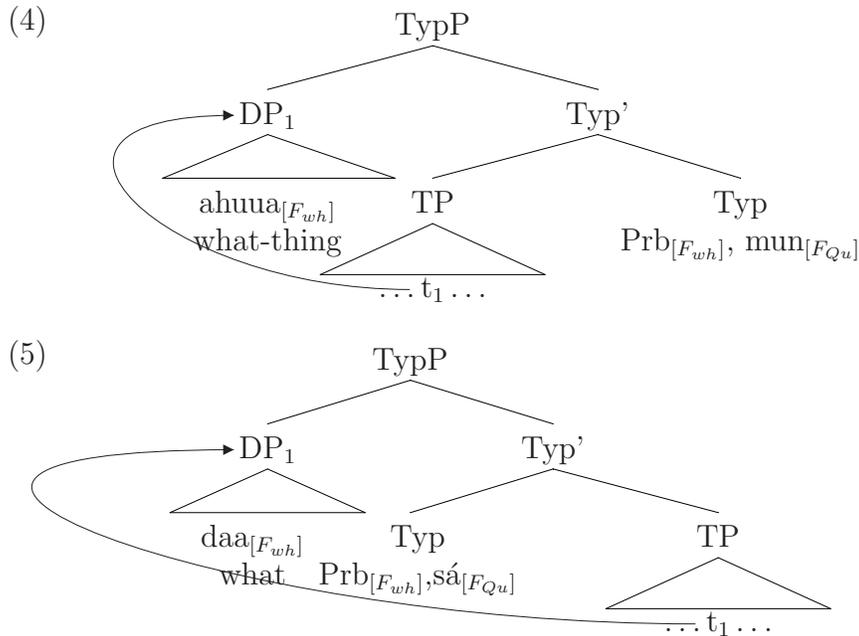
(3) Tlingit:

**Daa** **sá** *kéet*      *aɣ/’a*?  
 what Qu killerwhale he.eats.it  
 ‘What do killerwhales eat?’ (Cable 2007:64)

In these *wh*-constructions in (2) and (3), both the *wh*-phrase and the Qu-morpheme are likely in TypP. The *wh*-phrase moves from within the TP to [Spec, TypP], and the Qu-morpheme is in Typ. The Qu-morpheme has a Qu-feature ( $F_{Qu}$ ) and the *wh*-phrase has a *wh*-feature ( $F_{wh}$ ) that values a probe in Typ, as indicated by the  $F_{wh}$  subscript on the probe Prb (see section 6.4 for further details on how the Probe is valued). Thus, the Typ head in these constructions contains a Qu-feature and also a probe that is valued by the *wh*-feature. The TypP of (2) is shown in (4), and the TypP of (3) is shown in (5).

<sup>1</sup>This a Panoan language spoken in Peru (Scott & Frantz 1974:75).

<sup>2</sup>This is a “Na-Dene language of Alaska, British Columbia and the Yukon (Cable 2007:21).”



I discuss the details of these languages further in section 6.4. The key point here is that *wh*-constructions in these languages provide evidence that both a Qu- and a *wh*-element co-occur in the same TypP projection.

In the following sections, I argue that there are three ways, listed in (6a-c), that a *wh*-feature can obtain scope in Typ.

- (6)
- (a) Agree
  - (b) *Wh*-feature movement
  - (c) *Wh*-phrasal movement

Movement distinguishes these three relationships. A *wh*-feature and a probe in Typ can form an Agree relation (6a), which crucially does not result in island or intervention effects. A *wh*-feature can move to Typ (6b), or a *wh*-phrase can move to [Spec, TypP] (6c). These latter movement options are subject to island and intervention effects.

I propose that which of the three basic methods in (6a-c) is utilized in a *wh*-construction is dependent on the following factors: 1) the presence or absence of

an EPP feature that attracts a *wh*-element in Typ, and 2) the type of EPP feature that occurs (when present). A Typ head may or may not contain an EPP feature that attracts a *wh*-element, depending on the language. When there is no EPP feature, or no EPP feature that attracts a *wh*-element, a *wh*-feature undergoes an Agree relation with a probe in Typ. This relationship crucially does not involve any movement. When there is an EPP feature in Typ, some form of movement of a *wh*-element to TypP must occur. The EPP feature determines how the probe in the scopal TypP head is valued; either by XP movement of a *wh*-phrase to [Spec, TypP] or by  $X^0$  movement of a *wh*-feature to Typ. This notion that an EPP feature can attract an XP or an  $X^0$  element was proposed by Alexiadou & Anagnostopoulou (1998). This view is summarized by Miyagawa (2001) as follows.

The EPP may be satisfied either by moving an appropriate XP to the specifier of the head with the EPP-feature or by raising an appropriate head to the head with the EPP-feature (Miyagawa 2001:295).

I refer to an EPP feature that forces XP movement as an  $EPP^{XP}$  feature<sup>3</sup> and I refer to an EPP feature that forces  $X^0$  movement as an  $EPP^{X^0}$  feature. These three different types of *wh*-construction, utilizing Agree, *wh*-feature movement, or *wh*-phrasal movement are summarized in (7a-c). In 7a) there either is no EPP feature, or if an EPP feature is present, it does not attract a *wh*-element.

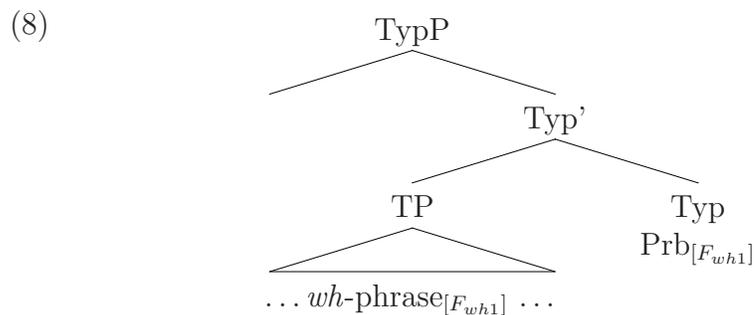
(7)

	Relationship	EPP
(a)	Agree	$\emptyset$
(b)	<i>Wh</i> -feature movement	$EPP^{X^0}$
(c)	<i>Wh</i> -phrasal movement	$EPP^{XP}$

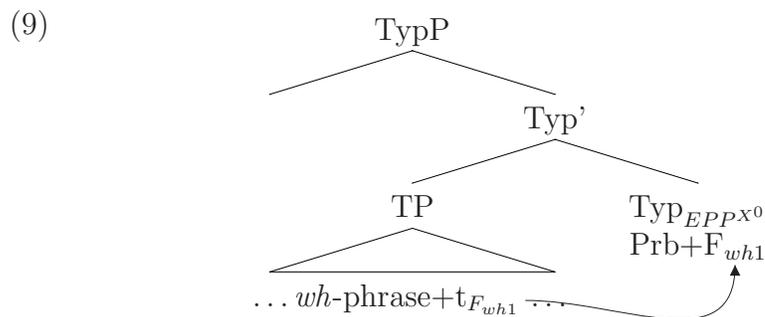
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<sup>3</sup>This is similar to the traditional EPP feature of Chomsky (1981), although in accord with Chomsky (1999, 2000), this EPP feature is associated with a projection other than T.

Example (8) shows an Agree relation between a probe Prb in Typ and the *wh*-feature of an in-situ *wh*-phrase located within the TP. The probe is valued by the *wh*-feature of the *wh*-phrase, and there is no movement of a *wh*-element. The Agree relation is represented by the matching  $F_{wh1}$  subscripts on the probe in Typ and on the *wh*-phrase within the TP.

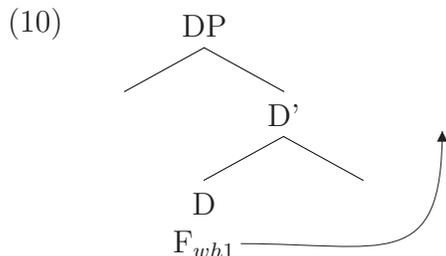


Example (9) shows *wh*-feature movement. An  $EPP^{X^0}$  feature located in Typ attracts the *wh*-feature of an in-situ *wh*-phrase, and the *wh*-feature values a probe, if present,<sup>4</sup> as shown in (9).

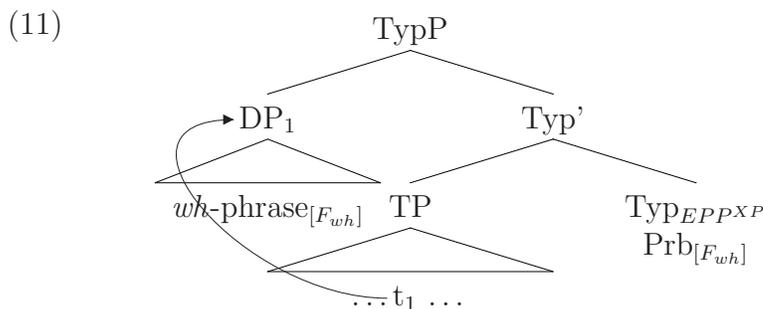


The *wh*-feature is an element that I assume is contained within the head of a *wh*-phrase. So if a *wh*-phrase is a DP, then the *wh*-feature is located within the D head, and when the *wh*-feature moves, it moves from this position, as shown below.

<sup>4</sup>A probe need not be present, such as when a *wh*-feature moves through an embedded clause on its way to a higher clause. In this case, I assume that the embedded clause has an EPP feature, but it does not have a probe. The probe is located in the scopal TypP head.



Example (11) shows *wh*-phrasal movement. In this case, an  $EPP^{XP}$  feature forces a *wh*-phrase to move to [Spec, TypP]. Then, the *wh*-feature associated with the *wh*-phrase values a probe, if present, via a Spec-head relation.



A crucial claim in the following sections is that Agree is not subject to intervention and island effects, whereas movement, whether it be feature movement or phrasal movement, is subject to these effects.<sup>5</sup> Here, I take the position that an EPP feature is sensitive to feature type, whereas Agree is only sensitive to feature content.<sup>6</sup> Specifically, an EPP feature in Typ attracts the closest scope bearing element; generally quantificational and/or focus elements. Thus, if a particular scope bearing element that is not a *wh*-feature intervenes between the EPP and a *wh*-element, attraction of the *wh*-element is blocked. This exact nature of these blocking effects is not entirely clear to me, but it is most likely that Ill-formedness results for one of the following reasons: 1) a feature associated with the intervening scope bearing element raises to Typ, but, not being a *wh*-feature, it is not compatible with the

<sup>5</sup>As discussed in chapter 2.2.4, Chomsky (1999, 2000), among others, takes the position that Agree is subject to blocking effects.

<sup>6</sup>I thank Heidi Harley (p.c.) for suggesting this to me.

probe, 2) the *wh*-feature is unable to value the probe in Typ since it is not attracted by the EPP, and/or 3) the non-*wh*-quantificational feature is attracted by the EPP feature, but it is unable to move, since it is in a position where it already values an uninterpretable feature. Agree, on the other hand, results when a probe simply searches for a feature of the appropriate content, which in the relevant cases discussed in this chapter, is a *wh*-feature. Any other features of the same type, i.e., have a scope bearing quality, but which lack a *wh*-feature, are invisible to an Agree relation, in the relevant cases discussed here. Agree may even hold when a *wh*-phrase is contained within a potential island. Thus, even if a *wh*-phrase is contained within a renumerated clause, there can be an Agree relation between the *wh*-feature of the *wh*-phrase and a probe in Typ because Agree does not involve any movement out of the clause. I elaborate on these distinctions between Agree and movement in the following sections.

In the following sections, I examine how Agree, *wh*-feature movement and *wh*-phrasal movement are utilized to establish a relationship between Typ and a *wh*-feature. In section 6.2, I argue that an Agree relation occurs between Typ and a *wh*-feature in certain *wh*-in-situ languages. Section 6.3 discusses languages in which a *wh*-phrase remains in-situ but its *wh*-feature moves. Section 6.4 focuses on languages in which there is *wh*-phrasal movement. Section 6.5 discusses languages that allow a *wh*-phrase either to undergo full *wh*-movement to a scopal TypP or partial *wh*-movement to a non-scopal TypP. Section 6.6 discusses Malay, a language which allows Agree, full *wh*-movement, and partial *wh*-movement. Section 6.7 is about French, a language which utilizes both overt *wh*-phrasal movement and *wh*-feature movement. Section 6.8 concludes the chapter.

## 6.2 Agree

In this section, I argue that in single *wh*-constructions in Sinhala, Okinawan, and Mandarin, there is no movement of a *wh*-element because Typ does not contain an

EPP feature that attracts a *wh*-element. Neither the *wh*-feature nor its associated *wh*-phrase undergo any movement, and so there are no island- or intervention-effects caused by *wh*-feature movement. There is, however, an Agree relation that is formed between the probe in Typ and a *wh*-feature. This Agree relation gives the *wh*-phrase scope and, together with a Qu-feature, types a clause as a *wh*-construction.

The following examples demonstrate that Sinhala is a *wh*-in-situ language. Example (12a) is a typical SOV construction. Example (12b) is a corresponding *wh*-construction in which the object has been replaced with the *wh*-phrase *monəwa* ‘what.’ Note that the object *wh*-phrase obtains scope but does not undergo any movement; it occurs in the typical preverbal position.

(12) Sinhala:

- (a) *Chitra potə gatta.*  
 Chitra book bought.A  
 Chitra bought the book.
- (b) *Chitra monəwa də gatte*  
 Chitra what Qu bought.E  
 What did Chitra buy? (Kishimoto 2005:3-4)

Examples (13a-b) demonstrate that Okinawan is also a *wh*-in-situ language. In (13a), the object *shishi* ‘meat’ occurs in pre-verbal position where it receives its theta-role in this SOV language, and in the *wh*-construction (13b), the object *wh*-phrase *nuu* ‘what’ occurs in this same position.

(13) Okinawan:

- (a) *Taru-ya shishi kami-N*  
 Taru-TOP meat eat-DECL  
 ‘Taru eats meat.’

- (b) *Taru-ya nuu kamyi-ga*  
 Taru-TOP what ate-Qu  
 ‘What does Taru eat?’ (Sugahara 1996:236)

Examples (14a-b) demonstrate that Mandarin is a *wh*-in-situ language. In (14a) the object follows the verb and when the object is a *wh*-phrase, as in (14b), it occurs in the same post-verbal position in this SVO language, thereby resulting in a *wh*-construction. The *wh*-phrase then does not need to move.

(14) Mandarin:

- (a) *Ta pian-le Lisi.*  
 he cheat-ASP Lisi  
 ‘He cheated Lisi.’ (Huang 1982:27)
- (b) *Ni kanjian-le shei?*  
 you see-ASP who  
 ‘Who did you see?’ (Huang 1982:253)

In these languages, a *wh*-phrase clearly does not need to move at Spell-Out. Below I present evidence that not only does the *wh*-phrase not move, but the *wh*-feature does not move. Rather, the *wh*-feature establishes an Agree relation with a probe in Typ.

As discussed in chapter 5, a Qu-morpheme in a *wh*-construction in Sinhala and Okinawan can appear in a TP-internal position adjoined to a *wh*-phrase, as long as the *wh*-phrase is not contained within an island. When the Qu-morpheme is at the edge of an island the result is well-formed. This can be seen in the Sinhala examples (15a-b) and the Okinawan (16a-b) (these examples were originally presented as (59a-b) and (62a-b) in chapter 5).

(15) Sinhala

- (a) \**Oyaa* [<sub>DP</sub> [<sub>TypP</sub> *Chitra kaa-tə də dunnə*] *potə*] *kieuwe?*  
 you Chitra who-DAT Qu gave book read.E  
 Intended: ‘[To whom]<sub>1</sub> did You read [the book that Chitra gave t<sub>1</sub>]?’

- (b) *Oyaa* [<sub>DP</sub> [<sub>T<sub>yp</sub>P</sub> *Chitra kaa-tə dunnə potə*] **də** *kieuwe?*]  
 you Chitra who-DAT gave book Qu read.E  
 ‘[To whom]<sub>1</sub> did You read [the book that Chitra gave t<sub>1</sub>]? (Kishimoto 2005:29)

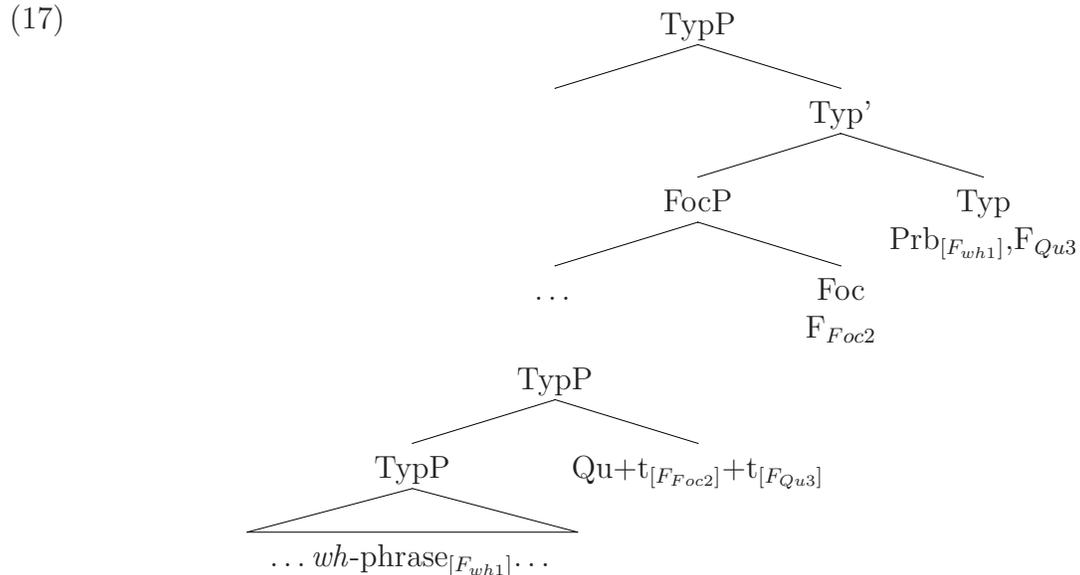
(16) Okinawan:

- (a) \**[DP* [<sub>T<sub>yp</sub>P</sub> ***taa-ga-ga*** *ka-chee-ru*] *shimuchi*]  
 who-NOM-Qu write-have-NOM book(-ACC)-TOP  
*John-oo yuda-ra?*  
 John-TOP read-RA  
 Intended: ‘[Who the hell]<sub>1</sub> did John read [the book that t<sub>1</sub> had written]?’
- (b) [<sub>DP</sub> [<sub>T<sub>yp</sub>P</sub> ***taa-ga*** *ka-chee-ru*] *shimuchi*]-**ga**  
 who-NOM write-have-NOM book(-ACC)-TOP-**ga**  
*John-oo yuda-ra?*  
 John-TOP read-RA  
 ‘[Who the hell]<sub>1</sub> did John read [the book that t<sub>1</sub> had written]?’ (Miyara 2001:52)

In examples (15-16a), the Qu-morpheme is contained within a complex-DP, resulting in ill-formedness. In chapter 5, I argued that in Sinhala and Okinawan, there is movement of Qu- and Focus-features from a Qu-morpheme and that this movement is blocked when it proceeds from within an adjunct clause (due to renumeration), or due to the MLC when it proceeds from a *whether/if*-clause. When the Qu-morpheme is outside the complex-DP as in (15-16b), the result is well-formed. The features associated with the Qu-morpheme are able to proceed uninhibited to their final landing sites. A *wh*-feature, on the other hand, is a different element from these Qu- and Focus-features.

In constructions such as (15-16b), the *wh*-phrases are able to obtain scope despite the fact that they are contained within complex-DPs. If the *wh*-feature associated with a *wh*-phrase undergoes movement, then this movement should result in island-effects. Because of the lack of island effects, I propose that the *wh*-feature does

not move, but instead, forms an Agree relation with a probe in Typ. This lack of movement is the result of there not being an EPP feature in Typ that attracts the *wh*-feature; i.e., there is either no EPP feature, or if there is an EPP feature, it does not attract a *wh*-element. Rather, a probe in Typ forms an Agree relation with the *wh*-feature.<sup>7</sup> This Agree relation is able to hold over potential island boundaries, because there is no movement out of the ‘island.’ A simplified diagram of the well-formed constructions in (15-16b) is shown below in (17).



The probe in Typ Agrees with the *wh*-feature, as signified by the  $F_{wh1}$  subscripts on the probe Prb in Typ and the in-situ *wh*-phrase. Following the discussion of TP-internal Qu-morphemes in chapter 5, I assume that Qu- and Focus-features associated with the TP-internal Qu-morpheme raise to Typ and Foc respectively. The Focus-feature in Foc focuses the embedded clause and the Qu-morpheme types the clause as an interrogative.

<sup>7</sup>In these cases, there may be an EPP feature in Typ, but one that does not attract a *wh*-feature. For example, in chapter 5, I argued that an EPP feature in Typ in Sinhala and Okinawan *wh*-constructions can attract a TP-internal Qu-feature. This EPP feature crucially does not attract a *wh*-feature.

I next turn to Mandarin Chinese. In chapter 5, I argued that the Qu-morpheme in Mandarin, which either surfaces as *ne* or is null, is Merged directly in Typ. If this is the case, then features associated with the Qu-morpheme cannot be responsible for any intervention or island effects. This is because Mandarin's Qu-morpheme is always Merged in a position external to an island. Therefore, examination of intervention and island effects should shed light on the behavior of the *wh*-feature. If these effects are absent, as appears to be the case,<sup>8</sup> then the argument that the *wh*-feature does not move is supported.

In Mandarin, a *wh*-phrase may be c-commanded by a quantificational element without any resulting ill-formedness. This shows that Mandarin *wh*-phrases are not subject to intervention effects (see chapter 2.7 for discussion of intervention effects). In the well-formed (18), the quantifier *zhi* 'only' or negation *bu* 'not' c-commands the *wh*-argument *shenme* 'what.'

(18) Mandarin:

*Ta* {*zhi/bu*} *mai shenme?*  
 he only/not sell what

'What is the thing x such that he {only sells/does not sell} x?' (Soh 2005:147)

Even though a quantificational element intervenes between Typ and the *wh*-phrase, the result is well-formed. If the *wh*-feature were to move, then this movement should be blocked by a quantificational feature associated with *zhi* 'only' or *bu* 'not,' as is the case in languages such as Japanese (see section 6.3).<sup>9</sup>

Similarly, there are generally no island effects in this language. The following examples in (19) demonstrate that the *wh*-phrases *shei* 'who' and *shenme* 'what'

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<sup>8</sup>Note though that *weishenme* 'why' is an exception. It is subject to intervention- and island-effects. I return to this issue in chapter 9.

<sup>9</sup>Although I do not have conclusive data on intervention effects in Sinhala and Okinawan, my analysis predicts that a *wh*-phrase should not be subject to intervention effects in these languages.

can occur within a *whether/if*-clause (19a), a complex-DP (19b), an adjunct clause (19c), and a complex subject (19d).

(19) Mandarin:

(a) No *whether/if* island effect:

*Ni xiang-xhidao [ta xi-bu-xihuan shei]?*  
 you wonder he whether-or-not like who  
 ‘Who<sub>1</sub> do you wonder [whether he likes t<sub>1</sub>]?’ (Lasnik & Saito 1992:32)

(b) No complex-DP island effect:

*Ni xihuan [DP shei xie de shu]?*  
 you like who write GEN book  
 ‘Who<sub>1</sub> do you like [the book t<sub>1</sub> wrote]?’

(c) No adjunct island effect:

*Ta [T<sub>ypP</sub> yinwei ni shuo shenme hua] hen shengqi?*  
 he because you say what word very angry  
 ‘What<sub>1</sub> was he angry [because you said t<sub>1</sub> words]?’ (Aoun & Li 1993:203)

(d) No subject island effect:

*[DP shei xie de shu] zui youqu?*  
 who wrote GEN book most interesting  
 ‘Who<sub>1</sub> are [books that t<sub>1</sub> wrote] most interesting?’ (Lasnik & Saito 1992:122)

Examples (20a-c) below show that the *wh*-adjuncts *sheme yuanyin* ‘what reason,’ *nali* ‘where,’ and *shemesihou* ‘when’ also are not subject complex-DP island effects.

(20) Mandarin:

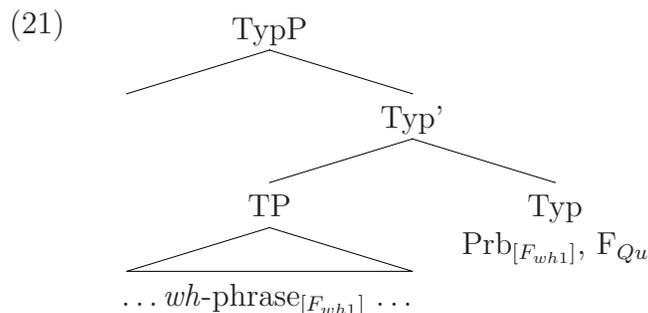
(a) *[DP Ta we-le sheme yuanyin xie de shu] zui youqu?*  
 he for what reason write GEN book most interesting

‘[For what reason]<sub>1</sub> are [books that he wrote t<sub>1</sub>] most interesting?’  
(Huang 1982:527)

(b) [<sub>DP</sub> *Ta zai nali pai de dianying*] *zui hao?*  
he at where film GEN movie most good  
‘Where<sub>1</sub> are [movies that he filmed t<sub>1</sub>] the best?’

(c) [<sub>DP</sub> *Ta (zai) shemeshihou pai de dianying*] *zui hao?*  
he (at) when film GEN movie most good  
‘When<sub>1</sub> are [movies that he filmed t<sub>1</sub>] the best?’ (Huang 1982:529-530)

The lack of intervention and island effects suggests that in Mandarin, a *wh*-feature associated with a *wh*-phrase does not move. A probe in Typ forms an Agree relation with the *wh*-feature of a *wh*-phrase, as shown in (21).



Since this is an Agree relation, it does not matter if the *wh*-phrase is c-commanded by a scope bearing element or contained within a potential island.

In summary, Sinhala, Okinawan, and Mandarin are languages in which the *wh*-feature of a *wh*-phrase does not move. Rather, it establishes scope by forming an Agree relation with a probe in Typ. Evidence for Agree is that in these languages, a *wh*-phrase can occur inside of a potential island. In Mandarin, there also are no intervention effects.

### 6.3 Wh-feature movement

I next turn to single *wh*-constructions in which a *wh*-feature undergoes feature movement. In languages such as Japanese, Korean, and Persian, I propose that the rel-

evant Typ head has an  $EPP^{X^0}$  feature that attracts an  $X^0$  category *wh*-feature so that it can value a probe in Typ.

Japanese, Korean, and Persian all allow a *wh*-phrase to remain in-situ.<sup>10</sup> Examples (22a-b) show that Japanese is a *wh*-in-situ language. In (22a), the object *hon-o* ‘book-ACC’ occurs in the preverbal position in this SOV language, and in (22b), the *wh*-phrasal object *nani-o* ‘what-ACC’ occurs in this same position. The *wh*-phrase does not move, but a *wh*-question is formed.

(22) Japanese:

- (a) *Hideya-wa hon-o katta.*  
 Hideya-TOP book-ACC bought.  
 ‘Hideya bought a book.’
- (b) *Hideya-wa nani-o katta no?*  
 Hideya-TOP what-ACC bought Qu.  
 ‘What did Hideya buy?’

Similarly, a *wh*-phrase in Korean may remain in-situ. Example (23a) shows a declarative construction in this SOV language. Note that the object *kae-lul* ‘dog-ACC’ directly precedes the verb. In the *wh*-construction (23b), the *wh*-phrasal object *muôs-ûl* ‘what-ACC’ remains in the preverbal position.

(23) Korean:

- (a) *Suna-ka chaeg-ul sa-ss-ta.*  
 Suna-NOM book-ACC buy-PAST-DECL  
 ‘Suna bought a book.’ (Hyun Kyoung Jung, p.c.)
- (b) *Suna-ka muôs-ûl sa-ss-ni?*  
 Sun-NOM what-ACC buy-PAST-Qu  
 ‘What did Suna buy?’ (Beck & Kim 1997:339)

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<sup>10</sup>All of these languages allow scrambling, but in an unscrambled constructions, a *wh*-phrase remains in-situ.

Persian, similarly is an SOV language in which a *wh*-phrase can remain in-situ. In (24a), the object *ketâb-ro* ‘book-ACC’ directly precedes the verb. In (24b) the *wh*-phrasal object *chi-ro* ‘what-ACC’ appears in this same preverbal position and a *wh*-construction results.

(24) Persian:

- (a) *Kimea un ketâb-ro xund.*  
 Kimea that book-ACC read  
 ‘Kimea read that book.’ (Karimi 2005:27)
- (b) *Kimea chi-ro xund?*  
 Kimea what-ACC read  
 ‘Kimea read that book.’ (Simin Karimi, p.c.)

In these languages, although the *wh*-phrase remains in-situ, there is evidence that its *wh*-feature undergoes movement.

First of all, in all of these languages a Qu-morpheme appears to be Merged directly in Typ. In chapter 5, I argued that because the Japanese Qu-morpheme must always appear in clause-final position, it is Merged directly in Typ of the clause that it types. Korean also requires a clause-final Qu-morpheme. Persian does not generally have an overt Qu-morpheme in a matrix clause; although an interrogative interpretation is indicated via rising intonation at the end of a clause (Simin Karimi, p.c.).<sup>11</sup> In these cases, I take the position that a null Qu-morpheme is present. I know of no evidence that a Qu-morpheme can be Merged TP-internally in Korean or Persian. If these languages have only a Qu-morpheme that is Merged directly in Typ, then any intervention or island effects must result from something other than Qu-feature movement.

The following data show that Japanese, Korean, and Persian have intervention effects. In the Japanese (25a), the Negative Polarity Item (NPI) element *sika* ‘only’

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<sup>11</sup>In formal Persian, there is a Qu-morpheme *āya* that appears clause-initially in yes/no constructions (Simin Karimi, p.c.).

c-commands the *wh*-phrase *nani-o* ‘what-ACC,’ resulting in ill-formedness. In (25b) the *wh*-phrase is scrambled to a position higher than the NPI and the result is well-formed.

(25) Japanese:

- (a) *?\*Taroo-sika nani-o yoma-nai no?*  
 Taroo-only what-ACC read-NEG Qu  
 ‘What did only Taro read?’ (Tanaka 1997:159)
- (b) *Nani-o Taroo-sika t<sub>1</sub> yoma-nai no?*  
 what-ACC Taroo-only read-NEG Qu  
 ‘What did only Taro read?’ (Tanaka 1997:162)

Intervention effects in Korean are shown in (26a-b).<sup>12</sup> When the *wh*-phrase *muôs-ûl* ‘what-ACC’ is c-commanded by *amuto* ‘anyone’ the result is ill-formedness, as shown in (26a). When the *wh*-phrase is scrambled to clause initial position, as shown in (26b), the result is well-formed.

(26) Korean:

- (a) *\*Amuto muôs-ûl sa-chi anh-ass-ni?*  
 anyone what-ACC buy-CHI not do-PAST-Qu
- (b) *Muôs-ûl<sub>1</sub> amuto t<sub>1</sub> sa-chi anh-ass-ni?*  
 what-ACC anyone buy-CHI not do-PAST-Qu  
 ‘What did no one buy?’ (Beck & Kim 1997:339)

Similarly, in the Persian (27a), the NPI *hichkas* ‘nobody’ c-commands the *wh*-phrase *chi-ro* ‘what,’ resulting in ill-formedness.<sup>13</sup> When the *wh*-phrase is scrambled to a position above *hichkas* ‘nobody’ in (27b), the result is well-formed.

<sup>12</sup>Following Beck & Kim (1997) I gloss *chi* as ‘CHI.’ Beck and Kim write that “[t]he status of the verbal suffix *chi* is not clear (381)” and that it has been argued to be a nominalizer by some and a complementizer by others.

<sup>13</sup>This is well-formed as an echo-question (Simin Karimi, p.c.).

(27) Persian:

(a) \***Hichkas** **chi-ro** *na-xarid?*  
 nobody what-ACC NEG-bought

(b) **Chi-ro**<sub>1</sub> **hichkas** *t*<sub>1</sub> *na-xarid?*  
 what-ACC nobody NEG-bought

‘What was it that no one bought?’ (Karimi & Taleghani 2007:180)

I turn to an explanation of the intervention effects and of the amelioration of these effects resulting from scrambling.

The notion that there are intervention effects, at least in Japanese and Korean, is not uncontroversial. Tomioka points out that there is a great deal of variability in well-formedness judgments regarding intervention effects and intervention effects are weaker in embedded clauses than in matrix clauses. However, Tomioka acknowledges that scrambling of a *wh*-phrase over a potential intervener is better than leaving the *wh*-phrase in a position c-commanded by an intervener, even in embedded clauses where intervention effects are weaker. Tomioka (2007:1572) writes the following, where ‘unscrambled’ refers to a construction in which an intervener c-commands a *wh*-phrase.

Although there is no denying that the scrambled version is better than the unscrambled counterpart, some feel that the unscrambled examples are merely marginal, while others find them bad enough to label them as ‘ungrammatical.’

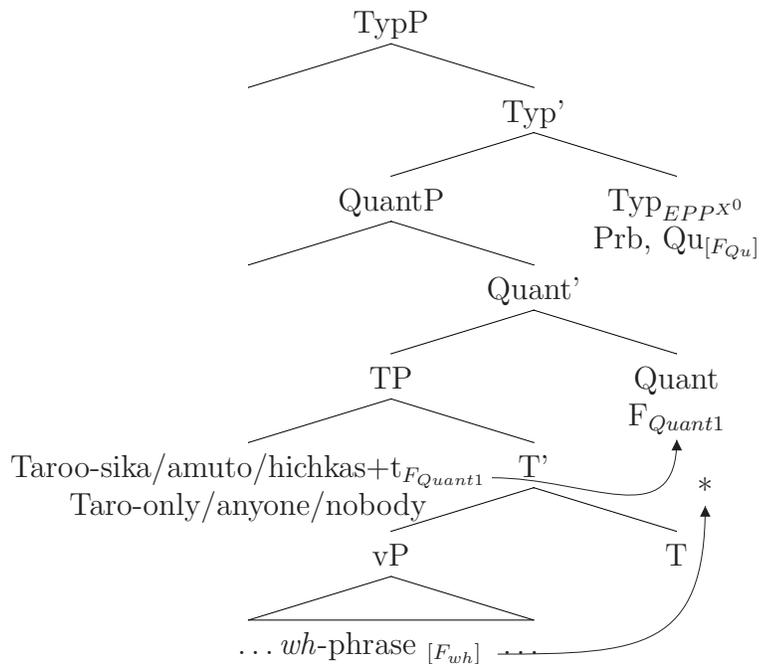
Even though there is variability in judgments and there are differences between matrix and embedded clauses, the facts still point to the existence of intervention effects. I leave aside the interesting complexities involving judgments of intervention effects, although see Tomioka (2007) for a pragmatic account of the intervention effects in Japanese and Korean.

I propose that the intervention effects in (25-27a) are the result of the blocking of *wh*-feature movement. The motivation for *wh*-feature movement is an  $EPP^{X^0}$  feature in Typ that attracts a *wh*-feature. However, the  $EPP^{X^0}$  feature is sensitive to ‘type’ - it searches for a *wh*-feature but if there is a close element of the same type, then this attraction is blocked. When there is a non-*wh*-scope bearing element such as an NPI closer to Typ than the *wh*-feature, then attraction of the *wh*-feature is blocked.<sup>14</sup> As a result, the probe in Typ does not get valued by the *wh*-feature. Example (28) shows the simplified structure of (25-27a). The Japanese *sika* ‘only,’ the Korean *amuto* ‘anyone,’ and the Persian *hichkas* ‘nobody’ are in the specifier or what I loosely refer to as QuantP, to indicate the quantificational nature of these elements. The  $EPP^{X^0}$  is unable to attract the *wh*-feature due to the intervening quantificational feature.

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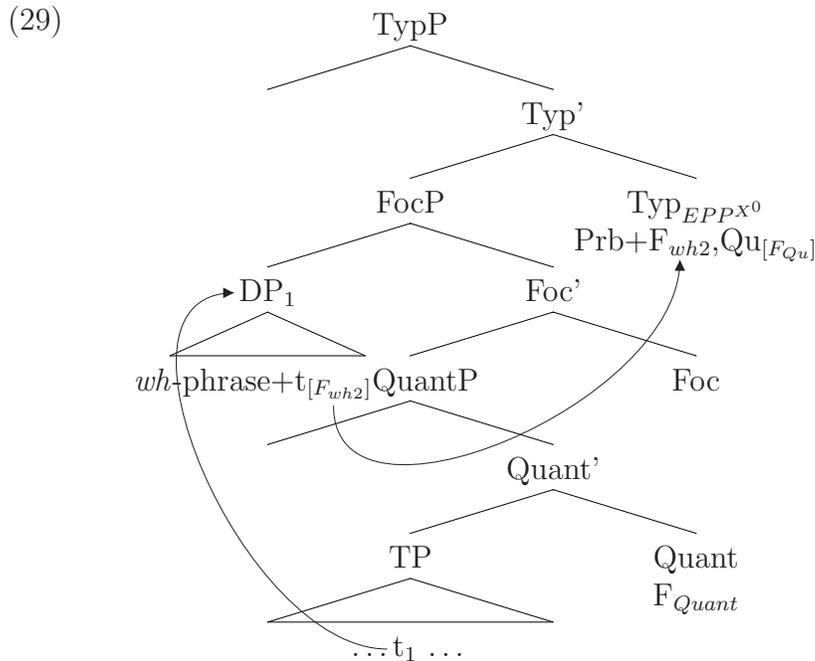
<sup>14</sup>Intervention effects appear to be caused by a class of scope bearing elements that have a quantificational and/or focus property. See chapter 2.7 for discussion of the class of elements that cause intervention effects. For the sake of simplicity I refer to these intervening elements as scope bearing and I place them in a projection that I refer to as a QuantP, where Quant refers to the quality of quantification. But note that quantificational alone is not necessarily an indicator of the relevant type of feature that causes intervention effects.

(28)



In (25-27b), the *wh*-phrase appears in a scrambled position higher than the quantificational element. In this case, the  $EPP^{X^0}$  feature in Typ is able to attract the *wh*-feature since there is no intervening element. A diagram is shown in (29). I have indicated the *wh*-phrase as being in the specifier of a FocP projection, which I assume houses a scrambled phrase.<sup>15</sup>

<sup>15</sup>I leave aside discussion of the exact nature of the projection housing a scrambled phrase. For discussion of scrambling see Saito (1985), Mahajan (1990), Saito & Fukui (1998), Bošković & Takahashi (1998), Miyagawa (1997a), Miyagawa (2001), and Karimi (2005), among others.



I next turn to island effects in these languages. In Japanese there appear to be island effects when a *wh*-phrase occurs inside of an embedded *whether/if* construction (see chapter 2.6 for discussion of *whether/if* islands). In the Japanese example (30), the *wh*-phrasal DP *nani-o* ‘what-ACC’ can have scope in the embedded clause, as indicated by the well-formed meaning (i), but according to Nishigauchi (1990), it cannot have scope in the matrix clause, as shown by the ill-formedness of meaning (ii).

(30) Japanese:

*Sato**okun-wa* [*Suzuki**kun-ga nani-o tabeta ka*] *oboeteimasu ka*?  
 Sato-TOP Suzuki-NOM what-ACC ate Qu remember Qu

(i) ‘Does Sato remember [what Suzuki ate]?’

(ii) \*‘What<sub>1</sub> does Sato remember [whether Suzuki ate t<sub>1</sub>]?’ (Nishigauchi 1990:30-31)

Example (31) is similar except that the embedded clause contains the Qu-morpheme *kadooka*, which notably only occurs in embedded yes/no constructions; it is not

compatible with a *wh*-phrase (see chapter 3.3). Since the *wh*-phrase in the embedded clause cannot have embedded scope and is unable to have matrix scope, ill-formedness results.

(31) Japanese:

\**Satookun-wa* [*Suzukikun-ga nani-o tabeta kadooka*] *oboeteimasu*  
 Sato-TOP Suzuki-NOM what-ACC ate whether remember  
***ka?***

Qu

“What<sub>1</sub> does Sato remember [whether Suzuki ate t<sub>1</sub>]?” (Nishigauchi 1990:31)

The assumption that there are island effects of the sort shown in (30) and (31) is in accord with Nishigauchi (1990), Watanabe (1992a, 1992b), and Richards (1998, 2001), among others. However, I note that the existence of this type of island effect (generally referred to as a *wh*-island effect in the literature) is controversial. Watanabe (1992a:262), who claims that island effects exist in Japanese, acknowledges that the “degree of unacceptability varies among different speakers (262).” Nishigauchi (1990), who also claims that island effects exist, states that island effects can be circumvented by heavy stress on a *wh*-phrase. Nishigauchi concludes that “a WH-expression which receives extra focus . . . is capable of taking wide scope, in violation of the WH-island effect (35).” He attributes this fact to something other than an island effect. Kitagawa (2005, 2006), Kitagawa & Fodor (2006), and Kitagawa *et al.* (2004) present arguments that when spoken with the ‘correct prosody,’ there are no *wh*-island effects in Japanese. With the acknowledgment that the issue of island effects in Japanese is not clear, I proceed with the assumption that they do exist for some speakers.

Korean also shows *whether/if*-island effects. According to Yoon (2006), the Korean example (32) is fine with meaning (i) as a yes/no construction, in which case *mwues-ul* ‘what-ACC’ has embedded scope and functions as an indefinite. But the *wh*-construction interpretation in (ii) is ill-formed, indicating an island effect.

(32) Korean:

*Ne-nun [Yenghi-ka mwues-ul sa-ess-nunci] al-ko sip-ni?*  
 you-TOP Yenghi-NOM what-ACC buy-PAST-whether want to know-Qu  
 (i) ‘Do you want to know [whether Yenghi bought something]?’  
 (ii) \*‘What<sub>1</sub> do you want to know [whether Yenghi bought t<sub>1</sub>]?’ (Yoon  
 2006:387)

Note that in Japanese and Korean, *wh*-phrases are not generally subject to Complex DP-island effects. I return to this issue in chapter 7.

The Persian examples (33a-c) show that a *wh*-phrase cannot be contained within an adjunct clause (33a), a complex-DP (33b), or a *whether/if*-clause (33c).

(33) Persian:

(a) Adjunct island:

\**Parviz raghsid [chonke ki unjâ bud]?*  
 Parviz dance-3SG because who there was  
 Intended: ‘Who<sub>1</sub> did Parviz dance [because t<sub>1</sub> was there]?’ (Karimi &  
 Taleghani 2007:180)

(b) Complex-DP island:

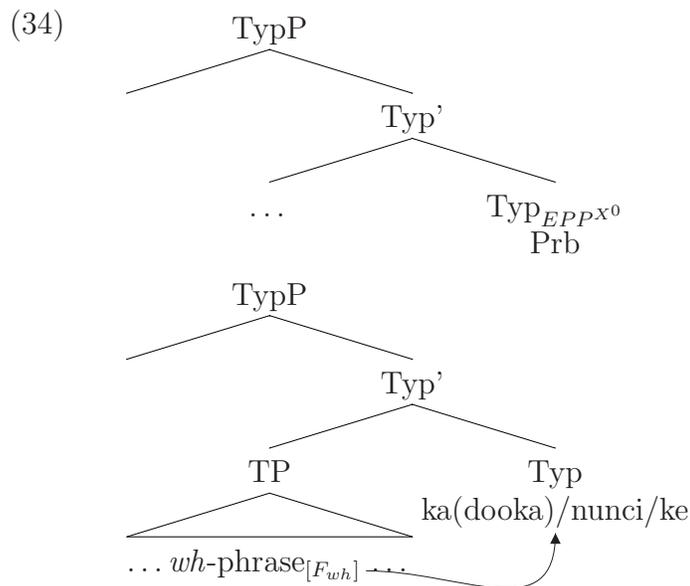
\**Kimea [<sub>DP</sub> pesar-i-ro [ke to diruz kojaa did-i]] be*  
 Kimea boy-REL-raa that you yesterday where saw-2sg to  
*man moarrefi kard?*  
 me introduced did  
 Intended: ‘Where<sub>1</sub> did Kimea introduce to me [the boy you saw t<sub>1</sub>  
 yesterday]?’ (Simin Karimi, p.c.)

(c) *Whether/if*-island:

*Kimea az Parviz porsid [ke Haesan chi xarid]?*  
 Kimea of Parviz asked that Hassan what bought  
 Intended \*‘What<sub>1</sub> did Parviz ask Kimea [whether Hassan bought t<sub>1</sub>]?’  
 (Simin Karimi, p.c.)

Examples (33a-b) are fine as echo questions, but not as *wh*-constructions, and (33c) is fine as a yes/no construction, but ill-formed as a *wh*-construction (Simin Karimi, p.c.).

The existence of island effects in Japanese, Korean, and Persian suggests that the *wh*-feature undergoes movement. I propose that the  $EPP^{X^0}$  feature in Typ attracts the *wh*-feature of the *wh*-phrase, but this attraction is blocked by *whether/if*, due to an MLC violation. For example, in (34), *ka(dooka)/nunci/ke* ‘whether’ in Japanese, Korean, and Persian, respectively prevents the  $EPP^{X^0}$  in the matrix Typ from attracting the *wh*-feature of the *wh*-phrase contained within the embedded clause.



The adjunct-island and complex-DP island effects in Persian result from renumeration of the adjunct-clause containing the *wh*-phrase. Once the adjunct clause is assembled and placed back into the numeration, a *wh*-feature cannot move out of it. The numerations of (33a-b) are shown below in (35a-b) respectively. The adjunct clauses are linearized constituents that have been renumerated, and as such, a *wh*-feature cannot move out of them.

(35) (a) N = {Parviz, raghsid, <chonke ki unjâ bud>}

- (b) N = {Kimea, pesar-i-ro, <ke to diruz kojaa did-i>, be, man, moarrefi, kard}

Note that this analysis shares similarities with Maki (1995) and Maki & Ochi (1998) who argue that in Japanese *wh*-constructions, there is movement of a *wh*-feature to a [+Q] Comp position. Maki (1995) argues that *wh*-feature movement occurs at LF; however, Maki & Ochi (1998) argue, as I do, that *wh*-feature movement occurs before LF, and that this *wh*-feature movement is subject to certain island effects. The key point that we differ on is what drives *wh*-feature movement. I claim that an  $EPP^{X^0}$  feature forces *wh*-feature movement, and they claim that movement is driven by the need to “delete the strong feature of the COMP (Maki & Ochi 1998:496).” An advantage of my analysis is that it does not rely on the notion that COMP contains a strong feature.

In summary, in languages such as Japanese, Korean, and Persian, a Typ head contains an  $EPP^{X^0}$  feature that attracts a *wh*-feature to Typ, where it values a probe. Intervention effects arise when there is an intervening element of the same type, due to the inability of the  $EPP^{X^0}$  feature to attract the *wh*-feature. Furthermore, a *wh*-feature cannot move out of a renumerated clause.

#### 6.4 *Wh*-phrasal movement

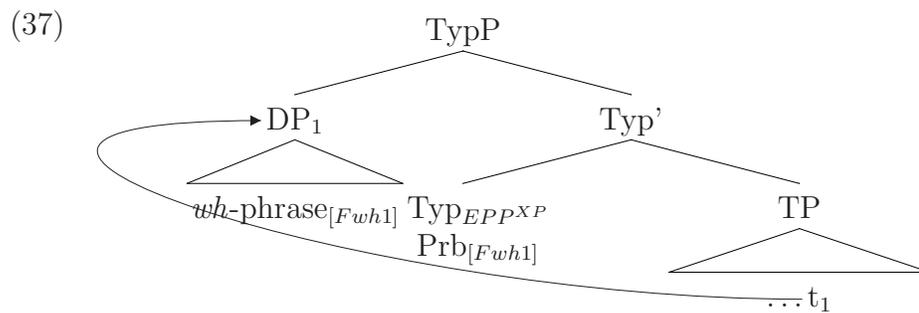
Some languages require a *wh*-phrase in a simple *wh*-construction to move to a clause peripheral position, a position I assume to be [Spec, TypP]. In this case, Typ contains an  $EPP^{XP}$  feature that attracts a *wh*-phrase to the [Spec, TypP] position. If this is a scopal TypP position, then there is a probe that the *wh*-feature values via a Spec-head relation.

English is a *wh*-movement language; a *wh*-phrase in a single *wh*-construction cannot remain in-situ. Example (36a), although fine as an echo question, is ill-formed as a standard *wh*-construction. (36b) in which the *wh*-phrase moves to the

front of the construction is the required form.

- (36) (a) \*You bought **what**?  
 (b) **What**<sub>1</sub> did you buy **t**<sub>1</sub>?

Movement of a *wh*-phrase is accounted for as follows. The English Typ head contains an  $EPP^{XP}$  feature that attracts a *wh*-phrase to [Spec, TypP]. The *wh*-feature associated with the *wh*-phrase then values the probe in Typ via a Spec-head relation.



Unlike in languages such as Japanese, Korean, and Persian, as shown in (25-27a), in English, a scope bearing element can c-command the base position of a *wh*-phrase, as shown in (38a-b).

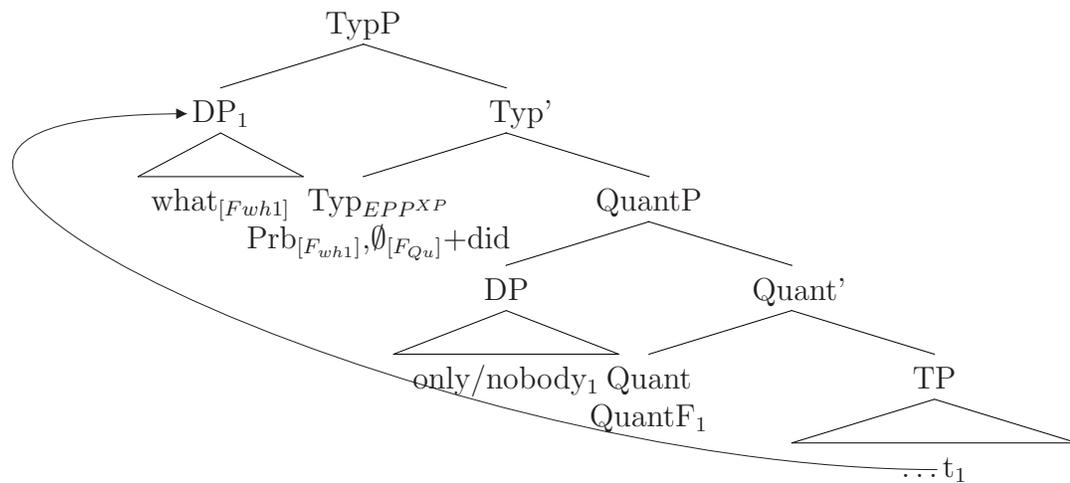
- (38) (a) **What**<sub>1</sub> did **only** Bob read **t**<sub>1</sub>?  
 (b) **What**<sub>1</sub> did **nobody** buy **t**<sub>1</sub>?

The well-formedness here results from phrasal movement. I assume that a quantificational feature associated with *only* or *nobody* occurs in Quant. This quantificational feature can block  $X^0$  movement of a *wh*-feature, as in Japanese and Korean, but it will not block XP movement of a *wh*-phrase. A diagram of (38a-b) is shown below. The quantificational element *only/nobody* occurs in [Spec, QuantP].<sup>16</sup> I propose that the quantifier feature associated with *only/nobody* checks

<sup>16</sup>It is likely that *only* is base-generated in this position, but *nobody*, being a subject, moves to this position.

an uninterpretable feature in Quant. Thus, the quantifier feature is associated with the head of QuantP and cannot block movement of an XP element.

(39)



I argued in the previous section that *wh*-feature movement is subject to island effects. *Wh*-phrasal movement is also subject to island effects. As is well known, in English movement of a *wh*-phrase out of certain types of clauses results in island-effects.<sup>17</sup> The following examples (originally presented as (29) in chapter 2.6) demonstrate that in English, a *wh*-phrase cannot move out of a *wh*-island, *whether/if* island, complex-DP-island, adjunct-island, or subject-island.

(40) (a) *Wh*-island:

\***What**<sub>1</sub> do you wonder [who bought **t**<sub>1</sub>]? (Huang 1982:456)

(b) *Whether/If* island

??**What**<sub>1</sub> do you wonder [whether/if John saw **t**<sub>1</sub>]? (adapted from Lasnik & Saito 1992:11)

<sup>17</sup>I leave aside D-linked *wh*-phrases. See Pesetsky (1987, 2000), among others.

(c) Complex NP/DP-island:

??**What**<sub>1</sub> did you read [a report [that John bought **t**<sub>1</sub>]]? (Lasnik & Saito 1992:12)

(d) Adjunct island:

\***Which book**<sub>1</sub> did John go to class [after he read **t**<sub>1</sub>]? (Lasnik & Saito 1992:12)

(e) Subject island:

?\***Who**<sub>1</sub> did [a story about **t**<sub>1</sub>] amuse you? (Lasnik & Saito 1992:42)

The existence of island effects is a straightforward result of *wh*-movement.

The causes of these island violations, though, is not so straightforward (see chapter 2.6). The *wh*-island effect in (40a) can be attributed to an MLC violation. Those in (40c-e) can be attributed to renumeration of a non-complement. In (40c) the adjunct clause modifier of the nominal *report* is sent to Spell-Out and renumerated. In (40d), the adjunct clause *after he read which book* is renumerated and in (40e), the subject clause is renumerated. As discussed in chapter 2.6.2, the *whether/if*-island effect in (40b) is not easy to account for. If *whether* and *if* are heads, then there is no MLC violation, and if *whether/if John saw what* is a complement, then this clause should not be renumerated. On the other hand, if *whether/if John saw what* is an adjunct clause, then the island effect is accounted for, since the adjunct clause would have to be renumerated. This latter possibility accounts nicely for the island effect here. However, *wonder* appears to select for an interrogative clause, suggesting that the *whether/if* clause is a complement. Thus, I leave this issue for further investigation.

Sharanahua is another language with overt *wh*-movement. Scott & Frantz (1974:84) write that in this language, “the interrogative word of content questions obligatorily occurs in sentence-initial position.” In (41a), the object *chasho* ‘deer’ appears in clause-second position in this SOV language. However, in (41b), the ob-

ject *wh*-phrase *ahuua* ‘what-thing’ occurs in clause-initial position. It has undergone movement.

(41) Sharanahua:

- (a) *Min chasho rutu-a-quin.*  
 you deer kill-COMPL-DECL  
 ‘You killed a deer.’
- (b) *Ahuua min rutu-a-mun?*  
 What-thing you kill-compl-Qu  
 ‘What did you kill?’ (Scott & Frantz 1974:84)

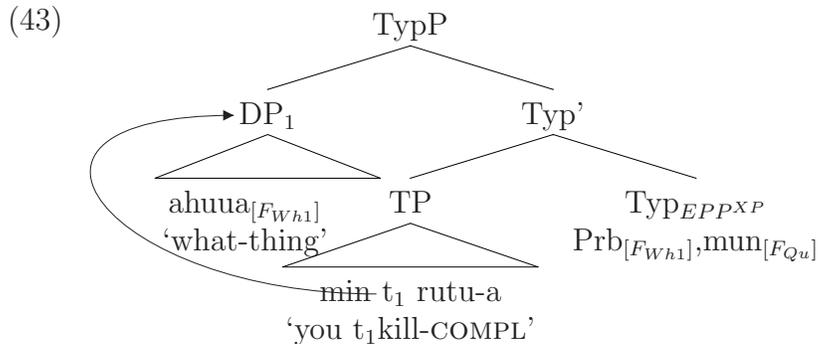
A Sharanahua *wh*-construction also contains an overt clause-final Qu-morpheme *mun*, as can be seen in (41b). Evidence that *mun* is a Qu-morpheme can be seen in (42). The statement in (42a) becomes a yes/no construction when the clause-final declarative ending *quin* is replaced with *mun* ‘Qu,’ as shown in (42b).

(42) Sharanahua:

- (a) *Min chasho rutu-a-quin.*  
 you deer kill-COMPL-DECL  
 ‘You killed a deer.’
- (b) *Min chasho rutu-a-mun?*  
 you deer kill-COMPL-Qu  
 ‘Did you kill a deer.’ (Frantz 1973:532)

The morpheme *mun* is responsible for the interrogative interpretation of this construction because it is a Qu-morpheme.

Sharanahua then is a language in which one can see both an overt Qu-morpheme and overt *wh*-movement. A construction such as (41b) is accounted for as shown in (43).



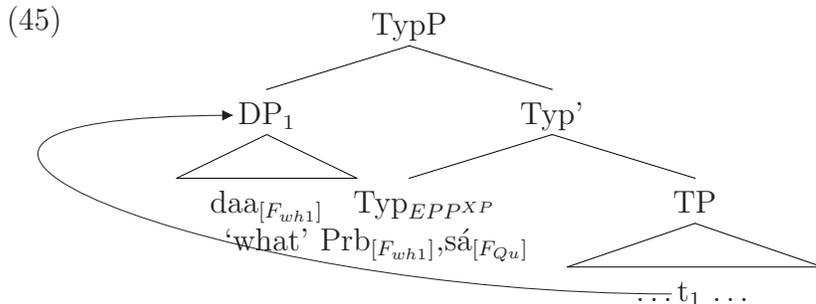
The Qu-morpheme *mun* is in Typ. The  $EPP^{XP}$  feature in Typ forces the *wh*-phrase *ahuua* ‘what-thing’ to move to [Spec, TypP]. The *wh*-feature associated with the *wh*-phrase values the probe in Typ via a Spec-head relation.

Tlingit is also a language with overt *wh*-movement, and like Sharanahua it has an overt Qu-morpheme. For example, in (44), the Qu-morpheme *sá* follows the clause-initial *wh*-phrase *daa*.

(44) Tlingit:

*Daa sá k é e t            a x / ' a ?*  
 what Qu killerwhale he.eats.it  
 ‘What do killerwhales eat?’ (Cable 2007:64)

The *wh*-phrase must appear in a pre-predicate position. Cable (2007:62) writes that “[i]n a Tlingit *wh*-question ... the phrase understood to be the *wh*-operator *must* appear left of the main predicate of the clause.” This fact is accounted for if the Typ head has an  $EPP^{XP}$  feature that forces movement of the *wh*-phrase to [Spec, TypP]. Example (44) is accounted for as shown in (45).



In this section, I have proposed that in *wh*-constructions in languages such as English, Sharanahua, and Tlingit, the Typ head contains an  $EPP^{XP}$  feature that forces a *wh*-phrase to move to [Spec, TypP]. This *wh*-phrasal movement can result in island effects, as is the case in English.<sup>18</sup>

### 6.5 Partial *wh*-movement

Some languages can form *wh*-constructions either with overt movement of a *wh*-phrase to its scope position or using partial *wh*-movement (McDaniel 1989) in which a *wh*-phrase moves to the edge of an embedded clause, but has scope in a matrix clause. A single language then can form a *wh*-construction with either *wh*-phrasal movement or partial *wh*-movement. In this section, I attempt to explain why this is the case.

I propose that languages that allow both full *wh*-movement and partial *wh*-movement have these two options because a Typ head can contain either an  $EPP^{XP}$  feature or an  $EPP^{X^0}$  feature. In a full *wh*-movement construction, an  $EPP^{XP}$  feature drives movement of a *wh*-phrase to a [Spec, TypP] position. If there is movement through multiple clauses then there can be multiple  $EPP^{XP}$  features. In a partial *wh*-movement construction, first an  $EPP^{XP}$  feature forces movement of a *wh*-phrase to [Spec, TypP] of an embedded clause (or clauses), and then an  $EPP^{X^0}$  feature

<sup>18</sup>Note that I do not have data on island effects in Sharanahua. Also, island effects in Tlingit can be circumvented for what I believe are reasons independent of *wh*-phrasal movement. I return to this issue in chapter 7.

forces movement of the *wh*-feature to the matrix Typ (and sometimes also to an embedded Typ). Interestingly, in these languages the  $EPP^{X^0}$  feature cannot be used freely. Rather, it can only occur if it c-commands an  $EPP^{XP}$  feature contained in TypP of the next lower embedded clause. I turn to an explanation of the details of partial *wh*-movement in German and Albanian.

### 6.5.1 German

Examples (46a-b) below demonstrate that a *wh*-construction in German can be formed via full *wh*-phrasal movement. The *wh*-phrase *mit wem* ‘with whom’ moves overtly from the embedded clause to the initial position of the matrix clause.

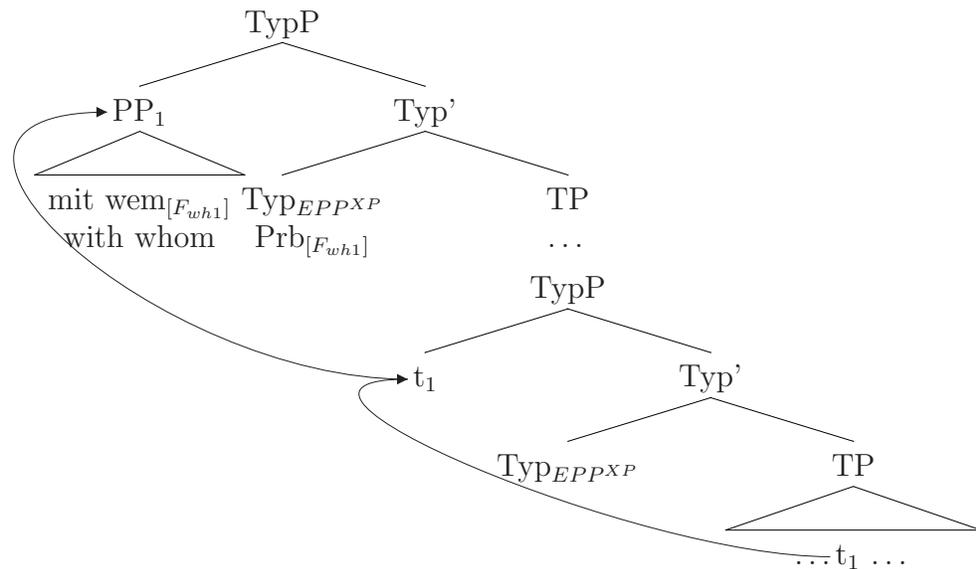
(46) German:

- (a) [<sub>PP</sub> **Mit wem**]<sub>1</sub> glaubt Hans [<sub>TypP</sub> t<sub>1</sub> daSS Jakob jetzt t<sub>1</sub>  
with whom thinks Hans that Jakob now  
*spricht*]]?  
talks  
‘With whom does Hans think that Jakob is now talking?’

- (b) [<sub>PP</sub> **Mit wem**]<sub>1</sub> glaubst du [<sub>TypP</sub> t<sub>1</sub> daSS Hans meint [<sub>TypP</sub>  
with whom believe you that Hans thinks  
t<sub>1</sub> daSS Jakob t<sub>1</sub> gesprochen hat]]?  
that Jakob talked has  
‘With whom do you believe that Hans thinks that Jakob talked?’  
(Cheng 2000:78)

The full *wh*-movement facts can be accounted for straightforwardly if each relevant Typ head contains an  $EPP^{XP}$  feature that forces movement of the *wh*-phrase to the embedded [Spec, TypP] and then to the matrix [Spec, TypP]. A simplified diagram of the full *wh*-movement (46a-b) is shown below in (47). An  $EPP^{XP}$  feature located in both the embedded and matrix Typ heads forces overt phrasal movement of the *wh*-phrase. When the *wh*-phrase arrives in the matrix TypP, its *wh*-feature values the probe in Typ via a Spec-head relation.

(47)



In addition to full *wh*-phrasal movement, a *wh*-phrase can undergo partial *wh*-movement. In (48), the *wh*-phrase *mit wem* ‘with whom’ raises to the specifier of the embedded TypP, which Cheng (2000:78) notes “does not normally host a [+wh] element since verbs such as *glauben* (‘to believe/think’) do not take an embedded question.” The *wh*-phrase, however, has matrix scope which is marked by *was* in the initial position of the matrix clause. In this case, *was* essentially functions as a scope marker.

(48) German:

**Was**<sub>1</sub> glaubt Hans [[**Mit wem**]<sub>1</sub> daSS Jakob jetzt t<sub>1</sub> spricht]]?  
 WH thinks Hans with whom that Jakob now talks  
 ‘With whom does Hans think that Jakob is now talking?’ (Cheng 2000:78)

The facts become more complex when a *wh*-phrase is multiply-embedded. In (49a), the *wh*-phrase moves to [Spec, TypP] of the higher embedded clause. In (49b), the *wh*-phrase moves to [Spec, TypP] of the lower embedded clause. In both cases,

matrix scope is marked by *was*. Example (49a) contains only a single *was*, whereas (49b) contains *was* both in the higher embedded clause and in the matrix clause.

(49) German:

- (a) **Was**<sub>1</sub> *glaubst du* [<sub>TypP</sub> [**Mit wem**]<sub>1</sub> *Hans meint* [<sub>TypP</sub> *t*<sub>1</sub>  
 WH believe you with whom Hans thinks  
*daSS Jakob t*<sub>1</sub> *gesprachen hat*]]?  
 that Jakob talked has  
 ‘With whom do you believe that Hans thinks that Jakob talked?’
- (b) **Was**<sub>1</sub> *glaubst du* [<sub>TypP</sub> **was**<sub>1</sub> *Hans meint* [<sub>TypP</sub> [**Mit wem**]<sub>1</sub>  
 WH believe you WH Hans thinks with whom  
*Jakob t*<sub>1</sub> *gesprachen hat*]]?  
 Jakob talked has  
 ‘With whom do you believe that Hans thinks that Jakob talked?’  
 (Cheng 2000:79)

According to Cheng (2000), if the *wh*-phrase remains in the lower clause in a construction such as (49b), in some dialects of German, there must be the *wh*-scope marker *was* in each higher clause. Example (50), in which the *wh*-phrase remains in the lower clause and the higher embedded clause lacks a *wh*-scope marker, is ill-formed.

(50) German:

- \***Was**<sub>1</sub> *glaubst du* [<sub>TypP</sub> *daSS Hans meint* [<sub>PP</sub> **Mit wem**]<sub>1</sub>  
 WH believe you that Hans thinks with whom  
*Jakob t*<sub>1</sub> *gesprachen hat*]]?  
 Jakob talked has  
 ‘With whom do you believe that Hans thinks that Jakob talked?’ (Cheng  
 2000:79)

As can be seen above, a partial *wh*-movement construction in German utilizes the *wh*-element *was*. Cheng (2000:80) argues that when used as a *wh*-scope marker,

*was* “is the *wh*-feature of the *wh*-phrase.”<sup>19</sup> If *was* is a *wh*-feature then, since it is a functional element, it should be an X<sup>0</sup> category element that occurs in Typ. There is evidence suggesting that this is the case. (51a) shows that a *wh*-phrase, in this case *mit wem* ‘with whom,’ may co-occur with a complementizer, *daB* ‘that.’ However, in (51b), *was* cannot co-occur with *daB* ‘that.’

(51) German:

- (a) *Ich weiB nicht [[<sub>PP</sub> mit wem]<sub>1</sub> (daB) du meinst t<sub>1</sub> daSS*  
 I know not with whom that you think that  
*Jakob t<sub>1</sub> gesprochen hat].*  
 Jakob talked has  
 ‘I don’t know with whom you think that Jakob has talked.’
- (b) *Ich weiB nicht [<sub>was</sub><sub>1</sub> (\*daB) du meinst [<sub>PP</sub> mit wem]<sub>1</sub>*  
 I know not WH that you think with whom  
*(daB) Jakob t<sub>1</sub> gesprochen hat].*  
 that Jakob talked has  
 ‘I don’t know with whom you think that Jakob has talked.’ (Cheng  
 2000:96)

The ill-formedness of (51b) is accounted for straightforwardly if *was* is a head that is in Typ. It cannot co-occur with *daB* since *daB* is also in Typ.<sup>20</sup> Further evidence that *was* is a moved *wh*-feature can be seen by examining intervention and island effects.

Example (52a) shows that movement of a *wh*-phrase is not blocked by the intervening negation *nicht*, whereas (52b) shows that partial *wh*-movement is blocked by negation. Example (52b) is fine if negation is absent.

<sup>19</sup> *Was* also has a use as a *wh*-phrase corresponding to *what* in English.

<sup>20</sup> There is another possibility, which is that *daB* is actually the head of a FinP (see chapters 2.4-2.5) and *was* is in Typ. If this is the case, then the reason why *daB* and *was* cannot co-occur is not due to their being in the same projection. I leave this issue for further analysis.

- (52) (a) [*Mit wem*]<sub>1</sub> glaubst du (*nicht*), dass Hans t<sub>1</sub>  
 with whom believe you not that Hans  
*gesprochen hat?*  
 spoken has  
 ‘With whom do(n’t) you believe that Hans has spoken?’
- (b) *Was*<sub>1</sub> glaubst du (*\*nicht*), [*Mit wem*]<sub>1</sub> Hans t<sub>1</sub>  
 WH believe you not with whom Hans  
*gesprochen hat?*  
 spoken has  
 ‘What do(n’t) you believe with whom Hans has spoken?’ (Rizzi  
 1994:368)

The existence of intervention effects is expected if partial *wh*-movement involves feature movement. In example (52b), the *wh*-feature is unable to move to the matrix Typ when negation *nicht* intervenes between the *wh*-phrase and Typ.

Another piece of evidence supporting the idea that the *wh*-feature moves in partial *wh*-movement constructions is the extreme sensitivity of partial *wh*-movement to islands. In the words of Cheng (2000:86), “partial *wh*-movement is more island-sensitive than overt extraction involving arguments.” Cheng (2000:87) gives the following examples in (53a-b), originally from Müller & Sternefeld (1996:21) and Müller (1997:18-20), which show a *wh*-phrase that originates in a complex-DP. When there is movement of the *wh*-feature out of the complex-DP in the partial *wh*-movement example in (53a), the result is worse than when there is *wh*-phrasal movement out of the complex-DP, as in (53b).

(53) German (Complex-DP island):

- (a) \**Was* hast du [<sub>DP</sub> ein Gerücht t<sub>2</sub>] gehört [<sub>typ2</sub> *wen*<sub>1</sub> Ede  
 WH have you a rumor heard whom Ede  
 t<sub>1</sub> mag]?  
 likes

- (b) ??**Wen**<sub>1</sub> hast du [<sub>DP</sub> ein Gerücht t<sub>2</sub>] gehört [<sub>typ2</sub> t<sub>1</sub> daSS  
 whom have you a rumor heard that  
 Ede t<sub>1</sub> mag]?  
 Ede likes

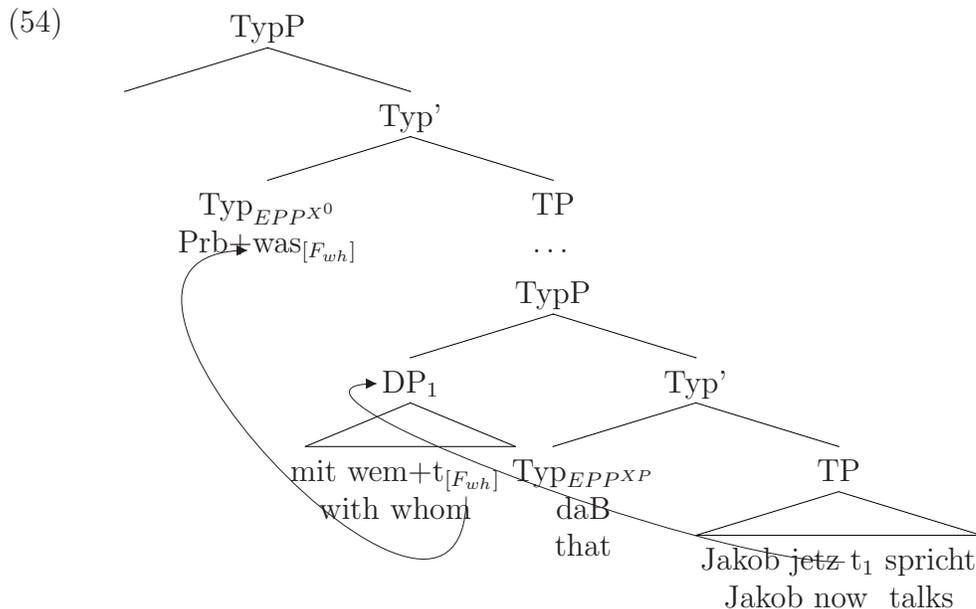
Cheng (2000) argues that these facts are the result of feature movement being more sensitive to island effects than phrasal movement. Why exactly feature movement is more island-sensitive than phrasal movement is an issue that I return to in the next section.

In this manner, partial *wh*-movement constructions appear to involve *wh*-phrasal movement to an embedded TypP followed by *wh*-feature movement to a higher TypP. I propose that the motivation for each type of movement is determined by the EPP feature contained within Typ. For example, in (48), repeated below, the embedded Typ contains an EPP<sup>XP</sup> feature and the matrix Typ contains an EPP<sup>X<sup>0</sup></sup> feature.

(48) German:

- Was**<sub>1</sub> glaubt Hans [[**Mit wem**]<sub>1</sub> daSS Jakob jetzt t<sub>1</sub> spricht]]?  
 WH thinks Hans with whom that Jakob now talks  
 ‘With whom does Hans think that Jakob is now talking?’ (Cheng 2000:78)

A simplified diagram is shown below in (54).



The embedded Typ contains an  $EPP^{XP}$  feature that forces the *wh*-phrase to move to the embedded [Spec, TypP]. The matrix clause, on the other hand, contains an  $EPP^{X^0}$  feature that forces the *wh*-feature of the *wh*-phrase to raise to the matrix Typ head where it values a probe and is pronounced as *was*.<sup>21</sup>

In a partial *wh*-movement construction in some German dialects, there can be variation in the position of a *wh*-phrase and in the number of occurrences of the *wh*-scope marker *was*. In (49a), repeated below, the *wh*-phrase *mit wem* ‘with whom’ moves to [Spec, TypP] of the higher embedded clause and its scope is marked by *was*. In (49b), the *wh*-phrase only moves to the [Spec, TypP] of the lower embedded clause, and there are two occurrences of *was*, one in the higher embedded clause and one in the matrix clause.

<sup>21</sup>Note that in order for a Typ head to have an  $EPP^{X^0}$  feature, it must c-command a Typ head in the next lower embedded clause that contains an  $EPP^{XP}$  feature. I return to this issue in section 6.5.3.

(49) German:

- (a) **Was**<sub>1</sub> *glaubst du* [<sub>TypP</sub> [**Mit wem**]<sub>1</sub> *Hans meint* [<sub>TypP</sub> *t*<sub>1</sub>  
 WH believe you with whom Hans thinks  
*daSS Jakob t*<sub>1</sub> *gesprachen hat*]]?  
 that Jakob talked has

‘With whom do you believe that Hans thinks that Jakob talked?’

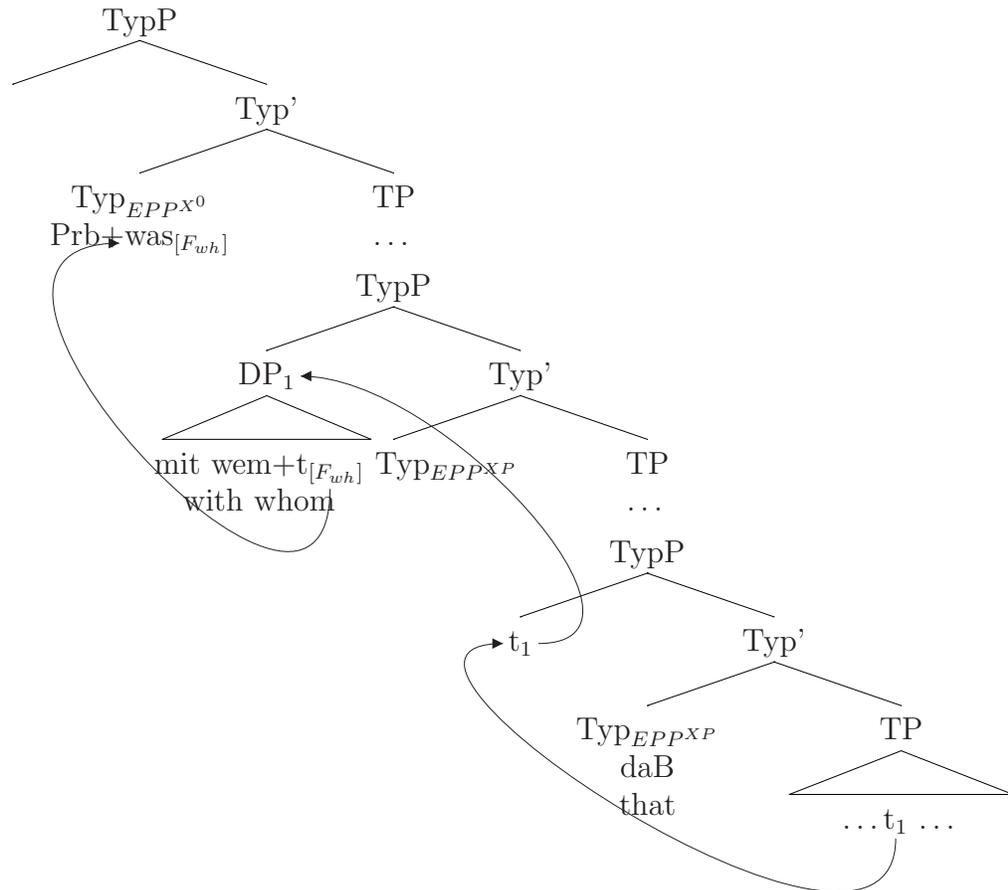
- (b) **Was**<sub>1</sub> *glaubst du* [<sub>TypP</sub> **was**<sub>1</sub> *Hans meint* [<sub>TypP</sub> [**Mit wem**]<sub>1</sub>  
 WH believe you WH Hans thinks with whom  
*Jakob t*<sub>1</sub> *gesprachen hat*]]?  
 Jakob talked has

‘With whom do you believe that Hans thinks that Jakob talked?’

(Cheng 2000:79)

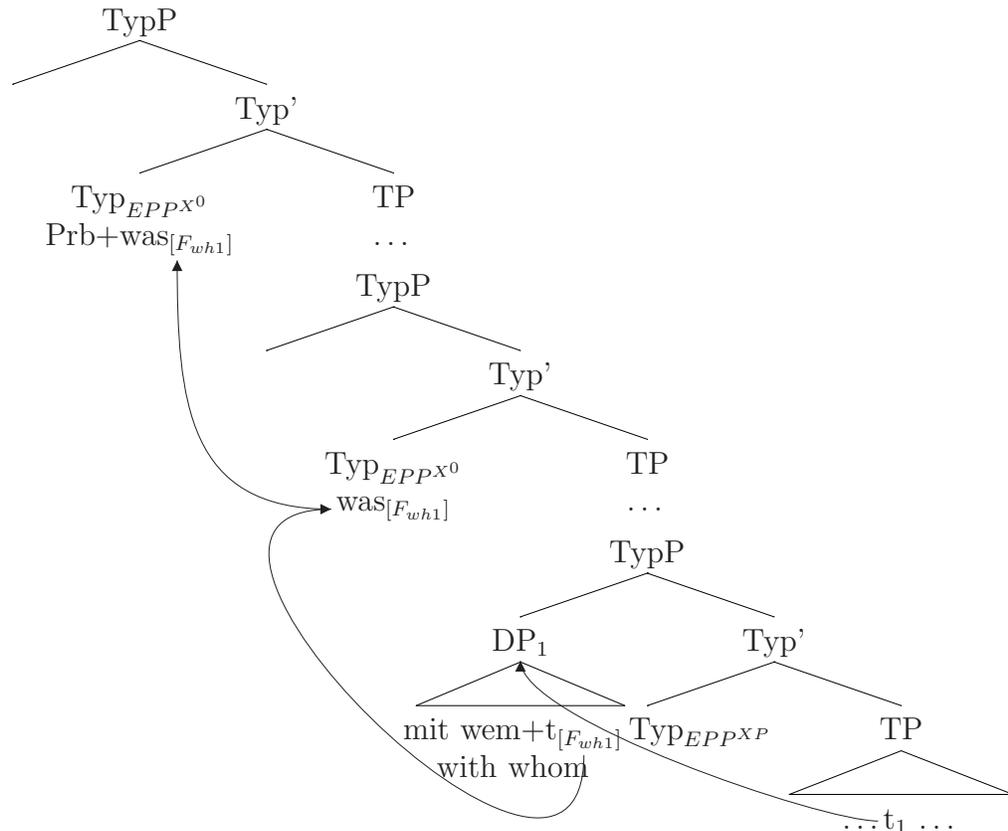
Other than the positions of the *wh*-phrases and the number of occurrences of *was*, these examples are identical. I propose that the difference between (49a) and (49b) results from the types of EPP features selected by the relevant Typ heads. In example (49a) both embedded Typ heads contain an  $EPP^{XP}$  feature, and the matrix clause Typ contains an  $EPP^{X^0}$  feature, as shown in (55). The  $EPP^{XP}$  features force the *wh*-phrase to move overtly through the lower embedded [Spec, TypP] to the higher embedded [Spec, TypP]. Then the  $EPP^{X^0}$  in the matrix clause attracts the *wh*-feature to the matrix Typ.

(55)



In example (49b) on the other hand, both the matrix and the higher embedded clauses contain an  $EPP^{X^0}$  feature. Therefore, the *wh*-phrase moves to the lower embedded [Spec, TypP] to satisfy the  $EPP^{XP}$  feature. Then, the *wh*-feature alone moves to the higher embedded Typ and again to the matrix Typ, in each case to satisfy an  $EPP^{X^0}$  feature. This *wh*-feature is pronounced as *was*. A diagram is shown below.

(56)



In this manner, the differences between these two types of constructions hinge on the type of EPP feature that **Typ** contains.<sup>22</sup>

### 6.5.2 Albanian

Albanian is also a language with partial *wh*-movement, although unlike in German, there does not appear to be an overt scope marker in a partial *wh*-movement con-

<sup>22</sup>In these partial *wh*-movement constructions in which a *wh*-phrase is multiply embedded, the facts regarding the positioning of the **EPP<sup>X<sup>0</sup></sup>** and **EPP<sup>XP</sup>** features are the same as in a construction in which a *wh*-phrase originates in a singly embedded clause (see footnote 21). The **TypP** housing the moved *wh*-phrase, has an **EPP<sup>XP</sup>** feature, and this **Typ** must be c-commanded by a **Typ** head with an **EPP<sup>X<sup>0</sup></sup>** feature in the next higher clause. I return to this issue in section 6.5.3.

struction.

First of all, a *wh*-phrase may undergo full *wh*-movement, as in (57).

(57) Albanian:

**K** $\ddot{e}_1$           *mendon se Maria ka takuar t<sub>1</sub>?*  
 Who-ACC think-2S that mary has met  
 ‘Who do you think that Mary met?’ (Turano 1998:162)

In a construction such as (57), an  $EPP^{XP}$  feature in Typ attracts the *wh*-phrase to [Spec, TypP].

Example (58) is a partial *wh*-movement construction. It corresponds to (57) except that instead of moving to the front of the matrix clause, the *wh*-phrase *kë* ‘who’ only moves to the front of the embedded clause. Also, the Qu-morpheme *a* appears in the initial position of the matrix clause. This morpheme is absent in (57). The morpheme *se* is presumably in ForceP.

(58) Albanian:

**A**<sub>1</sub> *mendon [se kë<sub>1</sub> ka takuar Maria t<sub>1</sub>]??*  
 Qu think-2S that who-ACC has met Mary  
 ‘Who do you think that Mary met?’ (Turano 1998:163)

Note that a partial *wh*-movement construction requires the presence of the particle *a*. Example (59) shows that *a* ‘Qu’ results in a yes/no construction, which shows that it is a Qu-morpheme.

(59) Albanian:

**A** *ke punuar dje?*  
 Qu have-2d worked yesterday  
 ‘Did you work yesterday?’ (Turano 1998:164)

Although *a* ‘Qu’ occurs in yes/no and partial *wh*-movement constructions, it does not occur in a full *wh*-movement construction, such as (57) above. Example (60) below shows that a moved *wh*-phrase and *a* ‘Qu’ cannot co-occur.

- (60) \**Kë*      *a*    *mendon se ka takuar Maria?*  
 who-ACC Qu think-2s that has met    Maria  
 Intended: ‘Who do you think that Mary met?’ (Turano 1998:170)

This fact can be accounted for straightforwardly as resulting from the Doubly Filled Comp Filter (Keyser 1975, Chomsky & Lasnik 1977), which is a constraint, found in some languages such as English, that in its original formulation prevents there from being a *wh*-word that is directly followed by a complementizer. Within a more modern MP framework, it is a constraint that prevents there from being both a specifier and a head in a CP (a TypP if my clause structure is utilized).<sup>23</sup> Specifically, if the Doubly Filled Comp Filter holds in Albanian, then both an overt *wh*-phrase and an overt Qu-morpheme cannot co-occur in a single TypP projection. In a partial *wh*-movement construction, there is no element in [Spec, TypP], and thus the Qu-morpheme *a* is pronounced.

Turano (1998) writes that a construction such as (60) is ill-formed because, following Koopman (1996), “for any given projection overt elements may appear either in the head or in the Spec, but not in both positions (171).” This view that both the head and specifier of a projection may not be filled is essentially identical to the Doubly Filled Comp Filter. Turano writes that in this case, both the Qu-morpheme and the *wh*-phrase check a Focus-feature in the head of a FocP projection. Since a Focus-feature cannot be checked twice, the Qu-morpheme and *wh*-phrase cannot co-occur. My analysis differs in that I assume that when a *wh*-phrase moves, there is still a Qu-morpheme present, but it is not pronounced. Both

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<sup>23</sup>I thank Heidi Harley (p.c.) for suggesting to me that the Doubly Filled Comp Filter may be the key to understanding this phenomenon.

the Qu-morpheme and *wh*-phrase occur in TypP and there is no checking of a Focus-feature.

The fact that *a* ‘Qu’ occurs in a partial *wh*-movement construction, but not in a full *wh*-movement construction leads Turano (1998:164) to argue that it “can be analyzed as a [+WH] C<sup>0</sup> element.” As I see the facts, *a* is not a *wh*-element. It is merely a Qu-morpheme with a Qu-feature and when it co-occurs with a *wh*-feature, then a *wh*-construction results. First of all, as shown in (59) above, *a* is used to type a clause as a yes/no construction; in which case *a* clearly is not a [+WH] element. Further evidence that *a* is not a *wh*-element can be seen by examining partial *wh*-movement constructions with multiply embedded *wh*-phrases. In (61a), the *wh*-phrase *kush* ‘who’ is in [Spec, TypP] of the doubly-embedded clause, and the Qu-morpheme *a* appears in the matrix clause. The ill-formed (61b) on the other hand is identical to (61a) except that *a* also occurs in the higher embedded clause.

(61) Albanian:

- (a)  $\mathbf{A}_1$  *mendon* [<sub>TypP</sub> *se* *Maria* *thotë* [<sub>TypP</sub> *se* ***kush***<sub>1</sub> *ka*  
 Qu think-2S that Mary says that who has  
*lexuar librin*]]?  
 read book-the  
 ‘Who do you think that Mary says read the book?’
- (b) \* $\mathbf{A}_1$  *mendon* [<sub>TypP</sub>  $\mathbf{a}_1$  *Maria* *thotë* [<sub>TypP</sub> *se* ***kush***<sub>1</sub> *ka*  
 Qu think-2S Qu Mary says that who has  
*lexuar librin*]]?  
 read book-the  
 ‘Who do you think that Mary says read the book?’

The ill-formedness of (61b) is accounted for straightforwardly if *a* is a Qu-morpheme. It occurs in the matrix clause because this clause is an interrogative. It cannot occur in the higher embedded clause because this clause is not an interrogative. If *a* were a *wh*-element akin to the *wh*-scope marker *was* in German then it should be able to

occur in a non-interrogative embedded clause in a partial *wh*-movement construction such as (61b), contrary to fact.

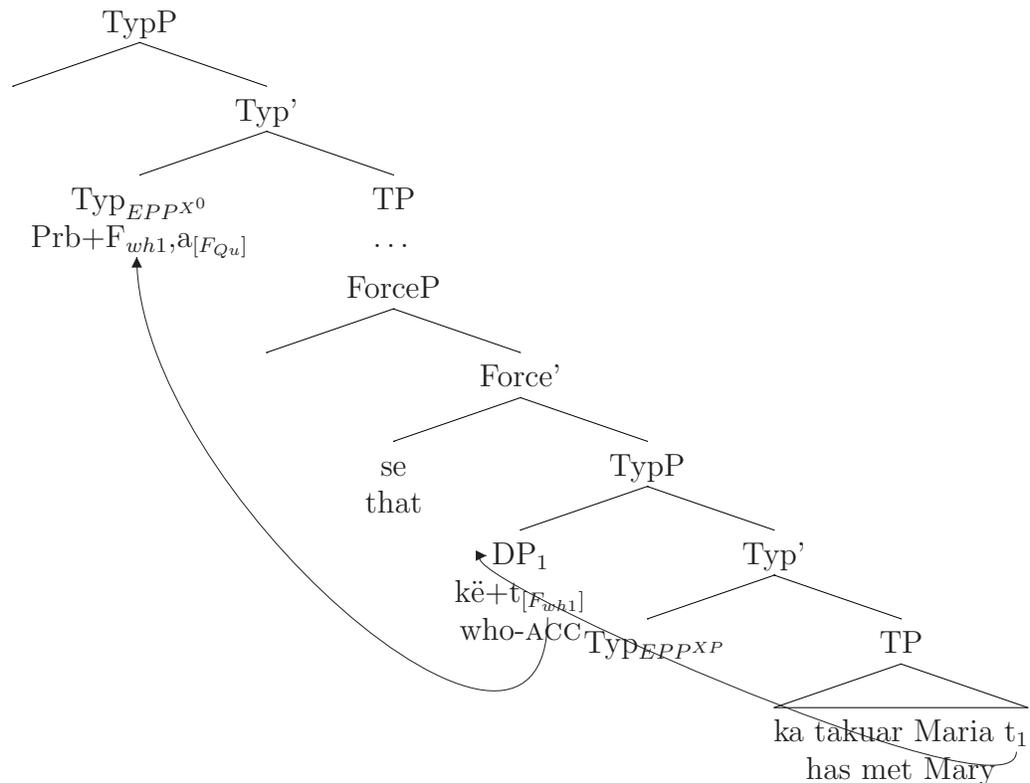
A partial *wh*-movement construction such as (58), repeated below, can then be accounted for as follows.

(58) Albanian:

$A_1$  *mendon* [*se*  $k\ddot{e}_1$  *ka takuar* *Maria*  $t_1$ ]?  
 Qu think-2S that who-ACC has met Mary  
 ‘Who do you think that Mary met?’ (Turano 1998:163)

The embedded Typ head contains an  $EPP^{XP}$  feature that attracts the *wh*-phrase *kë* ‘who’ to its specifier position. The matrix Typ contains an  $EPP^{X^0}$  feature that attracts the *wh*-feature of the *wh*-phrase to the matrix Typ. Since the specifier of Typ is empty, the Qu-morpheme *a*, which is a separate element from the *wh*-feature, is pronounced without violating the Doubly Filled Comp Filter. A diagram is shown below. Note that *se* ‘that’ is in the ForceP head in the embedded clause.

(62)



Example (61a), repeated below, contains a multiply embedded *wh*-phrase that has matrix scope.

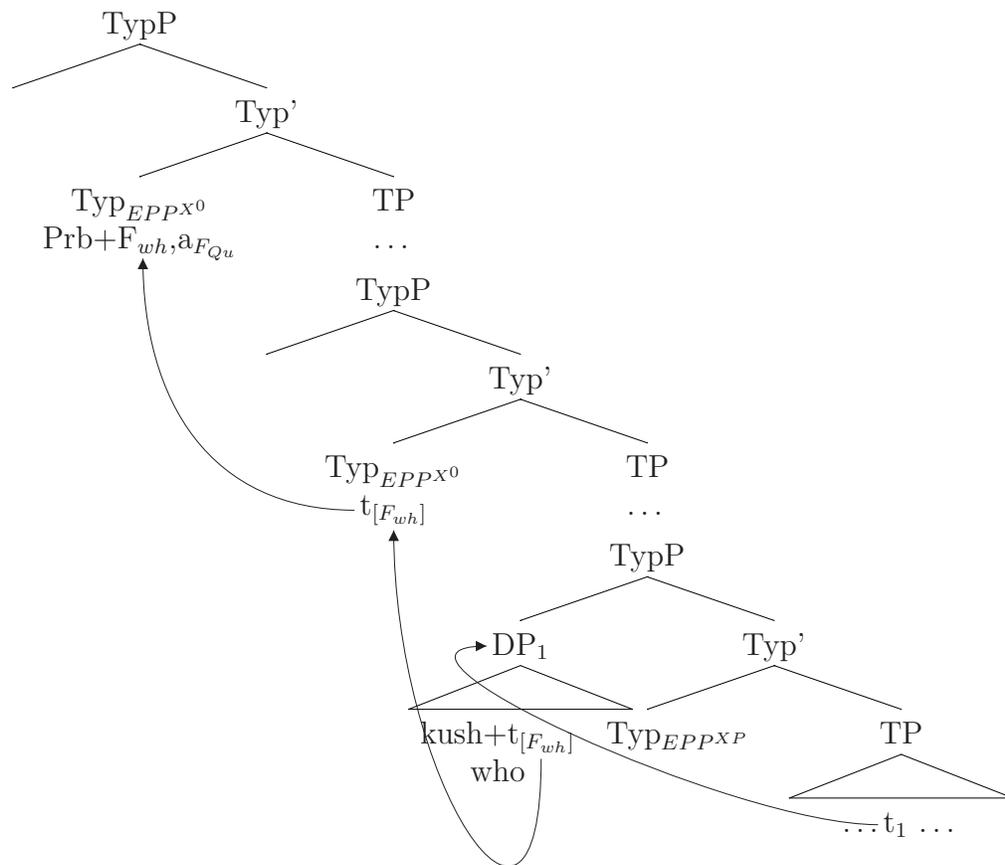
(61) Albanian:

- (a)  $A_1$  *mendon* [<sub>TypP</sub> *se* *Maria* *thotë* [<sub>TypP</sub> *se* ***kush***<sub>1</sub> *ka*  
 Qu think-2S that Mary says that who has  
*lexuar librin*]]?  
 read book-the  
 ‘Who do you think that Mary says read the book?’

In this case, there is an  $EPP^{XP}$  feature in the lowest embedded Typ that forces the *wh*-phrase *kush* to move to its specifier position. The higher embedded Typ and the matrix Typ each contain an  $EPP^{X^0}$  feature that forces movement of the *wh*-feature.

The Qu-morpheme *a* types the matrix clause as an interrogative and thus it appears in the matrix Typ. A simplified diagram is shown below.

(63)



In summary, partial *wh*-movement constructions in Albanian, like in German, are formed when there is a Typ head that contains an  $EPP^{XP}$  feature and a Typ head that contains an  $EPP^{X^0}$  feature.<sup>24</sup> Unlike in German, though, a moved *wh*-feature is not pronounced. Also, unlike in German, Albanian contains an overt Qu-morpheme that is pronounced in a partial *wh*-movement construction.

<sup>24</sup>As in German, the Typ head with the  $EPP^{X^0}$  feature must c-command a Typ head with an  $EPP^{XP}$  feature. I discuss this issue in the next section.

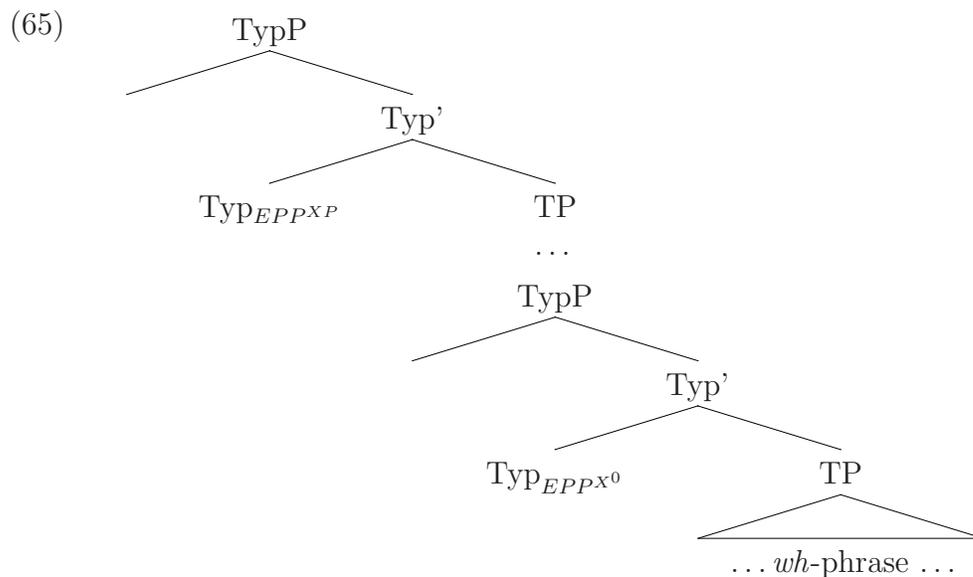
6.5.3 Remaining issues concerning partial *wh*-movement

Both German and Albanian are languages that require movement of a *wh*-phrase. I propose that there is the following constraint in these languages.

- (64) The closest c-commanding Typ head of a clause with a *wh*-phrase must contain an  $EPP^{XP}$  feature.

This constraint requires movement of a *wh*-phrase to the specifier of the closest c-commanding TypP. If this constraint is satisfied, then there can also be an  $EPP^{X^0}$  feature. This constraint explains why an  $EPP^{X^0}$  feature cannot occur freely in any Typ head.

First of all, (64) accounts for the fact that a Typ head with an  $EPP^{X^0}$  feature cannot precede a Typ head with an  $EPP^{XP}$  feature. The structure in (65), in which an embedded Typ contains an  $EPP^{X^0}$  feature that attracts a *wh*-feature and a higher Typ contains an  $EPP^{XP}$  that attracts a *wh*-phrase is not allowed.



The  $EPP^{XP}$  feature in the higher Typ attracts a *wh*-phrase from the embedded clause. In order to arrive in the specifier of the matrix TypP, the *wh*-phrase would

have to move through the embedded [Spec, TypP], but this is not possible because the embedded Typ contains an  $EPP^{X^0}$  feature that only attracts the *wh*-feature, and not the *wh*-phrase. According to Phase Theory, only an element at the edge of a phase is accessible to higher phrases. Thus, if the embedded *wh*-phrase does not move to the embedded [Spec, TypP], it is not able to move out of the lower phase (the embedded TypP) and into a higher phase. Therefore, there is a ban on a construction with the configuration in (65).

The constraint in (64) also straightforwardly accounts for the fact that a *wh*-phrase cannot remain in-situ in these languages. For example, (66a-b) from German are ill-formed because the *wh*-phrase does not move.

(66) German:

- (a) \***Was**<sub>1</sub> *ist er wem*<sub>1</sub> *begegnet?*  
 WH is he who met (Sabel 2000:419)
- (b) \***Was**<sub>1</sub> *glaubst du* [<sub>CP</sub> **was**<sub>1</sub> *Hans meint* [<sub>CP</sub> *Jakob* [**mit**  
 WH believe you WH Hans thinks Jakob with  
**wem**]<sub>1</sub> *gesprachen hat*]]?  
 whom talked has  
 ‘With whom do you believe that Hans thinks that Jakob has talked?’  
 (Cheng 2000:80)

Similarly, the Albanian (67) is ill-formed because the *wh*-phrase remains in-situ.<sup>25</sup>

(67) Albanian:

- \***A** *pe kush* *rrugës?*  
 Qu saw-2s who street  
 ‘Who did you see in the street?’ (Turano 1998:150)

<sup>25</sup>Note that (67) is well-formed as a yes/no construction meaning *Did you see anyone in the street?*, in which case the *wh*-element functions as an indefinite (Turano 1998:150).

These are ill-formed as *wh*-constructions because Typ lacks an  $EPP^{XP}$  feature, thereby violating (64).

Cheng (2000) has a different analysis of why *wh*-phrasal movement must precede *wh*-feature movement; however, it has some problems. Cheng (2000:81) writes the following.

Following Chomsky (1995; class lecture fall 1995), I assume that overt *wh*-movement involves a two-step movement: feature movement and category movement. Feature movement falls under Attract F (i.e., as a result of feature attraction/checking) while category movement (the so-called generalized pied piping) is for PF convergence. Further, Chomsky proposes that after a category undergoes movement, an automatic repair strategy takes place to ensure that the feature(s) will not be scattered (Cheng 2000:81).

Cheng, following Chomsky, claims that a *wh*-feature raises to C and then the *wh*-phrase raises to the specifier of CP so that a repair strategy can occur. The repair strategy is described as “a mechanism which puts the feature bundle back into the category (Cheng 2000:81).” The *wh*-feature separates from the *wh*-phrase, undergoes movement to C, and then the *wh*-phrase moves to [Spec, CP] so that the feature can move back into the *wh*-phrase. According to Cheng, a *wh*-phrase must move before partial *wh*-movement can occur because the repair strategy must occur. If the *wh*-phrase remains in-situ and its feature raises to C, then there is no point in the derivation in which the repair strategy can occur. Cheng (2000:82) writes that “category movement is a necessary step preceding the repair strategy.”

A problem with Cheng’s analysis is that, in my opinion, it predicts that *wh*-phrasal movement should behave like *wh*-feature movement with respect to island effects. As shown in (53a-b), repeated below, partial *wh*-movement out of an island is worse than full *wh*-movement out of an island.

(53) German (Complex-DP island):

- (a) \***Was** hast du [<sub>DP</sub> ein Gerücht t<sub>2</sub>] gehört [<sub>typ2</sub> **wen**<sub>1</sub> Ede  
 WH have you a rumor heard whom Ede  
 t<sub>1</sub> mag]?  
 likes
- (b) ??**Wen**<sub>1</sub> hast du [<sub>DP</sub> ein Gerücht t<sub>2</sub>] gehört [<sub>typ2</sub> t<sub>1</sub> daSS  
 whom have you a rumor heard that  
 Ede t<sub>2</sub> mag]?  
 Ede likes (Cheng 2000:87)

In constructions such as (53a), partial *wh*-movement involves *wh*-feature movement alone out of an island. When there is *wh*-phrasal movement as in (53b), according to Cheng, the *wh*-feature moves to C and the *wh*-phrase moves to [Spec, CP] for the repair strategy to occur. Since, under Cheng's analysis, the *wh*-feature undergoes head-movement regardless of whether or not there is partial or full *wh*-movement, full *wh*-phrasal movement out of an island should be just as bad as partial *wh*-movement. It maybe should even be worse, since two elements (a *wh*-phrase and a *wh*-feature) move in the case of full *wh*-movement, but only a *wh*-feature moves in the case of partial *wh*-movement. Yet *wh*-phrasal movement is not just as bad as partial *wh*-movement. Partial *wh*-movement is more island sensitive than full *wh*-movement. Cheng accounts for this fact by suggesting that category movement somehow lessens an island violation. Cheng (2000:87) writes the following.

In cases where full movement takes place, both feature movement and category movement are involved. However, in such cases, the violations incurred by feature movement are “cancelled” by category movement.

Thus, according to Cheng, category movement which follows feature movement lessens an island effect incurred by feature movement.<sup>26</sup> However, it is not clear

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<sup>26</sup>Cheng states that the island effects are ‘canceled’ but this is not quite correct, since island effects still occur, but are not as severe.

why category movement would lessen the severity of an island effect. Since there is movement of two elements out of an island, an island effect should worsen. Instead, as I see it, the difference in the severity of island effects resulting from full *wh*-movement versus partial *wh*-movement results from the difference between movement of a feature, which is an  $X^0$  category element, and XP movement of a phrase.

This view of the facts raises the question of why head-movement is more sensitive to island effects than phrasal movement is. However, I do not have a solution at this time. The island effects in the complex-DP constructions in (53a-b) can be attributed to renumeration of the adjunct clause modifier of the nominal. Why exactly movement of a *wh*-feature is worse than movement of a *wh*-phrase out of a complex-DP is not clear to me, and is an issue that requires further examination.

In conclusion, partial *wh*-movement languages such as German and Albanian require a *wh*-phrase to undergo movement before its *wh*-feature can separate from it and raise to adjoin to a *wh*-expletive. There can only be an  $EPP^{X^0}$  feature in a Typ head if there is already an  $EPP^{XP}$  feature in a lower embedded Typ. A partial *wh*-movement construction must have the configuration shown in (68a), although there can be any number of Typ heads with an  $EPP^{XP}$  feature as long as they are c-commanded by a Typ with an  $EPP^{X^0}$  feature, and there can be any number of Typ heads with an  $EPP^{X^0}$  feature as long as they c-command a Typ head with an  $EPP^{XP}$  feature. The configuration in (68b) which results in *wh*-feature movement preceding *wh*-phrasal movement, and the configuration in (68c) which results in a *wh*-in-situ construction are not allowed.

- (68) (a)  $[TypP [Typ_{EPP^{X^0}} \dots [TypP [Typ_{EPP^{XP}} \dots ]]]]$   
 (b)  $*[TypP [Typ_{EPP^{XP}} \dots [TypP [Typ_{EPP^{X^0}} \dots ]]]]$   
 (c)  $*[TypP [Typ_{EPP^{X^0}} \dots ]]$

The facts of (68) are forced by (64) which requires a *wh*-construction to have an  $EPP^{XP}$  feature in the closest Typ to c-command a relevant *wh*-phrase and by these

languages containing an  $EPP^{X^0}$  feature in their lexicons.

#### 6.6 *Wh*-phrasal movement, Agree, and partial *wh*-movement in a single language: Malay

Malay<sup>27</sup> is interesting in that it allows a *wh*-construction to be formed in a variety of ways. Malay, like German and Albanian, allows a *wh*-phrase either to move to its scope position or to undergo partial-*wh*-movement, and in addition, it allows a *wh*-phrase to remain in-situ. I propose that these facts are the result of Malay allowing three different types of Typ heads, one without an EPP feature, one with an  $EPP^{XP}$  feature, and one with an  $EPP^{X^0}$  feature, although as in the partial *wh*-movement languages discussed above, the  $EPP^{X^0}$  feature can only occur if there is already an  $EPP^{XP}$  feature in a lower Typ head.

I begin by presenting the relevant data from Malay. First, a *wh*-phrase can undergo movement to the position where it takes scope, as in (69).

(69) Malay:

*Siapa*<sub>1</sub> (*yang*) [*Bill harap [yang t*<sub>1</sub> *akan membeli baju*  
Who (that) Bill hope that will buy clothes for  
*untuknya]]?*  
him

‘Who does Bill hope will buy clothes for him?’ (Cole & Hermon 1998:224)

The second option is for a *wh*-phrase to remain in-situ, as shown in (70).<sup>28</sup>

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<sup>27</sup>This is a language spoken in Brunei, Indonesia, Malaysia, and Singapore. The data that I present are from Cole & Hermon (1998) who state that their data come from “the Malay spoken by educated speakers in Singapore.” See also Saddy (1990) for a discussion of Indonesian, which is closely related to Malay, and which shows the same variety of *wh*-constructions.

<sup>28</sup>Note that unlike a *wh*-phrase such as *apa* ‘what,’ *kenapa* ‘why’ cannot remain in-situ. See chapter 9 for further discussion.

(70) Malay:

*Ali memberitahu kamu tadi [Fatimah baca apa]?*  
 Ali informed you just now Fatimah read what  
 ‘What did Ali tell you Fatimah was reading?’ (Cole & Hermon 1998:224)

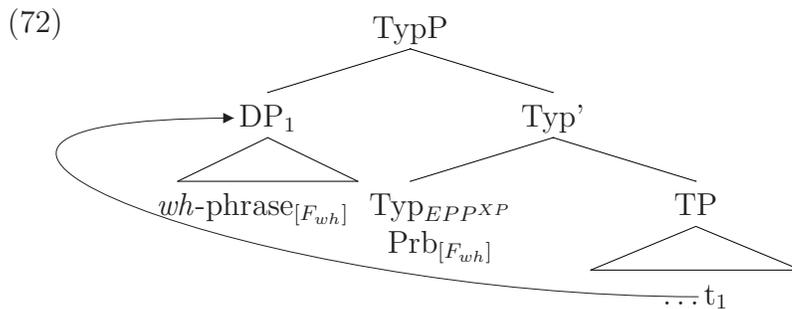
The third option is for a *wh*-phrase to undergo partial movement, as shown in (71).

(71) Malay:

*Jon fikir [kenapa<sub>1</sub> (yang) Mary rasa [Ali dipecat t<sub>1</sub>]]?*  
 John think why (that) Mary feel Ali was fired  
 ‘Why does John think (that) Mary felt Ali was fired?’ (Cole & Hermon 1998:225)

The *wh*-phrase moves to the initial position of an embedded clause but has scope in a higher clause. Note that there is no overt *wh*-expletive.

When a *wh*-phrase moves to its scope position as in (69), according to my analysis, there is an  $EPP^{XP}$  feature in Typ that forces overt movement of the *wh*-phrase, and the *wh*-feature values the probe in Typ via a Spec-head relation. A diagram is shown in (72).



Evidence supporting the idea that there is overt *wh*-movement is the existence of island effects. For example, in (73), the *wh*-phrase *di mana* ‘at where’ moves from inside a complex-DP, resulting in ill-formedness. See Cole & Hermon (1998:227-228) for further examples.

(73) Malay:

\*[*Di mana*]<sub>1</sub> kamu fikir Ali suka [<sub>DP</sub> perempuan yang tinggal  
At where you think Ali like woman who live  
*t*<sub>1</sub>]/?

Intended: ‘Where<sub>1</sub> do you think Ali likes the woman who lives *t*<sub>1</sub>?’ (Cole & Hermon 1998:227)

The ill-formedness of this construction is accounted for straightforwardly if the  $EPP^{XP}$  feature in Typ is unable to attract the *wh*-phrase out of a renumerated adjunct clause within the complex-DP.

When a *wh*-phrase remains in-situ as in (70), there are two possibilities; one is that the *wh*-feature alone moves, and the other is that the *wh*-feature forms an Agree relation with Typ. Evidence suggests that the latter is the case; there is an Agree relation. This is because an in-situ *wh*-phrase is not subject to island effects. Example (74) shows that the *wh*-phrase *di mana* ‘at where’ can remain in-situ and result in a perfectly well-formed *wh*-construction, which is identical to the ill-formed (73), except that the *wh*-phrase remains in-situ.

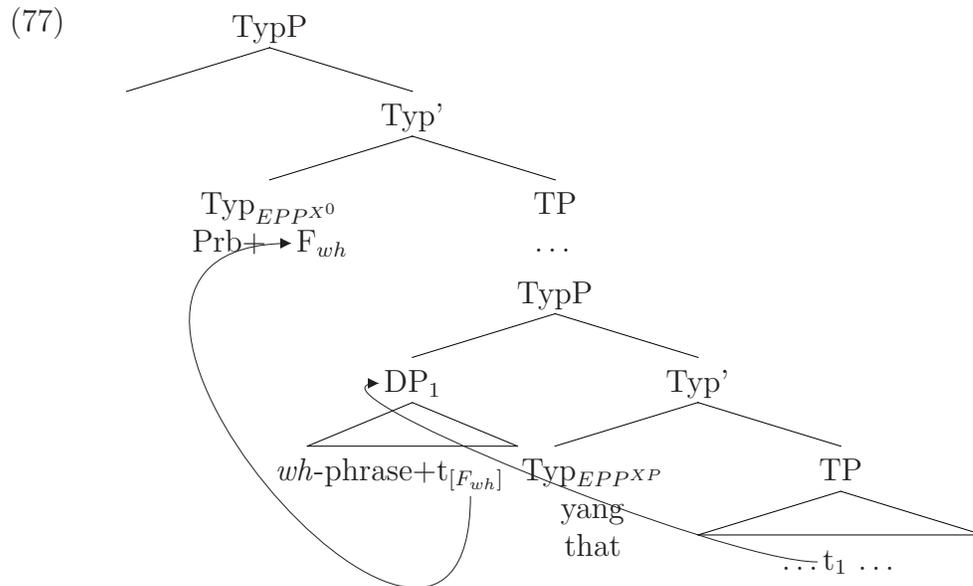
(74) Malay:

*Kamu fikir [Ali suka [<sub>DP</sub> perempuan yang tinggal di mana]]/?*  
you think Ali like woman that live at where  
‘Where<sub>1</sub> do you think Ali likes the woman who lives *t*<sub>1</sub>?’ (Cole & Hermon  
1998:228)

The well-formedness of this construction can be accounted for if there is no  $EPP$  feature in Typ. The *wh*-feature undergoes an Agree relation with a probe in Typ, and Agree can occur between the matrix Typ and a *wh*-feature contained within a renumerated *wh*-phrase. Since there is no movement of the *wh*-feature, there is no island effect. A diagram is shown in (75).



to the embedded [Spec, TypP]. The matrix Typ contains an  $EPP^{X^0}$  feature that attracts the *wh*-feature from the *wh*-phrase within the embedded clause.



Note that this partial *wh*-movement works just as in German and Albanian; an  $EPP^{X^0}$  feature can only occur if there is an  $EPP^{XP}$  feature in a lower embedded clause. Remember that I claimed that German and Albanian have the constraint in (64), repeated below.

- (64) The closest c-commanding Typ head of a clause with a *wh*-phrase must contain an  $EPP^{XP}$  feature.

This same constraint appears to hold in Malay, although with a twist. It is not the case that a *wh*-construction always must have an  $EPP^{XP}$  feature in Typ, as indicated by the possibility of Agree in this language. Rather, when there is *wh*-phrasal movement of any sort, there must be  $EPP^{XP}$  feature in Typ. Thus I revise (64) as follows.

- (78) In a construction with *wh*-phrasal movement, the lowest c-commanding Typ head of a clause with a *wh*-phrase must contain an  $EPP^{XP}$  feature.

The Malay *wh*-construction facts then raise the question of why so many different options for forming a *wh*-construction are allowed in a single language. The answer lies in the possible underlying numerations of a *wh*-construction. There are three basic numerations that are allowed, as shown in (79a-c), which differ in terms of whether or not there is an EPP feature in Typ and the type of EPP feature that occurs in Typ.

(79)

	<i>Wh</i> -construction type	EPP
(a)	<i>Wh</i> -movement	$EPP^{XP}$
(b)	<i>Wh</i> -in-situ	$\emptyset$
(c)	Partial <i>wh</i> -movement	$[TypP [Typ_{EPPX^0} \dots [TypP [Typ_{EPPXP} \dots ]]]]$

In a *wh*-movement construction (79a), Typ contains an  $EPP^{XP}$  feature that forces the *wh*-phrase to move to [Spec, TypP]. In a *wh*-in-situ construction (79b), Typ lacks an EPP feature, and thus Agree alone occurs. In a partial *wh*-movement construction, there is an  $EPP^{XP}$  feature in an embedded Typ that forces movement of the *wh*-phrase to [Spec, TypP] and there is an  $EPP^{X^0}$  feature in a higher Typ head that forces *wh*-feature movement. These options exist in various other languages. Thus, Malay is a language which can form a *wh*-construction in the same way as in English with *wh*-phrasal movement, as in Mandarin with no movement of a *wh*-element, or as in German and Albanian, with partial *wh*-movement.

Before I end this section, I briefly compare my analysis with that of Cole & Hermon (1998), who take a different approach to the Malay *wh*-construction facts. They assume that a *wh*-phrase consists of an operator and a variable, and that whether or not the variable and operator form a single word depends on the language. In English, they propose that an operator and variable form a single lexical item, thus accounting for the requirement for full *wh*-movement in single *wh*-constructions, and in Chinese, an operator and variable are separate, thus accounting for why a

*wh*-phrase can remain in-situ and why it is not subject to island effects. In Malay, on the other hand, they propose that the operator and variable can either be a single lexical item, or they can be separate, and that these facts account for the wide variety of Malay *wh*-constructions.

Cole & Hermon (1998) take the position that in a *wh*-construction, a C head contains what they refer to as a “STRONG Q (*wh*-feature) that needs to be checked by a *wh*-feature that moves into the checking domain of C (Cole & Hermon 1998:223).” In other words, there is a Q feature in C that needs to be checked by a *wh*-feature.

Cole & Hermon (1998) argue that there are two possibilities for the structure of a *wh*-phrase. One type of *wh*-phrase consists of an operator and a variable that form a single lexical item, represented as “[OP+VAR].” This single *wh*-phrase is used in both full and partial *wh*-movement constructions. The other type consists of a separated operator and variable, represented as “[OP.. ..VAR],” and this results in a *wh*-in-situ construction.

Evidence that a *wh*-word and an operator can be separate is that a *wh*-word in Malay can behave as a variable. For example, *apa* ‘what’ can be used in the following example, where Cole and Hermon argue that it is “bound by the existential quantifier represented by *-pun* ‘also’ (240).”

(80) Malay:

*Dia tidak membeli apa-pun untuk saya.*  
 he not MENG-buy what-also for me  
 ‘He did not buy anything for me.’ (Cole & Hermon 1998:239)

Based on this use of a *wh*-word as a variable, Cole & Hermon argue that a *wh*-word can occur separately from an operator.

In a full *wh*-movement construction, there is a single lexical item [OP+VAR] that undergoes movement to [Spec, CP] to check the STRONG Q feature in C by discharging its *wh*-feature. The need to check the STRONG Q feature in C results

in overt *wh*-phrasal movement. Movement of a *wh*-phrase is subject to island effects, as in (73) above.

In a partial *wh*-movement construction, again Cole and Hermon argue that there is an [OP+VAR] *wh*-phrase, but in addition, unlike in a full *wh*-movement construction, there is a null *wh*-expletive that is Merged directly in the scopal [Spec, CP] position, where it “satisfies the STRONG feature of Q (250).” Because the *wh*-expletive is in the scopal [Spec, CP] position, the [OP+VAR] *wh*-phrase moves to a non-scopal [Spec, CP] position. Then, at LF, the operator OP moves to the scopal [Spec, CP] where it replaces the *wh*-expletive. From this position, the OP binds the variable VAR. LF movement of this *wh*-operator is also subject to island effects, as in (76b).

In a *wh*-in-situ construction, Cole and Hermon argue that there is an [OP..VAR] structure. The operator part of the *wh*-phrase is base generated directly in [Spec, CP], where it checks the STRONG Q feature, and binds the *wh*-phrase. Following Tsai (1994), Reinhart (1993, 1995), and Cole & Hermon (1995), they attribute the lack of island effects in a *wh*-in-situ construction to unselective binding of the *wh*-phrase by the operator. Unselective binding is a proposed form of binding in which an operator binds a variable and this binding relation is not subject to intervention effects.

There are several problems that I see with this analysis.

First of all, the motivation for *wh*-phrasal movement (in constructions with overt *wh*-phrasal movement), and also *wh*-operator movement (in constructions with partial *wh*-movement) is the need to check a *wh*-feature on a STRONG Q feature in C. This analysis thus lumps together Qu- and *wh*-features, which I believe are distinct elements. The label Q indicates a feature that results in an interrogative; i.e., in a yes/no or a *wh*-construction. However the STRONG Q of Cole and Hermon’s analysis requires checking by a *wh*-feature, and thus appears to be an element specific to a *wh*-construction. This type of analysis appears to require that a yes/no construction

contain a different type of Q-feature than a *wh*-construction. My analysis unifies the interrogative aspect of yes/no and *wh*-constructions by simply assuming that the Qu-feature of a *wh*-construction is the same type of feature that appears in a yes/no construction. The Qu-feature has nothing to do with motivating movement of a *wh*-element. Rather, movement is motivated by an EPP feature.

Another problem with this analysis is that it relies on the notion that a *wh*-phrase consists of an operator and a variable that can be separated, either at Spell-Out (in a *wh*-in-situ construction), or at LF (in a partial *wh*-movement construction). Specifically, because an operator is base generated in [Spec, CP], it can bind a variable *wh*-word in a *wh*-in-situ construction, or it can bind a variable *wh*-word in a non-scopal [Spec, CP] position. But Bruening (2007) demonstrates that there are problems with this view. Bruening (2007) points out that there are *wh*-in-situ languages such as Turkish (a fact noted by Cole and Hermon) that do not use *wh*-words as variables, and there are languages that use *wh*-words as indefinites, but that require overt *wh*-phrasal movement, such as Pasamaquoddy. Therefore, whether or not a *wh*-word can be used as a variable in a language does not predict whether or not a *wh*-word can remain in-situ. One implication of Bruening's analysis is that it may not be the case that a *wh*-phrase actually consists of an operator and a variable. This notion is compatible with my analysis, in which I make no recourse to the notion of null *wh*-operators.

Next, in a partial *wh*-movement construction, Cole and Hermon claim that a null *wh*-expletive is replaced at LF by movement of a null *wh*-operator. The null *wh*-expletive checks the STRONG Q feature in the scopal C position, and the null *wh*-operator undergoes movement to replace the expletive, most likely in order to give a *wh*-phrase scope. This analysis does not account for why a full [OP+VAR] *wh*-phrase moves to a non-scopal [Spec, CP] position. If there is an expletive inserted in the scopal C head, and the null *wh*-operator can move at LF, then the *wh*-phrase should be able to remain in-situ at Spell-Out as its *wh*-operator could move at LF.

Under my account, a *wh*-phrase moves to a non-scopal [Spec, CP] position because of a requirement that there be an  $EPP^{XP}$  feature to drive *wh*-movement (see (64)), in which case, there can be an  $EPP^{X^0}$  feature in a higher Typ head. There is no reliance on a null *wh*-expletive or movement of a null *wh*-operator.

Lastly, in a *wh*-in-situ construction, Cole and Hermon rely on the notion that a *wh*-operator is base generated in the scopal [Spec, CP] position and unselectively binds an associated in-situ *wh*-word. Under my analysis, there is an Agree relation between a probe in Typ and the *wh*-feature of the *wh*-phrase. This Agree relation is similar to the notion of unselective binding, although it is not an operator variable relationship. Rather it is a probe and goal (*wh*-feature) relationship, and the *wh*-in-situ facts do not result from binding by a null *wh*-operator.

In conclusion, the basic differences between my analysis and that of Cole and Hermon, are that, under my analysis, there is no *wh*-operator movement, nor is there any LF movement. The *wh*-construction facts simply rely on the relationship that a *wh*-feature forms with a probe and whether or not a Typ head contains an EPP feature.<sup>29</sup>

## 6.7 French: *wh*-phrasal movement and *wh*-feature movement in a single language

In this section, I discuss French, a language in which a *wh*-phrase may either occur in-situ or undergo movement, although the option for a *wh*-phrase to remain in-situ is limited.

According to Bošković, *wh*-in-situ in French is limited to one particular situation, a matrix clause with a null complementizer, as in (81a), in which the *wh*-phrase *qui* ‘who’ remains in-situ. The *wh*-phrase may also move to clause-initial position as in (81b).

---

<sup>29</sup>Cole and Hermon also apply their analysis to other languages, with English being a language in which a *wh*-phrase and operator are a single lexical item and Chinese a language in which a *wh*-phrase always consists of a *wh*-word variable and a separate operator.

(81) French:

- (a) *Tu as vu qui?*  
 you have seen whom  
 ‘Who did you see?’
- (b) *Qui<sub>1</sub> as-tu vu t<sub>1</sub>?*  
 whom have-you seen  
 ‘Who did you see?’ (Bošković 1998)

In all other environments, a *wh*-phrase must move. Examples (82a-b) show a matrix clause with an overt complementizer. The *wh*-phrase cannot remain in-situ, as shown by the ill-formedness of (82a). (82b) in which the *wh*-phrase moves to clause-initial position is fine.

(82) French:

- (a) *\*Que tu as vu qui?*  
 COMP you have seen who  
 Intended: ‘Who have you seen?’
- (b) *Qui<sub>1</sub> que tu as vu t<sub>1</sub>?*  
 who COMP you have seen  
 ‘Who have you seen?’ (Bošković 2002:352)

Example (83a) is ill-formed because the *wh*-phrase remains in-situ in the embedded clause. (83b) is fine because the *wh*-phrase has moved to the initial position of the embedded clause.

(83) French:

- (a) *\*Pierre a demandé [tu as embrassé qui].*  
 Pierre has asked you have kissed who  
 Intended: ‘Pierre has asked who you have kissed.’

- (b) *Pierre a demandé [qui<sub>1</sub> tu as embrassé t<sub>1</sub>]*  
 Pierre has asked who you have kissed  
 ‘Pierre has asked who you have kissed.’ (Bošković 2002:352)

Examples (84a-b) show that when an embedded *wh*-phrase has matrix scope it must move. (84a) is ill-formed because the *wh*-phrase remains in-situ, whereas (84b) is well-formed because the *wh*-phrase has moved to the beginning of the matrix clause.

(84) French:

- (a) \**Jean et Marie croient [que Pierre a embrassé qui]?*  
 Jean and Marie believe that Pierre has kissed who  
 Intended: ‘Who do Jean and Marie believe that Pierre has kissed?’
- (b) *Qui<sub>1</sub> Jean et Marie croient-ils [que Pierre a embrassé t<sub>1</sub>]?*  
 who Jean and Marie believe that Pierre has kissed  
 ‘Who do Jean and Marie believe that Pierre has kissed?’ (Bošković 2002:352)

The constructions in which a *wh*-phrase moves overtly are accounted for straightforwardly according to my analysis. The TypP head contains an  $EPP^{XP}$  feature that attracts the *wh*-phrase to [Spec, TypP].

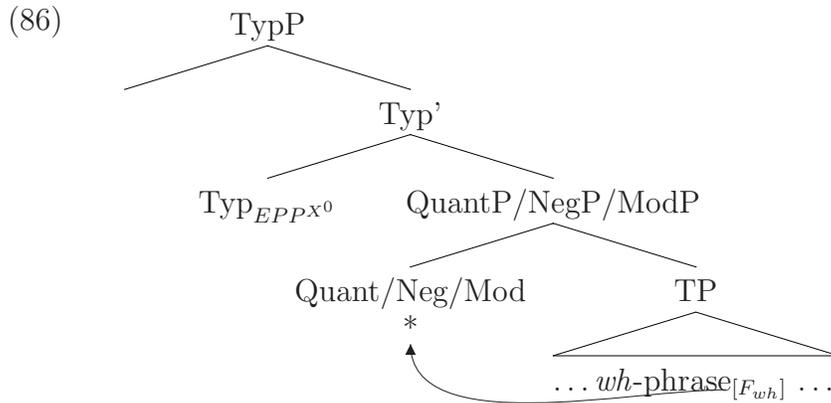
Accounting for what happens when a *wh*-phrase remains in-situ is more problematic. Bošković (2000) argues that a complementizer with a strong feature can be inserted into a derivation at LF, in which case the strong feature of the complementizer forces the *wh*-phrase to move at LF. Since movement is at LF, the *wh*-phrase remains in-situ at Spell-Out. This LF insertion can only occur in a matrix clause since Merge must expand a tree. However, a general assumption in current work in the Minimalist Program (Chomsky 1995b) is that LF movement does not exist. If this is the case, then another analysis is required.

When the *wh*-phrase remains in-situ, there are two possibilities. One is that the *wh*-feature alone undergoes feature movement driven by an  $EPP^{X^0}$  feature in Typ.

The other possibility is that there is an Agree relation between the probe in Typ and the *wh*-feature, and there is no movement of the *wh*-feature. The existence of intervention effects indicates that *wh*-feature movement is at work. When an in-situ *wh*-phrase (in a matrix clause with a null complementizer) is c-commanded by “quantifiers, negation, or modals (Cheng & Rooryck 2000:11),” the result is ill-formedness. In (85a), the *wh*-phrase is c-commanded by a quantifier, in (85b) by negation, and in (85c) by a modal.

- (85) (a) \***Tous** les étudiants ont rencontré **qui**?  
 all the students have met who  
 Intended: ‘Who did all the students meet?’ (Chang 1997:17, per Cheng & Rooryck 2000:11)
- (b) \*Il **n’** a **pas** rencontré **qui**?  
 he NEG has NEG met who  
 Intended: ‘Who didn’t he meet?’ (Chang 1997:19, per Cheng & Rooryck 2000:11)
- (c) \*Il **peut** rencontrer **qui**?  
 he can meet-sc inf who  
 Intended: ‘Who can he meet?’ (Cheng & Rooryck 2000:11)

The intervention effects in the ill-formed (85a-c) are accounted for straightforwardly if the *wh*-feature moves, but this movement is blocked by a c-commanding scope bearing element. There is an EPP<sup>X<sup>0</sup></sup> feature in Typ that is unable to attract the *wh*-feature because of the intervener, thereby resulting in ill-formedness, as shown below.



Note that intervention effects disappear when there is overt *wh*-movement. Example (87a) is ill-formed because negation c-commands an in-situ *wh*-phrase, but when the *wh*-phrase precedes negation, as in (87b), the result is well-formed.

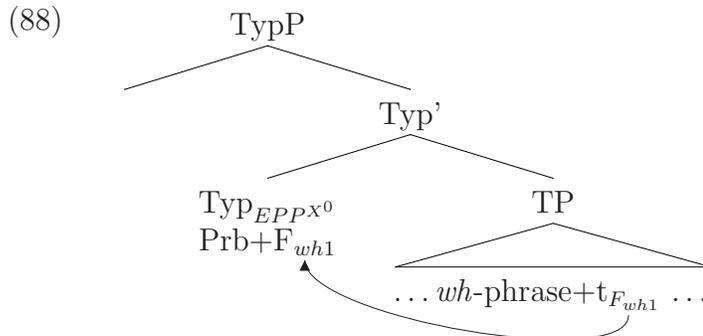
(87) French:

(a) *?\*Jean ne mange pas quoi?*  
 Jean NEG eats NEG what  
 Intended: ‘What doesn’t John eat?’

(b) *Que ne mange-t-il pas?*  
 what NEG eats NEG  
 ‘What doesn’t he eat?’ (Bošković 1998)

When the *wh*-phrase moves to clause initial position in (87b), it undergoes XP movement, which is not subject to intervention effects.

These facts then indicate that when a *wh*-phrase remains in-situ, the *wh*-feature separates from the associated *wh*-phrase and moves to satisfy an  $EPP^{X^0}$  feature in Typ. A simplified diagram of this type of construction is shown below.



If this analysis is on the right track, then in French, an  $EPP^{X^0}$  feature and an  $EPP^{XP}$  feature have a different distribution. An  $EPP^{XP}$  feature can occur in any Typ head, whether it be a matrix or embedded Typ. An  $EPP^{X^0}$  feature can never occur in an embedded clause, which is why an embedded *wh*-phrase can never remain in-situ and have matrix scope, as shown in (83a-b) and (84a-b) above. An  $EPP^{X^0}$  feature is confined to only a matrix Typ head. In a simple matrix clause, Typ can contain an  $EPP^{X^0}$  feature. For example, (81a), repeated below as (89) contains an  $EPP^{X^0}$  feature in the matrix Typ.

(89) French:

$[_{Typ_{EPP^{X^0}}}$  *Tu as vu qui*?  
you have seen whom

‘Who did you see?’ (Bošković 1998)

However, the  $EPP^{X^0}$  feature is incompatible with an overt complementizer. For example, (82a-b) above have the following structures in (90a-b). (90a) is ill-formed because there is an overt complementizer and an  $EPP^{X^0}$  together in Typ. (90a-b), which has *wh*-phrasal movement, is fine because an overt complementizer and an  $EPP^{XP}$  can co-occur.

(90) French:

(a)  $*[_{Typ_{EPP^{X^0}}}$  *Que tu as vu qui*?  
COMP you have seen who

Intended: ‘Who have you seen?’

- (b) [ $_{Typ_{EPP^{XP}}}$  **Qui**<sub>1</sub> **que** *tu as vu* **t**<sub>1</sub>?  
 who COMP you have seen  
 ‘Who have you seen?’

French thus bans the following configuration in which *que* co-occurs with an  $EPP^{X^0}$  feature.

- (91) \* $[_{Typ} que, EPP^{X^0} \dots]$

When *que* co-occurs with an  $EPP^{XP}$  feature in *Typ*, 91 is violated. Why exactly this restriction holds, though, is not clear to me.

Lastly, there is no partial *wh*-movement in French. For example, a *wh*-phrase cannot move to the edge of an embedded clause, and have matrix scope. In (92), *qui* ‘who’ has moved to the edge of the embedded clause, and it cannot have matrix scope. There cannot be a *wh*-scope marker; this is ill-formed if *que* ‘what’ is present in the matrix clause to mark scope, and it is ill-formed, if *que* ‘what’ is absent. It is also ill-formed regardless of whether or not there is an embedded clause complementizer *que*.

- (92) \*(**Que**) *Jean et Marie croient* [(*que*) **qui**<sub>1</sub> *Pierre a embrassé*  
 (what) Jean and Marie believe (that) who Pierre has kissed  
**t**<sub>1</sub>?]

‘Who do Jean and Marie believe that Pierre kissed?’ (Dalila Ayoun, p.c.)

The French facts thus raise the issue of why there is no partial *wh*-movement. An  $EPP^{X^0}$  feature should be able to attract the *wh*-feature of a *wh*-phrase that has moved to the specifier of an embedded *TypP*, but this is not allowed. A *wh*-phrase cannot move to [Spec, *TypP*] of an embedded clause and have matrix scope. The following configuration in which the embedded clause *Typ* contains an  $EPP^{XP}$  feature and the matrix clause *Typ* contains an  $EPP^{X^0}$  feature is banned.

- (93) \* $[_{TypP} [_{Typ_{EPP^{X^0}}} \dots [_{TypP} [_{Typ_{EPP^{XP}}} \dots ]]]]$ .

At this point, I do not have an explanation for why this is the case. One possibility though is that the  $EPP^{X^0}$  feature in French is ‘weak’ in the sense that it can only attract a *wh*-feature that is in the same clause.

Lastly, another perplexing fact is that the  $EPP^{X^0}$  feature is confined to a matrix clause. It cannot occur inside of an embedded clause. Why this would be the case is not clear.

To summarize, in French, an  $EPP^{XP}$  feature can occur in any Typ head, whereas an  $EPP^{X^0}$  feature can only occur in a matrix Typ and it is incompatible with an overt complementizer. Why exactly an  $EPP^{X^0}$  has such a limited distribution in French though requires further investigation.

## 6.8 Conclusion

In this chapter I have examined *wh*-constructions that are formed via Agree, *wh*-phrasal movement, *wh*-feature movement, and/or partial *wh*-movement. When Typ lacks an EPP feature that attracts a *wh*-element (either there is no EPP feature, or there is an EPP feature, but it does not attract a *wh*-element), there is an Agree relation between a *wh*-feature and a probe in Typ, as shown in (94), where ‘Relation’ refers to the type of relationship established between a *wh*-feature and Typ.

(94)

Languages	EPP	Relation
Sinhala, Okinawan, Mandarin	$\emptyset$	Agree

When there is an  $EPP^{X^0}$  feature in Typ, then there is *wh*-feature movement, as shown in (95).

(95)

Languages	EPP	Relation
Japanese, Korean, Persian	$EPP^{X^0}$	<i>Wh</i> -feature movement

When there is an  $EPP^{XP}$  feature in Typ, there is full *wh*-phrasal movement to [Spec, TypP], as shown in (96).

(96)

Languages	EPP	Relation
English, Sharanahua, Tlingit	$EPP^{XP}$	<i>Wh</i> -phrasal movement

Languages that permit either *wh*-phrasal movement or partial *wh*-movement allow both an  $EPP^{XP}$  feature and an  $EPP^{X^0}$  feature in Typ. (97a) with only an  $EPP^{XP}$  feature results in full *wh*-movement, and (97b) with both an  $EPP^{XP}$  feature and an  $EPP^{X^0}$  feature results in partial *wh*-movement. However, an  $EPP^{X^0}$  feature can only occur if an embedded clause has an  $EPP^{XP}$  feature.

(97)

	Languages	$EPP^{XP}$	$EPP^{X^0}$	Relation
(a)	German, Albanian	✓	∅	<i>Wh</i> -phrasal movement
(b)	German, Albanian	✓	✓	Partial <i>wh</i> -movement

Then there are languages such as Malay, which allows all strategies except for *wh*-feature movement, as shown in (98a-c). (98a) states that there is an Agree relation, in which case a *wh*-phrase remains in-situ, when the Typ head lacks an EPP feature. (98b) states that there is *wh*-phrasal movement when all relevant Typ heads contain an  $EPP^{XP}$  feature. (98c) states that there is partial *wh*-movement when there is both an  $EPP^{XP}$  feature and an  $EPP^{X^0}$  feature. Again, the  $EPP^{X^0}$  feature can only occur if an embedded clause contains an  $EPP^{XP}$  feature.

(98)

	$EPP^{XP}$	$EPP^{X^0}$	Relation
(a)	∅	∅	Agree
(b)	✓	∅	<i>Wh</i> -phrasal movement
(c)	✓	✓	Partial <i>wh</i> -movement

Lastly, there is French. (99a) states that *wh*-phrasal movement occurs when a Typ head contains an  $EPP^{XP}$  feature. (99b) states that *wh*-feature movement occurs when a Typ head contains an  $EPP^{X^0}$  feature. However, an  $EPP^{X^0}$  feature can only occur in a matrix clause with a null complementizer.

(99)

	Clause	$EPP^{XP}$	$EPP^{X^0}$	Relation
(a)	Any	✓	∅	<i>Wh</i> -phrasal movement
(b)	Matrix, null complementizer	∅	✓	<i>Wh</i> -feature movement

This analysis also suggests that there is a crucial distinction between movement triggered by an EPP feature and Agree. An EPP feature attracts elements of a particular type, thus resulting in intervention effects when there is an intervening element of the appropriate type but the incorrect content. EPP-driven movement is also subject to island effects when movement is out of a renumeralized clause. Agree is a relation that is sensitive to feature content, and is not subject to intervention effects caused by elements of a particular type, if they do not have the relevant content. Furthermore, since Agree does not involve movement, it can hold over potential island boundaries.

In conclusion, I have accounted for some of the variation found in single *wh*-constructions. The relationship between a probe in Typ and a *wh*-element is determined by whether or not there is an EPP feature, and the type of EPP feature. Also, further research is required to account for the French facts; specifically, why it is that only a matrix Typ can contain an  $EPP^{X^0}$  feature and why the  $EPP^{X^0}$  in a matrix Typ is incompatible with an embedded clause that contains an  $EPP^{XP}$  feature. In the next chapter, I examine further influences of *wh*-features on *wh*-constructions.

## CHAPTER 7

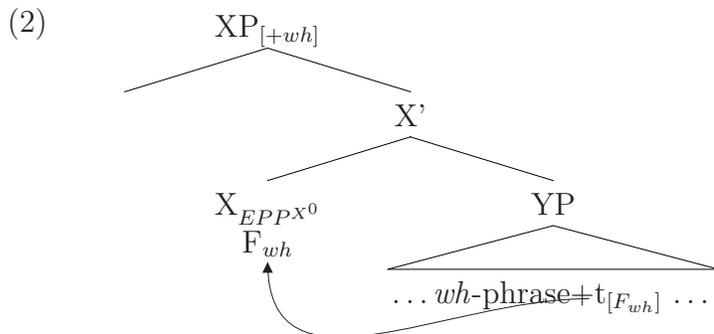
*Wh*-movement that forms a *wh*-phrase

## 7.1 Introduction

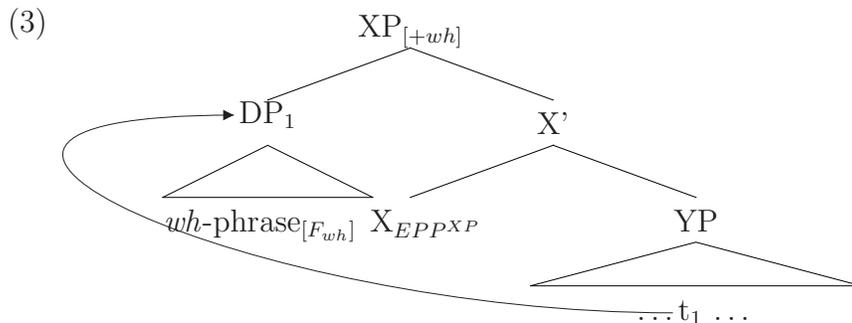
This chapter examines instances in which movement of a *wh*-element within a larger phrase turns that larger phrase into a *wh*-constituent. For example, the complex-DP in the Japanese (1) functions as a *wh*-phrase due to movement of the *wh*-feature associated with *dare* ‘who.’ I return to this type of construction later in this chapter.

- (1) [<sub>DP</sub> **dare**      *ga*      *kaita hon*]  
       who-NOM wrote book  
       ‘book that who wrote’

I take the position that movement of a *wh*-element within a larger constituent is motivated by an EPP feature. For example, in (2), a *wh*-feature associated with a *wh*-phrase embedded inside of a larger XP raises to the head X, thereby turning the XP into a *wh*-phrase. This *wh*-feature movement is motivated by an  $EPP^{X^0}$  feature in the head X.



In (3), on the other hand, there is an  $EPP^{XP}$  feature in the head X that attracts a *wh*-phrase to its specifier position. The *wh*-feature of the *wh*-phrase turns the XP into a *wh*-phrase.



In this chapter, I examine how this movement of a *wh*-element that turns a larger phrase into a *wh*-phrase can circumvent potential island effects (see chapter 2.6.3 for discussion of island effects).

The organization of this chapter is as follows. In section 7.2, I examine *wh*-in-situ languages in which *wh*-feature movement can result in island circumvention effects, and in section 7.3, I examine *wh*-movement languages in which *wh*-phrasal movement can lead to island circumvention effects. Section 7.4 is the conclusion.

## 7.2 *Wh*-in-situ languages

There are *wh*-in-situ languages in which a *wh*-feature associated with a *wh*-phrase raises to turn a potential island into a *wh*-phrase. This process allows a potential island effect to be circumvented. In this section, I show how a reworked version of the feature percolation analysis proposed by Nishigauchi (1986, 1990, 1999a, 1999b) can account for island circumvention effects in the *wh*-in-situ languages of Japanese and Korean.

As discussed in chapter 6, in Japanese, there are intervention effects and, at least for some speakers, *wh*-island effects. However, complex-DP and adjunct-island effects are lacking.<sup>1</sup> When a *wh*-phrase is contained within a complex-DP, as in (4a-b), the result is well-formed. There is no island effect. The *wh*-phrases *dare-ga* ‘who-NOM’ and *donna riyuu-de* ‘what reason-for’ can have scope outside of the

<sup>1</sup>There are complex-DP and adjunct-island effects with *naze* ‘why.’ See chapter 9 for discussion.

complex-DP.

(4) Japanese:

- (a) *Kimi-wa* [<sub>DP</sub> [**dare-ga** *kaita*] *hon*]-*o* *yomimashita ka?*  
 you-TOP who-NOM wrote book-ACC read Qu  
 ‘Who<sub>1</sub> did you read [books that t<sub>1</sub> wrote]? (Nishigauchi 1990:40)
- (b) *Kare-ga* [<sub>DP</sub> [**donna riyuu-de** *kaita*] *hon*]-*ga* *omosiroi*  
 he-NOM what reason-for wrote book-NOM interesting  
*desu ka?*  
 is Qu  
 ‘[For what reason]<sub>1</sub> are [books that he wrote t<sub>1</sub>] interesting?’  
 (Nishigauchi 1990:92)

Similarly, *wh*-phrases are not subject to adjunct-island effects. Examples (5a-b) show that *doko-ni* ‘where-DAT’ and *nani-o* ‘what-ACC’ can occur within an adjunct clause, labeled as TypP, and have matrix scope.

(5) Japanese:

- (a) *Taroo-ga* [<sub>TypP</sub> **doko-ni** *itta kara*] *umaku itta no?*  
 Taro-NOM where-DAT went because well went Qu  
 ‘Where<sub>1</sub> did things go well [because Taroo went t<sub>1</sub>?’ (Richards 2000:187)
- (b) *Taroo-ga* [<sub>TypP</sub> **nani-o** *katta kara*] *umaku itta no?*  
 Taro-NOM what-ACC bought because well went Qu  
 ‘What<sub>1</sub> did things go well [because Taro bought t<sub>1</sub>?’ (Junko Ginsburg,  
 p.c.)

If an adjunct clause is renumerated (see discussion of Johnson 2002 in chapter 2.6.2) and if there is *wh*-feature movement in Japanese, then the fact that a *wh*-phrase can have scope outside of a complex-DP or adjunct clause requires an explanation.

Nishigauchi (1986, 1990, 1999a, 1999b) argues that *wh*-arguments which occur inside of DP-islands are able to avoid an island effect, not because a *wh*-phrase is not subject to island effects, but rather, because a DP-island can be pied piped at





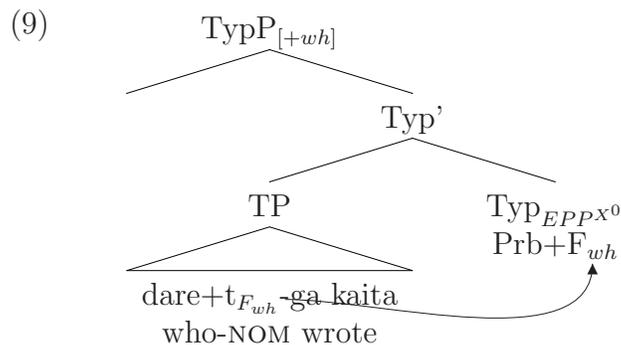
a *wh*-phrase. The adjunct clause is renumerated, but since it is now a *wh*-phrase, its *wh*-feature is still accessible to further operations. The D head of the complex-DP contains an  $EPP^{X^0}$  feature and a probe. The *wh*-feature again raises to satisfy the  $EPP^{X^0}$  feature and value the probe, thereby turning the complex-DP into a *wh*-phrase. Lastly, the matrix Typ contains an  $EPP^{X^0}$  feature and a probe. The *wh*-feature thus moves to the matrix Typ and values the probe. In this last case, though, the *wh*-feature turns the matrix clause into a *wh*-construction because of the presence of a Qu-feature.

The complex-DP island effect in (4a), repeated below, is accounted for as follows.

(4) Japanese:

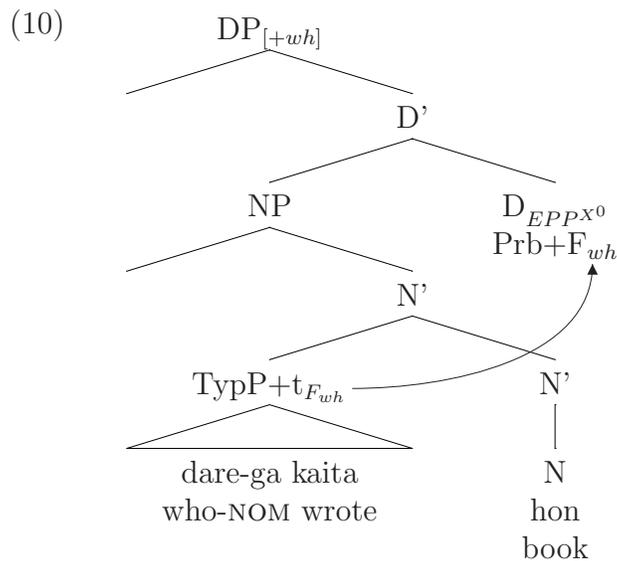
- (a) *Kimi-wa* [<sub>DP</sub> [**dare-ga** *kaita*] *hon*]-o *yomimashita ka?*  
 you-TOP who-NOM wrote book-ACC read Qu  
 ‘Who<sub>1</sub> did you read books that t<sub>1</sub> wrote?’ (Nishigauchi 1990:40)

First, an  $EPP^{X^0}$  feature in Typ of the embedded adjunct clause attracts the *wh*-feature and the *wh*-feature values a probe, thereby turning the adjunct clause into a *wh*-phrase, as shown in (9).

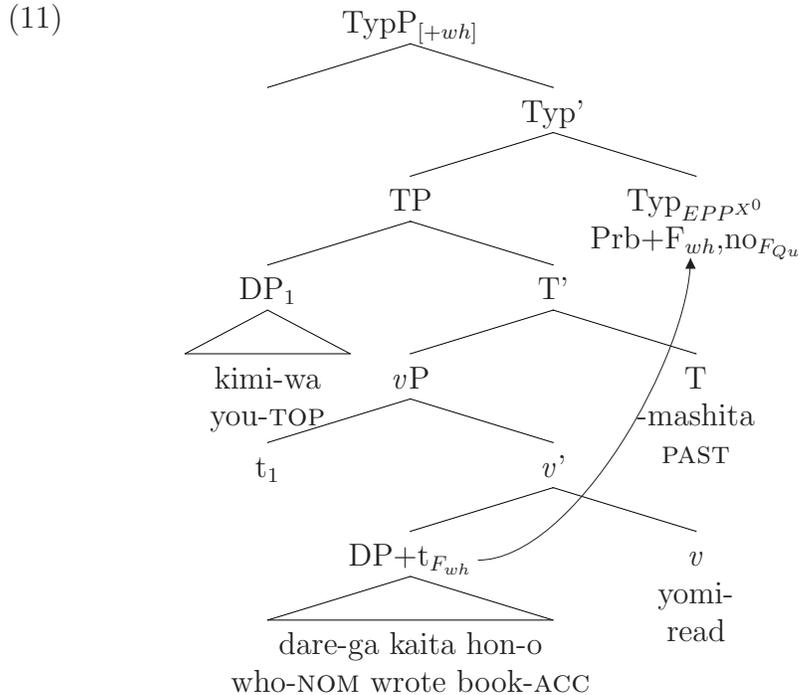


This adjunct clause is renumerated, but since it is now a *wh*-phrase, its *wh*-feature is accessible to further operations; i.e., the *wh*-feature can move from its position in Typ of the adjunct clause because the adjunct clause is a *wh*-phrase. Then the adjunct clause is Merged with the nominal *hon* ‘book’ and with a null D head to

form a complex-DP, as shown in (10). The D head contains an  $EPP^{X^0}$  feature that attracts the *wh*-feature from the Typ head of the adjunct clause. Furthermore, the D head contains a probe that is valued by the *wh*-feature. Valuation of this probe turns the complex-DP into a *wh*-phrase.



Then the complex-DP is Merged with the other elements of the numeration, and the *wh*-feature in its D head is able to proceed freely to the matrix Typ head to satisfy an  $EPP^{X^0}$  feature and also to value a probe, thereby giving the complex-DP matrix scope, as shown in (11).

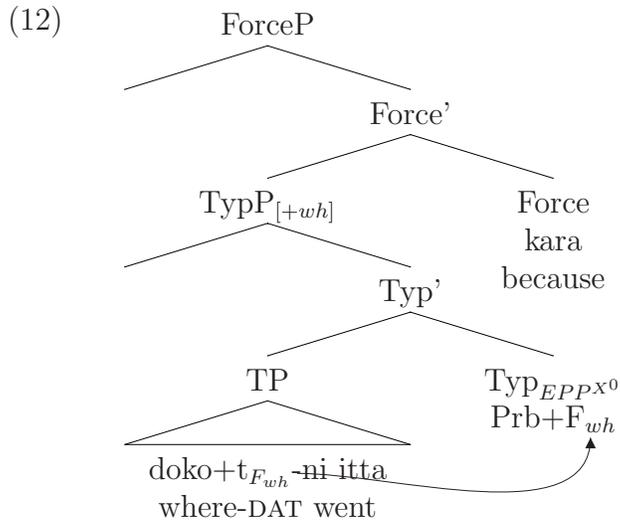


The same analysis accounts for examples such as (5a), repeated below, in which a *wh*-phrase occurs within an adjunct-clause.

(5) Japanese:

- (a) *Taroo-ga* [<sub>TypP</sub> ***doko-ni*** *itta kara*] *umaku itta no?*  
 Taroo-NOM where-DAT went because well went Qu  
 ‘Where<sub>1</sub> did things go well [because Taroo went t<sub>1</sub>?’ (Richards 2000:187)

As shown in (12), the *wh*-feature associated with *doko-ni* ‘where-DAT’ raises to the Typ head of the adjunct clause where it values a probe, and thus turns the adjunct clause into a *wh*-phrase. I assume that there is a ForceP that houses *kara* ‘because.’ Despite the ForceP, movement of the *wh*-feature can proceed from the adjunct clause because the entire clause has become a *wh*-phrase.

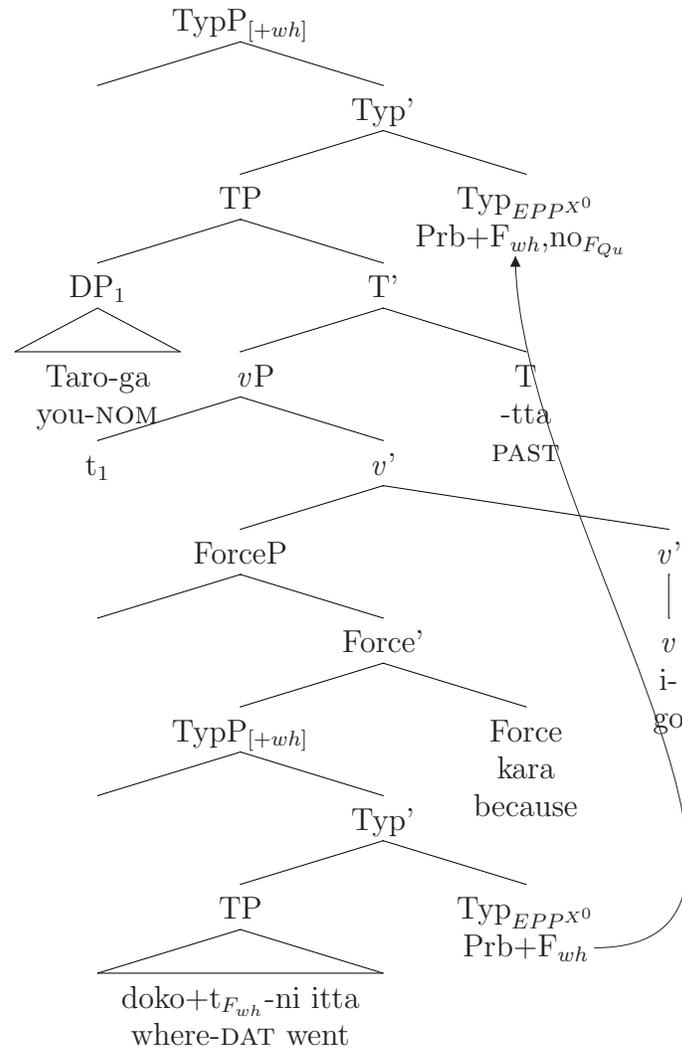


Then this adjunct clause *wh*-constituent Merges with the other elements of the clause, as shown below. The *wh*-feature raises from the Typ head of the adjunct-clause to the matrix Typ to satisfy an  $EPP^{X^0}$  feature and value a probe, as shown in (13).<sup>2</sup>

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<sup>2</sup>I have left out the adjunct *umaku* ‘well’ for the sake of simplicity. Presumably, *umaku* ‘well’ is an adverbial that is Merged with the verb.

(13)



Movement of the *wh*-feature is not blocked by intervening *v* and T heads because these heads contain elements that are different from a *wh*-feature in type, in that they lack a scope bearing quality.

This analysis then relies on the notion that a complex-DP or adjunct clause can become a *wh*-phrase in Japanese. Nishigauchi (1990, 1999a) presents evidence that this is the case with respect to a complex-DP; a *wh*-construction with a complex-DP, such as (14), can be answered with a response that refers to the whole complex-DP.

(14) Japanese:

*Kimi-wa* [<sub>DP</sub> ***dare-o*** *egaita* *hon*]-*o* *yomimashita ka?*  
 you-TOP who-ACC described book-ACC read Qu  
 ‘You read a book such that it described who?’ (Nishigauchi 1999a:274)

Nishigauchi claims that the following are possible answers to (14).

(15) Japanese:

(a) *Gates desu.*  
 Gates be.  
 ‘Its Gates.’

(b) *Gates-o egaita hon desu.*  
 Gates-ACC described book be.  
 ‘(It’s) the book that describes Gates.’ (Nishigauchi 1999a:276)

Nishigauchi (1999a) argues that because (15b) refers to the entire complex-DP, the entire DP must be pied-piped to [Spec, CP] of the matrix clause. The shortened answer in (15a) is allowed because “it is a further truncated form of [(15b)] by means of a discourse deletion rule (276).” Under my analysis, there is no phrasal movement. The *wh*-feature associated with the entire DP raises from the DP to the matrix Typ, giving the complex-DP scope. Thus, the answer in (15b) that refers to the entire complex-DP is permitted. The availability of (15a) can be accounted for as a shortened form of (15b), as claimed by Nishigauchi.

The same facts appear to be true when a *wh*-phrase originates inside of an adjunct clause, as in (5b), repeated below.

(5) Japanese:

(b) *Taroo-ga* [<sub>TypP</sub> ***doko-ni*** *itta kara*] *umaku itta no?*  
 Taroo-NOM where-DAT went because well went Qu  
 ‘Where<sub>1</sub> did things go well [because Taroo went t<sub>1</sub>?’ (Richards 2000:187)

According to my consultant, a response as in (16b) that refers to the entire adjunct-clause is not only allowed, but it is better than a response that refers only to the *wh*-phrase, as in (16a).

- (16) (a) *?Kyoto-ni.*  
 Kyoto-DAT.  
 ‘To Kyoto.’
- (b) *Kyoto-ni itta kara.*  
 Kyoto-DAT went because.  
 ‘Because he went to Kyoto.’ (Junko Ginsburg, p.c.)

The possibility of the response in (16b) is to be expected if the entire adjunct clause functions as a *wh*-constituent. The marginality of (16a) could be an indication that, at least for my consultant, deletion of the remainder of the adjunct clause is marked.

Korean also behaves in an identical manner to Japanese: complex-DP and adjunct-island effects are absent. (17a) shows a *wh*-phrase contained within a complex-DP and (17b) shows a *wh*-phrase in an adjunct clause. According to Yoon (2006), these are well-formed.

(17) Korean:

- (a) [<sub>DP</sub> [**Nwukuwu-ka** *ssu-n*] *chayk*]-*i* *epseci-ess-ni?*  
 who-NOM write-ADN book-NOM disappear-PAST-Qu  
 ‘The book that who wrote disappeared?’
- (b) *Ne-nun* [<sub>TypP</sub> **Yenghi-ka** *mwues-ul machi-myen*] *ttena-l*  
 you-TOP Yenghi-NOM what-ACC finish-if leave  
*ke-ni?*  
 FUT-Qu  
 ‘You are going to leave if Yenghi finishes what?’ (Yoon 2006:387)

These constructions can be accounted for in the same manner as the Japanese data discussed above. *Wh*-feature movement allows potential complex-DP and adjunct-island effects to be circumvented.

Richards (2000) gives evidence involving the scope of multiple *wh*-phrases that supports Nishigauchi's analysis. He points out that if two *wh*-phrases are contained within a complex-DP or adjunct-clause they both must have the same scope, whereas this is not the case if they are not in a complex-DP. In (18), there are two *wh*-phrases contained in an embedded clause of the sort from which *wh*-movement can proceed freely. For meaning (i), both *dare-ga* 'who-NOM' and *dare-o* 'who-ACC' have matrix scope. For meaning (ii), *dare-ga* 'who-NOM' has matrix scope and *dare-o* 'who-ACC' has embedded scope.

(18) Japanese:

*Keesatu-wa [dare-ga dare-o korosita ka] sirabeteiru no?*  
 police-TOP who-NOM who-sc acc killed Qu are-investigating Qu

(i) 'For which x and which y are the police investigating [whether x killed y]?'  
 (ii) 'For which x are the police investigating [for which y, x killed y]?'  
 (Richards 2000:188-189)

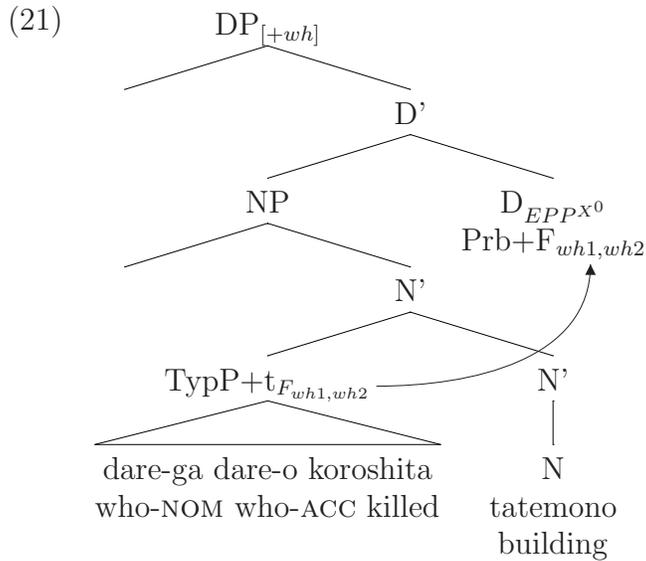
In (18), the two embedded *wh*-phrases can either have scope together or separately. However, when two *wh*-phrases occur within a complex-DP, as in (19), both *wh*-phrases must have the same scope. (19) can only have the meaning in (i) in which both *wh*-phrases have the same scope, and not the meaning in (ii) in which each *wh*-phrase has a different scope.

(19) Japanese:

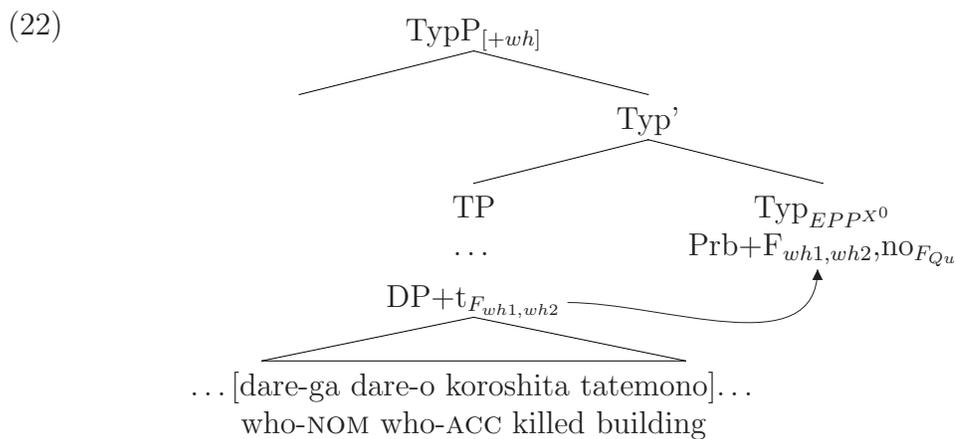
*Keesatu-wa [Nakamura-san-ga [dare-ga dare-o korosita  
 police-TOP Nakamura-HON-NOM who-NOM who-sc acc killed  
 tatemono-o] katta ka] sirabeteiru no?*  
 building-ACC bought Qu are-investigating Qu

(i) 'For which x and which y are the police investigating [whether Nakamura-san bought [a house where x killed y]]?'  
 (ii) \* 'For which x are the police investigating [for which y Nakamura-san bought [a house where x killed y]]?' (Richards 2000:189-190)





The *wh*-feature bundle associated with this newly formed *wh*-phrase then raises to the matrix Typ, as shown in the following simplified diagram.



Since the complex-DP functions as a single *wh*-phrase which has matrix scope, it is not possible for the lower *wh*-phrase to have scope in any position other than the matrix clause.

If a *wh*-feature can turn a complex-DP or an adjunct clause into a *wh*-phrase and thereby circumvent an island effect, then the issue arises of why it cannot do the same with a *whether/if* clause. For example, in (23) (originally presented as

(31) in chapter 6), the *wh*-feature associated with *nani-o* ‘what-ACC’ cannot turn the embedded TypP into a *wh*-phrase from which *wh*-feature movement can occur.

(23) Japanese:

\**Satookun-wa* [*Suzukikun-ga nani-o tabeta ka*] *oboeteimasu ka?*  
 Sato-TOP Suzuki-NOM what-ACC ate Qu remember Qu  
 ‘What<sub>1</sub> does Sato remember [whether Suzuki ate t<sub>1</sub>]?’ (Nishigauchi  
 1990:30-31)

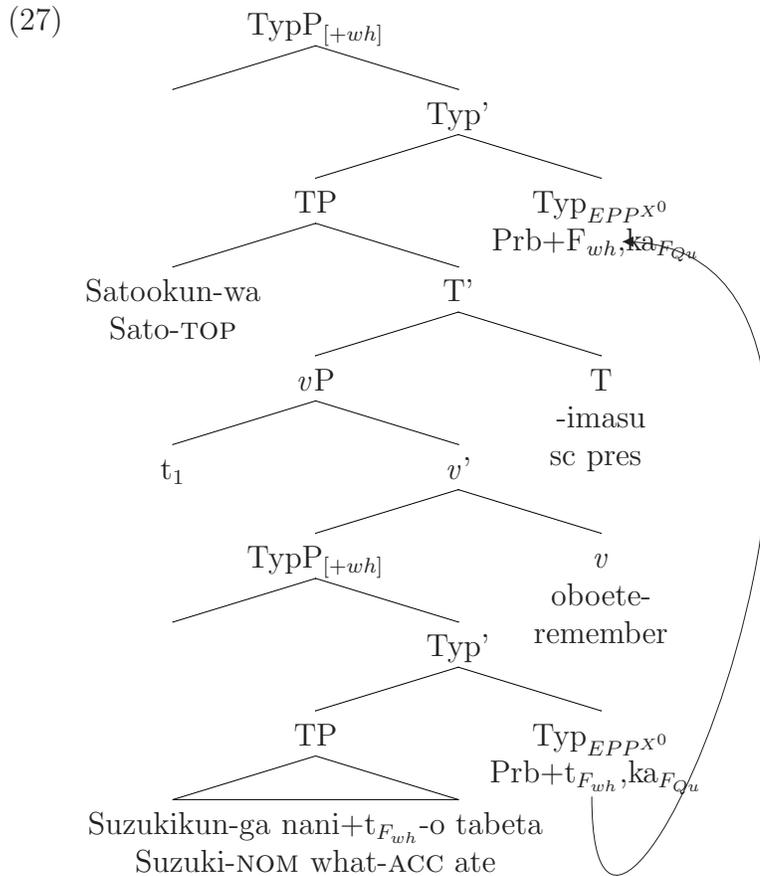
Richards (2000), who assumes Nishigauchi’s analysis that certain islands can pied-pipe at LF, argues that if a *wh*-island were to pied-pipe at LF, then “the *wh*-phrase [would be] in two scope positions at once (199).” A *wh*-island that appears in [Spec, CP] of a larger clause would contain a *wh*-phrase that is simultaneously in the specifier of the island and the specifier of the larger clause at the same time. This is ruled out because “a single *wh*-phrase cannot take scope in two different places, presumably for semantic reasons (Richards 2000:199).” However, under Richard’s analysis, even within a complex-DP or adjunct clause, a *wh*-phrase has scope in both the complex-DP or adjunct clause and [Spec, CP] of a matrix clause. Therefore, I think there is another explanation.

As I see the facts, a *whether/if*-island effect cannot be circumvented by *wh*-feature movement for the following reasons given in (24a-b).

(24) A *wh*-phrase cannot be an interrogative clause - a phrase that is typed as an interrogative clause by a Qu-feature cannot also be a *wh*-phrase.

Specifically, if an embedded clause is typed as a *wh*-construction by both a Qu-feature and a *wh*-feature, then this embedded clause cannot also function as a *wh*-phrase that has scope in a higher TypP. For example, (25a) shows that a *wh*-phrase can move to [Spec, TypP] in English, but a *whether* clause cannot. The ill-formedness of 25b) can be accounted for as resulting from a violation of (24).





But in this case, the *whether/if* clause, which is an interrogative *wh*-construction, is also functioning as a *wh*-phrase that has matrix scope, in violation of (24) above.

Notably, there are languages in which, like Japanese and Korean, a *wh*-phrase remains in-situ, and there is *wh*-feature movement, but this *wh*-feature movement cannot circumvent an island effect.<sup>3</sup> For example, *wh*-phrases can remain in-situ in Persian, but there are adjunct- and DP-island effects, as shown in (28a-b) (originally (33a-b) in chapter 6.3).

<sup>3</sup> *Wh*-in-situ languages such as Mandarin, as discussed in chapter 6.2 do not have *wh*-feature movement. Rather, a probe in a Typ head is able to form an Agree relation with a *wh*-feature. Since there is no movement of a *wh*-element, there are no island effects.

(28) Persian:

(a) Adjunct island:

*\*Parviz raghsid [chonke ki unjâ bud]?*

Parviz dance-3SG because who there was

Intended: ‘Who<sub>1</sub> did Parviz dance [because t<sub>1</sub> was there]?’ (Karimi & Taleghani 2007:180)

(b) Complex-DP island:

*\*Kimea [DP pesar-i-ro [ke to diruz kojaa did-i]] be*

Kimea boy-REL-raa that you yesterday where saw-2sg to

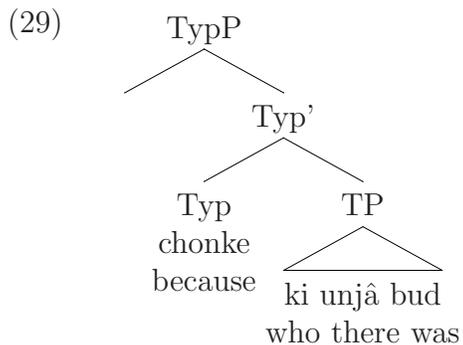
*man moarrefi kard?*

me introduced did

Intended: ‘Where<sub>1</sub> did Kimea introduce to me [the boy you saw t<sub>1</sub> yesterday]?’ (Simin Karimi, p.c.)

In Persian, then, it appears as though a *wh*-feature cannot undergo movement that circumvents an island effect. This can be accounted for if a Typ head within an adjunct clause in Persian simply cannot contain an EPP feature that can attract a *wh*-feature. Therefore, there is a difference between a Typ head that occurs in an adjunct clause in Persian as opposed to a Typ head that occurs in a non-adjunct clause.

(29) shows the structure of the adjunct clause of (28a) above.



Crucially, there is no EPP feature in the Typ head to attract the *wh*-feature, and therefore, the *wh*-feature does not turn this clause into a *wh*-phrase. Since it is not a *wh*-phrase, its *wh*-feature cannot move out of the clause, which is an island (it has been renumerated).

If this analysis is on the right track, then there is a parametric difference between Typ heads of adjunct clauses in different languages. In languages such as Japanese and Korean, Typ in an adjunct clause can contain an EPP feature, whereas Typ of an adjunct clause in languages such as Persian cannot.

Lastly, I focus on the following fact: subject-island effects are absent in languages such as Japanese, Korean, and Persian.

(30) Japanese:

*[[dare-ga kaita] hon]-ga itiban omosiroi no?*  
 who-NOM wrote book-NOM most interesting Qu  
 ‘Who<sub>1</sub> are [the books that t<sub>1</sub> wrote] most interesting? (Lasnik & Saito 1992:122)

(31) Korean:

*Nu-ka sseun chaek-i kajang chemiit-ni?*  
 who-NOM wrote book most interesting-Qu  
 ‘Who<sub>1</sub> are [the books that t<sub>1</sub> wrote] most interesting? (Hyun Kyoung Jung, p.c)

(32) Persian:

*[Ye ketaab az kodum nevisande] montasher shod*  
 a book of which writer published became.  
 ‘Which writer was [a book of t] published?’ (Simin Karimi, p.c.)

Notably, the *wh*-feature movement analysis can account for the lack of subject island effects in Japanese and Korean. The *wh*-feature raises t<sub>0</sub> to turn the complex-subject

into a *wh*-phrase and then the *wh*-feature raises to the matrix Typ. However, this analysis cannot account for Persian, which does not appear to allow *wh*-feature movement to circumvent an island effect.

One possibility is that in these languages that lack subject-island effects, a subject actually remains within the *vP* and that when in a *vP* internal position, a subject is not an island for extraction. Karimi (2005) argues that a subject remains within the *vP* in Persian and that this *vP* internal position is not an island. Miyagawa (2001, 2003) also argues that a subject can remain in the *vP* in Japanese.<sup>4</sup>

Why exactly a *vP*-internal subject would not be an island though is not so clear. Following Koizumi (1995) and Lasnik (2003), Hornstein *et al.* (2007) write that in

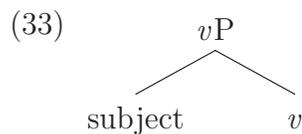
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<sup>4</sup>According to Miyagawa (2001, 2003), either a subject or object must raise to [Spec, TP]. If Miyagawa is correct, the following examples raise some questions.

- (i) Boru-o [dare-ga tsukutta roboto]-ga nageta no?  
 ball-ACC who-NOM made robot-NOM threw Qu  
 ‘[The robot that who made] threw the ball?’
- (ii) [Dare-ga tsukutta roboto]-ga boru-o nageta no?  
 who-NOM made robot-NOM ball-ACC threw Qu  
 ‘[The robot that who made] threw the ball?’

In (i), the object *boru-o* ‘ball-ACC’ can be in [Spec, TP], in which case the subject remains in [Spec, *vP*]. Thus this example does not pose a problem for the view that a *vP*-internal subject is not an island. However, in (ii), if Miyagawa is correct, the subject *dare-ga tsukutta roboto-ga* ‘the robot that who made’ must either be in [Spec, TP] or in a scrambled position above [Spec, TP], in which case the object *boru-o* ‘ball-ACC’ would be in [Spec, TP]. In either case, the subject clause must move. If the subject is in [Spec, TP], then it should be an island, contrary to fact, if only *vP*-internal subjects are not islands (and if *wh*-feature movement cannot circumvent an island effect in Japanese). If the subject is in a scrambled position such as a FocP, then maybe since it is in an A’-position, it can escape islandhood. On the other hand, as discussed above with respect to adjunct clauses in Japanese, it could be that a subject does not function as an island because *wh*-feature movement can turn a complex subject into a *wh*-phrase, in which case it would not matter whether or not the subject has moved out of the *vP*.

Japanese and Korean, “it is reasonable to suppose that the association of subjects internal to the VP is ultimately small-clausal (155).” Following Moro (2000), they note that the elements of a small clause likely form a “symmetrical relation” at some point in a derivation. I assume that the symmetrical relation would be along the lines of that shown in (33).



If the subject is not an adjunct, in the sense of an adjunct defined by Johnson (2002) (see (39) in chapter 2.6.2), then it need not be renumerated, and an element can be extracted from it. However, this notion of a *vP*-internal subject being in a symmetric relation with the verb raises some questions. For example, since both the subject and *v* are in a symmetric *c*-command relation in (33), what prevents the label of (33) from being that of the subject (e.g., DP) and not *vP*? Also, it is not clear where an object would occur if the subject and verb are in a symmetrical relation. Lacking any clear solution at this time, I leave this issue for further analysis.

In summary, a *wh*-phrase can occur within an adjunct clause in *wh*-in-situ languages such as Japanese and Korean because these languages allow an  $EPP^{X^0}$  feature to occur within the *Typ* head of an adjunct clause. This  $EPP^{X^0}$  feature forces movement of the *wh*-feature to the edge of the adjunct clause and thus allows the *wh*-feature to undergo further movement that is not blocked by renumeration of the adjunct-clause. In this section, I have examined how movement of a *wh*-feature can turn a larger phrase into a *wh*-phrase in languages such as Japanese and Korean, but not in Persian. In the next section, I examine how movement of a *wh*-phrase (rather than a *wh*-feature) within a larger phrase can turn the larger phrase into a *wh*-phrase and circumvent potential island effects in some languages.

### 7.3 Overt *wh*-movement languages

In this section, I examine movement of a *wh*-phrase in certain island constructions. I show that *wh*-phrasal movement can circumvent potential island effects in Basque and Tlingit. This *wh*-phrasal movement is very similar to the *wh*-feature movement of the previous section. However, there is one big difference; unlike with *wh*-feature movement, when there is *wh*-phrasal movement that circumvents an island effect, there is clear surface movement of a *wh*-phrase. I also show how *wh*-phrasal movement cannot circumvent potential island effects in English.

#### 7.3.1 Basque

Richards (2000:195) points out, following Ortiz de Urbina (1989), that in Basque, when a *wh*-phrase is contained within a complex-DP or adjunct-clause, a potential island effect can be avoided by overtly “pied piping the potentially offending island.”

In (34a), an entire adjunct clause has fronted to clause initial position, whereas in (34b), only the *wh*-phrase has moved out of the clause. Fronting of the adjunct clause is better than movement of the *wh*-phrase out of the adjunct clause.<sup>5</sup>

(34) Basque:

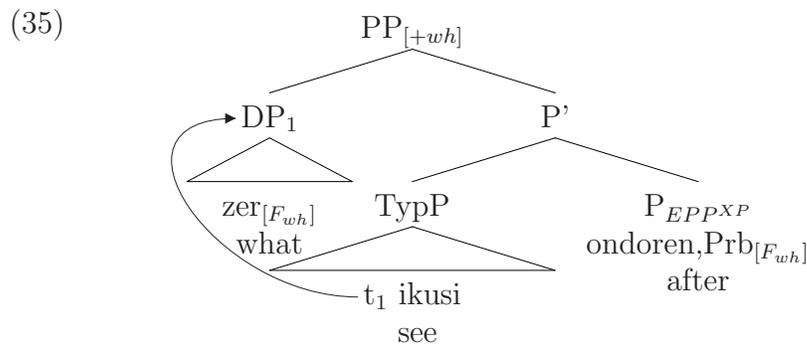
- (a)  $?[_{\text{TP}} \text{Zer } ikusi \text{ ondoren}] \text{ joan } ziren \text{ hemen-dik?}$   
       what see after go AUX here-from  
       ‘What did they leave [after seeing]?’

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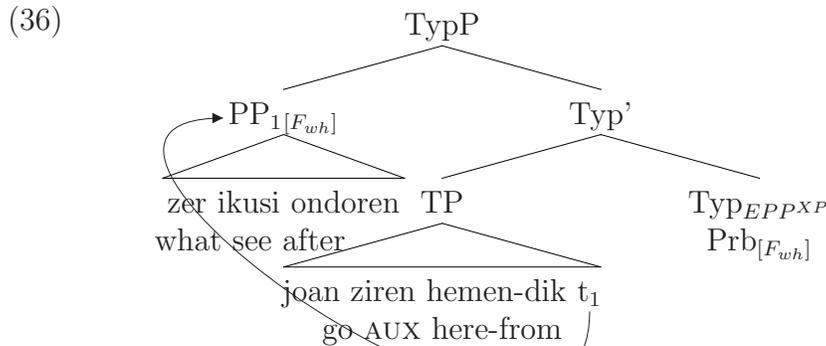
<sup>5</sup>The original source does not indicate the base position of the adjunct clause in (34a), but it is most likely base generated in clause-final position, as in (34b). Ortiz de Urbina (1989, 2003) claims that the basic word order in Basque is generally thought to be SOV, in which case, the base position of the object *wh*-phrase in (34b) would most likely be directly preceding the verb inside of the adjunct clause.

- (b) \***Zer** joan ziren hemen-dik [<sub>TypP</sub> ikusi ondoren]?  
 what go AUX here-from see after  
 Intended: ‘What<sub>1</sub> did they leave [after seeing t<sub>1</sub>]?’ (Ortiz de Urbina  
 1989:249,252, per Richards 2000:195)

In (34a), I propose that the *wh*-phrase raises to the specifier of the adjunct clause. From this position, the *wh*-phrase’s *wh*-feature turns the adjunct clause into a *wh*-phrase by establishing a Spec-head relation with a Probe in the Typ head. (35) shows the internal structure of the adjunct clause, which I assume is a PP. The *wh*-phrase *zer* ‘what’ raises to the specifier of the PP to satisfy an  $EPP^{XP}$  feature in the P head. Once the *wh*-phrase arrives in [Spec, PP], its *wh*-feature forms a Spec-head relationship with a probe in the P head, and this *wh*-feature turns the entire PP into a *wh*-phrase.



Since the PP is now a *wh*-phrase, it is able to move directly to [Spec, TypP] of the matrix clause. This latter movement is motivated by an  $EPP^{XP}$  feature in the matrix Typ. There is no movement of a *wh*-element out of the adjunct clause, and thus, this example is well-formed. A diagram is shown below.



In the ill-formed (34b), the *wh*-phrase moves overtly out of an adjunct clause that has been renumerated, thereby resulting in ill-formedness.

Examples (37a-b) show that the same results are obtained when a *wh*-phrase is base generated inside of a complex-DP; fronting a complex-DP is better than moving a *wh*-phrase out of it.<sup>6</sup>

(37) Basque:

- (a) *?[DP nork idatzi zuen liburua] irakurri du Peruk?*  
 who-ERG write AUX book read AUX Peter-ERG  
 ‘Who<sub>1</sub> did Peter read the book that t<sub>1</sub> wrote?’
- (b) *\*Nork irakurri du Peruk [DP idatzi zuen liburua]?*  
 who-ERG read AUX Peter-ERG write AUX book  
 ‘Who<sub>1</sub> did Peter read the book that t<sub>1</sub> wrote?’ (Ortiz de Urbina 1989:249,252, per Richards 2000:195)

First of all, the *wh*-phrase raises to the specifier of the TypP of the adjunct clause contained within the complex-DP, as shown in (38), thus turning the adjunct clause into a *wh*-phrase.

<sup>6</sup>Assuming an SOV basic word order, per Ortiz de Urbina (1989, 2003), the *wh*-phrase is most likely base generated in the position preceding the verb in the complex-DP.





*wh*-movement and an overt Qu-morpheme. In (42) (originally given as (44) in chapter 6.4), I assume that the *wh*-phrase *daa* is in [Spec, TypP] and the Qu-morpheme *sá* is in Typ.

(42) Tlingit:

***Daa sá ḱéet aɣ/'a?***  
 what Qu killerwhale he.eats.it  
 ‘What do killerwhales eat?’ (Cable 2007:64)

Cable (2007) shows that island effects occur in Tlingit when a Qu-morpheme is contained within a potential island, such as a complex-DP, but are absent when the Qu-morpheme is at the edge of the potential island. As Cable notes, this is similar to what one finds in Sinhala and Okinawan (see chapter 6.3). Example (43a) demonstrates that a *wh*-phrase can occur inside of a complex-DP that has fronted to the beginning of a clause, and that is followed by a Qu-morpheme. (43b-c) show that the Qu-morpheme cannot occur within the complex-DP, neither adjacent to nor separated from the *wh*-phrase.

(43) Tlingit:

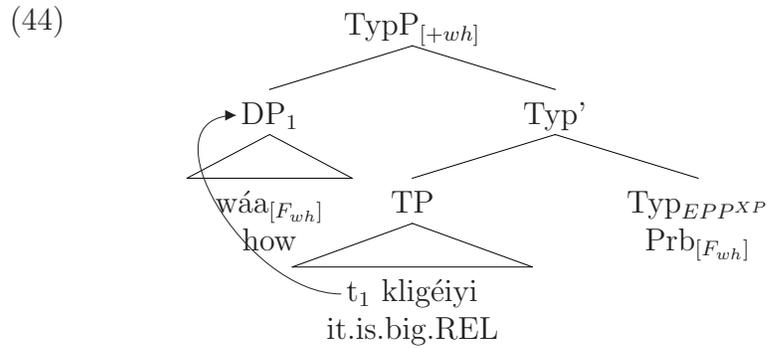
- (a) [<sub>DP</sub> ***Wáa kligéiyi x́áat***] ***sá*** *i tuwáa sigóo?*  
 how it.is.big.REL fish Qu your spirit it.is.happy  
 ‘How big a fish do you want?’ (A fish that is how big do you want?)
- (b) \*<sub>[DP</sub> ***Wáa sá kligéiyi x́áat***] *i tuwáa sigóo?*  
 how Qu it.is.big.REL fish your spirit it.is.happy
- (c) \*<sub>[DP</sub> [***Wáa kligéiyi***] ***sá x́áat***] *i tuwáa sigóo?*  
 how it.is.big.REL Qu fish your spirit it.is.happy  
 (Cable 2007:79)

Cable (2007) proposes that a Qu-morpheme is the head of what he refers to as a QP projection (not to be confused with a Quantifier Phrase), and that the Qu-morpheme has a *wh*-phrasal complement. Thus, a *wh*-phrase and a Qu-morpheme

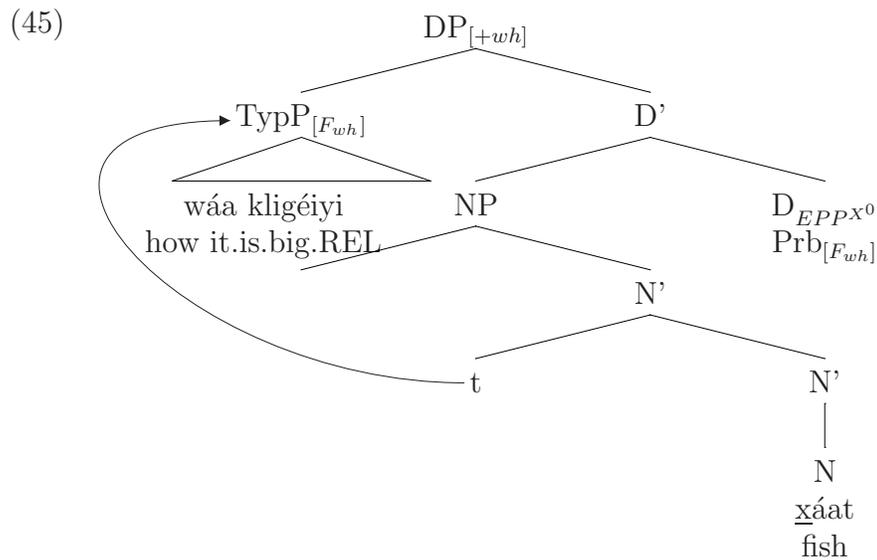
are base generated together. The Qu element of the QP, not the *wh*-phrase, is attracted to [Spec, CP]. The *wh*-phrase fronts with the Qu-morpheme since it is contained within the QP.

As I see it, the Tlingit data can be accounted for in another manner. Cable views the Qu-morpheme as always being base generated in a position adjacent to a *wh*-phrase. However, I take the fact that a Qu-morpheme can appear in a position separate from a *wh*-phrase to be evidence that this is not the case. Rather, a Qu-morpheme by default is Merged directly in Typ, and a *wh*-phrase raises from a TP-internal position to [Spec, TypP]. *Wh*-phrasal movement is motivated by an  $EPP^{XP}$  feature in Typ. An advantage of my proposal is that it accounts for both yes/no and *wh*-constructions. In both types of interrogatives, a Qu-morpheme is Merged in Typ. Cable's proposal that a Qu-morpheme is always Merged in a position adjacent to a *wh*-phrase requires that a yes/no Qu-morpheme appear in a different position than a Qu-morpheme that appears in a *wh*-construction; i.e., a yes/no Qu-morpheme is Merged at the edge of the clause, but a Qu-morpheme that appears in a *wh*-construction is Merged TP-internally. However, as I see it, the Qu-morpheme in both a yes/no and a *wh*-construction is the same type of element, and is Merged in exactly the same position.

*Wh*-phrasal movement accounts for the lack of island effects in (43a). As shown in (44), an  $EPP^{XP}$  feature in the Typ head of the adjunct clause attracts the *wh*-phrase to [Spec, TypP]. A Spec-head relation between the *wh*-phrase and Typ turns the TypP into a *wh*-phrase.



Next, the adjunct clause TypP raises to the specifier of the complex-DP. Again, a spec-head relation between the moved adjunct clause and the D head turns the complex-DP into a *wh*-phrase, as shown in (47).



Lastly, the complex-DP, which is now a *wh*-phrase, raises to the specifier of the matrix TypP.



and circumvent an island effect, it is necessary to examine whether or not a complex-DP can be moved to clause-initial position. Example (47b) is alright as an echo question, but ill-formed as a *wh*-question. It would not be fine if one were asking for the name of the author of a book. Thus, movement of a *wh*-feature cannot turn a complex-DP into a *wh*-phrase and circumvent an island effect. Example (47c) is one in which the *wh*-phrase has moved to the initial position of the complex-DP and the complex-DP has moved to the initial position of the matrix clause. Unlike in Basque and Tlingit, in which movement of a *wh*-phrase within a complex-DP can circumvent a potential island effect, this clearly is not an option in English. Movement of the *wh*-phrase within the complex-DP and further movement of the complex-DP results in utter gibberish. Movement of a *wh*-phrase within a complex-DP therefore cannot turn the complex-DP into a larger *wh*-phrase.

The facts are identical with other types of clauses that function as islands. Examples (48a-c) show constructions with an adjunct clause.

- (48) (a) \***What**<sub>1</sub> did things go well [<sub>TypP</sub> because he bought **t**<sub>1</sub>]?  
 (b) \*<sub>[TypP</sub> Because he bought **what**]<sub>1</sub> did things go well t<sub>1</sub>?  
 (c) \*<sub>[TypP</sub> **What**<sub>2</sub> because he bought **t**<sub>2</sub>]<sub>1</sub> did things go well t<sub>1</sub>?

Examples (49a-c) show a *wh*-phrase contained within a *whether/if* clause.

- (49) (a) \***What**<sub>1</sub> does he remember [<sub>TypP</sub> whether she ate **t**<sub>1</sub>] ?  
 (b) \*<sub>[TypP</sub> Whether she ate **what**]<sub>1</sub> does he remember t<sub>1</sub>?  
 (c) \*<sub>[TypP</sub> **What**<sub>2</sub> whether she ate **t**<sub>2</sub>]<sub>1</sub> does he remember t<sub>1</sub>?

Movement of the potential island cannot circumvent an island effect in English.

In English, the inability for *wh*-phrasal movement to circumvent an island effect indicates that the head of a potential island cannot contain an EPP feature that attracts a *wh*-element.

#### 7.4 Conclusion

In summary, languages such as Japanese, Korean, Basque, and Tlingit allow movement of a *wh*-element, either a *wh*-feature or a *wh*-phrase, to circumvent a potential island effect. In Japanese and Korean, movement of a *wh*-feature to the head of a clause that is a potential island turns the clause into a *wh*-phrase. In Basque and Tlingit, movement of a *wh*-phrase to the specifier of a clause that is a potential island turns the clause into a *wh*-phrase. Once this clause becomes a *wh*-phrase, there is either movement of a *wh*-feature from it (in Japanese and Korean), or movement of the entire clause (Basque and Tlingit). Since this movement does not pass through an island, it is well-formed and an island effect is avoided.

Other languages such as Persian and English do not allow movement of a *wh*-element to circumvent an island effect. I proposed that this is because the heads of these potential islands simply cannot contain an EPP feature that attracts a *wh*-element.

I next turn to a discussion of constructions in which there are multiple *wh*-phrases.

## CHAPTER 8

Multiple *wh*-constructions

## 8.1 Introduction

Many languages allow multiple *wh*-constructions in which multiple *wh*-phrases have scope and, presumably, multiple *wh*-features establish a relationship with Typ. The facts regarding multiple *wh*-constructions are extraordinarily complicated, with respect to which *wh*-phrases can occur where, scope relations, island effects, intervention effects, etc. (for example, see Richards (2001)). Due to lack of space, I leave most of these issues aside and focus on answering the following question: How do multiple *wh*-phrases establish scope in a single clause within the system outlined in this work? I also briefly examine why there are languages which do not allow multiple *wh*-constructions.

The organization of this chapter is as follows. Section 8.2 discusses languages in which all *wh*-features form an Agree relation with Typ. I next discuss multiple *wh*-constructions in Japanese and English in sections 8.3 and 8.4, respectively. I argue that in these languages, movement of an initial *wh*-element to Typ allows a probe in Typ to form an Agree relation with another *wh*-element. Section 8.5 discusses previous analyses of the multiple *wh*-construction facts in Japanese and English and compares them with the analysis presented here. Section 8.6 discusses multiple *wh*-constructions in Persian, a language that does not pattern with Japanese or English with respect to multiple *wh*-constructions. Section 8.7 examines languages that disallow multiple *wh*-constructions altogether. Section 8.8 is the conclusion.

## 8.2 Agree languages

Sinhala and Mandarin are languages that allow multiple *wh*-constructions. (1) is an example from Sinhala in which there are two *wh*-phrases in a matrix clause.

(1) Sinhala:

***Kiidenek*** *pot*    ***kiiyak***    *gatta*    ***də***?  
 how many books how many bought Qu  
 ‘How many people bought how many books?’ (Sumangala 1992:236, per Hagstrom 1998:66)

Example (2) from Mandarin also shows that multiple *wh*-phrases can have scope in a single clause.

(2) Mandarin:

***Shei*** *mai-le*    ***shenme*** *(ne)*?  
 who buy-ASP what Qu  
 ‘Who bought what?’ (Cheng 1997:106)

In chapter 6.2, I claimed that in these languages, a *wh*-feature forms an Agree relation with a probe in Typ. Evidence is the lack of island effects in single *wh*-constructions. In a multiple *wh*-construction, evidence suggests that the probe in Typ can form an Agree relation with multiple *wh*-features.

Evidence that Agree is at work is that in a multiple *wh*-construction, none of the *wh*-phrases are subject to island effects. In the Sinhala example (3) below, both *kaaTə* ‘who’ and *mokak* ‘what’ have matrix scope even though the *wh*-phrase *mokak* ‘what’ is contained within a potential island because of the c-commanding *wh*-phrase *koheedi* ‘where.’ This example is fine as long as the Qu-morpheme is outside of the embedded clause, indicating that *koheedi* ‘where’ does not prevent *mokak* ‘what’ from obtaining matrix scope.<sup>1</sup>

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<sup>1</sup>See chapter 5.5 for discussion of the Qu-morpheme and island effects in Sinhala *wh*-constructions.

(3) Sinhala:

**KaaTə** [api koheedi **mokak** gatta kiyala] matəkə də?  
 who we where what buy-PAST that remember Qu  
 ‘Who remembers where we bought what?’ (Sumangala 1992:183)

In the Mandarin (4), according to Richards (2001), the lowest *wh*-phrase *shei*<sub>3</sub> ‘who,’ which is contained within a potential *wh*-island, can have matrix scope together with the highest *shei*<sub>1</sub> ‘who’; an answer refers to both the lowest and highest *shei* ‘who.’ Therefore, *shei*<sub>2</sub> ‘who’ within the embedded clause does not prevent the lowest *shei*<sub>3</sub> ‘who’ from having matrix scope.

(4) Mandarin:

**Shei**<sub>1</sub> xiang-zhidao [**shei**<sub>2</sub> sha-le **shei**<sub>3</sub>]?  
 who want-know who kill-PERF who  
 ‘Who wants to know who killed who?’ (Richards 2001:248)

The fact that a *wh*-phrase can occur in an embedded clause of this sort without resulting in an island effect indicates that Typ forms an Agree relation with its *wh*-feature.

I propose that in multiple *wh*-constructions in these languages, a Typ head forms an Agree relation with multiple *wh*-features. For example, in the Mandarin example (2) above, the *wh*-feature associated with *shei* ‘who’ forms an Agree relation with the probe in Typ and then the *wh*-feature associated with *shenme* ‘what’ also forms an Agree relation with the probe in Typ. A diagram is shown below. Agree is not sensitive to island effects because there is no movement of a *wh*-element.

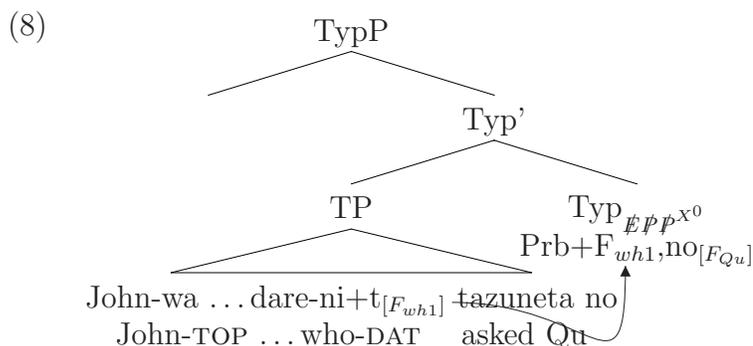


*whether/if*-clause. When the *wh*-phrase *dare-ni* ‘who-DAT’ is added outside of the *whether/if*-clause in (7b), ill-formedness disappears.

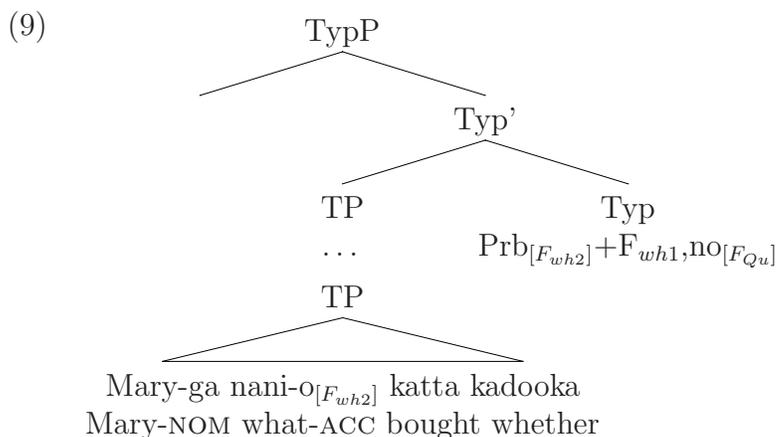
- (7) (a) ??*John-wa* [*Mary-ga nani-o katta kadooka*] *Tom-ni*  
 John-TOP Mary-NOM what-ACC bought whether Tom-DAT  
*tazuneta no?*  
 asked Qu  
 ‘What<sub>1</sub> did John ask Tom [whether Mary bought t<sub>1</sub>]?’
- (b) *John-wa* [*Mary-ga nani-o katta kadooka*] ***dare-ni***  
 John-TOP Mary-NOM what-ACC bought whether who-DAT  
*tazuneta no?*  
 asked Qu  
 ‘Who did John ask [whether Mary bought what]?’ (Watanabe 1992a:263)

The marginality of (7a) is accounted for as discussed in chapter 6.3. An  $EPP^{X^0}$  feature in the matrix Typ is unable to attract the *wh*-feature associated with *nani-o* ‘what-ACC’ due to the intervening *kadooka* ‘whether’ in the embedded Typ head, thereby resulting in an MLC violation.

I propose that the well-formedness of (7b) is due to the fact that the  $EPP^{X^0}$  feature in Typ has been satisfied and eliminated. That is, the *wh*-feature of the matrix *wh*-phrase *dare-ni* ‘who-ACC’ moves to the matrix Typ head where it eliminates the  $EPP^{X^0}$  feature, as shown in (8) below; the slashes through the EPP feature indicate that it has been eliminated.



Once the  $EPP^{X^0}$  feature is eliminated, the Typ head is able to form an Agree relation with the *wh*-feature of the *wh*-phrase contained within the island, as shown in (9).



In this manner, the probe in the matrix Typ is valued by two *wh*-features, thereby giving two *wh*-phrases scope. An initial *wh*-feature moves to the probe and a second *wh*-feature forms an Agree relation with it.

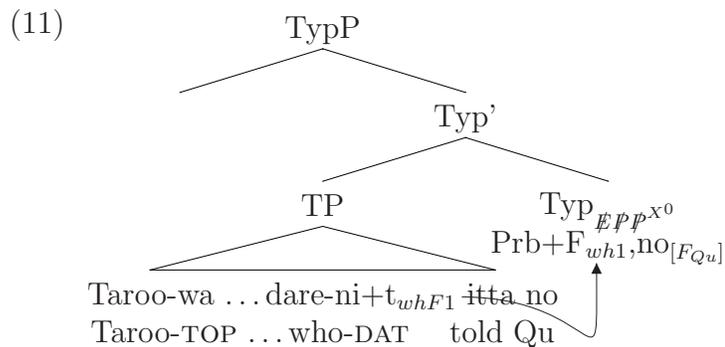
This same additional *wh*-effect can be seen with respect to intervention effects in Japanese. Example (10a) is ill-formed because the  $EPP^{X^0}$  feature in the matrix Typ is unable to attract the *wh*-feature associated with *nani-o* ‘what-ACC’ due to the intervening *sika* ‘only,’ thereby resulting in an MLC violation. However, when a *wh*-phrase is added to the matrix clause, the intervention effect disappears, as shown in (10b), in which both the matrix and embedded *wh*-phrases can have matrix scope.<sup>2</sup>

- (10) (a) *?\*Taroo-wa [Hanako-sika nani-o yoma-nai to]*  
 Taroo-TOP Hanako-only what-ACC read-NEG COMP  
*Tomoko-ni itta no?*  
 Tomoko-DAT told Qu  
 ‘What did Taroo tell Tomoko that only Hanako read?’

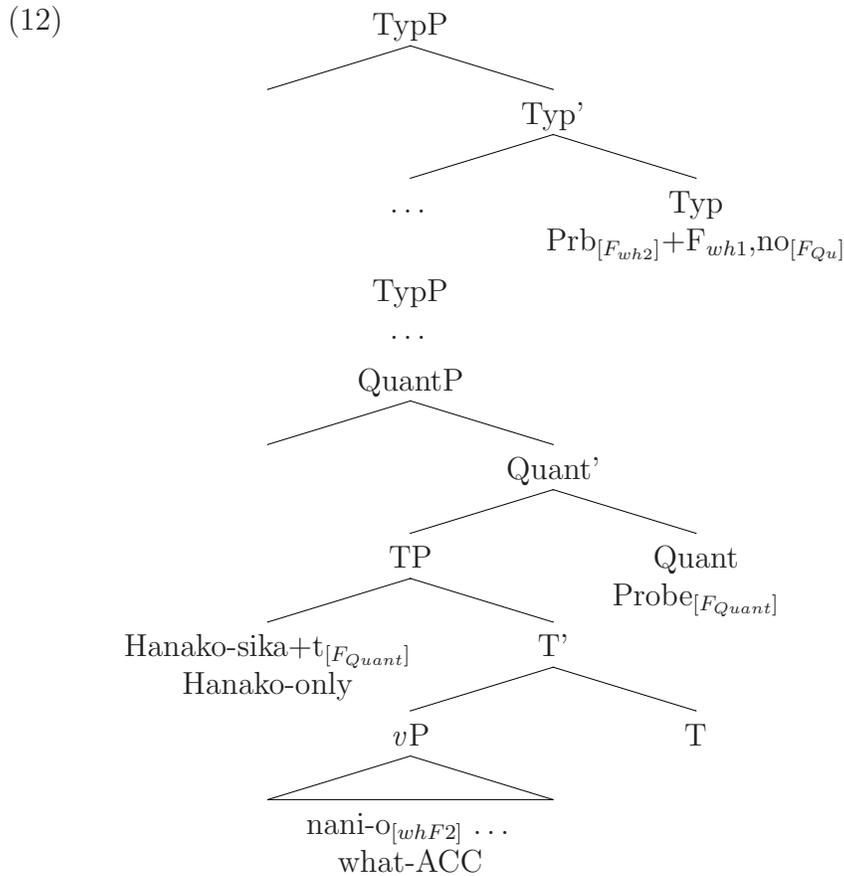
<sup>2</sup>I gloss *sika* as ‘only’ but Tanaka (1997) glosses it as ‘Foc.’

- (b) *Taroo-wa [Hanako-sika nani-o yoma-nai to] dare-ni itta no?*  
 Taroo-TOP Hanako-only what-ACC read-NEG COMP who-DAT  
 told Qu  
 ‘Who did Taroo tell Tomoko that only Hanako read what?’ (Tanaka 1997:165)

In the well-formed (10b), the *wh*-feature associated with the matrix *wh*-phrase *dare-ni* ‘who-DAT’ raises to Typ where it satisfies and eliminates the  $EPP^{X^0}$  feature, as shown below.



Since the  $EPP^{X^0}$  feature is no longer present, a probe in the matrix Typ head is able to Agree with the lower *wh*-feature associated with *nani-o* ‘what-ACC.’ Since this is an Agree relation, the intervening *sika* ‘only’ does not cause an intervention effect. Agree is sensitive to feature content. There is no MLC violation because the probe in Typ searches for a *wh*-feature and is not sensitive to intervening elements of a similar type. A simplified diagram is shown in (12).



Thus, in Japanese, movement of a higher *wh*-feature eliminates an  $\text{EPP}^{X^0}$  feature, thereby allowing a probe in Typ to Agree with a lower *wh*-feature.

#### 8.4 *Wh*-phrasal movement followed by Agree: English

In chapter 6.4, I argued that in a single *wh*-construction in English, an  $\text{EPP}^{XP}$  feature in Typ forces movement of a *wh*-phrase to [Spec, TypP]. As is well-known, only one *wh*-phrase undergoes movement in English. Therefore, the  $\text{EPP}^{XP}$  feature clearly cannot attract multiple *wh*-phrases. For example, (13a-b), in which both *wh*-phrases have moved (assuming that a subject *wh*-phrase moves in English - see chapter 5.3), are ill-formed. The correct way to form this construction requires that the lower *wh*-phrase remain in-situ, as in (13c).

- (13) (a) \***Who**<sub>1</sub> **what**<sub>2</sub> t<sub>1</sub> bought t<sub>2</sub>?  
 (b) \***What**<sub>2</sub> **who**<sub>1</sub> t<sub>1</sub> bought t<sub>2</sub>?  
 (c) **Who**<sub>1</sub> t<sub>1</sub> bought **what**?

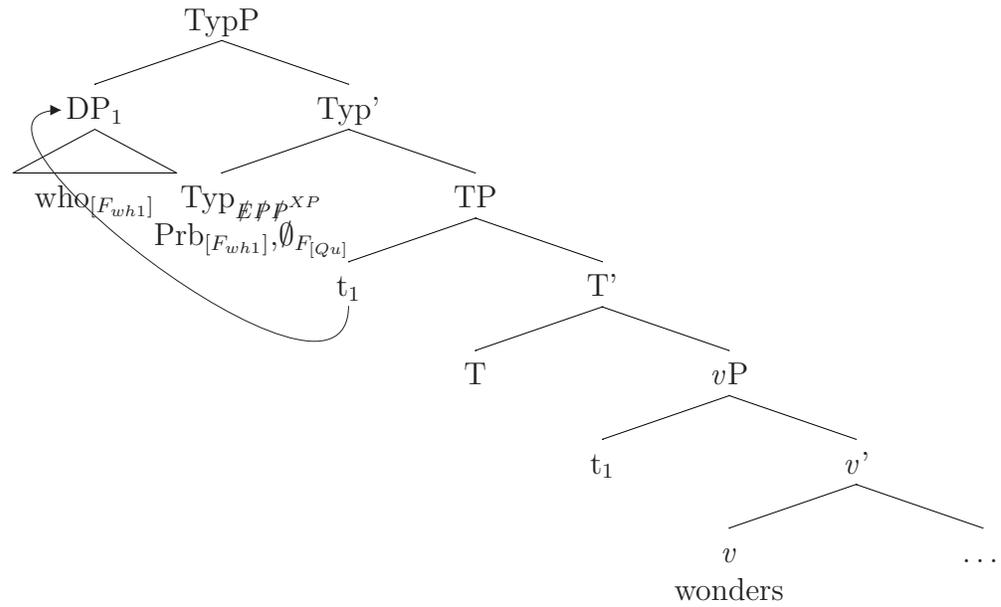
In English, a second *wh*-phrase then is able to obtain scope without overt movement. The facts indicate that, as in Japanese, the *wh*-feature of this second *wh*-phrase forms an Agree relation with a probe in Typ.

Multiple *wh*-constructions in English show additional *wh*-effects, just like in Japanese. Example (14a) is ill-formed due to the inability of the  $EPP^{XP}$  feature in the matrix Typ to attract *what*. The intervening *wh*-phrase *who* results in an MLC violation. However, example (14b) with an additional *wh*-phrase in the matrix clause is fine.

- (14) (a) \***What**<sub>1</sub> do you wonder [who bought t<sub>1</sub>]?  
 (b) **Who**<sub>1</sub> t<sub>1</sub> wonders [who bought **what**]? (Brody 1995, per Richards 1998:600)

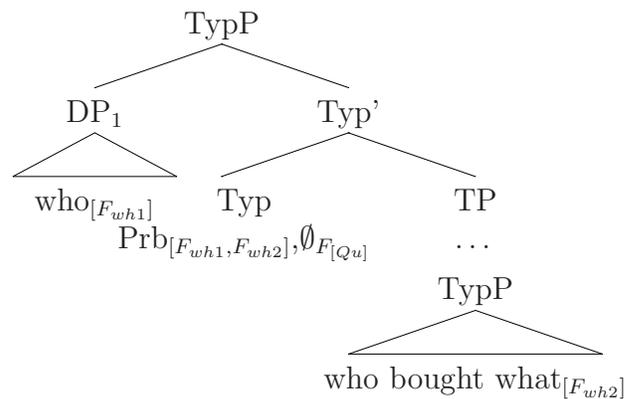
The well-formedness of (14b) suggests that the *wh*-feature associated with the matrix *who* eliminates an  $EPP^{XP}$  feature in Typ, thereby allowing Typ to form an Agree relation with the *wh*-feature of *what* in the embedded clause. Since this is an Agree relation, *what* is able to have matrix scope despite being inside of a potential *wh*-island. As shown in (15), the higher *wh*-phrase raises to [Spec, TypP], where it satisfies and eliminates an  $EPP^{XP}$  feature.

(15)



Since the EPP feature is eliminated, the probe in Typ is able to form an Agree relation with the *wh*-feature of the *wh*-phrase *what* that is contained within the embedded *wh*-island, as shown below.

(16)



In this manner, the probe in Typ is valued by multiple *wh*-features.

The following examples demonstrate the same phenomenon with a complex-DP. In (17a), *which car* moves out of a complex-DP, resulting in ill-formedness since the relative clause has been renumerated. In (17b), the matrix clause contains an

additional *wh*-phrase *who*. Although *which car* remains in-situ, it can have matrix scope, indicating that the DP-island effect has disappeared.

- (17) (a) \***[Which car]<sub>1</sub>** did John persuade [<sub>DP</sub> the man who bought **t<sub>1</sub>**] to sell the hubcaps?  
 (b) Who<sub>1</sub> t<sub>1</sub> persuaded [<sub>DP</sub> the man who bought **which car**] to sell the hubcaps? (Richards 1998:605)

The well-formedness of (17b) results from the addition of a *wh*-phrase to the matrix clause. In this case, the matrix *wh*-phrase *who* raises to [Spec, TypP] where it eliminates the EPP<sup>XP</sup> feature. Then the probe in Typ is able to form an Agree relation with the *wh*-feature associated with *which car* contained within the complex-DP.

### 8.5 Previous analyses of additional *wh*-effects

I have argued that in Japanese and English, once an initial *wh*-element (a *wh*-feature in Japanese, and a *wh*-phrase in English) moves to TypP, the EPP feature is eliminated, and a probe in Typ can form an Agree relation with another *wh*-feature. This analysis thus accounts for additional *wh*-effects, as in (7a-b), (10a-b), (14a-b), and (17a-b), whereby an additional *wh*-phrase that c-commands an island or intervening quantificational element improves the well-formedness of a construction. My analysis notably differs from other analyses.

Huang (1982) argues that LF movement is not subject to Subjacency (see chapter 2.6.1 for discussion of Subjacency) but overt movement is. For example, (18a) is ill-formed because there is overt movement of the *wh*-phrase *who* out of a complex-DP. In (18b), the *wh*-phrase *who* contained within the complex-DP has matrix scope together with the matrix *who*. Huang argues that this is fine because the lower *who* moves at LF.

- (18) (a) \***Who<sub>1</sub>** do you like [books that criticize **t<sub>1</sub>**]?  
 (b) Who<sub>1</sub> do you like [<sub>DP</sub> the man who bought **which car**]? (Richards 1998:605)

(b) **Who** likes [books that criticize **who**]? (Huang 1982:492)

Watanabe (1992b) follows Huang's (1982) notion that LF movement is not subject to island effects, despite the apparent existence of island effects in *wh*-in-situ languages such as Japanese. The difference between Japanese and English, Watanabe argues, is that Japanese *wh*-phrases have a null *wh*-operator, whereas English *wh*-phrases do not. Both overt *wh*-movement in English and overt null *wh*-operator movement in Japanese are subject to Subjacency.

Constructions such as (7a-b), repeated below, are accounted for by Watanabe as follows.

- (7) (a) ??*John-wa [Mary-ga nani-o katta kadooka] Tom-ni*  
 John-TOP Mary-NOM what-ACC bought whether Tom-DAT  
*tazuneta no?*  
 asked Qu  
 'What<sub>1</sub> did John ask Tom [whether Mary bought t<sub>1</sub>]?'  
 (b) *John-wa [Mary-ga nani-o katta kadooka] dare-ni*  
 John-TOP Mary-NOM what-ACC bought whether who-DAT  
*tazuneta no?*  
 asked Qu  
 'Who did John ask [whether Mary bought what]?' (Watanabe  
 1992a:263)

In (7a), a null operator associated with *nani-o* 'what-ACC' moves overtly out of the embedded clause to [Spec, CP]. This movement passes over two bounding nodes, and therefore violates Subjacency. In (7b), on the other hand, the null *wh*-operator associated with *dare-ni* 'who-DAT' in the matrix clause raises to the matrix [Spec, CP]. Then the *wh*-phrase *nani-o* 'what-ACC' moves at LF out of the embedded clause and adjoins to the operator in the matrix [Spec, CP] position. Since this movement is at LF, it is not subject to island effects. Crucially, Watanabe assumes that if [Spec, CP] is filled at S-structure, then movement of another *wh*-phrase to [Spec, CP] can occur at LF.

Tanaka (1997) similarly accounts for additional *wh*-effects in terms of null *wh*-operator movement. Whereas Watanabe discusses island effects, Tanaka focuses on intervention effects, as in (10a-b), repeated below.

(10) Japanese

- (a) ?*Taroo-wa* [*Hanako-sika nani-o yoma-nai to*] *Tomoko-ni*  
 Taroo-TOP Hanako-only what-ACC read-NEG COMP Tomoko-DAT  
*itta no?*  
 told Qu  
 ‘What did Taroo tell Tomoko that only Hanako read?’
- (b) *Taroo-wa* [*Hanako-sika nani-o yoma-nai to*] ***dare-ni***  
 Taroo-TOP Hanako-only what-ACC read-NEG COMP who-DAT  
*itta no?*  
 told Qu  
 ‘Who did Taroo tell Tomoko that only Hanako read what?’ (Tanaka 1997:165)

Tanaka’s analysis relies on the notion that intervention effects arise in a construction such as (10a) because a null operator associated with NPI *sika* ‘only’ blocks movement of the null *wh*-operator associated with *nani-o* ‘what-ACC.’ In (10b) the null *wh*-operator associated with *dare-ni* ‘who-DAT’ in the matrix clause moves to [Spec, CP] at S-structure. Then the *wh*-phrase in the embedded clause moves at LF to the matrix [Spec, CP]. Since this movement is at LF, it is not blocked by the operator associated with *sika* ‘only.’

My proposal has the advantage of not relying on LF movement nor on null *wh*-operator movement. Huang (1982), Watanabe (1992b), and Tanaka (1997) all rely on the notion that LF movement of a *wh*-phrase is not subject to island effects. A problem for this view is that it is not clear why LF movement should be so special and not subject to island effects. Under my proposal, there is no recourse to LF movement. An island effect does not occur when a probe can form an Agree relation with a *wh*-feature, and this Agree relation occurs before Spell-Out. Watanabe

(1992b) and Tanaka (1997) also rely on the notion that in Japanese *wh*-constructions there is movement of a null *wh*-operator. However, the same facts can be accounted for as resulting from movement of a *wh*-feature, without recourse to the notion of null *wh*-operator movement.

Richards (1998, 2001) takes a different view of these additional *wh*-effects. He relies on what he refers to as the “Principle of Minimal Compliance,” which is the notion ‘that a given constraint only has to be satisfied once in a certain domain (Richards 2001:197).’ The Principle of Minimal Compliance applies to a wide variety of phenomena, such as reflexivity, weak crossover, VP-ellipses, etc. Richards (2001:607) writes that “it appears to be true quite generally that in cases involving multiple *wh*-movement to a single *wh*- complementizer, only the first-moved *wh*-word will have to obey Subjacency; the other *wh*-movements are free from Subjacency.” When there is an additional *wh*-effect, as in (7b) and (10b), movement of an initial *wh*-phrase to [Spec, CP] is well-formed and obeys Subjacency. Thus, Subjacency can be ignored with respect to movement of a lower *wh*-phrase.

My analysis on the one hand, makes no recourse to the notion that once a constraint is satisfied, it may be ignored. However, it may be that my analysis is compatible with Richard’s proposal in the sense that it explains why the Principle of Minimal Compliance holds with respect to *wh*-constructions. According to Richards, well formed movement of a *wh*-element that does not violate an island effect allows movement to occur that is not subject to an island effect. As I see it, well-formed movement of a *wh*-element eliminates an EPP feature, and allows an Agree relation which would not normally be allowed. Thus, my analysis accounts for why a particular constraint that results in island effects can be ameliorated.

In summary, unlike my analysis, other proposals rely on the notion that LF movement is not subject to island effects, movement of a null *wh*-operator, and the Principle of Minimal Compliance. Rather, I claim that additional *wh*-effects result from movement of a *wh*-element that eliminates an EPP feature in Typ and from

the ability of a probe in Typ to form an Agree relation with another *wh*-feature.

## 8.6 Multiple *wh*-feature movement

Persian also allows multiple *wh*-constructions, as in (19) below.

(19) Persian

***Ki chi-ro xarid?***  
 who what bought-3sg  
 ‘Who bought what?’ (Karimi 2005:145)

In chapter 6.3, I claimed that Persian is a language in which there is *wh*-feature movement driven by an  $EPP^{X^0}$  feature in Typ. Evidence suggests that unlike in Japanese and English, the *wh*-feature of a secondary *wh*-phrase undergoes feature movement, and there is no Agree relation. This is because unlike Japanese and English, Persian does not show additional *wh*-effects.

Example (20) demonstrates an island effect in Persian resulting from blocking of *wh*-feature movement from *chi* ‘what’ by *ke* ‘that’ in the embedded clause.<sup>3</sup> This is ill-formed under the interpretation in which the *wh*-phrase *chi* ‘what’ has matrix scope.<sup>4</sup> Under my analysis, an  $EPP^{X^0}$  feature in the matrix Typ is unable to attract the *wh*-feature associated with *chi* ‘what’ in the embedded clause because of the intervening complementizer *ke* ‘that.’

(20) *\*Parviz az Kimea porsid [ke Maryam **chi** xarid]?*  
 Parviz of Kimea asked that Maryam what bought  
 Intended: ‘What did Parviz ask Kimea whether Maryam bought?’ (Simin Karimi, p.c.)

---

<sup>3</sup>Note that this is not quite identical to a *whether/if* island effect as *ke* is a complementizer that can appear in both statements and interrogative constructions, whereas the English *whether* and *if* cannot be used with statements.

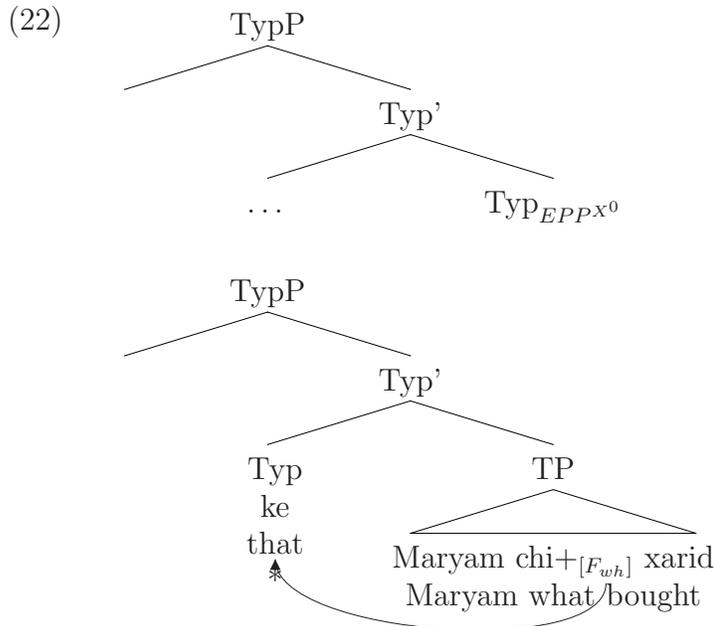
<sup>4</sup>This is fine as an echo question if *chi* ‘what’ has strong stress (Simin Karimi, p.c.).

Example (21a) corresponds to (20) above, except that there is an additional *wh*-phrase *ki* ‘who’ outside of the *whether/if*-clause. According to Simin Karimi (p.c.), (21a) is well-formed as a *wh*-construction, but only the matrix *wh*-phrase is answered, as indicated by the response in (21b). A response such as that in (21c) is ill-formed because the embedded *wh*-phrase cannot have matrix scope, which indicates that the embedded *wh*-phrase is subject to an island effect.

- (21) (a) *Q: Parviz az ki porsid [ke Maryam chi xarid]?*  
 Parviz of who asked that Maryam what bought  
 ‘Who did Parviz ask whether Maryam bought what?’ (Simin Karimi, p.c.)
- (b) *A: Az Kimea porsid.*  
 of Kimea asked  
 ‘He/she asked Kimea’
- (c) *A: \*Be Kimea porsid ke Maryam book xarid*  
 to Kimea asked that Maryam book bought  
 ‘He/she asked Kimea if Maryam bought a book.’

Thus, the addition of a *wh*-phrase outside of an island in Persian does not alleviate an island effect. I propose that in Persian, once a *wh*-feature moves to Typ to satisfy the  $EPP^{X^0}$  feature, the  $EPP^{X^0}$  feature is still active and it still attracts other *wh*-features.

The island effect in (21) can then be accounted for as follows. The *wh*-feature associated with the higher *wh*-phrase *ki* ‘who’ raises to Typ to satisfy the  $EPP^{X^0}$  feature. The  $EPP^{X^0}$  feature remains active so that the *wh*-feature associated with the lower *wh*-phrase *chi* ‘what’ contained within the *whether/if*-clause also must move to the matrix Typ to obtain scope. This *wh*-feature movement, though, is blocked by *ke* ‘that’ in the embedded clause. A diagram of the embedded clause is shown below in (22).



Evidence from intervention effects similarly shows that all *wh*-features move in a multiple *wh*-construction. Example (23) shows an intervention effect because *faghat* ‘only’ blocks *wh*-feature movement from *chi* ‘what’ to the matrix Typ, thereby resulting in ill-formedness as a *wh*-construction. This is fine as a yes/no construction.

- (23) \**Parviz be Kimea goft [ke faghat Maryam chi xund-e]?*  
 Parviz to Kimea said that only Maryam what read-has  
 ‘What did Parviz tell Kimea that only Maryam read?’ (Simin Karimi, p.c.)

The addition of a *wh*-phrase to the matrix clause, as in (24a) below, again does not allow an intervention effect to be eliminated. The answer in (24b) in which only the matrix *wh*-phrase is answered is fine. But the answer in (24c) is ill-formed because the embedded *wh*-phrase cannot have matrix scope.

- (24) (a) *Q: Parviz be ki goft [ke faghat Maryam chi xund-e]?*  
 Taro to who said that only Maryam what read-has  
 ‘Who did Parviz tell that only Maryam read what?’
- (b) *A: Be Kimea goft.*  
 to Kimea said  
 ‘He told Kimea.’

- (c) A: \**Be Kimea goft ke faghat Arezu book xund-e*  
 to Kimea asked that only Arezu book read-has  
 ‘He told Kimea that only Arezu read a book.’ (Simin Karimi, p.c)

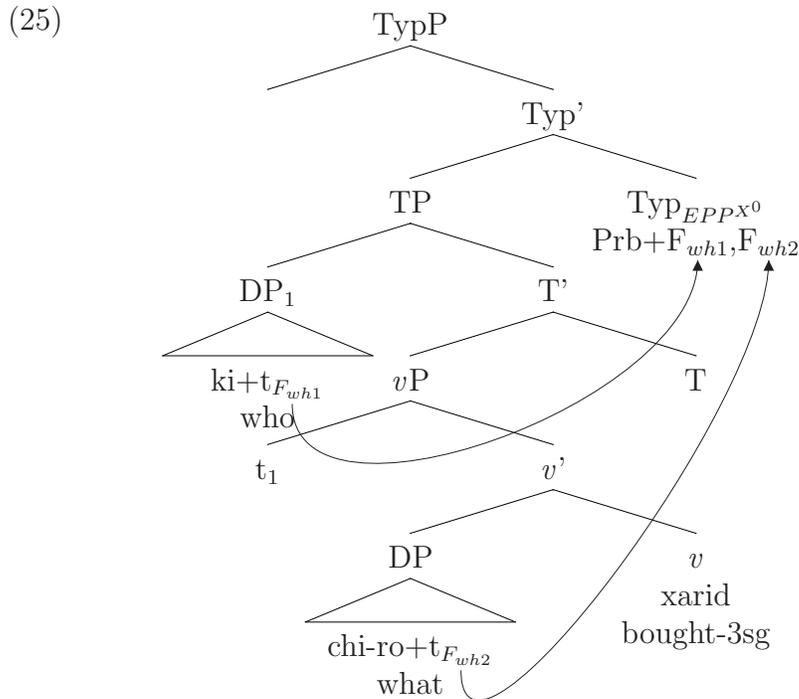
Again, movement of the *wh*-feature associated with the matrix *wh*-phrase, in this case *ki* ‘who,’ to the matrix Typ does not eliminate an EPP feature, and thus the *wh*-feature associated with the *wh*-phrase in the embedded clause is subject to intervention effects.

The Persian data then show that in a multiple *wh*-construction, all *wh*-features must move to Typ. In a construction such as (19), repeated below, each *wh*-feature raises to the matrix Typ, giving its associated *wh*-phrase scope.

(19) Persian:

- Ki chi-ro xarid?***  
 who what bought-3sg  
 ‘Who bought what?’ (Karimi 2005:145)

This multiple *wh*-feature movement can be seen in (25).



Evidence for multiple *wh*-feature movement is supported by the fact that only a pair-list reading is possible in multiple *wh*-constructions. For example, Karimi (2005:146) writes the following about an answer to (19).

The answer to [(19)] is something like: ‘*Kimea bought a dress, Rahjue a hat, and I bought Chomsky’s book on 9-11.*’ A single-listing interpretation is not an option, indicating that all *wh*-features must move to C.

On this point I agree, all *wh*-features move to Typ.

In an example such as (25), note that the *wh*-feature  $F_{wh1}$  associated with *ki* ‘who’ does not block movement of the *wh*-feature  $F_{wh2}$  associated with *chi-ro* ‘what.’ This fact can be accounted for if movement of a *wh*-feature does not leave a trace/copy, and thus there is no trace/copy of the higher *wh*-feature to block movement of the lower *wh*-feature. Since the higher *wh*-feature moves to Typ first, and it does not leave a trace/copy, the lower *wh*-feature can raise freely to Typ.

In summary, in Persian, unlike in Japanese, movement of a *wh*-feature to Typ does not ameliorate an EPP feature. An EPP feature remains active even if a *wh*-feature has moved to it.

### 8.7 Languages that disallow multiple *wh*-constructions

There are languages that completely disallow multiple *wh*-constructions. In these languages, multiple *wh*-phrases cannot have scope in a single clause.<sup>5</sup> For example, multiple *wh*-constructions do not occur in Scottish Gaelic, as shown below. This is ill-formed as a *wh*-construction in which both *wh*-phrases have scope.

(26) Scottish Gaelic:

\***Có** a bha a' pógadh **có**?  
 who C-REL be-PAST kissing who  
 'Who kissed who?' (Adger & Ramchand 2005:183)

Nor do they occur in Irish.

(27) Irish:

- (a) \***Cé** aL rinne **caidé**?  
 who COMP did what  
 'Who did what?'  
 (b) \***Caidé** aL thug sé do **cé**?  
 what COMP gave he to who  
 'What did he give to whom?'

---

<sup>5</sup>Note that multiple *wh*-phrases may occur in a single clause if a lower *wh*-phrase receives an echo question interpretation, but in this case, this is not a multiple *wh*-construction, as multiple *wh*-phrases do not have scope in a single clause.

- (c) \***Cé** *aL bhí ag caint le cé?*  
 who COMP was at talking with who  
 ‘Who was talking to who(m)?’ (McCloskey 1979:71)

Similarly, they are banned in Italian.

- (28) (a) \***Chi** ha scritto **che cosa?**  
 Who has written what?’  
 (b) \***Chi** è partito **quando?**  
 ‘Who left when?’  
 (c) \***Quale** ragazza ha dato un bacio a **quale** ragazzo?  
 ‘Which girl gave a kiss to which boy?’ (Calabrese 1984, per Dayal 2005)

In languages such as Scottish Gaelic, Irish, and Italian, the fact that multiple *wh*-constructions are banned suggests that the probe in Typ is unable to form a relationship with multiple *wh*-features. First of all, in these languages, which all require *wh*-phrasal movement, the probe in Typ is valued by the *wh*-feature of a fronted *wh*-phrase that moves to satisfy an  $EPP^{XP}$  feature. I propose that in these languages, once the Probe in Typ is valued, it is eliminated. Thus, it is not available to be valued by any other *wh*-features.

There are two types of probes that a language may have in Typ, given in (29a-b).

- (29) (a) Probe<sub>1</sub>: Remains active once it is valued by a *wh*-feature.  
 (b) Probe<sub>2</sub>: Eliminated once it is valued by a *wh*-feature.

Languages such as Sinhala, Mandarin, Japanese, English, and Persian that allow multiple *wh*-constructions contain the probe in (29a) which can be valued by multiple *wh*-features. Languages such as Scottish Gaelic, Irish, and Italian contain the probe in (29b) which can only be valued once.

Note that all of the languages that disallow multiple *wh*-constructions are languages with over *wh*-movement, which I have proposed results from an  $EPP^{XP}$

feature in Typ. It is possible that there are other languages that disallow multiple *wh*-constructions because the probe in Typ is eliminated once it is initially valued, but which, unlike the languages discussed here, form *wh*-constructions via Agree or *wh*-feature movement. I suspect that languages of this sort exist, but leave this issue for further analysis.

## 8.8 Conclusion

In this chapter, I have examined a few aspects of multiple *wh*-constructions. I attempted to show that in languages such as Sinhala and Mandarin, multiple *wh*-features can form an Agree relation with Typ. There is no movement of a *wh*-element, and thus, a *wh*-element is not subject to intervention or island effects even when there are multiple *wh*-phrases. In languages such as Japanese and English, movement of an initial *wh*-element is driven by an EPP feature in Typ. Once this movement occurs, the probe in Typ is able to form an Agree relation with another *wh*-feature. In languages such as Persian, the EPP feature in Typ remains active even after an initial *wh*-feature has moved to it. Therefore, the EPP feature is able to attract other *wh*-features. Furthermore, in languages that allow multiple *wh*-constructions, I proposed that a probe remains active once it is valued by a *wh*-feature; i.e., a probe can be valued by multiple *wh*-features. However, in languages that disallow multiple *wh*-constructions, such as Scottish Gaelic, Irish, and Italian, a probe is eliminated once it is valued by a *wh*-feature.

The table in (30) summarizes the findings regarding *wh*-feature movement for multiple *wh*-constructions in the languages discussed in this chapter.

(30)

	Languages	Typ	Probe
(a)	Sinhala, Mandarin		$F_{wh}, F_{wh}$
(b)	Japanese	<del>EPP</del> <sup><math>X^0</math></sup>	$F_{wh}, F_{wh}$
(c)	English	<del>EPP</del> <sup><math>XP</math></sup>	$F_{wh}, F_{wh}$
(d)	Persian	$EPP^{X^0}$	$F_{wh}, F_{wh}$
(e)	Scottish Gaelic, Irish, Italian	$EPP^{XP}$	* $F_{wh}, F_{wh}$

In Sinhala and Mandarin multiple *wh*-constructions (30a), Typ lacks an EPP feature (or if there is an EPP feature, it does not attract a *wh*-feature),<sup>6</sup> which results in an Agree relation. The probe Agrees with two *wh*-features, as shown in the column labeled *Probe*. In a Japanese and English multiple *wh*-construction (30b) and (30c), respectively, the EPP feature attracts an initial *wh*-feature (Japanese) or *wh*-phrase (English), and then is eliminated, as represented by the slashes through the EPP feature in the column labeled *Typ*. A secondary *wh*-feature or phrase then can form an Agree relation. In a Persian multiple *wh*-construction (30d), an  $EPP^{X^0}$  feature is not eliminated, and so every *wh*-feature must move to Typ. In all of these languages, multiple *wh*-features can value a probe in Typ. In Scottish Gaelic, Irish, and Italian, a probe cannot form a relationship with multiple *wh*-features, and thus a multiple *wh*-construction is banned.

Although no languages of this sort have been discussed here, this analysis also predicts the existence of languages that do not allow multiple *wh*-constructions, but which utilize Agree or *wh*-feature movement. There could be a language that lacks an EPP feature in Typ, as in (31a), and thus utilizes Agree, but which does not allow multiple *wh*-constructions because a Probe cannot be valued by multiple *wh*-

<sup>6</sup>Note that in Sinhala, if the arguments in chapters 5.4-5.6 and in the previous section of this chapter are correct, then when there is a TP-internal Qu-morpheme, there is an EPP feature in Typ. However, this EPP feature attracts a Qu-feature and not a *wh*-feature.

features. Also, there could be a language that has *wh*-feature movement resulting from an  $EPP^{X^0}$  feature in Typ, but which does not allow multiple *wh*-constructions for the same reason, as shown in (31b).

(31)

	Typ	Probe
(a)		* $F_{wh}, F_{wh}$
(b)	$EPP^{X^0}$	* $F_{wh}, F_{wh}$

Further typological investigations would be useful for investigating whether languages of this sort exist.

## CHAPTER 9

The weird behavior of *why*

## 9.1 Introduction

Cross-linguistic evidence shows that words corresponding to *why* in various languages have different syntactic distributions from other *wh*-phrases. (1a-d) state what some of these differences are.

- (1) (a) *Why* is not subject to intervention effects in situations in which other *wh*-phrases are subject to these effects.
- (b) *Why* is subject to intervention effects even when other *wh*-phrases are not subject to these effects.
- (c) *Why* must appear at the clause periphery even though other *wh*-phrases can remain in-situ.
- (d) *Why* is subject to island effects even when other *wh*-phrases are not subject to these effects.

An example of (1a) can be seen in Japanese. Although a *wh*-phrase cannot generally be c-commanded by a scope bearing element, *naze* ‘why’ can, as shown below in (2).

- (2) Japanese:

**{*Taroo-mo/dareka-ga/daremo-ga*}** *naze* *Boston-o* *satta no?*  
 Taroo-also/someone-NOM/everyone-NOM why Boston-ACC left Qu  
 ‘Why did {Taroo also/someone/everyone} leave Boston?’ (Ko 2005:873)

An example of (1b) can be seen in Mandarin, a language in which *wh*-phrases generally can be c-commanded by a scope bearing element without a resulting intervention effect. However, when *weishenme* ‘why’ is c-commanded by *chang/ye* ‘often/also,’ the result is ill-formed, as shown in (3).

(3) Mandarin:

\**Ta* {*chang/ye*} *weishenme* *ma* *ta*?  
 he often/also why scold he  
 ‘What is the reason x such that he often/also scolds/scolded him for x?’  
 (Soh 2005:146)

An example of (1c) can be seen in Persian. Although *wh*-phrases can remain in-situ, *cherâ* ‘why’ cannot. (4a) is ill-formed because *cherâ* ‘why’ is in a TP-internal position. (4b) is fine because *cherâ* ‘why’ appears in the clause periphery.

(4) Persian:

(a) \**Ali bâ Maryam ezdevâj kard cherâ?*  
 Ali with Maryam marry did.3sg why  
 (b) *Ali cherâ<sub>1</sub> bâ Maryam ezdevâj kard t<sub>1</sub>?*  
 Ali why with Maryam marry did-3sg  
 ‘Why did Ali marry Maryam?’ (Kahnemuyipour 2001:47, per Karimi 2005:139)

An example of (1d) can be seen in Japanese. Although *wh*-phrases generally are not subject to complex-DP island effects, *naze* ‘why’ is, as shown in (5).

(5) Japanese:

\**Kimi-wa* [<sub>DP</sub> *kare-ga naze kaita hon*]-o *yomimashita ka?*  
 you-TOP he-NOM why wrote book-ACC read Qu  
 Intended: ‘Why<sub>1</sub> did you read [books that he wrote t<sub>1</sub>]?’ (Nishigauchi 1990:41)

In this chapter, I discuss the details of this peculiar behavior of *why* in languages that fall into each of the categories in (1a-d).

This odd behavior of *why* has been the subject of much research. Most notably, in the Government and Binding framework, the behavior of *why* was often attributed to the Empty Category Principle (ECP) (cf. Huang (1982) and Lasnik & Saito (1984), among others). Being an adjunct, *why* needs to be antecedent governed, as it cannot be lexically governed. A *wh*-argument, on the other hand, can be either lexically or antecedent governed. This requirement that *why* be antecedent governed can account for differences between the behavior of *why* and other *wh*-phrases. One problem for the ECP analysis is that it predicts that *why* and all other adjuncts should behave in the same manner. But this is not the case. *Why* often behaves differently from other *wh*-adjuncts. Furthermore, the ECP has been abandoned within the framework of the Minimalist Program.

In this chapter, I examine the behavior of *why* from the perspective of the Minimalist Program, and attempt to account for the facts described in (1a-d), repeated below.

- (1) (a) *Why* is not subject to intervention effects in situations in which other *wh*-phrases are subject to these effects.
- (b) *Why* is subject to intervention effects even when other *wh*-phrases are not subject to these effects.
- (c) *Why* must appear at the clause periphery even though other *wh*-phrases can remain in-situ.
- (d) *Why* is subject to island effects even when other *wh*-phrases are not subject to these effects.

I show that the odd behavior of *why* described in (1a-c) can be accounted for by adopting a slightly modified version of Ko's (2005) view that *why* is base generated

in the clause-periphery. I also examine the fact in (1d), but I am unable to offer a clear solution that accounts for the behavior of *why* in certain island constructions.

The organization of this chapter is as follows. Sections 9.2 and 9.3 present evidence that *why* is base generated in [Spec, TypP] of the clause that it modifies. In section 9.2, I discuss how the notion that *why* must appear in [Spec, TypP] provides a straightforward explanation for the the odd behavior of *why* with respect to intervention effects. In section 9.3, I discuss how the notion that *why* is base generated in [Spec, TypP] is supported by the fact that in certain languages, *why* must appear in the clause periphery in cases in which other *wh*-phrases can appear in a TP-internal position. Section 9.4 presents evidence that *wh*-feature movement may proceed from *why* in certain instances. Section 9.5 examines the behavior of *why* with respect to island effects. Section 9.6 is the conclusion.

## 9.2 *Why* is base generated in [Spec, TypP]

In this section, I discuss Ko's (2005) proposal, which I adopt with a few minor changes, that in *wh*-in-situ languages, *why* is Merged directly in [Spec, CP]. This proposal provides a nice explanation for the perplexing facts concerning *why* given in (1a-b), repeated below.

- (1) (a) *Why* is not subject to intervention effects in situations in which other *wh*-phrases are subject to these effects.
- (b) *Why* is subject to intervention effects even when other *wh*-phrases are not subject to these effects.

*Why* is not subject to intervention effects in languages such as Japanese, Korean, and Persian even though other *wh*-phrases are (1a), whereas *why* appears to be subject to intervention effects in languages such as Mandarin in which other *wh*-phrases are not (1b).

## 9.2.1 Japanese, Korean, and Persian

In Japanese, Korean, and Persian, *wh*-phrases are generally subject to intervention effects, as discussed in chapter 6.3. These intervention effects can be seen in (6a-b) (originally (25a-b) in chapter 6.3) from Japanese, (7a-b) (originally (26a-b) in chapter 6.3) from Korean, and (8a-b) (originally (27a-b) in chapter 6.3) from Persian. In the (a) examples, a *wh*-phrase is c-commanded by a scope bearing element, resulting in an intervention effect. In the (b) examples, the *wh*-phrase appears higher than the scope bearing element, and the intervention effect disappears.

(6) Japanese:

- (a) *?\*Taroo-sika nani-o yoma-nai no?*  
 Taroo-only what-ACC read-NEG Qu  
 ‘What did only Taro read?’ (Tanaka 1997:159)
- (b) *Nani-o Taroo-sika t<sub>1</sub> yoma-nai no?*  
 what-ACC Taroo-only read-NEG Qu  
 ‘What did only Taro read?’ (Tanaka 1997:162)

(7) Korean:

- (a) *\*Amuto muôs-ûl sa-chi anh-ass-ni?*  
 anyone what-ACC buy-CHI not do-PAST-Qu
- (b) *Muôs-ûl<sub>1</sub> amuto t<sub>1</sub> sa-chi anh-ass-ni?*  
 what-ACC anyone buy-CHI not do-PAST-Qu  
 ‘What did no one buy?’ (Beck & Kim 1997:339)

(8) Persian:

- (a) *\*Hichkas chi-ro na-xarid?*  
 nobody what-ACC NEG-bought

- (b) *Chi-ro<sub>1</sub> hichkas t<sub>1</sub> na-xarid?*  
 what-ACC nobody NEG-bought  
 ‘What was it that no one bought?’ (Karimi & Taleghani 2007:180)

Ko (2005), following work by Miyagawa (1997b, 1999), Cho (1998), Kuwabara (1998), Watanabe (2000), Lee (2002), and Choi (2003) points out that, surprisingly, *why* does not appear to be subject to intervention effects in these languages. For example, in (9a) (originally presented as (2) above) from Japanese and (9b) from Korean, *why* follows a quantificational element, yet this quantificational element does not cause an intervention effect.

- (9) (a) Japanese:

*{Taroo-mo/dareka-ga/daremo-ga} naze Boston-o satta*  
 Taroo-also/someone-NOM/everyone-NOM why Boston-ACC left  
*no?*  
 Qu  
 ‘Why did {Taroo also/someone/everyone} leave Boston?’

- (b) Korean:

*{John-man/John-to/nwukwunka-ka/nwukwuna-ka} way*  
 John-only/John-also/someone-NOM/everyone-NOM why  
*Boston-ul tenass-ni?*  
 Boston-ACC left-Qu  
 ‘Why did {only john/John also/someone/everyone} leave Boston’ (Ko 2005:873)

These examples are also fine if *why* appears above the quantificational element, as shown below.

(10) (a) Japanese:

*Naze* {*Taroo-mo/dareka-ga/daremo-ga*} *Boston-o* *satta*  
 why Taroo-also/someone-NOM/everyone-NOM Boston-ACC left  
*no?*  
 Qu  
 ‘Why did {Taroo also/someone/everyone} leave Boston?’

(b) Korean:

*Way* {*John-man/John-to/nwukwunka-ka/nwukwuna-ka*}  
 why John-only/John-also/someone-NOM/everyone-NOM  
*Boston-ul tenass-ni?*  
 Boston-ACC left-Qu  
 ‘Why did {only john/John also/someone/everyone} leave Boston’ (Ko  
 2005:873)

Examples (11a-b) also show that *why* is not subject to intervention effects in Persian. *Cherâ* ‘why’ can either precede or follow the quantificational element *hichkas* ‘nobody,’ and the result is fine.

(11) (a) *Hichkas cherâ ketâb-ro na-xarid?*  
 nobody why book-ACC NEG-bought

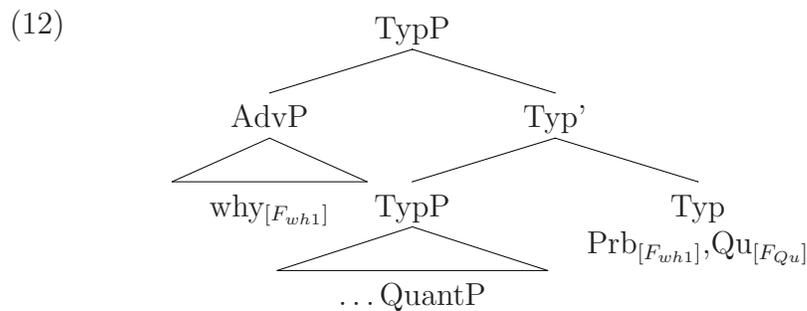
(b) *Cherâ<sub>1</sub> hichkas t<sub>1</sub> ketâb-ro na-xarid?*  
 why nobody book-ACC NEG-bought  
 ‘Why didn’t anyone buy the book?’ (Simin Karimi, p.c.)

These facts raise the obvious question of why *why* is not subject to intervention effects in these languages, whereas other *wh*-phrases are subject to these effects.

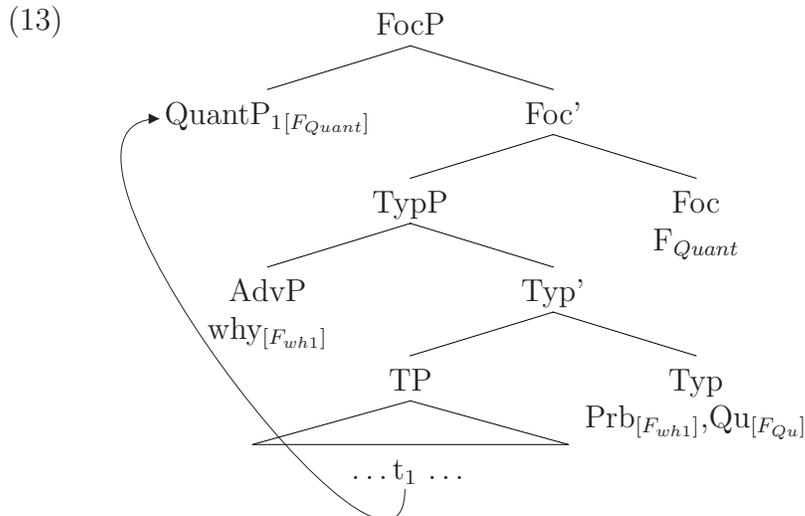
Ko (2005) provides an answer by arguing that in Korean and Japanese *why* “is an adverb which is externally merged (i.e. base-generated) in [Spec,CP] of the clause it modifies as a CP-modifier (Ko 2005:877).” According to Ko, in (9a-b) there are no intervention effects because there is no movement of *naze* ‘why,’ or any element (such as a feature) associated with it. Rather, *why* is Merged directly in [Spec, CP]

and the clause initial scope bearing element appears in a higher position “either by A'-movement ... or by being base-generated above (877)” *naze* ‘why.’ According to Ko, in (10a-b), in which *why* precedes the scope bearing element, *why* is in [Spec, CP] and the scope bearing element is below it. This analysis can also be extended to account for the Persian data in (11a-b) in the same manner; *hichkas* ‘why’ is base generated in [Spec, TypP] and thus it can be preceded by a scope bearing element in a FocP.

Adapting Ko’s (2005) analysis to fit with my proposals, the following picture emerges. In matrix clauses in Japanese, Korean, and also Persian, *why* is not subject to intervention effects because it is base generated in [Spec, TypP], a position above the base position of *why*. When *why* precedes the potential intervener, *why* is in [Spec, TypP] and the intervener is in a lower position within the TypP, as shown in (12). I refer to the scope bearing potential intervener as a QuantP.



Example (13) shows the structure of a construction in which *why* is preceded by a scope bearing element.



*Why* is in [Spec, TypP], a position higher than the base position of the QuantP. The quantifier has scrambled to a position above [Spec, TypP] that I have labeled as FocP.<sup>1</sup>

### 9.2.2 Mandarin

The facts in Mandarin are the exact opposite of those in Japanese, Korean, and Persian. Although *wh*-phrases are not generally subject to intervention effects, as discussed in chapter 6.2, *why* is an exception. In example (14) (originally (18) in chapter 6.2), the *wh*-phrase *shenme* ‘what’ is c-commanded by the scope bearing elements *zhi* ‘only’ or *bu* ‘not,’ yet there are no intervention effects.

(14) Mandarin:

*Ta* {*zhi/bu*} *mai shenme?*  
 he only/not sell what

‘What is the thing x such that he {only sells/does not sell} x?’ (Soh 2005:147)

<sup>1</sup>In chapter 2.5, I proposed a clause structure in which TypP is above FocP, but it may be that a FocP can precede, as well as follow, a TypP in languages that allow a great deal of word order flexibility, such as Japanese and Korean.

Notably, *weishenme* ‘why,’ unlike other *wh*-phrases cannot be c-commanded by certain scope bearing elements. When *weishenme* ‘why’ precedes *chang* ‘often’ or *ye* ‘also’ the result is fine, as shown in (15a), but when it follows, the result is ill-formed, as shown in (15b).<sup>2</sup>

- (15) (a) *Ta weishenme {chang/ye} ma ta?*  
 he why often/also scold he  
 ‘What is the reason x such hat he often/also scolds/scolded him for x?’
- (b) \**Ta {chang/ye} weishenme ma ta?*  
 he often/also why scold he  
 ‘What is the reason x such that he often/also scolds/scolded him for x?’  
 (Soh 2005:146)

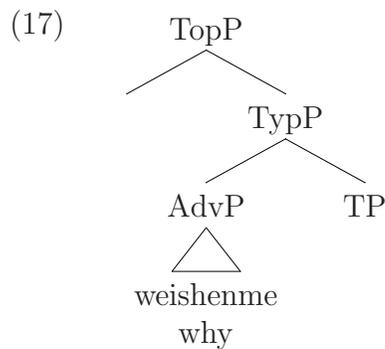
Ko (2005) argues that the Mandarin facts are not a result of *why* being subject to intervention effects, but rather, they result from Mandarin disallowing ‘scrambling.’ According to Ko, *weishenme* ‘why’ in Mandarin, just like *why* in Korean and Japanese, is Merged in [Spec, CP]. However, whereas in Korean and Japanese, a scope bearing element can appear in an A’-position above *why*, there is no position above [Spec, CP] that can house this type of element. Ko provides evidence that this is the case. (16a) shows that the definite NP *Lisi* can be topicalized, and (16b) shows that it may precede *weishenme* ‘why.’

- (16) (a) *Lisi<sub>1</sub>, Zhangsan shuo [(ta<sub>1</sub>) hen congming].*  
*Lisi Zhangsan said (she) very smart*  
 ‘*Lisi<sub>1</sub>*, Zhangsan said that she<sub>1</sub> is very smart.’
- (b) *Lisi<sub>1</sub>, weishenme t<sub>1</sub> kan-le na-ben shu?*  
*Lisi why read-ASP that-CL book*  
 ‘Why did Lisi read that book?’ (Ko 2005:885-886)

However, quantificational elements such as *chang* ‘often’ and *ye* ‘also’ cannot be topicalized, and thus cannot precede *weishenme* ‘why,’ as in (15b) above. Thus, there is no position above TypP for these elements to appear in.

<sup>2</sup>This example was originally presented as (3) above.

The ill-formedness of a construction such as (15b) then is not due to an intervention effect, but rather, according to the analysis presented here, it is due to the fact that *weishenme* ‘why’ must appear in [Spec, TypP]. This position cannot be preceded by a scrambled quantificational element. It can only be preceded by a topicalized element since the periphery of the Mandarin clause-structure is as shown in (17) below.



There is a TopP projection above TypP, but there is no projection, such as a FocP above TypP, that a quantificational element can appear in.

### 9.3 Further evidence that *why* must appear in [Spec, TypP]

The evidence discussed in the previous sections supports Ko’s (2005) claim that in certain languages, *why* is base generated in [Spec, CP] ([Spec, TypP] in my analysis). In this section, I extend this analysis to account for the behavior of *why* describe in (1c), repeated below.

- (1) (c) *Why* must appear at the clause periphery even though other *wh*-phrases can remain in-situ.

In some languages, although a *wh*-phrase can appear in a TP-internal position, *why* cannot. It must occur in the clause periphery. This fact supports the idea that *why* is base generated in [Spec, TypP].

As discussed in section 6.3, *wh*-phrases generally may remain in-situ in Persian or undergo movement; a form of ‘scrambling,’ as shown in (18a-c).

- (18) (a) *Kimea diruz ketâb-ro be ki dâd?*  
 Kimea yesterday book-ACC to who gave  
 ‘Who did Kimea give the book to yesterday?’
- (b) *Kimea be ki diruz ketâb-ro dâd?*  
 Kimea to who yesterday book-ACC gave  
 ‘Who did Kimea give the book to yesterday?’
- (b) *Be ki Kimea diruz ketâb-ro dâd?*  
 to who Kimea yesterday book-ACC gave  
 ‘Who did Kimea give the book to yesterday?’ (Karimi 2005:136)

Karimi (2005:139) notes, following an observation by Kahnemuyipour (2001), that *cherâ* ‘why’ “is subject to obligatory movement from its base position.” For example, (19a) is a statement with an adjunct clause and (19b) is a corresponding interrogative construction in which the adjunct clause in (19a) has been replaced with *cherâ* ‘why.’ The ill-formedness of this construction shows that *cherâ* ‘why’ cannot occur in a TP-internal position. Rather, *cherâ* ‘why’ must appear at the edge of the clause as in (19c), a position I assume to be [Spec, TypP].<sup>3</sup>

(19) Persian:

- (a) *Ali bâ Maryam ezdevâj kard [con dust-esh dâsht].*  
 Ali with Maryam marry did.3sg because friend-her had-3sg  
 ‘Ali married Maryam because he loved her.’
- (b) \**Ali bâ Maryam ezdevâj kard cherâ?*  
 Ali with Maryam marry did.3sg why
- (c) *Ali cherâ<sub>1</sub> bâ Maryam ezdevâj kard t<sub>1</sub>?*  
 Ali why with Maryam marry did-3sg  
 ‘Why did Ali marry Maryam?’ (Kahnemuyipour 2001:47, per Karimi 2005:139)

<sup>3</sup>(19b-c) were originally presented as (4a-b).

In (19c), if *cherâ* ‘why’ is in [Spec, TypP], then the preceding subject *Ali* could be in a higher position, such as [Spec, FocP].<sup>4</sup> In chapter 6.3, I argued that in Persian, a *wh*-feature associated with an in-situ *wh*-phrase raises to Typ. Although Karimi claims that the clause-peripheral *cherâ* ‘why’ moves from the base position of the adjunct clause in (19a), another possibility, consistent with the evidence presented in the previous section, is that *cherâ* ‘why’ actually never moves. Rather, it is simply Merged directly into [Spec, TypP].

As discussed in chapter 6.6, Malay allows *wh*-phrases to remain in-situ, as in (20), which was originally presented as (70) in chapter 6.6.

(20) Malay:

*Ali memberitahu kamu tadi [Fatimah baca apa]?*  
 Ali informed you just now Fatimah read what  
 ‘What did Ali tell you Fatimah was reading?’ (Cole & Hermon 1998:224)

Yet, according to Cole & Hermon (1998), the non-DP *wh*-phrase *kenapa* ‘why’ is an exception. It cannot occur in a non-clause-peripheral position. When it appears in clause-initial position in (21a), the result is fine, but when it appears TP-internally in (21b), ill-formedness results.

(21) Malay:

- (a) ***Kenapa*** *Fatimah menangis?*  
 why Fatimah cry  
 ‘Why did Fatimah cry?’
- (b) \**Fatimah kenapa menangis?*  
 Fatimah why cry  
 ‘Why did Fatimah cry?’ (Cole & Hermon 1998:226)

The *wh*-phrase *kenapa* ‘why’ can also appear in a partial *wh*-movement construction, as shown in (22), originally presented as (71) in chapter 6.6.

<sup>4</sup>See Karimi (2005) for discussion of the positions of scrambled phrases in Persian.

(22) Malay:

*Jon fikir [kenapa<sub>1</sub> (yang) Mary rasa [Ali dipecat t<sub>1</sub>]]*  
 John think why (that) Mary feel Ali was fired  
 ‘Why does John think (that) Mary felt Ali was fired?’ (Cole & Hermon  
 1998:225)

Even though *kenapa* ‘why’ does not appear in its scope position in (22), it is in a clause-peripheral position that I assume to be [Spec, TypP]. *Wh*-feature movement from *kenapa* ‘why’ thus is permitted as long as *kenapa* ‘why’ appears in [Spec, TypP]. Therefore, if *kenapa* ‘why’ is in [Spec, TypP] of the clause that it modifies, its *wh*-feature can move to a higher clause.

In the *wh*-movement language of English, notably, *why* also must appear in a clause-peripheral position when it has scope in a *wh*-construction, even in situations in which a *wh*-phrase normally can appear TP-internally. In a single *wh*-construction, a *wh*-phrase must move, and therefore, the appearance of *why* in [Spec, TypP] in this type of construction is expected. This example can be accounted for if *why* moves to [Spec, TypP] from a position corresponding to the adjunct clause in (23b).

(23) (a) **Why**<sub>1</sub> did he eat dinner t<sub>1</sub>?

(b) Harry ate dinner [**because he was hungry**].

However, as discussed in chapter 8, in a multiple *wh*-construction, only one *wh*-phrase moves to [Spec, TypP]. What is interesting is that *why* cannot appear in a non-clause-peripheral position (and have scope) in a multiple *wh*-construction. For example, whereas the lower *wh*-phrase *what* may remain in-situ and have matrix scope in the multiple *wh*-construction in (24a), this is not the case in (24b), which is ill-formed because *why* does not appear at the beginning of the clause. (24c) is fine because *why* appears in clause-initial position.

- (24) (a) Who bought **what**?  
 (b) \*Who e arrived **why**? (Reinhart 1998:30)  
 (c) **Why** did who arrive?

Note that whereas *why* must appear clause-peripherally, other adverbials, such as *when*, as in (25) need not. Although (25) may be a bit marginal under the interpretation in which both *who* and *when* have scope, I think that it is much better than (24b).

- (25) ?Who arrived **when**?

The fact that *why* must appear in clause-initial position in a multiple *wh*-construction suggests that unlike with other *wh*-phrases, *why* must appear in [Spec, TypP]. Furthermore, the fact that in (24c), *why* appears in clause-initial position even though there is another *wh*-phrase, is consistent with *why* being base generated in this position. If *why* were base-generated within the TP below the subject *who*, then it should not be able to move to clause-initial position without an MLC effect arising.

In Persian, Malay, and English, the *wh*-adjunct *why* thus does not pattern with other *wh*-phrases. Although Persian and Malay allow *wh*-phrases to appear in-situ in single *wh*-constructions, and English allows a secondary *wh*-phrase to remain in-situ in multiple *wh*-constructions, *why* must appear in the clause periphery. This fact can be accounted for straightforwardly if *why* is base generated in [Spec, TypP].

#### 9.4 Feature movement may proceed from *why* in some languages

Ko (2005) demonstrates that in Japanese and Korean, when *why* appears in an embedded clause but has matrix scope, it is subject to intervention effects. Examples (26a-b) from Japanese and (27a-b) from Korean demonstrate this.

(26) Japanese:

- (a) \**John-wa [Mary-sika naze sono hon-o yoma-nakat-ta to]*  
 John-TOP Mary-only why that book-ACC read-not-PAST C  
*itta no?*  
 said Qu

‘What is the reason x such that John said that only Mary read that book for x?’

- (b) *John-wa [naze Mary-sika sono hon-o yoma-nakat-ta to]*  
 John-TOP why Mary-only that book-ACC read-not-PAST C  
*itta no?*  
 said Qu

‘What is the reason x such that John said that only Mary read that book for x?’ (Ko 2005:875)

(27) Korean:

- (a) \**John-un [amwuto way ku chayk-ul ilk-ci-anh-ass-ta-ko]*  
 John-TOP anyone why that book-ACC read-Ci-not-PAST-DEC-C  
*malhayss-ni?*  
 said-Qu

‘What is the reason x such that John said that no one read that book for x?’

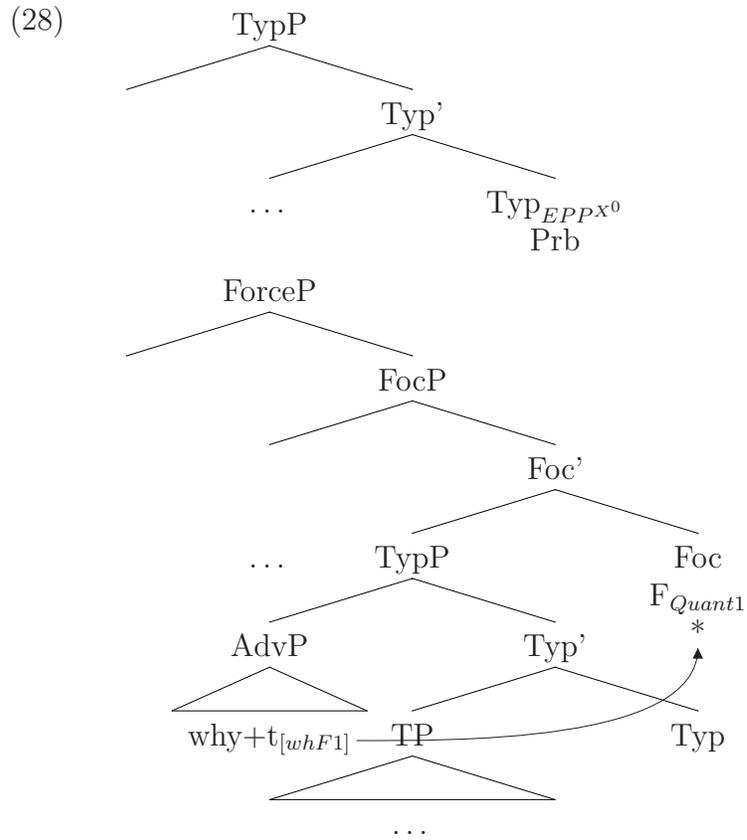
- (b) *John-un [way amwuto ku chayk-ul ilk-ci-anh-ass-ta-ko]*  
 John-TOP why anyone that book-ACC read-Ci-not-PAST-DEC-C  
*malhayss-ni?*  
 said-Qu

‘What is the reason x such that John said that no one read that book for x?’ (Ko 2005:875)

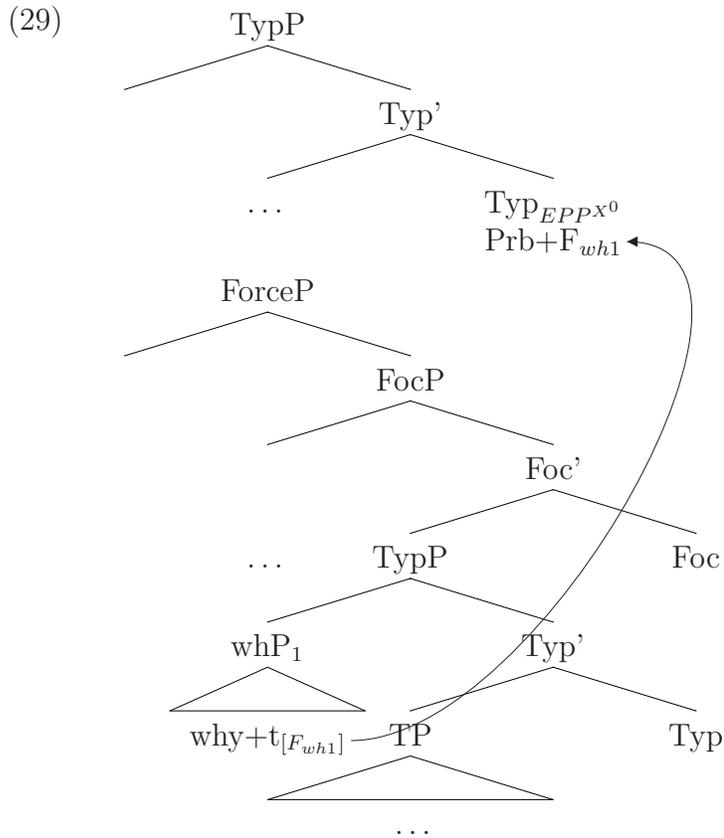
In (26-27a), *why* is contained within an embedded declarative clause, yet it must have matrix scope because the Qu-morpheme appears in the matrix clause. According to Ko, LF movement of *why* is blocked by *Mary-sika* ‘Mary-only’ in Japanese and *amwuto* ‘anyone’ in Korean. When *why* appears above these scope bearing elements in (26-27b), the intervention effects disappear.

Ko (2005) accounts for the intervention effects in constructions such as (26-27a) as resulting from the blocking of LF movement of *why*. Specifically, *why* needs to move at LF to the matrix interrogative clause to have scope, yet this movement is blocked by the intervening scope bearing element. In (26-27b), *why* proceeds freely to the matrix [Spec, CP] at LF.

Unlike Ko, I propose that the facts concerning embedded clauses with *why* can be resolved without resorting to LF movement of *why*. Rather, there is movement of a *wh*-feature from *why* and this feature movement is motivated by an  $EPP^{X^0}$  feature (see chapter 6). In constructions such as (26-27a) above, *why* is Merged in [Spec, TypP] of the embedded clause. Then an  $EPP^{X^0}$  feature contained in the matrix Typ attracts the *wh*-feature from *why*. This *wh*-feature movement is blocked by certain c-commanding scope bearing element. A simplified diagram is shown below, where the inability of the EPP feature to attract the *wh*-feature is signified by an arrow that is blocked.



When there is no intervening scope bearing element, feature movement may proceed uninhibited, and the result is well-formed, as shown in (29).



In this manner, *why* can be subject to intervention effects, but only when *wh*-feature movement proceeds from it.

Persian also shows these same effects in an embedded clause; *why* is subject to intervention effects. Remember that *cherâ* ‘why’ is not subject to intervention effects in a matrix clause (see (11a) above). However, (30) shows that *cherâ* ‘why’ cannot have matrix scope when it occurs in an embedded clause and is c-commanded by *faghat* ‘only.’

(30) Persian:

\**pro fekr mi-kon-i [(ke) faghat cherâ Kimea in xuna-ro*  
 thought dur-do-s2sg that only why Kimea this house-ACC  
*dar Tusân sâxte]?*

in Tucson built-3sg

‘Why<sub>1</sub> do you think [that Kimea only built this house in Tucson t<sub>1</sub>]?’ (Simin Karimi, p.c.)

The fact that *cherâ* ‘why’ cannot have matrix scope can be accounted for if *wh*-feature movement is blocked by the intervening *faghat* ‘only.’ Note that *wh*-feature movement may proceed from *cherâ* ‘why’ in an embedded clause to a matrix clause if there is no intervener. In (31) below, *cherâ* ‘why’ modifies the verb of the embedded clause, but it has matrix scope, as it turns the matrix clause into a *wh*-construction (Simin Karimi, p.c.).

(31) Persian:

*pro fekr mi-kon-i [(ke) Kimea cherâ in xuna-ro dar*  
 thought dur-do-s2sg that Kimea why this house-ACC in  
*Tusân sâxte]?*

Tucson built-3sg

‘Why<sub>1</sub> do you think Kimea [built this house in Tucson t<sub>1</sub>]?’ (Karimi 2005:138-139)

The facts discussed in this section support the notion that *why* is Merged in [Spec, TypP] of a clause that it modifies, although, at least in some languages, it need not be Merged in [Spec, TypP] of the clause in which it has scope. When *why* is Merged in a non-scopal TypP, *wh*-feature movement can proceed from it, and this *wh*-feature movement is subject to intervention effects. In this manner, while adopting Ko’s proposal that *why* is Merged in the clause-periphery, I account for the facts without resorting to LF movement.

9.5 *Why* and island effects

In this section I examine the odd behavior of *why* described in (1d), repeated below.

- (1) (d) *Why* is subject to island effects even when other *wh*-phrases are not subject to these effects.

Japanese and Mandarin shown this phenomenon described in (1d). This perplexing fact, as discussed below, leaves a number questions unresolved.

As discussed in chapter 7, *wh*-phrases in Japanese are not generally subject to complex-DP island and adjunct island effects. (32a-b) (originally (4a) and (5a) presented in chapter 9.4) show that a *wh*-phrase can occur within a complex-DP and within an adjunct clause in Japanese.

(32) Japanese:

- (a) *Kimi-wa* [<sub>DP</sub> [**dare-ga** *kaita*] *hon*]-*o* *yomimashita ka?*  
 you-TOP who-NOM wrote book-ACC read Qu  
 ‘Who<sub>1</sub> did you read books that t<sub>1</sub> wrote? (Nishigauchi 1990:40)
- (b) *Taroo-ga* [<sub>TP</sub> **doko-ni** *itta kara*] *umaku itta no?*  
 Taro-NOM where-DAT went because well went Qu  
 ‘Where<sub>1</sub> did things go well [because Taro went t<sub>1</sub>?’ (Richards 2000:187)

However, *naze* ‘why’ does not pattern with other *wh*-phrases with respect to complex-DP and adjunct island effects. When *naze* ‘why’ occurs within a complex-DP, as in (33a) or in an adjunct clause, as in (33b), the result is ill-formed.

(33) Japanese:

- (a) \**Kimi-wa* [<sub>DP</sub> *kare-ga naze kaita hon*]-*o* *yomimashita ka?*  
 you-TOP he-NOM why wrote book-ACC read Qu  
 Intended: ‘Why<sub>1</sub> did you read [books that he wrote t<sub>1</sub>?’ (Nishigauchi 1990:41)

- (b) \**Taroo-ga* [<sub>TypP</sub> *naze itta kara*] *umaku itta no?*  
 Taro-NOM            why    went    because    well    went    Qu  
 Intended: ‘Why<sub>1</sub> did things go well [because Taroo went t<sub>1</sub>]?’ (Junko  
 Ginsburg, p.c.)

In chapter 7, I argued, following Nichigauchi (1986, 1990, 1999a, 1999b), that in Japanese, a *wh*-phrase can avoid DP- and adjunct island effects via *wh*-feature movement; the *wh*-feature raises to turn the potential island into a *wh*-phrase and thus circumvent an island effect. These examples in (33a-b) clearly show that movement of a *wh*-feature associated with *naze* ‘why’ cannot circumvent an island effect.

One possibility, proposed by Nishigauchi (1990) is that a mismatch between the syntactic category of *naze* ‘why’ and the ‘island’ that contains it is the cause of these effects. According to Nishigauchi (1990:89), “a WH-phrase must be identical in syntactic category with the dominating node in order for the [+WH]-feature to be percolated to the latter.” In order for a *wh*-phrase to circumvent a complex-NP island effect, the *wh*-phrase must be a nominal. For example, since *naze* ‘why’ is not a nominal, its *wh*-feature is incompatible with a complex-NP. However, a problem for this analysis is that *naze* ‘why’ is subject to adjunct island effects, as in (33b), even though it is an adjunct. There is also the problem of accounting for why adjuncts other than *naze* ‘why’ are not subject to island effects, even though these adjuncts do not appear to be nominals (for example, see (4b) and (5a) in chapter 7.2).

I have taken the position that *naze* ‘why’ is Merged directly in [Spec, TypP]. As shown above, when Merged in [Spec, TypP], the *wh*-feature of *naze* ‘why’ can move to a higher clause. Therefore, even if *naze* ‘why’ were Merged in [Spec, TypP] within an adjunct clause, the inability of its *wh*-feature to undergo further movement is not accounted for. The facts thus indicate that the *wh*-feature of *naze* ‘why,’ unlike the *wh*-features of other *wh*-phrases, simply cannot turn a larger phrase into a *wh*-phrase; the *wh*-feature of *naze* ‘why’ cannot turn a complex-DP or an adjunct clause

into a *wh*-phrase. At this point, I do not have any solution that can account for this behavior of the *wh*-feature of *naze* ‘why.’

I next turn to Mandarin, in which, unlike other *wh*-phrases in this language, *weishenme* ‘why’ is subject to island effects. Examples (34a-b) (originally (19b-c) in chapter 6.2) show that a *wh*-phrase can occur within a complex-DP or adjunct clause in Mandarin.

(34) Mandarin:

- (a) *Ni xihuan [DP shei xie de shu]?*  
 you like who write GEN book  
 ‘Who<sub>1</sub> do you like [the book t<sub>1</sub> wrote]?’
- (b) *Ta [TypP yinwei ni shuo shenme hua] hen shengqi?*  
 he because you say what word very angry  
 ‘What<sub>1</sub> was he angry [because you said t<sub>1</sub> words]?’ (Aoun & Li 1993:203)

In chapter 6.2, I argued that these facts result from a probe in Typ being able to form an Agree relation with the *wh*-feature of a *wh*-phrase in these types of constructions. Yet, examples (35a-b) show that *weishenme* ‘why’ cannot scope outside of a complex-DP or adjunct clause, as shown in the following examples.

(35) Mandarin

- (a) *\*Ni xihuan [DP ta weishenme xie de shu]?*  
 you like he why write GEN book  
 Intended: ‘Why<sub>1</sub> do you like [the book he wrote t<sub>1</sub>]?’
- (b) *\*Ta [TypP yinwei ni shuo weishenme hua] hen shengqi?*  
 he because you say why word very angry  
 Intended: ‘Why<sub>1</sub> was he angry [because you said words t<sub>1</sub>]?’ (Aoun & Li 1993:203-204)

These facts suggest that a Typ head cannot form an Agree relation with the *wh*-feature of *weishenme* ‘why’ when *weishenme* ‘why’ is in a complex-DP or adjunct clause. Why exactly this is the case is not clear to me.

## 9.6 Conclusion

In conclusion, many of the facts concerning the syntactic behavior of *why* are accounted for straightforwardly if Ko's (2005) analysis is adopted; *why* is base generated in [Spec, TypP] (Ko uses [Spec, CP]). The odd fact that *why* appears to be immune to intervention effects in Japanese, Korean, and Persian is accounted for as resulting from *why* being base generated in a position above the base position of a potential intervener. As long as there is no *wh*-feature movement from *why*, there are no intervention effects. In this chapter, I showed how Ko's proposal that *why* is base generated in the clause periphery straightforwardly accounts for the fact that in languages such as Persian, Malay, and English, *why* clearly cannot occur in a TP-internal position (and have scope) even though other *wh*-phrases can. However, as pointed out by Ko, when *why* appears in [Spec, TypP] of an embedded clause, it is subject to intervention effects. I proposed that when *why* is Merged in [Spec, TypP] of an embedded clause in languages such as Japanese, Korean, or Persian, and has matrix scope, its *wh*-feature raises to the matrix Typ. This *wh*-feature movement is subject to intervention effects. Unlike Ko, I account for these intervention effects as resulting from feature movement, and not from LF movement of a *wh*-phrase.

The facts regarding island effects and *why* are perplexing. Whereas *wh*-phrases are not generally subject to complex-DP and adjunct island effects in Japanese, *why* is subject to these effects. I suggested that this fact could be an indication that the *wh*-feature associated with *why* is unable to move to the relevant position in Japanese to turn a larger phrase into a *wh*-phrase and circumvent an island effect. In Mandarin, the fact that *why* is subject to island effects appears to result from the inability of an Agree relation to be formed between Typ and the *wh*-feature of *why* when *why* is within an island. Why exactly a *wh*-feature behaves in these ways with respect to island effects, though, is not clear to me, and requires further analysis.

In conclusion the facts concerning *why* raise a few perplexing questions, given

below.

- (36) (a) Why does *why* have to be Merged in [Spec, TypP]?  
(b) Why can't *wh*-feature movement from *why* circumvent an island effect in languages such as Japanese?  
(c) Why can't the *wh*-feature of *why* form an Agree relation when *why* is contained within an island in languages such as Mandarin?

I suspect that investigation of the semantics of *why* may lead to some answers to these questions.

## CHAPTER 10

## Conclusion

In this dissertation, I have accounted for cross-linguistic and language internal variation in the formation of *yes/no* and *wh*-constructions. In this chapter, I summarize the main findings of this work concerning the formation of interrogative constructions and I discuss remaining issues.

My analysis began in chapter 3, where I argued that a Qu-feature is required to type a clause as an interrogative construction, and it does so by appearing in the head of a clausal typing projection that I refer to as TypP. I discussed how some languages contain identical overt Qu-morphemes that appear in both *yes/no* and *wh*-constructions, and I claimed that this is evidence that a Qu-feature is required in both *yes/no* and *wh*-constructions. I argued that when an overt Qu-morpheme is absent in an interrogative construction, a covert Qu-morpheme is present.

In chapter 4, I focused on *yes/no* constructions. I argued that a certain amount of cross-linguistic and language internal variation in *yes/no* constructions is dependent on the properties of a Qu-morpheme; specifically whether or not it is overt, and whether or not it is an affix. I also discussed the fact that a *yes/no* construction, depending on the language, may be formed with a Qu-morpheme in a clause peripheral position, or in a TP-internal position. I argued that by default a Qu-morpheme is Merged directly in Typ in the clause periphery. However, a Qu-morpheme appears in a TP-internal position when it contains a Focus-feature that forces it to be Merged into a derivation in a position adjacent to a focused phrase. Evidence for this proposal is that a TP-internal phrase with an adjacent Qu-morpheme is interpreted as an identificational focus. When a Qu-morpheme appears in a TP-internal position, its Qu- and Focus-features move to the heads of a TypP and a

FocP, respectively, and this movement can be detected via the existence of island effects.

Next, in chapter 5, I examined the positions of Qu-morphemes in *wh*-constructions. As in a yes/no construction, in a *wh*-construction, a Qu-morpheme by default is Merged directly in Typ. I also extended my analysis of TP-internal Qu-morphemes in yes/no constructions to account for TP-internal Qu-morphemes in *wh*-constructions. In some languages, a Qu-morpheme may contain a Focus-feature which forces it to be Merged in a position adjacent to a *wh*-phrase in a TP-internal position, that is, if the *wh*-phrase is in-situ. In these cases, a *wh*-phrase appears to receive a special identificational focus interpretation, although there is a possible exception in Sinhala that requires further examination. I also showed that the properties of a Qu-morpheme, specifically, whether or not it is an affix, influence the form of a *wh*-construction in certain English dialects.

In chapter 6, I examined how a *wh*-feature establishes a relationship with a probe in Typ. I argued that depending on the language, 1) a *wh*-feature can form an Agree relation with a probe in Typ, 2) a *wh*-feature can move to Typ, or 3) a *wh*-phrase can move to [Spec, TypP]. Which option is chosen is dependent on the Typ head. When Typ lacks an EPP feature, then there is an Agree relation. When Typ contains an  $EPP^{X^0}$  feature, then there is *wh*-feature movement, and when there is an  $EPP^{XP}$  feature, there is *wh*-phrasal movement. In order to distinguish between Agree and *wh*-feature movement, I examined the presence and absence of intervention and island effects. I also examined languages with partial *wh*-movement, which I argued results when a lower Typ head contains an  $EPP^{XP}$  feature and a higher c-commanding Typ head contains an  $EPP^{X^0}$  feature. The lower Typ head with the  $EPP^{XP}$  feature attracts a *wh*-phrase to its specifier position and the higher Typ head with an  $EPP^{X^0}$  feature attracts a *wh*-feature.

In chapter 7, I investigated instances in which movement of a *wh*-element within a larger non-*wh*-phrase can turn that phrase into a *wh*-constituent. This phenomenon

can lead to island circumvention effects. In certain languages, movement of a *wh*-feature or a *wh*-phrase to the head or specifier, respectively, of a potential island turns the potential island into a *wh*-phrase. Then either *wh*-feature movement can proceed from the newly formed *wh*-phrase, or the *wh*-phrase itself can undergo movement. I found that island circumvention effects can occur when a *wh*-phrase is contained within a complex-DP or an adjunct clauses, although not when it is contained within a *whether/if*-island. I proposed that this *wh*-movement that turns a larger phrase into a *wh*-phrase is motivated by an EPP feature, which attracts the *wh*-element. I also discussed how some languages do not allow movement of a *wh*-element to circumvent island effects. In these languages, the head of a potential island cannot contain an EPP feature.

In chapter 8, I examined multiple *wh*-constructions. I argued that in certain languages such as Japanese and English, a probe in Typ can form an Agree relation with a secondary *wh*-feature once movement of an initial *wh*-element to TypP eliminates an EPP feature. However, in some languages such as Persian, Agree is not an option for secondary *wh*-features because movement of a *wh*-element to TypP does not eliminate the EPP feature. Also, in some languages which disallow multiple *wh*-constructions, a Typ head simply cannot form any relation with a secondary *wh*-phrase. I proposed that this was the result of the probe in Typ being eliminated after it is valued by a single *wh*-feature. In languages which allow multiple *wh*-constructions, a probe in Typ can be valued by multiple *wh*-features.

In chapter 9, I examined the behavior of *why*, which does not pattern with other *wh*-phrases. I argued that *why*'s odd behavior results from a requirement that it appear in [Spec, TypP], even in situations in which a *wh*-phrase generally can remain in-situ. Thus, the Typ head of a clause containing *why* must have an  $\text{EPP}^{XP}$  feature. Interestingly, there are instances in languages that allow *wh*-feature movement, such as Malay, Japanese, Korean, and Persian, in which *why* can appear in [Spec, TypP] of a clause in which it does not have scope. In these cases, the *wh*-feature associated

with *why* undergoes feature movement from *why* in the specifier of the non-scopal TypP to the Typ head where it has scope.

In summary, if the arguments presented in this dissertation are on the right track, then cross-linguistic variation in interrogative constructions boils down to several important parameters given in (1a-f).

- (1) (a) A Qu-morpheme has either a [+OVERT] or a [-OVERT] feature.
- (b) A Qu-morpheme has either a [+AFFIX] or a [-AFFIX] feature.
- (c) A Qu-morpheme may or may not have a Focus-feature.
- (d) In a *wh*-constructions, Typ contains an  $EPP^{XP}$  feature that attracts a *wh*-phrase, an  $EPP^{X^0}$  feature that attracts a *wh*-feature, or no EPP feature that attracts a *wh*-element.
- (e) A probe may or may not be eliminated by a *wh*-feature.
- (f) An EPP feature may or may not be eliminated by movement of a *wh*-feature.

(1a) accounts for whether or not a Qu-morpheme is overtly pronounced in an interrogative construction. (1b) accounts for whether or not a Qu-morpheme attaches onto another lexical item. (1c) accounts for whether a Qu-morpheme appears in a TP-internal position or in a clause-peripheral position. (1d) accounts for whether there is *wh*-phrasal movement, *wh*-feature movement, or no movement at all in a *wh*-construction. (1e) accounts for whether or not a language allows multiple *wh*-constructions; if a probe is eliminated by a *wh*-feature (via Agree, *wh*-feature movement, or *wh*-phrasal movement), then multiple *wh*-constructions do not occur. (1f) accounts for whether or not a secondary *wh*-phrase forms an Agree relation with a probe in Typ (in languages that allow multiple *wh*-constructions); if an EPP feature is eliminated and a probe remains active, then a secondary *wh*-feature forms an Agree relation with the probe in Typ. I illustrate how these parameter settings

account for the *wh*-construction facts in some of the languages that I have discussed in this work.

In English the facts are as shown in (2).

(2) English

Clause	Qu <sub>[±OVERT]</sub>	Qu <sub>[±AFFIX]</sub>	Qu <sub>F<sub>Loc</sub></sub>	Typ	Mult- <i>wh</i> : Prb	Mult- <i>wh</i> : EPP
Matrix	[-OVERT]	[+AFFIX]	∅	EPP <sup>XP</sup>	F <sub>wh</sub> , F <sub>wh</sub>	<del>EPP</del> <sup>XP</sup>
Embedded	[+OVERT]	[-AFFIX]				

In a matrix clause, there is a [-OVERT] and [+AFFIX] Qu-morpheme, whereas an embedded clause contains a [+OVERT] and [-AFFIX] Qu-morpheme. English does not allow a Qu-morpheme to contain a Focus-feature. A Typ head (in a *wh*-construction) contains an EPP<sup>XP</sup> feature that attracts a *wh*-phrase. A probe is not eliminated by movement of a *wh*-element; multiple *wh*-phrases can have scope. Lastly, movement of a *wh*-feature eliminates an EPP<sup>XP</sup> feature from Typ, and thus secondary *wh*-features form an Agree relation with a probe in Typ.

The Japanese and Korean facts are shown in (3).

(3) Japanese/Korean

Qu <sub>[±OVERT]</sub>	Qu <sub>[±AFFIX]</sub>	Qu <sub>F<sub>Loc</sub></sub>	Typ	Mult- <i>wh</i> :Prb	Mult- <i>wh</i> :EPP
[+OVERT]	[-AFFIX]	∅	EPP <sup>X<sup>0</sup></sup>	F <sub>wh</sub> , F <sub>wh</sub>	<del>EPP</del> <sup>X<sup>0</sup></sup>

There is a [+OVERT] and [-AFFIX] Qu-morpheme that lacks a Focus-feature. Typ contains an EPP<sup>X<sup>0</sup></sup> feature. A probe can be valued by multiple *wh*-features and movement of an initial *wh*-feature eliminates the EPP<sup>X<sup>0</sup></sup> feature from Typ; i.e. secondary *wh*-features form an Agree relation with a probe in Typ.

The Persian facts are summarized in (4).

## (4) Persian

Qu <sub>[±OVERT]</sub>	Qu <sub>[±AFFIX]</sub>	Qu <sub>F<sub>Focus</sub></sub>	Typ	Mult- <i>wh</i> :Prb	Mult- <i>wh</i> :EPP
[-OVERT]	[-AFFIX]	∅	EPP <sup>X<sub>0</sub></sup>	F <sub><i>wh</i></sub> , F <sub><i>wh</i></sub>	EPP

The Persian Qu-morpheme is null and is not an affix. It also lack a Focus-feature. Typ contains an EPP<sub>X<sub>0</sub></sub> feature. A probe can be valued by multiple *wh*-features, and movement of a *wh*-feature does not eliminate the EPP feature; a secondary *wh*-feature must move to Typ .

The Sinhala facts are summarized in (5).

## (5) Sinhala

Qu <sub>[±OVERT]</sub>	Qu <sub>[±AFFIX]</sub>	Qu <sub>F<sub>Focus</sub></sub>	Typ	Mult- <i>wh</i> :Prb
[+OVERT]	?	∅, ✓	(EPP <sup>X<sub>0</sub></sup> )	F <sub><i>wh</i></sub> , F <sub><i>wh</i></sub>

In Sinhala there is a [+OVERT] Qu-morpheme. I am not sure whether or not it is an affix. Note that if it is an affix, this does not appear to have an important influence on the structure of interrogative constructions (the Qu-morpheme does not appear to force movement of a tense element, etc., for the purpose of affixation). Sinhala has Qu-morphemes both with and without a Focus-feature, as signified by the ∅ and ✓ marks. The Typ head generally lacks an EPP feature. It lacks an EPP feature in a *wh*-construction. However, Typ can contain an EPP feature that attracts a TP-internal Qu-feature. Since this EPP feature attracts a feature, it would have to be an EPP<sub>X<sub>0</sub></sub> feature. In other cases in which the Qu-morpheme is base generated in Typ, then there is no EPP feature. Lastly, multiple *wh*-features can value a probe in Typ.

The Mandarin facts are summarized in (6).

## (6) Mandarin

Qu <sub>[±OVERT]</sub>	Qu <sub>[±AFFIX]</sub>	Qu <sub>F<sub>Focus</sub></sub>	Typ	Mult- <i>wh</i> :Prb
[+OVERT]/[-OVERT]	[-AFFIX]	∅		F <sub><i>wh</i></sub> , F <sub><i>wh</i></sub>

The Mandarin Qu-morpheme can be overt or covert. It is not an affix, and it lacks a Focus-feature. The Typ head lacks an EPP feature and a probe in Typ can be valued by multiple *wh*-features.

I have also discussed various other languages here, although not in enough detail to be able to provide the settings of all of the parameters listed above. Notable though, is that German, Albanian, and Malay require both  $EPP^{XP}$  and  $EPP^{X^0}$  features to surface in partial *wh*-movement constructions. Scottish Gaelic, Irish, and Italian are languages in which movement of a *wh*-feature appears to eliminate a probe in Typ, thereby preventing the occurrence of multiple *wh*-constructions.

The analyses presented here also raise a number of unresolved issues.

I have argued that a Qu-morpheme can contain a Focus-feature based on evidence that TP-internal elements with an adjacent Qu-morpheme receive an identificational focus interpretation in some languages such as Sinhala, Okinawan, Pre-modern Japanese, etc. These languages allow a single lexical item to both type a clause and focus a particular element in a clause. In other languages such as English and Japanese, a Qu-morpheme and focus are not connected in this manner, as a Qu-morpheme does not contain a Focus-feature. If this analysis is correct, then some languages have a close connection between a Qu- and a Focus-feature, whereas others do not. Further examination of interrogative interpretations and their connections, or disconnections, from focus might provide clues as to why languages differ in this manner.

My analyses of *wh*-constructions rely on the notion that there is cross-linguistic variation in EPP features; with some languages having an  $EPP^{XP}$  feature in Typ (resulting in *wh*-phrasal movement), some an  $EPP^{X^0}$  feature (resulting in *wh*-feature movement), some allowing both types of EPP feature (resulting in partial *wh*-movement), and some disallowing an EPP feature altogether (resulting in Agree). What exactly the EPP feature is, and why there are different types of EPP feature, if there really are different types, is an issue that requires further investigation.

In this work, I have taken the position that there is a difference between Agree and movement triggered by the EPP. Specifically, Agree is a relation that is not subject to blocking effects (island effects, intervention effects, etc.) because it is sensitive to feature content. When  $\alpha$  forms an Agree relation with  $\beta$ ,  $\alpha$  searches specifically for  $\beta$ . Intervening elements that are of the same type as  $\beta$  do not block Agree. For example if  $\gamma$  and  $\beta$  are quantificational, and  $\gamma$  intervenes between  $\alpha$  and  $\beta$ ,  $\gamma$  does not block Agree, because  $\gamma$  has a different content from  $\beta$ . The EPP feature on the other hand, is sensitive to type. Thus, if  $\alpha$  has an EPP feature that attracts  $\beta$ , but  $\gamma$  intervenes and is of the same type as  $\beta$ , attraction of  $\beta$  is blocked. However, further investigation of the nature of Agree and the EPP feature may be needed to clarify why Agree and the EPP differ in these ways.

There are also other unresolved issues concerning *wh*-constructions. Although a *wh*-phrase may remain in-situ in a matrix clause with a null complementizer in French, in which case there is *wh*-feature movement, why exactly *wh*-in-situ is confined to this one particular environment is not clear. Lastly, evidence indicates that *why* must appear in a specifier of a TypP, even in languages that generally allow a *wh*-phrase to remain in-situ. Why exactly this is the case requires further examination.

In conclusion, I hope that further research will shed light on the the proposed parameters in (1a-f) and on the various other issues brought up in this dissertation.

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