

# **Unifying Optional Wh-movement**

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## Abstract

This thesis puts forward a theory that attempts to unify optional wh-movement within the Minimalist framework. Optionality is generally problematic for a theory of Minimalist syntax: movement, when motivated, must occur. This thesis argues that having a wh-movement language does not strictly entail that wh-phrases appear fronted in surface syntax. Essentially, the formal optionality of wh-movement is predicted to fall out via the multiple satisfaction of the EPP. Wh-movement languages all possess equally economical options to leave wh-phrases in-situ without a need to postulate an optional EPP feature or multiple grammars. There are three core pillars to the theory proposed. First, the QuP hypothesis proposes that universally, a question particle Qu, which is seen to be a variable over choice functions, takes a wh-phrase as its complement to form a larger constituent. Second, it is proposed that the principle driving force of optional movement lies in the Featural Subset Hypothesis. The FSH proposes that the EPP is not parasitic on Agree; rather, the EPP along with other features can be arranged into a subset configuration. Depending on the configuration, three types of equally economical movement can result: spec-raising, head movement, or phrasal movement. The third pillar of the theory is the notion of Q-migration, as first developed in Hagstrom (1998). The concept of Q-migration is heavily adapted, redeveloped and formalised, appealing to a combination of m-merger (Matushansky 2006), reprojective movement (Donati 2006) and a new proposed principle of L(abel)-absorption, which allows the transformation of specifiers into adjuncts. The main purpose of Q-migration is to obviate island barriers in order to allow elements within the island, in this case Qu, to escape, yielding the correct interpretation of wh-in-situ elements within islands. The theory is then applied to a variety of languages and especially applied in accounting for the optional wh-movement facts in Singapore English, a contact language with heavy Chinese substrate influence, for which new and original data will be presented.

# Contents

<b>Abstract</b>	<b>i</b>
<b>Acknowledgements</b>	<b>vi</b>
<b>Author's Declaration</b>	<b>ix</b>
<b>Introduction</b>	<b>1</b>
<b>1 On Optimal Language Design and Optionality</b>	<b>10</b>
1.1 Architecture . . . . .	10
1.2 On the wh-parameter . . . . .	12
1.3 Why permit optionality? . . . . .	15
<b>2 Optional Wh-movement in the Minimalist Programme</b>	<b>21</b>
2.1 English and Brazilian Portuguese . . . . .	21
2.2 Babine-Witsuwit'en . . . . .	31
2.3 Spanish . . . . .	36
2.4 French . . . . .	41
2.5 Summary . . . . .	49
<b>3 Optional Wh-movement in Singapore English</b>	<b>51</b>
3.1 Brief background of SgE . . . . .	52
3.1.1 On the grammar of SgE . . . . .	55
3.1.2 Properties of SgE . . . . .	56
3.2 Question particles in SgE . . . . .	60
3.2.1 A variety of particles . . . . .	62
3.2.2 <i>Ah</i> . . . . .	65
3.2.2.1 Rising <i>ah</i> . . . . .	66
3.2.2.2 Falling <i>ah</i> . . . . .	69
3.2.3 Yes/no particles . . . . .	72
3.2.4 <i>Leh</i> . . . . .	75
3.2.5 <i>Hor</i> . . . . .	77
3.3 The position of particles . . . . .	77

3.3.1	FOFC and its predictions . . . . .	79
3.3.2	The QuP hypothesis . . . . .	84
3.4	Question Formation in SgE . . . . .	90
3.4.1	Wh-arguments . . . . .	91
3.4.1.1	No topicalisation or clefting . . . . .	91
3.4.1.2	Islands and interveners . . . . .	93
3.4.1.3	Embedded constructions . . . . .	96
3.4.1.4	Structural constraints of Qu . . . . .	97
3.4.2	<i>Where</i> and <i>do</i> -support . . . . .	100
3.4.3	Wh-adjuncts . . . . .	102
3.4.3.1	The Distribution of <i>how</i> . . . . .	104
3.4.3.2	The Distribution of <i>why</i> . . . . .	108
3.4.3.3	<i>Or not</i> constructions . . . . .	113
3.4.3.4	Wh-adjuncts and its constraints . . . . .	116
3.5	Wh-words as free relatives . . . . .	119
3.6	Summary . . . . .	122
4	<b>Explaining Optional Wh-movement</b>	123
4.1	Against the Clausal Typing Hypothesis . . . . .	124
4.1.1	The Clausal Typing Hypothesis . . . . .	124
4.1.2	On wh-particles and wh-movement . . . . .	126
4.1.3	Q-morphemes and Q-features . . . . .	130
4.1.3.1	Arguments in Cheng (1991) . . . . .	131
4.1.4	Why the predictions of the CTH cannot hold . . . . .	134
4.1.5	Bruening (2007) and WALS (Haspelmath et al. 2008) .	139
4.1.5.1	Question particles . . . . .	140
4.1.5.2	Wh-indefinites . . . . .	142
4.1.6	Conclusion . . . . .	146
4.2	The particle Qu: Form and function . . . . .	147
4.2.1	What is Qu? . . . . .	148
4.2.2	Previous accounts of Qu-movement . . . . .	150
4.2.2.1	Qu-adjunction in Sinhala and Japanese (Hagstrom 1998; Kishimoto 2005) . . . . .	150
4.2.3	Qu-merger and complementation in Tlingit (Cable 2007) . . . . .	157
4.2.4	Concluding remarks . . . . .	160
4.3	The syntax of QuP . . . . .	160
4.3.1	Featural composition of Qu . . . . .	160
4.3.1.1	Qu, EPP and the Head parameter . . . . .	161

4.3.1.2	The formal features of Qu . . . . .	165
4.3.2	Interaction of C and QuP . . . . .	171
4.3.2.1	Matrix questions . . . . .	171
4.3.2.2	Complex questions . . . . .	173
4.3.2.3	Multiple wh-questions . . . . .	175
4.4	Formal optionality in grammar . . . . .	180
4.4.1	Reconsidering EPP satisfaction . . . . .	182
4.4.1.1	Optionality in Afrikaans (Biberauer and Richards 2006) . . . . .	183
4.4.1.2	Optionality of particle shift (Svenonius 1996) . . . . .	187
4.4.2	Rethinking the EPP . . . . .	190
4.4.2.1	The Featural Subset Hypothesis . . . . .	191
4.5	Applying the FSH . . . . .	195
4.5.1	The FSH predicts optionality . . . . .	196
4.5.2	Head-to-Spec Movement . . . . .	199
4.5.3	Scope Assignment . . . . .	204
4.5.3.1	Wh-in-situ languages . . . . .	204
4.5.3.2	The syntax of Q-migration . . . . .	213
4.5.3.3	Optional Wh-fronting languages . . . . .	218
4.5.3.4	Featural subset satisfaction . . . . .	221
4.6	Summary . . . . .	223
<b>5</b>	<b>Applying the Theory</b>	<b>225</b>
5.1	Q-migration, islands and intervention . . . . .	226
5.1.1	L-absorption: from specifiers to adjuncts . . . . .	227
5.1.2	Escaping from islands in SgE . . . . .	235
5.1.3	Escaping from islands in other languages . . . . .	241
5.1.3.1	Japanese . . . . .	241
5.1.3.2	Sinhala . . . . .	245
5.1.4	Concluding remarks . . . . .	249
5.2	More optional wh-movement . . . . .	249
5.2.1	Complex questions in SgE . . . . .	250
5.2.1.1	Wh-arguments . . . . .	250
5.2.1.2	Wh-adjuncts . . . . .	260
5.2.2	Babine-Witsuwit'en . . . . .	268
5.2.3	Spanish and the SFR . . . . .	271
5.2.4	French . . . . .	278
5.3	Yes/no questions . . . . .	282
5.3.1	Typological overview . . . . .	282

5.3.2	SgE . . . . .	288
5.3.2.1	What is Qu, again? . . . . .	288
5.3.2.2	The special case of <i>or not ah</i> . . . . .	290
5.4	Chapter Summary . . . . .	294
<b>6</b>	<b>The Way Forward...</b>	<b>296</b>
6.1	Small steps forward . . . . .	296
6.2	Things to do . . . . .	299
6.2.1	Split-DPs and optional movement . . . . .	299
6.2.2	Multiple wh-questions . . . . .	301
6.2.3	What is Qu, yet again? . . . . .	302
6.3	Conclusion . . . . .	303
	<b>Bibliography</b>	<b>304</b>

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## **Author's Declaration**

This thesis has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree other than Doctor of Philosophy of the University of York. This thesis is the result of my own investigations, except where otherwise stated. Other sources are acknowledged by explicit references.

I hereby give consent for my thesis, if accepted, to be made available for photocopying and for inter-library loan, and for the title and summary to be made available to outside organizations.

Signed.....(candidate)

Date.....

An earlier version of this work was presented at a workshop on Optional Wh-movement at the 19<sup>th</sup> International Symposium on Theoretical and Applied Linguistics (ISTAL 19) in Thessaloniki, Greece, 3-5<sup>th</sup> April 2009. The proceedings of the workshop will appear as volume 37 of *Linguistic Analysis* some time in the future.

Bits of chapter 3, especially section 3.6, was based on work done in Yeo (2005). In turn, a version of that work was presented at the Language Contact workshop at the 31<sup>st</sup> GLOW Colloquium in Newcastle, 25-29<sup>th</sup> March 2008.

# Introduction

This thesis will primarily be concerned with optional wh-movement; in particular, the availability of wh-movement languages to adopt wh-in-situ strategies. All of this will be done according to the principles as laid out in the Minimalist Programme (MP) as proposed by Noam Chomsky in the early 1990s, especially in Chomsky (1995b), with some modifications. The MP embarks on a programme (not a theory) which aims towards developing an explanatory account of Universal Grammar. By reducing linguistic computation to a very limited set of operations, we are able to reduce the derivation of syntactic structures into a coherent and structured series of operations which can be defined and constrained. For example, by the introduction of Agree and EPP features, we can constrain movement of a goal moving into the specifier position of a structurally higher probe, and only at the root, as per the Extension Condition.

This is why optional wh-movement is interesting. Optionality has been (and is) a serious problem for the Minimalist approach to grammar. Syntactic operations, both Merge and Move are formally considered to be motivated through the process of the matching and elimination of uninterpretable and interpretable formal features; probes and goals in modern terminology (Chomsky 2000). When such motivations are present, the syntactic operations which follow are obligatory. Thus, when it comes to wh-movement, when the correct motivations (EPP on C) are present, wh-movement will and must occur. In languages that possess these motivations, wh-in-situ constructions are generally only seen to be (non-interrogative) echo questions or the lower wh-phrase in multiple wh-questions. In all other cases, not moving would fail to eliminate uninterpretable features at the interface, causing the derivation to crash. As such, true interrogative single wh-in-situ questions are predicted to be impossible according to the MP. Having said that, there are numerous languages which are reported to possess optional wh-movement: English, Brazilian Portuguese, French, Babine-Witsuwit'en, Spanish, Greek, the list goes on. Most of the accounts for these languages have been couched on accounts that shy away from true

optional movement, that is, two alternations which fall out from a single numeration *and* derivational cycle. Some accounts propose the selection of different complementisers, while others propose extra movement operations, yet others propose an operator-binding approach mostly used to account for wh-in-situ languages like Chinese and Japanese. The aim of this thesis is to show that by reconsidering the way we look at the fundamental concepts of our syntactic theory, a unified framework can be proposed to account for optional wh-movement.

The development of the MP focusses on the effort to economise the computational system of language by minimising its theoretical apparatuses to Merge, Move (External and Internal Merge respectively, from Chomsky 2004 onwards) and Agree. In Chomsky (1995b), syntactic operations such as Internal and External Merge are basically governed by the two somewhat opposing principles of Last Resort (LR) and Full Interpretation (FI). LR demands that the computational system does not do “too much” by imposing constraints on what moves where while FI prevents the system from doing “too little” by stipulating that no uninterpretable features must survive to the interfaces, ensuring that movement operations, when motivated, must apply. These principles are couched upon several other key concepts, a brief summary of which will be given below. To begin, LR is formulated as:

(1) *Last Resort*

Move F raises F to target K only if F enters into a checking relation with a sublabel of K. (Chomsky 1995b:280)

Essentially, this ensures that all movement operations must be suitably motivated by a probe targeting a valid goal. This in turn is constrained by Attract F<sup>1</sup> and the Minimal Link Condition (MLC):

(2) *Attract F*

K *attracts* F if F is the closest feature that can enter into a checking relation with a sublabel of K. (Chomsky 1995b:297)

(3) *Minimal Link Condition*

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

The MLC maintains that the closest valid goal is attracted by any probe, exhibited by the appearance of Superiority effects in multiple wh-constructions. Not all languages (such as German) exhibit this though, and

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<sup>1</sup> Attract F is dispensed with in replaced by Agree and Match as will be shown below.

we will have to account for this. The concept of closeness is important and is defined by Chomsky as such:

- (4) Where  $\beta$  c-commands  $\alpha$  and  $\tau$  is the target of raising, then:  $\beta$  is closer to K than  $\alpha$  unless  $\beta$  is in the same minimal domain as  $\tau$  or  $\alpha$ .  
(Chomsky 1995b:356)

The minimal domain of any head H is the minimal (local) subset of nodes that are contained in the maximal projection of H and do not contain H. This subset includes complements, specifiers and adjuncts of H. These constraints on movement are balanced against the concept of FI, which basically disallows any uninterpretable features to be present at the interfaces or at LF as far as we are concerned. Anything else would render the computational system imperfect, since uninterpretable features are illegible at LF, causing the derivation to crash. The combination of LR and FI thus states that all movement must result from feature checking and is obligatory where applicable.

This means that optional movement operations simply cannot obtain. In the case of wh-movement, the same constraints apply. Wh-movement is traditionally seen to involve the movement of a maximal wh-phrase into [Spec,CP]. The feature responsible for motivating this movement is the EPP feature on interrogative C. The EPP feature allows the projection of a specifier and Agree determines that an interrogative C probes for the closest active wh-phrase and triggers movement into its specifier. When the EPP feature is present, wh-phrases are obliged to move into [Spec,CP]. What about the cases where wh-movement appears to be optional? One way to approach the issue to assume, following Chomsky (2000), that the assignment of an EPP feature is optional on phase heads C and v:

- (5) *Optional Assignment of EPP on Phase Heads*

The head H of a phase PH may be assigned an EPP-feature (P-feature).

(Chomsky 2000:109)

When present, the EPP triggers movement, when absent, it allows wh-phrases to remain in-situ, accounting for optionality. This however, raises the question as to whether this is the correct approach to take with regards to optional wh-movement. The MP strives to eliminate optionality from narrow syntax, barring superfluous operations. Chomsky states explicitly that for any syntactic element  $\alpha$ , “ $\alpha$  enters the numeration only if it has an effect on output” (1995b:294), meaning that an interrogative C without an EPP

feature should always be preferred to one with an EPP feature unless there was an effect on output (either at PF or LF). The fact that the EPP impacts PF output is obvious, however the effects that it imposes on LF are less so. Chomsky postulates that the logical equivalence of two LF interpretations (though possibly differing in form) is sufficient to establish identity between these two interface representations, despite stating that EPP assignment is optional while the introduction of features must contribute to interpretation – quite a contradiction.

Adopting an approach which considers the semantic contribution of the EPP is murky at best (although for more discussion see Rothstein (1983), Heycock (1991), Rosengren (2002), Butler (2004), Sigurðsson (2010) amongst others). This murkiness is further compounded by a rather cryptic statement made in Chomsky's 'Minimalist Inquiries' (MI), which reads "EPP-features are uninterpretable (nonsemantic, hence the name), though the configuration they establish has effects for interpretation" (Chomsky 2000:102). The point of this thesis is (thankfully) not to debate the semantic contributions of the EPP. The proposals that will be made here will attempt to avoid these thorny issues completely by reconsidering the syntactic purpose of the EPP. Whatever the eventual outcome of the aforementioned debate, we will maintain that the EPP feature is the sole motivator of movement – the question boils down to how we can motivate optional movement operations.

It thus follows that the ideal, though probably not the easiest way to approach the issue of optional wh-movement is to assume that in languages which do adopt a movement strategy in the construction of wh-interrogatives, the EPP feature is always present on C; this is a crucial factor in defining the linguistic parameter of wh-movement in languages. Wh-in-situ constructions must then fall out from this central stipulation, while adhering closely to the core principles and constraints of Merge and Agree. Let us define these now. Merge is unproblematic, it simply takes two lexical items  $\alpha$  and  $\beta$ , puts them together yielding either  $\{\alpha, \{\alpha, \beta\}\}$  or  $\{\beta, \{\alpha, \beta\}\}$ . We will of course use the standard labels ( $X^0$ , bar, phrase) for ease of exposition. We adopt a probe-goal Agree framework such that for the any probe P and goal G and D(P) the domain of P:

- (6) *Agree (Probe-Goal System)*
  - i. matching is feature identity
  - ii. D(P) is the sister of P
  - iii. locality is reduced to "closest c-command" (Chomsky 2000:122)

P c-commands D(P) and a feature G is closest to P if there is no other feature matching P intervening between P and G. Closeness is defined such that “terms of the same minimal domain are ‘equidistant’ to probes” and “the minimal domain of a head H is the set of terms immediately contained in projections of H” (*ibid*). We will make a minor modification to this claim later to allow us to include H in the minimal domain. This will be an important factor in driving optional movement. Further, we also assume that as per Chomsky (2001), probes and goals must be active (containing one or more uninterpretable features) in order for Agree to apply, although we will see later that the EPP itself can independently be a probe without being parasitic on Agree.

Feature matching and deletion takes place when a probe and goal agree and where both probe and goal are  $\varphi$ -complete and their features match. Given the mechanism defined in (6), we can define Match as:

(7) *Match*

A probe P and goal G match if for any feature F, either:

- a. either P or G has uF and the other F
- b. P and G have identical values for F

Following (7), the following scenarios are possible:

- (8)
- a. [uF:] ... [F] (Match, trigger Agree)
  - b. [uF:F] ... [F] (Match)
  - c. [uF:F] ... [uF:F] (Match)
  - d. [uF] ... [uG] (no Match)
  - e. [uF] ... [G] (no Match)
  - f. [F] ... [G] (no Match)

Similar principles apply to wh-movement. Following Chomsky, wh-phrases have an uninterpretable [uWH] and an interpretable [Q] feature<sup>2</sup>. The complementiser, on the other hand has an interpretable [WH], an uninterpretable [uQ] feature as well as an [EPP] feature.

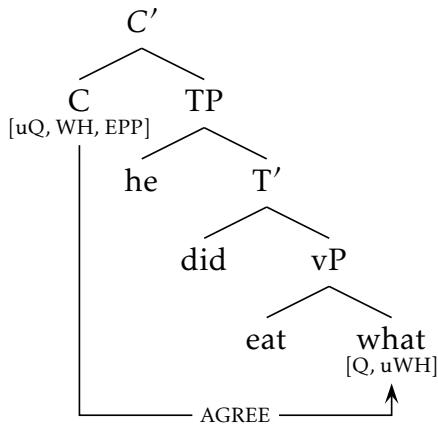
The derivation for wh-movement proceeds as such: both the probe C and the goal wh-phrase are active, since both have uninterpretable features; the former has [uQ] while the latter [uWH]. A simple derivation for *What*

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<sup>2</sup>Some scholars propose an interpretable [WH] and uninterpretable [uQ] on wh-phrases and the opposite for complementisers. This is not of immediate concern to us; the theory we propose here should be able to be extended to use any kind of feature system one chooses to adopt.

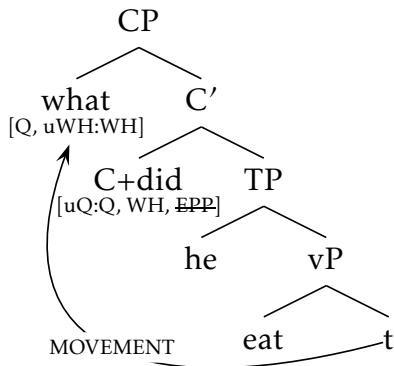
*did he eat?* would be as follows, abstracting away from irrelevant syntactic operations:

(9)



The feature set on both of them conform to Match as described in (7) and (8), triggering Agree as shown in (9) above. Throughout this paper, when present, angled arrows will be used to represent Agree (or Binding in later chapters), while curved arrows will be used to represent movement.

(10)



The EPP feature on C allows for the projection of a specifier and triggers movement of the wh-phrase into [Spec,CP], which deletes upon movement of the wh-phrase into [Spec,CP]. There is still one more step to be done. In order for the derivation to achieve Full Interpretation, uninterpretable features must delete. For A-movement,  $\varphi$ -completeness determines eligibility to be a deleter. Likewise, for  $\bar{A}$ -movement, it is reasonable that a similar notion should apply. Chomsky states:

Take wh-movement. This would be point-by-point analogous to A-movement if the wh-phrase has an uninterpretable feature [wh-] and an interpretable feature [Q], which matches the uninterpretable probe [Q] of a complementizer in the final stage;

(Chomsky 2000:128)

Chomsky is not very clear on this, but nevertheless, let us define it anyway as something called (Q)uestion-completeness:

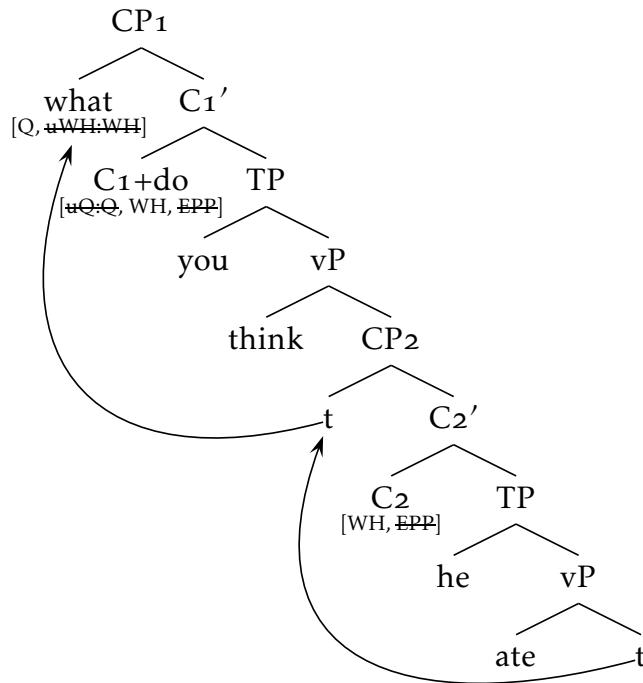
(11) (Q)uestion-completeness

A probe or goal  $\alpha$  is Q-complete if it possesses wh- and Q features. For  $\alpha$  and  $\beta$  (one a probe and one a goal),  $\alpha$  can delete any uninterpretable features on  $\beta$  (and likewise) if they:

- i. are Q-complete
- ii. enter into an Agree relation with the other
- iii. Match in features (only matched features delete)

We will not follow this to the letter, because in some cases it simply does not apply (EPP satisfaction) as we shall see. Based on this definition, the derivation in (10) converges and terminates since both *what* and C are Q-complete, enter into an Agree relation and Match in features. In embedded clauses, successive cyclic movement can be obtained by ensuring that the intermediate C is not Q-complete:

(12)



Embedded  $C_2$  has an uninterpretable feature EPP, rendering it active. It probes the wh-phrase *what*, triggering Internal Merge of *what* into [Spec,CP1] and valuing the uninterpretable [uWH] on *what*. However,  $C_2$  is not Q-complete, therefore it values but does not delete [uWH] on *what*. The derivation proceeds until matrix  $C_1$  is merged. Agree takes place, since  $C_1$  has a [uQ] feature which acts as a probe. The EPP triggers raising and

deletes. Both C1 and *what* are Q-complete and they match in features (by 8a,b), uninterpretable features delete and the derivation converges.

The system shown here will undergo quite a fair bit of modification in the course of the presentation of the theory, as it will be shown that the current system as it stands is insufficient to accommodate the presence of a question particle that takes wh-DPs as its complements. We will need to redesign the featural system of questions. The question that should be foremost on our minds however, is how we can be as minimal as possible in the development of our theory. We hope to answer this question in a satisfactory way.

This is a good time to begin our discussion proper. The thesis is organised in the following way: in chapter 1 we will embark on a discussion of wh-optionality in general, there will be bits of theoretical and philosophical discussions with a slight biolinguistic slant. The discussion will revolve around two core questions: first, does optimal language design preclude formal optionality in grammars? And second, what is the wh-parameter?

Chapter 2 will critically review four current approaches to optional wh-movement in various languages in the literature: the optionality of the EPP assignment in English and Brazilian Portuguese, the optional selection of C in Babine-Witsuwit'en, remnant movement in Spanish and Q-morpheme movement in French. The first three approaches will be rejected, since the approaches in themselves do not entail formal optionality. The fourth approach will cut closer to what we want to propose, that a Qu particle is involved in the interpretation of wh-phrases, although the final implementation of the theory will differ greatly from what has been proposed.

Chapter 3 presents new and original data from Singapore English, a contact language with heavy Chinese substrate influence. From this influence, SgE possesses several traits that makes it quite different from English. In particular, it adopts the use of question particles and allows optional wh-movement far more freely. Also in this chapter, we will begin to sketch out the skeletal framework of the theory we will develop by introducing the QuP hypothesis, which states that universally, a question particle Qu, whether phonologically overt or not, takes wh-phrases as its complements.

Chapter 4 focusses firstly on rejecting the Clausal Typing Hypothesis, as proposed in Cheng (1991). We will show that while there is nothing wrong with clausal typing in itself, the predictions that the CTH makes are empirically incorrect. Secondly, we will further develop the general theory of optional wh-movement by introducing two new concepts. The first of these is the Featural Subset Hypothesis (FSH), which strives to break apart the par-

asitic nature that movement (EPP) has on Agree. The FSH proposes that the EPP features can enter into subset relations with other features, yielding different ways in which it can be satisfied, motivating and predicting optional movement. The second concept we will introduce is that of Q-migration, as first proposed in Hagstrom (1998), which we will attempt to formalise syntactically. Q-migration is the principle driving force that allows wh-in-situ elements to be interpreted within islands by forcing Qu to detach and to move out of islands to a scope taking position.

Chapter 5 will heavily redevelop and finalise the inner workings of Q-migration. Combining the m-merger analysis of Matushansky (2006) and the reprojective movement approach of Donati (2006), we will propose an operation called reprojective m-merger. We will demonstrate how reprojective m-merger can turn specifier positions into adjuncts and in doing so, dissolve island boundaries and allowing Qu to escape. The rest of the chapter will be devoted to applying the theory to cross-linguistic data as discussed in chapters 2 and 3.

Finally, chapter 6 draws the discussion to a close while asking difficult questions raised as a result of the work presented here. Many issues that were not able to be included in this thesis will also be heavily speculated upon, in hope that these explorations will yield further avenues for fruitful research.

# Chapter 1

## On Optimal Language Design and Optionality

The introduction of this chapter has introduced several key concepts which form the basic building blocks of the syntactic architecture of the MP. In this section, we address two issues: first, we will discuss what a wh-parameter is and why optional wh-movement should not be couched on the variation of this parameter in any way. Second, we ask more broadly why languages should, if they are optimally designed, permit any kind of optionality. The issues presented here do not greatly impact our theory in any theoretical way; instead, they are more conceptual and philosophical in nature, leading us to think about the bigger picture that the theory will be framed within.

### 1.1 Architecture

In MI, Chomsky (2000) proposes that Universal Grammar (UG) follows a process of generating linguistic expressions EXP by drawing from a set F of features and operations from the human language computational subsystem  $C_{HL}$ . For any language L, Chomsky argues, computational complexity can be minimised if the operations and memory requirements are reduced as far as possible. The general procedure is as follows:

- (1)
    - i. Select [F] from the universal feature set F
    - ii. Select LEX (The Lexicon), assembling features from [F]
    - iii. Select LA (Lexical Array) from LEX
    - iv. Map LA to EXP (Expression), with no recourse to [F] for narrow syntax
- (Chomsky 2000:101)

For any given language L, a one-time selection of a subset [F] of F is made, shown in (1i), with no further access to F. The lexicon LEX is then assembled from this restricted feature set. This means that any L, coupled with the correct setting of its linguistic parameters, can be specified by procedures (1i,ii). To further reduce complexity, when generating EXP, a one-time selection is

made from LEX to form the lexical array (numeration) LA, with no further recourse to [F] (or LEX) once the derivation proceeds. Syntactic operations then apply, mapping LA to EXP as per the usual derivations in syntax we are accustomed to.

If we are inclined to follow this line of reasoning, then clearly, we must abandon Chomsky's idea that the assignment of the EPP on phase heads is optional above, even if we accept, following Chomsky that the EPP itself does not contribute to semantic interpretation, although the configurations that they yield do. As mentioned above, internal Merge is a core operation of  $C_{HL}$ , and undeniably, along with it, the presence of the EPP. In 'Beyond Explanatory Adequacy' (BEA), Chomsky states "the extra edge position in  $\alpha$  required by internal Merge is optional, and has no theta-role. *Assuming options to be determined in LEX*, the head H of  $\alpha$  must have a feature that makes this position available: an EPP-feature in standard terminology" (Chomsky 2004:112; emphasis mine). If the presence of the EPP is determined in LEX, while (1i,ii) along with parameter setting determines a language L, then it follows that the presence or the absence of the EPP is already predetermined at stages (1iii,iv) of the procedures described above. Thus, in the computation of LF (narrow syntax), there is no recourse to accessing [F] anymore and the selection C, with or without EPP will already have been performed once derivation begins.

Thus, for the case of optional wh-movement, we have two options. The first option is to say that for any language L which possesses optional wh-movement, there are two types of interrogative C in the lexicon, one which possesses an EPP feature and one which does not. The expressions which exhibit wh-movement merge the C with an EPP and the expressions which remain in-situ merge the C without an EPP. Such an approach is for example used by Pires and Taylor (2007) to account for non-echo wh-in-situ constructions in English and Brazilian Portuguese; this will be covered in more depth in chapter 2. However, similar to what has been mentioned above, akin to the optional assignment of the EPP on phase heads, allowing a language to possess two interrogative complementizers one with an EPP and one without seems counterproductive and conceptually far from ideal:

...one could always postulate optional EPP or uninterpretable features. But if these are the features which define parameters, and if different grammars are defined in terms of whether and how they differ in parameter values, then postulating features in this way is equivalent to postulating different grammars. Our concern here, however, is with the possibility of optionality in a

single grammar.

(Roberts 2007:307n11)

As Roberts puts it, typological differences in language can be described in part by their differences in parameter settings, and the EPP feature on C is precisely one such parameter. Therefore, the aim of the investigation presented here to evaluate the plausibility of a theory of grammar that allows us to maintain the strict typological split between wh-movement and wh-in-situ languages, that is, an EPP feature on interrogative C, while allowing wh-in-situ constructions in wh-movement languages without appealing to multiple grammars or the optionality of EPP assignment.

## 1.2 On the wh-parameter

No discussion of language design will be complete without a discussion on parameters. This is particularly pertinent to our issue at hand from a conceptual viewpoint, as wh-movement is often seen to be parameterised between movement and in-situ. In (1), the procedures of determining languages and their corresponding linguistic expressions relies on selecting features, assembling the lexicon and setting the parameters. Crucially then, typological variation is captured by different parameter settings, amongst other things, and for the case of wh-movement, the parameter responsible is directly related to the featural specification of the EPP on C.

Within the Principles and Parameters (P& P) framework, in its original formulation by Chomsky (1981), Universal Grammar was seen to be comprised of interacting subsystems, which can be seen as subcomponents of a rule system of grammar, or as subsystems of principles:

- (2) Subcomponents of the rule system:
  - a. lexicon
  - b. syntax
    - i. categorial component
    - ii. transformational component
  - c. PF-component
  - d. LF-component
- (3) Subsystems of principles:
  - a. bounding theory
  - b. government theory
  - c.  $\theta$ -theory

- d. binding theory
- e. Case theory
- f. Control theory

(Chomsky 1981:5)

It is through the interaction of these subsystems that the cross-linguistic variation exists, and the source of this variation stems from differentiation in parametric settings:

Each of the systems of [(2) and (3)] is based on principles with certain possibilities of parametric variation. Through the interaction of these systems, many properties of particular languages can be accounted for. We will see that there are certain complexes of properties typical of particular types of language; such collections of properties should be explained in terms of the choice of parameters in one or another subsystem. In a tightly integrated theory with fairly rich internal structure, change in a single parameter may have complex effects, with proliferating consequences in various parts of the grammar. Ideally we hope to find that complexes of properties differentiating otherwise similar languages are reducible to a single parameter, fixed in one way or another.

(Chomsky 1981:6)

Essentially, what this says is that we have a finite set of parameters that are able to take different settings, and through their interaction, yield the entire range of languages in all their varying types. Considering the last sentence of the quote from Chomsky above, given that a certain parameter is the sole governing factor of a certain property of the grammar, we would expect different settings of this single parameter to yield sharp differences in output, clearly not the case since we are concerned with optional wh-movement. The question which then arises is, assuming a given fixed setting of a parameter, are we able to then provide a principled account of variation which would point otherwise? That is, given that a language is parameterised for wh-movement, are we able to provide an account of how wh-in-situ constructions are available without recourse to saying that the parameter has been “unset” in some way? The answer to this question, at least where wh-movement is concerned, is yes. The framework that will be outlined in the subsequent chapters will show that not only can we account for this variation, but that such a variation is to be expected of all wh-movement languages, if certain conditions are met.

Let us first consider what the formal make-up of a parameter is. Clearly, parameters typologically categorise different languages in different ways.

Scholars have posited the existence of parameters for null-subjects, wh-movement, V-T movement, headedness or even Baker's (1996) polysynthesis parameter. While an exhaustive list of parameters in language would certainly be impossible at this stage of our field's knowledge, let us concern ourselves with the wh-movement parameter. Roberts (2007) describes a parameter along the following lines:

- (4) a. *Parameter*: A (functional) head H {has/does not have} feature F (in a given formal relation).
- b. *Default*: F is absent.
- c. *Cue/expression*: properties of inflectional morphology and linear order of elements. (Roberts 2007:269)

Given the minimalist framework that we adopt, (4a) can be expressed as a choice of one of two binary conditions: firstly whether a head H has a feature which triggers Agree, and secondly, if so, whether H has an EPP feature. If H possesses an EPP there are two further possibilities: does H require pied-piping of the goal, and if so, how large a category?

- (5) a. does H have a feature triggering Agree?
- b. if so, does H have an EPP feature? If so,
- c. does H (Probe) require pied-piping of the Goal?
- d. if so, how large category? (Roberts 2007:269n20)

Consider the wh-movement parameter, which can be formulated as follows. Consider an interrogative head C in a wh-movement language, C possesses a feature triggering agree, the uninterpretable [uQ]. C possesses an EPP feature. Let us draw our attention now to (5c,d). It seems to me that the inclusion of pied-piping as part of a particular parameter is perhaps not the best way to proceed. Consider for example, a simple pied-piping/preposition-stranding alternation in wh-constructions.

- (6) a. To whom did you give the letter?
- b. Who did you give the letter to?

The fact that wh-phrases raise to [Spec,CP] is undoubtedly because of the EPP. The presence or absence of the EPP on an interrogative C encapsulates the wh-parameter. Asking further whether the probe requires pied-piping of the goal seems to me to be somewhat beyond the jurisdiction of the EPP; we will see why this is so in chapter 4. Crucially, the EPP in itself is unable to determine whether the wh-phrase to be moved is *who* or *to whom*. Either way, movement into [Spec,CP] would satisfy the EPP with it none the

wiser. Similarly, asking how large a category is pied-piped is again something which neither the feature triggering Agree [uQ] or the EPP is able to establish. All the features are concerned with is that they are matched and valued. Issues of pied-piping and the size of the moved category are probably better off seen as being motivated by independent reasons outside of the bounds of what the wh-parameter dictates. In fact, as we shall see later, it is precisely this “blindness” of the EPP that allows for optional wh-movement. To sum up then, the definition of the wh-parameter is very simple:

(7) *Wh-movement parameter*

An interrogative C {possesses/does not possess} an EPP feature, triggering movement of wh-phrases to its specifier.

That is all there is to it. There is no reason to define the wh-parameter in any other way, especially from the viewpoint of any language’s surface output. The EPP feature is present, and whatever output is produced follows from this. All surface conditions, in-situ or movement should be strictly derived from this, without deviating from the core principles of narrow syntax as described above.

### 1.3 Why permit optionality?

The Hows of wh-optionality will be answered later; the remainder of this section will deal with the Whys. Why should any grammar permit formal optionality? Given the nature of the wh-parameter described above, we would then expect a sharp distinction between languages that possess wh-movement and those that do not. From a very broad perspective, this appears to be true, wh-movement languages front wh-phrases while wh-in-situ languages do not. However, when we examine individual languages in finer detail, no small number of wh-movement languages (English and Brazilian Portuguese (Pires and Taylor 2007), Babine-Witsuwit'en (Dennham 1997), French (Cheng and Rooryck 2000, Mathieu 1999), Greek (Vlachos 2008), Malagasy (Sabel 2003), Spanish (Uribe-Etxebarria 2002, Reglero 2005), amongst many others) have been documented to exhibit wh-in-situ strategies.

As mentioned above, the credibility of the wh-parameter is not called into question. The wh-parameter simply states whether an EPP feature is present on C or not. Our system demands that the EPP is fulfilled, no more. How the EPP ends up being fulfilled is irrelevant as far as the EPP is con-

cerned<sup>1</sup>, it just so happens that the predominant strategy of EPP fulfilment in wh-movement languages is to move the wh-phrase in [Spec,CP]. If we can (and we will) show that the merging of syntactic elements other than the wh-phrase into [Spec,CP] can satisfy the EPP feature on C, we can reconcile the differences between languages that possess a positive setting for the wh-parameter while yielding wh-in-situ constructions.

Let us ask a more philosophical question. Why would language, which we assume to be optimally designed, allow for such a seemingly counterproductive and redundant system to be in place? Different kinds of optionality is found in natural language, such as semantically vacuous scrambling or left-branch extractions etc. Or to rephrase the question, does an optimally designed language preclude the availability of optionality? The answer must be no.

Permit the following analogy: the entire (although finite) set of linguistic parameters, can be seen, if we look through a biolinguistic looking glass, as the genome of language. Each parameter can thus be seen as a “chromosome” of the language genome; we can even go further to say that features involved in making up the parameter are the genes that make up the chromosome but I think the picture is clear enough. The search for UG is akin to decoding and unravelling the Language Genome.

If we adopt such a view, then the answers to our questions become much clearer. Parameters merely describe a particular level of linguistic detail. If we persist in pursuing finer and finer detail, then every single utterance is unique. The study of syntax allows us to abstract away from many potential confounds of phonetics, phonology, morphology etc.) which would make our work much more difficult. This does not mean that these do not contribute to the entire language subsystem, they do and they interact, that is clear. It is simply the case that we do not know enough to put forward a theory of everything that links everything together.

Even so, within the restricted field syntax, there is still much to discover. Drawing again an analogy from Biology, Butler (2010) reports that it has been ten years after the decoding of the Human Genome, but yet biologists are only a tiny fraction of the way towards fully understanding it. In the same way, it would be extremely naive to assume that we would be able to deterministically derive syntactic output based on the knowledge of a single parameter. Intra-grammar, or even intra-speaker variation is not an

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<sup>1</sup>This ignores the fact that in its current form, the EPP is parasitic on Agree; that is movement followed (usually) as a reflex of agreement. We aim to deconstruct this notion later.

argument against the feasibility of parameters if we look at the issue in the right way. In the grand scheme of things, parameters describe relatively broad descriptions of cross-linguistic expressions and until we are able to identify all the linguistic parameters of UG, even if we do, it is unlikely that we will be able to say what the interdependencies of the entire subsystem are – it is impossible at this stage to reconstruct human beings from DNA, even with the decoding of the genome. For linguists who have not even sequenced the entire language genome (all the parameters), it is silly to think that we can reconstruct the grammar of an entire language based on partial information.

Having said this, it does not mean that we should not try. By restricting our scope of study, the usefulness of parameters are many, being able to make broad divisions across different languages. At the very least, it can function as a rough typological cartographic tool in the same way that we can roughly categorise human beings into their various races. Returning the question of optional wh-movement, an EPP parameter on C is a *rough* description of how languages deal with wh-phrases. The availability of optional wh-movement is a reflex of way the syntactic system works, not a defect of the parameter itself. It is practically useless to posit a parameter that varies unstably or is valued in a certain way say two thirds of the time, while valued in another one third of the time.<sup>2</sup>. Parameters can change, along the lines of the Constant Rate Hypothesis (Kroch 1989), but synchronically speaking, any given parameter in a given grammar, by its definition, should possess a fixed value. This point cannot be emphasised enough, and this I believe, is the strongest argument against the optionality of EPP assignment as an explanation for optionality, if we want to couch the wh-parameter along these lines.

If this line of reasoning is correct, then cases which seem like parametric variation, such as optional wh-movement, should not be considered as dynamic variation of the parameter's value, where one speaker's parameter is valued for wh-movement in one instance and wh-in-situ in another. Rather, variation should centre around a fixed value of the parameter, [ $\pm$ EPP] on C and all output contrary to parametric setting explained independently.

The answer to the question of why an optimally designed language should not preclude optionality lies in the way we look at economy. In a single, isolated case, redundancy can be seen as uneconomical, and rightly so. In a highly complex environment such as communication and interac-

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<sup>2</sup>However, see Adger (2006) for an account of probabilistic intra-speaker morphosyntactic variation of *was/were* in Buckie Scots.

tion, where speech is dominant, utterances are seldom if ever propositionally complete at face value; more often than not, language bears the burden of extra- and paralinguistic information, which convey other sorts of information pertinent to communication. Language thus has to develop strategies to adapt to be flexible, and in doing so, is motivated to allow for redundancy in order to be more error-free. Redundancy therefore, is not suboptimality. On the contrary it contributes to the optimality language because each instance of optionality in grammar exponentially generates more output.

For example, Pires and Taylor (2007) show that in English and Brazilian Portuguese, both of which are wh-movement languages, wh-in-situ constructions are permitted given certain presuppositional conditions (Common Ground) are met in discourse. Such presuppositional information, I believe, is not encoded in the syntax, and is meant to be extracted pragmatically by the hearer. Pires and Taylor claim that this is a result of the selection of different Cs, one with an EPP and one without. A notion that we have rejected based on reasons mentioned above. Parametric setting and its corresponding surface output are not in a biconditional relationship.

It is more ideal to develop means to account for the optionality without access to a language's parametric setting: a language either has or does not have an EPP on C. Such an approach is discussed at some length in Biberauer and Richards (2006), who discusses semantically vacuous optionality of vP-piedpiping in Afrikaans. Similarly, we will show that in Singapore English, which we will examine in great detail in the next chapter is technically a wh-movement language, despite exhibiting optional wh-movement. Bao (2001) describes SgE to exhibit optional wh-movement and “the positioning of wh-phrases may be motivated by discoursal factors... moving *what* to COMP breaks the temporal flow of the information intended in the conversation (cf. Ho 2000)”. The theory that we want to develop here does not take into account these factors. I am not denying that these factors may affect the choice determining which variant is chosen; what I am saying is that these need not be encoded into narrow syntax. Chomsky (2005) has this to say:

...language is in many ways “poorly designed” for communicative efficiency: apart from such ubiquitous phenomena as ambiguity, garden paths, etc., the core property of language – recursive embedding – leads to exponential memory growth and therefore has to be avoided in language use, giving it something of the character of paratactic constructions. Languages have various devices to overcome the problems... Some of them are

used to overcome prosodic difficulties... Others yield “rearrangements” near the SM interface that violate crossing constraints and have other properties that indicate that they are not operations of the narrow syntax. (Chomsky 2005:3)

Chomsky has rightly pointed out these devices which seemingly violate economy conditions and constraints which would ideally be in place for optimal communicative efficiency. I believe these inefficiencies are essential components of the adaptability and flexibility of language. Using again our example of wh-movement, if a grammar forbids variation deterministically, once it has set the value of the parameter, it would render it extremely inflexible. Second language learners of wh-movement languages who produce wh-in-situ constructions (or the converse case) would fail to be understood completely, in the most extreme case; if the grammar is completely incapable of parsing such an utterance, repeatedly causing it to crash during perceptual derivation, it would cause great difficulties in transmission and the continued survivability of a language. Precise and finely-tuned instruments which allow little room for error are more likely to fail and in the long run render it less economical to maintain.

Although I would not go as far as to say that linguistic parameters are encoded in the genes, if we adopt stance that the parameters are available within the faculty of language (FL), and that FL is a biological endowment, we should be able to draw parallels linguistic and biological parallels. This is clearly true: the genetic code is rife with redundancy, allowing errors in the gene code to be tolerated. This was not always thought to be the case. Earlier, we drew a parallel between parameters and chromosomes, and roughly about 50 years ago, something similar happened in the field of Genetics, where a supremely elegant solution was proposed by Francis Crick for the decoding of the DNA sequence (Hayes 1998). Crick was one of the co-discoverers of the DNA molecule. Since DNA is essentially a long coded sequence of four bases (think a random string of any length of the letters A, C, G and T), Crick developed a solution to decode the sequence by eliminating redundancy and ambiguity. Although his solution turned out to generate all and only the 20 kinds of relevant bases, this solution turned out to be wrong. In fact, the numerous solutions proposed by several scholars during that time were far more elegant than the one nature had in place, which was filled with redundancy to allow for errors in hereditary transmission.

Similarly, it is probably these “imperfections” in language which allow for the transmission of language. It is this flexibility in the grammar, of

both production and parsing, that enables us to understand say, a second language speaker's use of the wrong case marking or a child garbling her tenses in any given linguistic expression. Surely, the most economical hypothesis for UG would perhaps be the generation of a language which had fixed word order with no deviations or room for variation, clearly contrary to fact. Language is rife with variation, redundant word orders, polysemy and more. Thus the link between linguistic parameters and generated output is far weaker than one might assume and it is precisely this "suboptimality" in design that allows for the complexities and variations of language and all the expressive richness it has to offer.

## Chapter 2

# Optional Wh-movement in the Minimalist Programme

In this chapter we will take a look at several languages that have been reported to exhibit optional wh-movement in the literature and the analysis that is offered to account for each of them. The list of languages here is by far no means exhaustive. What we attempt to do instead is to present as many different analyses of optional wh-movement as possible across a variety of languages. These analyses include the selection of different complementisers, optional selection of complementisers, remnant movement, and operator-variable binding. The aim is to capture the strengths and weaknesses of each of these analyses and to put the framework that we will develop across the rest of this thesis in context, highlighting the problems that the theory will need to address in order to be deemed a unified account of optional wh-movement.

### 2.1 English and Brazilian Portuguese

Pires and Taylor (2007) propose that in languages like English and Brazilian Portuguese (BP), discourse pragmatic conditions, which they term as the Common Ground (CG) along the lines of Stalnaker (1978; 2002), can permit wh-in-situ in non-echo, single wh-phrase questions. The licensing of these in-situ constructions falls out from the selection of different complementizers; Cs with an EPP feature trigger movement, and Cs without do not. CG information must be extractable from context or the discourse, or from extralinguistic context. CG consists of propositions or presuppositions which are shared by both hearer and speaker. If CG conditions are satisfied, they list four different conditions under which wh-in-situ is permitted in English and BP. All examples in this section are from Pires and Taylor.

They argue against the standard view that wh-in-situ questions in En-

glish and BP are echo questions. Echo questions, according to Pires and Taylor require an immediately prior antecedent and have characteristic rising intonation and focal stress, which they represent by the arrow and capitals in (1) below:

- (1) a. A: Mary ate a skunk.  
B: Mary ate WHAT↑?
- b. A: A Maria comeu um gambá.  
B: A Maria comeu O QUÊ↑?

Pires and Taylor argue that discourse-pragmatic conditions allow wh-movement to be dispensed with and crucially, the resulting wh-in-situ constructions are not echo-questions, as will be shown in the B responses below. They list four conditions under which wh-in-situ questions can be permitted.

First, wh-in-situ is permitted in questions that they term “[+specific]Qs”, which request more specific information about something mentioned immediately prior in the discourse. The antecedent requirement is similar to that of echo questions in (1), but the main difference lies in their intonation pattern. Instead of requiring the rising intonation and focal stress of echo questions, these questions require special rise-fall intonation and show different focal stress patterns. Pires and Taylor merely report that these questions exhibit different focal stress patterns but give no details. Since we are not concerned with intonation here, I will not pursue this matter further and just report their findings.

- (2) [+specific]Qs
  - a. A: I made desserts.
  - b. B: You made [what ↑kind of desserts↓ ]?  
B: Você fez [que ↑tipo de sobremesa↓ ]?
  - c. B: [Que tipo de sobremesa]<sub>i</sub> voce fez e<sub>i</sub> (overt wh-movement)

Second, wh-in-situ questions are also permitted in “Expect-Qs”, which occur when further questioning of new information is expected. This is found in legal questioning (3) or in reporting (4):

- (3) Expect-Qs
  - a. B: Tell me what happened on January 1<sup>st</sup>, 2005 at 4pm.  
B: Você pode dizer o que aconteceu no dia 1º de janeiro de 2005, às 4 da tarde.  
A: I was driving along Andrews Avenue.

- A: Eu estava dirigindo na Avenida dos Andradas.
- b. B: And you were driving [[in] which↑ direction↓]?  
 B: E você estava dirigindo [em que↑ direção↓]?  
 A: I was headed south, towards the library.  
 A: Eu estava indo para o sul, na direção da biblioteca.
- ...

(4) *Expect-Qs*

- a. A: I made many different kinds of desserts.
- b. B: So, you made [**how many cookies**↓]?  
 B: (E) você fez [**quantos biscoitos**↓]?  
- c. B: (E) [**quantos biscoitos**]i você fez e<sub>i</sub>? (overt wh-movement)

It is not very clear to me (neither do Pires and Taylor make clear) what the difference is between (2) and (4); but, from what I can gather, (2) questions for more specific information regarding the immediate antecedent *desserts* whereas in (4), a subset (*cookie* ⊂ *dessert*) of the antecedent is questioned. If the question was *You made how many desserts?* or *You made how many kinds of desserts?*, it would be a [+specific]Q instead of an Expect-Q.

Third, reference questions request a repetition of an immediately prior antecedent. Pires and Taylor state that some scholars such as Ginzburg and Sag (2001) argue that reference-Qs are a type of echo question, however Pires and Taylor believe that they are subsumed under wh-in-situ questions in general. This is not completely accurate, Ginzburg and Sag actually claim that reference-Qs are part of a class of questions called “reprise questions”:

[Echo questions result] from mishearing a previous speech act...[they are] marked by a characteristic intonation pattern (focus-associated rise with spreading high tone). Ref questions, by contrast, ask for clarification of the reference of some element in the immediately prior utterance and have a distinct intonation pattern (focus-associated fall with spreading low tone).

(Ginzburg and Sag 2001:256)

We will cover Ginzburg and Sag’s analysis of in-situ questions later; let us return to Pires and Taylor, who gives example of reference-Qs as (5):

(5) *Reference-Qs*

- a. A: I did not sell those strange pictures.  
 A: Eu não vendi aquelas pinturas estranhas.

- b. B: You did not sell **what**↑↓**strange pictures**↓?
- B: Você não vendeu **que**↑↓**pinturas estranhas**↓?
- c. B: [**Que pinturas estranhas**]<sub>i</sub> você não vendeu↓ e<sub>i</sub>? (overt wh-movement)

Finally, extralinguistic contexts can also permit wh-in-situ.

(6) *Extralinguistic CG*

B sees his friend reading something and asks:

- a. B: You're reading **what**?
- B: Você (es)tá lendo **o quê**?
- b. B: [**O que**]<sub>i</sub> você está lendo e<sub>i</sub>?

Ginzburg and Sag (2001) describe in-situ questions slightly differently, grouping them into two groups, reprise and non-reprise questions. Reprise questions, as mentioned above, constitute a group of echo-questions (mere repetition) and reference questions. Reprise questions, they argue, are metalinguistic in nature, but crucially, only in their content. That is, what is reprised is the illocutionary force of its antecedent utterance while their syntax and semantics are fundamentally the same. Since the aim of this thesis is optional wh-movement, I will not delve into the details of echo questions here; neither will I address (as do Pires and Taylor 2007) whether reference questions are “echo” or not. Ginzburg and Sag do, however, discuss what they term as “non-reprising in-situ wh-interrogatives”. These can appear with or without antecedent utterances, their examples (Ginzburg and Sag 2001:28off) are as follows:

- (7) a. A: Well, anyway, I'm leaving.  
B: OK, so you'll be leaving **when** exactly?
- b. A: I'm annoyed.  
B: Aha. You're annoyed with **whom**?
- (8) A: I'm going to send the sourdough bread to the Southern Bakery,  
and the croissants to Barringers.  
B: I see, and the bagels you're going to send **where**?

Ginzburg and Sag claim that such non-reprising wh-in-situ constructions are licensed by the presence of certain presuppositional factors; more specifically, the in-situ wh-clause carries a presupposition of some kind. Although the nature of this presupposition is difficult to pin down, they suggest that it could be related to the salience of the in-situ question, either through an antecedent utterance or context.

- (9) a. [Post-maritally blissful speaker]: We're going to buy a house.  
           [Skeptical in-law]: Uh huh. And you're going to pay for it **with what?**  
       b. **With what** are you going to pay for it?

In (9), Ginzburg and Sag claim that the establishment of the context of buying a house allows accessibility to the issue of payment and that the question in (9a) has a different “force” from (9b). While they do not explain what “force” is in this case, I infer that they mean illocutionary force. By my understanding, in-situ questions are more restricted than ex-situ ones. If we adopt a Hamblin (1973) or Karttunen (1977) semantics<sup>1</sup> for questions, where questions denote the set of propositions expressed by answers, we can imagine, simplistically speaking, that an infinitely wealthy person would be able to pay for things in more ways than the above-mentioned cash-strapped newlyweds. Abstracting away from the thorny issue of what *what* actually denotes in (9), it could be abstract chunks of money, loans, means of payment, whatever; we can construe a scenario where a wealthy person would have a larger set of things to pay for the house with a set  $S$  with  $\{\alpha, \beta, \gamma, \delta, \dots\}$  while the newlyweds would have more limited means, a subset of  $S$ , say only  $\{\alpha, \beta, \gamma\}$ . The restriction of  $S$  must be derived from presuppositional information, or the Common Ground as Pires and Taylor (2007) argue for, but the argument that must be made here is that this in no way, should have an impact on narrow syntax. Instead, the in-situ versus ex-situ differences should be explained, as Ginzburg and Sag put it, in “cognitive and functional terms” and the presuppositional differences in the CG or semantic/pragmatic (I believe more pragmatic than semantic<sup>2</sup>) subtleties be explored elsewhere, outside of narrow syntax. This is the same argument that I will carry over into the discussion of Pires and Taylor, which we return to below.

The main thrust of the syntactic analysis given by Pires and Taylor is that wh-in-situ in English and BP is licensed when the requested information is expected (part of the presuppositions of CG). What is important is that Pires and Taylor (2007) account for the syntax of these constructions<sup>3</sup>

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<sup>1</sup>The main difference between Hamblin and Karttunen is that while Hamblin proposes that questions are the set of propositions expressed by possible answers, Karttunen proposes that questions denote the set of propositions expressed by **true** answers. The reason for doing so is to make it easier to assign meaning to verbs which are truth-entailing in indirect questions such as *tell* in *John told Mary who killed the President*.

<sup>2</sup>More precisely, I think it is the pragmatics that affect the semantics in this sense by restricting the set of possible answers.

<sup>3</sup>Ginzburg and Sag (2001) provide a very detailed account of these constructions in the HPSG framework and interested readers are so directed.

by arguing that in English and BP, a [+wh,+Q] complementizer that does not trigger wh-movement is present. The selection of the type of complementizer determines whether a wh-phrase moves or not.

- (10) a. (\*que) você está lendo **o que**?  
that you are reading the what
  - b. **O que** que você está lendo?  
the what that you are reading  
'What are you reading?'
- (11) O Pedro disse \*(que) ele leu **o que**?  
the Peter said that he read the what  
'What did Peter say that he read?'

In matrix wh-in-situ constructions in BP, the complementizer selected is obligatory null, as shown in (10a). If the overt complementizer *que* is selected, wh-movement must occur and in-situ constructions are impossible. In embedded constructions, overt complementizers do not trigger wh-movement; embedded wh-in-situ constructions must co-occur with overt complementizers. According to Pires and Taylor, this is contrary to what is claimed by Hornstein et al. (2005), who state that wh-movement in embedded interrogatives is obligatory, regardless of complementizer. This is not fully accurate. In Hornstein et al. (§2.3.1.4), the given paradigm is similar for matrix questions: wh-movement is optional with a null C but obligatory with an overt C. In embedded constructions however, wh-movement is obligatory:

- (12) a. Eu perguntei **como** (que) você consertou o carro.  
I asked how that you fixed the car
- b. \* Eu perguntei (que) você consertou o carro **como**.  
I asked that you fixed the car how  
'I asked how you fixed the car.'

What Pires and Taylor seem to have missed is the fact that in Hornstein et al., they additionally mention that wh-movement of arguments are **optional** from within embedded clauses if no island constraints are violated:

- (13) *No island violations; optional wh-movement*
  - a. **Que livro** você disse que ela comprou?  
which book you said that she bought
  - b. Você disse que ela comprou **que livro**?  
you said that she bought which book

‘Which book did you say that she bought?’

- (14) *Island violations; only wh-in-situ possible*
- a. \* **Que** **livro** você conversou com o autor [que escreveu]?  
which book you talked with the author that wrote
  - b. Você conversou com o autor [que escreveu **que** **livro**]  
you talked with the author that wrote which book  
‘Which is the book such that you talked with the author that wrote it?’

Based on these facts, both Pires and Taylor and Hornstein et al. conclude that BP has different complementizers, one which triggers movement and one which does not. Hornstein et al. suggest that the distribution can be explained by positing that the null embedded complementizer, the overt complementizer *que* ‘that’ and non-D-linked elements (such as “what the hell” constructions) all have strong wh-features, triggering wh-movement. As for the null matrix complementizer, they come in two versions, one strong, triggering movement, one weak, allowing in-situ.

Moreover, Pires and Taylor claim that in the wh-in-situ constructions in English and BP, there is no LF movement. Citing an example from Lasnik and Saito (1992) which shows that wh-adjuncts are not permissible in islands, even in a wh-in-situ language like Japanese, shown below in (15). They argue that unlike Japanese, the merger of a non-EPP complementizer in English and BP licenses true wh-in-situ without any movement whatsoever (overt or LF) and thus allowing it to escape island violations.

- (15) \* Mary-wa John-ni **naze** hon-o ageta hito-ni atta no  
Mary-TOP John-to why book-ACC gave person-to met  
‘Mary met the person that gave a book to John why?’
- (Lasnik and Saito 1992:174)
- (16) a. A: A man won the lottery this year. Another one did it last year.  
b. B: E ai, você vai entrevistar o homem que ganhou na loteria **quando**?  
B: So, you will interview the man that won the lottery **when**?

What seems to be puzzling about both Pires and Taylor (2007) and Hornstein et al.’s (2005) account is with regards to the presence of *que* ‘that’ in (13). Since they give an account where different Cs are selected, it does not explain why a single complementizer *que* can allow for both wh-moved and wh-in-situ constructions. Pires and Taylor state that the “overt complementizer *que* ‘that’...[obligatorily] triggers wh-movement in matrix questions

but not in embedded clauses...”. Strangely, while Hornstein et al. also note that the movement of wh-arguments within embedded clauses is optional when there are no island boundaries, they state that *que* has strong features that trigger movement, contrary to (13b), which oddly enough is the example they provide.

Regardless, even if the matrix Cs were different in (13), we would expect the wh-phrase to end up in an intermediate position in (13b), yielding ‘*Você disse que livro que ela comprou?*’<sup>4</sup>, assuming cyclic movement. The specifier position of embedded *que* ‘that’ must be available, since it must be an intermediate landing site for cyclic movement to yield (13a), otherwise the PIC would render the wh-phrase inaccessible in-situ in the embedded clause, its base position. Either way, the optional selection of matrix C does not mitigate the fact that the embedded *que* also exhibits optionality.

While the description of the distribution of the wh-in-situ phenomena in English (and assumably BP) seem to be correct, the description of the distribution itself is insufficient to motivate or explain why an wh-interrogative C without an EPP feature exists in English and BP in constructions which are claimed to be clearly interrogative, given the fact that these languages are seen to be wh-movement languages. Recall that the defining characteristic feature of wh-movement languages is that they possess an EPP feature on C, thus motivating movement. Unless we want to posit that there are multiple grammars in BP speakers with various versions of embedded and matrix complementizers, it would be far more ideal to account for this as a case of formal optionality within a single grammar.

Ultimately, the only difference between the types of constructions discussed above and canonical wh-questions is the presuppositional conditions imposed on CG. It is not apparent to me how these semantic-pragmatic effects have any impact on whether an EPP feature is present on C or not. I think the better way to approach the issue at this stage is to divorce the operations of narrow syntax from pragmatics; rather, the model of syntax that we develop should be powerful enough to give pragmatics all the choices to choose from. Aspects of narrow syntax such as formal features should not be governed by pragmatics. As Chomsky himself states in an interview by Stemmer (1999):

Suppose further (as appears to be correct) that old/new information relates to “displacement effects” in narrow syntax. And

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<sup>4</sup>Luiz Guidi (p.c), a native BP speaker in our department informs me that the partially wh-moved reading is either an embedded question or a yes/no question.

suppose further (merely for concreteness) that we take these displacement effects to be expressed in narrow syntax by transformational operations. Should we then say that the operations of object-shift, topicalization, and so on literally access shared background information? This seems close to incoherent... A more reasonable approach, I think, is to take the operations to be “autonomous”... If that is correct, then syntax (broad or narrow) will be “autonomous” of pragmatics...

(Stemmer 1999:399-400)

What is being said though, is not that exploring wh-in-situ constructions along the lines of pragmatic concerns serves no purpose. Investigating the pragmatic interpretations of these expressions is meaningful and these facts have been captured well by Pires and Taylor (2007) and Ginzburg and Sag (2001). In fact, much work still needs to be done pinning down the exact nature of the presuppositions involved. However, issues of movement and the EPP are ultimately just pure syntactic operations; while linking the expressions generated by syntax to the pragmatic forces they convey is one thing, tying core syntactic operations themselves to pragmatic effects is as Chomsky says, simply meaningless.

This leaves semantics. Again, similar arguments to the ones made above for pragmatics can be made here, it seems rather silly to state that wh-moved and wh-in-situ constructions express different propositional content. As discussed above, an in-situ construction could at best be described as having a more restricted set of answers compared to a wh-moved one, but again the question is, what bearing does this have on whether C has an EPP feature or not, or whether the wh-phrase is in this or that position? Probably none. Allowing the EPP feature alone to bear this burden clearly is not the ideal way to approach the issues discussed here.

To conclude this section on English and BP, it should be noted that there are other accounts explaining BP wh-in-situ constructions in the literature. One of these is the insertion of a Q-operator, separate from the wh-phrase. Such an approach is investigated by Zocca (2007), who, following Watanabe (1992), propose that the question operator Q is an unselective binder which can unselectively bind wh-phrases at LF, allowing island violations. In BP, Q is merged in a higher position, above [Spec,CP], presumably a second specifier, although this is not explicitly mentioned. Further, she posits a PF condition which prevents Q and the wh-phrase from being non-adjacent in BP. She accounts for the wh-moved and wh-in-situ variation by proposing

that in wh-movement constructions, C and Q are merged in narrow syntax; wh-phrases have uninterpretable [WH] features that need to be checked in locality and are unselectively bound by Q and ends up adjacent to the wh-phrase, obeying the PF adjacency condition, shown below:

- (17) *Wh-movement; C and wh- Agree; Q binds wh- in locality*  

$$[\underset{\downarrow}{\text{CP}} \underset{\text{[WH]}}{\text{Q}} \underset{\text{[WH]}}{\text{wh}} [\underset{\downarrow}{\text{C'}} \underset{\text{[WH]}}{\text{C}} \dots \text{t}]]$$

In wh-in-situ constructions on the other hand, the [WH] feature is present on Q but crucially, not on the wh-phrase and agreement occurs between C and Q, rather than the C and the wh-phrase. C and Q are merged in LF, allowing unselective binding to take place while obviating the need for the PF adjacency condition for Q and wh.

- (18) *Wh-in-situ; LF insertion of C and Q; Q bears [WH] and binds wh- at LF*  

$$[\underset{\downarrow}{\text{CP}} \underset{\text{[WH]}}{\text{Q}} [\underset{\downarrow}{\text{C'}} \underset{\text{[WH]}}{\text{C}} \dots \text{wh}]]$$

There are several problems with this approach. First, such an approach trades different complementizers for lexically different wh-words. Second, while saying that a phonologically null element could be in some way condition intonation is feasible (Cheng and Rooryck 2000), it seems odd positing that a PF dependency exists between a wh-phrase and a **phonologically null** element. Third, if there are no uninterpretable features on wh-words in wh-in-situ constructions, how is it rendered as an active goal? And fourth, since Zocca assumes that Q has uninterpretable features, how are they satisfied if C first agrees with the wh-phrase and triggers movement, becoming inactive thereafter? If Q is merged above the wh-phrase, then the Defective Intervention Constraint of Chomsky (2000) is violated, since we must assume that Q and the wh-phrase must have a probe-goal relationship in order for them to be base-generated together and be raised together:

- (19) *Defective Intervention Constraint*  
 $\alpha > \beta > \gamma$   
 where  $>$  is c-command,  $\beta$  and  $\gamma$  match the probe  $\alpha$ , but  $\beta$  is inactive,  
 $\alpha$  cannot Agree with  $\gamma$  (Chomsky 2000:123ff)

In (17), for  $\alpha = Q$ ,  $\beta = \text{wh}$  and  $\gamma = C$ , the inactive wh-phrase will block agreement between Q and C, since in Zocca's system, only feature matching is necessary, two uninterpretable features (she glosses the features as [uF], while I have glossed them as [WH] for clarity) can Agree with each other and delete.

Despite the numerous problems with Zocca's analysis, I believe that such an analysis is on the right track, but not correctly implemented. I will show

in the coming chapters that the interaction of question particles and wh-phrases are responsible for optional wh-movement, even in wh-movement languages, which are not expected to possess particles. Now we will proceed in looking at other languages which exhibit optional wh-movement.

## 2.2 Babine-Witsuwit'en

In the previous section we discussed optional wh-movement in English and Brazilian Portuguese, accounted for by different complementizers. In this section, we will focus mainly on work done by Denham (1997, 2000) on Babine-Witsuwit'en (BW), an Athabaskan language, which is claimed to have semantically vacuous optional wh-movement. Denham's account for optional wh-movement in BW is somewhat similar to the selection of C approach discussed in the previous section; here it is the optional selection of C that motivates optional movement. BW is reported to have a rather rigid SOV word order and in simple matrix questions exhibit free variation of the position of the wh-phrase.

- (20) a. Lillian **ndu** yunkët? (wh-in-situ)  
Lillian what 3SG.bought.3SG
  - b. **Ndu** Lillian yunkët? (wh-movement)  
what Lillian 3SG.bought.3SG  
'What did Lillian buy?'
- (21) a. Lillian **mbi** yunt'iy'  
Lillian who 3SG.likes.3SG
  - b. **Mbi** Lillian yunt'iy'  
'Who does Lillian like?'  
'Who likes Lillian? (21b. only)

Non-wh-phrases are not able to be fronted in BW, unless they are overtly marked as focussed by a marker.

- (22) a. George Lillian yunt'iy'.  
George Lillian 3SG.likes.3SG  
'George likes Lillian.'  
'\*George, Lillian likes.'
- b. **George'en** Lillian yunt'iy'  
George-FOC Lillian 3SG.likes.3SG  
'It's George that Lillian likes'  
'It's George that likes Lillian.'

A sentence which has both a focussed NP and a wh-phrase will have both fronted, with the focussed NP preceding the wh-phrase, although two focussed non-wh-phrases cannot be fronted.

- (23) Hoo', lhës'iy nts'ë Lillian yunkët?  
No, bread-FOC where Lillian 3SG.bought.3SG  
'No, where did Lillian buy the **bread**?'
- (24) a. \* Lhës'iy Friday'iy Lillian yunkët.  
bread-FOC Friday-FOC Lillian 3SG.bought.3SG  
b. \* Friday'iy lhës'iy Lillian yunkët.  
'Lillian bought the bread Friday.'

This leads Denham to conclude that focus marking and wh-fronting are separately motivated with distinct landing sites, ruling out wh-movement as focus movement. Wh-adjuncts are also able to vary in their positions:

- (25) a. Sharon book **nts'ën'a** yik'iyetalhdic?  
Sharon book how 3SG.will.read.3SG  
b. **Nts'ën'a** Sharon book yik'iyetalhdic?  
'How will Sharon read the book?'

In complex questions, both wh-phrases and wh-adjuncts can freely occur in-situ, partially moved, or fully wh-fronted, and can yield different scope readings depending on the position of the wh-phrase.

- (26) a. George [Lillian **ndïtni** book yik'iyelhdic] yilhni?  
George Lillian which book 3SG.read.OPT.3SG 3SG.told.3SG  
b. George [**ndïtni** book Lillian yik'iyelhdic] yilhni?  
'Which book did George tell Lillian to read?'  
'George told Lillian to read which book?'  
c. **Ndïtni** book George [Lillian yik'iyelhdic] yilhni?  
'Which book did George tell Lillian to read?'  
'\*George told Lillian to read which book?'

BW employs the use of an emphatic marker in cleft constructions, which is not used in wh-constructions. I omit them here for reasons of space. Denham goes on to show that there is true wh-movement in BW, since extraction from islands is impossible. I will only include one example here:

- (27) a. [[George **mbi** yudihye] Lillian yilhggi]?  
George who 3SG.know.3SG Lillian 3SG.surprised.3SG

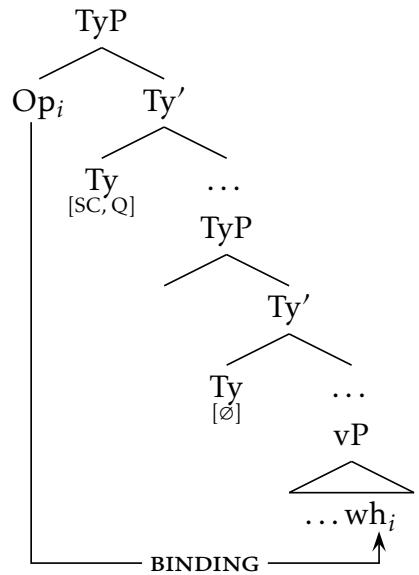
- b. \* Mbii<sub>i</sub> [[George t<sub>i</sub> yudiiye] Lillian yilhggii]?  
 who George 3SG.know.3SG Lillian 3SG.surprised.3SG  
 'That George knows who surprised Lillian?'

At the time of Denham's writing, strong and weak features were still a core part of Minimalist syntax, which we have abandoned today. However, she does make a point in noting that feature strength is a core property of cross-linguistic variation and to vary strong and weak wh-features on the wh-word to account for variations of movement is unsatisfactory, much in the same way that we do not want to vary the presence of an EPP feature on C. Thus, Denham proceeds to account for the optionality of wh-movement by appealing to the optional selection of C in the numeration. In order for this to work, Denham proposes that the wh-features on wh-phrases are interpretable, while C serves to only motivate movement. When C is present, movement is triggered and obligatory.

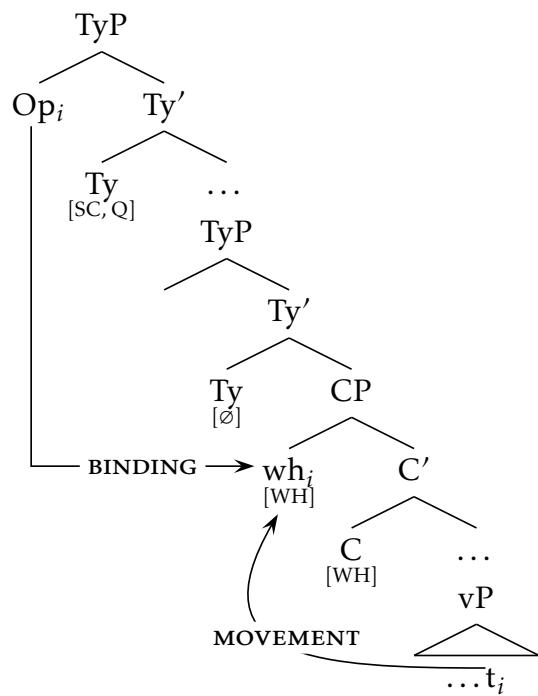
To account for (26), the merging of C in different parts of the clause will result in different surface structure: thus, (26a) has no C merged at all triggering no movement, (26b) has C merged in the embedded clause, triggering partial wh-movement while (26c) has C merged in the matrix clause, triggering full wh-movement.

Given such an approach, the overt position of the wh-phrase clearly cannot be used as an indicator of scope. Since all three structures have the same interpretation, they must therefore, have the same wide scope. Denham draws from evidence in German and Romani, both of which use scope markers in partially moved wh-constructions, showing that the overt position of the wh-phrase has no bearing on scope assignment. So, in order for BW wh-constructions to yield the correct scope, Denham proposes that a typing projection (TyP) is part of the clausal spine. Following Aoun and Li (1993), Denham proposes that wh-elements are bound by a question operator in [Spec,TyP]: "scope-marking features in the head position in Ty project an operator through Spec-head agreement, which then links to wh-phrase(s) and marks scope." (Denham 2000:216). Ty also serves to type clauses in the sense of Cheng (1991). It is not clear to me how scope-marking features "project" an operator, but what I take this to mean is that the operator is base-generated and merged in-situ in [Spec,TyP]. Abstracting from the head-final structure in (26) for ease of viewing, the general schema will look like this for (26a,b,c) respectively:

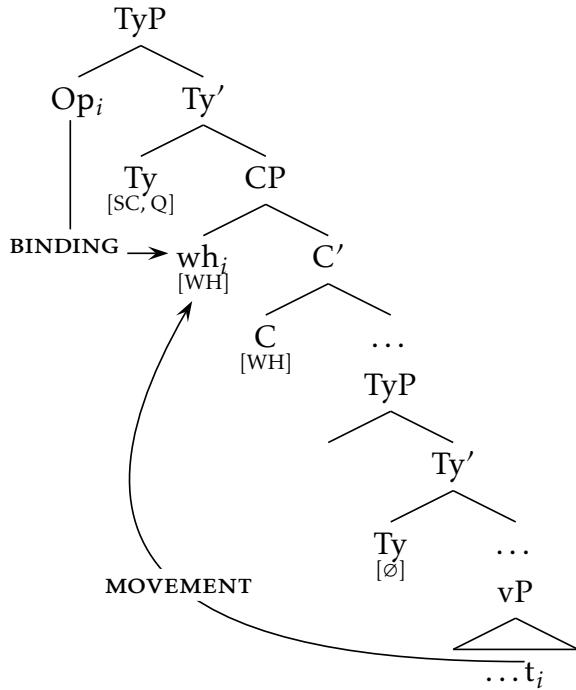
- (28) a. No C selected; wh-in-situ



- b. C merged in embedded clause; partial wh-movement



c. *C merged in matrix clause; full wh-movement*



Since a TyP is projected in every clause, Denham's account must ensure that wh-phrases do not raise into [Spec,TyP], and only allow Op to be base-generated there. In order to do this, Denham proposes that Ty possesses only interpretable features that do not require checking in locality and consequently, no movement is triggered. Subjacency violations from long wh-movement across clause boundaries are mitigated because there are no other Ā-positions available for the wh-phrase to raise to, since C is only optionally selected for and when selected, a single [Spec,CP] is the only position available for wh-phrases to move to.

There are two problems with this approach that are apparent to me. First, along the same lines as the issues discussed in the previous section for English and BP, the optional selection of C is merely another way of stating that the assignment of the EPP feature is optional, or that that there are different Cs, one which motivate movement and one which does not. Denham eschews the optionality of feature strength and trades it for the optionality of the selection of C. Furthermore, since C is no longer the locus of clause typing, she is forced to introduce another TyP projection, essentially trading away one functional projection for another with no empirical motivation to do so, by no means the most economical of moves.

As Denham claims, feature strength is the root of cross-linguistic variation and parametric variation of wh-movement must be accounted for in terms of the feature's presence. There are no in-betweens when it comes to

parameter setting; we have said this many times. Exhibiting optional wh-movement does not mean that a language is parametrically sometimes set as “plus” and sometimes as “minus”, it is set one way or the other. It means very little to say that a language has wh-movement, but when desired, the grammar is able to deselect such a core component of its functional spine. This leads us to the next point.

The second major issue with such an approach is that it is rather difficult to modernise and bring in line with current theory, especially if we take (at least) vP and CP to be phases. Without C and its corresponding edge, there would be no means available to allow for cyclic movement of the wh-phrase from an embedded clause to a higher position, since long movement<sup>5</sup> across clause boundaries would be rendered impossible by the PIC. The ideal solution to optional wh-movement would be one which maintains the integrity and consistency of the clausal spine, at least where the core functional categories are concerned, while still capturing the correct facts with regards to scope marking, clause typing and the multiple positions of wh-phrases in overt syntax.

### 2.3 Spanish

In this section we will examine the data and arguments discussed in Uribe-Etxebarria (2002) and Reglero (2005, 2007), who look at wh-in-situ constructions in Spanish. Uribe-Etxebarria proposes a remnant movement analysis, while Reglero proposes that phonological factors are responsible and contrary to Uribe-Etxebarria’s analysis, no remnant movement occurs, adopting instead a combination of focus-prosodic assignment and the pronunciation of lower copies. Examples are from the references cited above:

- (29) a. Qué compró Juan?  
what bought John  
b. [Y] Juan compró qué?  
and John bought what  
'What did John buy?'

As can be seen in (29), Spanish can exhibit optional wh-movement, although as noted by Uribe-Etxebarria, wh-in-situ questions do not possess the canonical word order found in declaratives<sup>6</sup>.

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<sup>5</sup>However, see Kaplan (2005) for an account of long wh-movement in Chamorro.

<sup>6</sup>The examples below are taken from Uribe-Etxebarria (2002) and contain glosses but no free translation. Being a non-speaker of Spanish, I will not presume to insert free translations here. Their meanings should be relatively obvious, despite this.

- (30) a. [Y tú] invitaste a tu fiesta a quién?  
       and you invited to your party to whom  
     b. [Y tú] te vas a vestir para la fiesta cómo?  
       and you CL are-going to dress for the party how

(Jiménez 1997)

- (31) a. Yo invité a María a mi fiesta  
       I invited to Mary to my party  
     b. Yo me voy a vestir de payaso/de terciopelo para la  
       I CL am-going to dress as a clown/in velvet for the  
       fiesta  
       party

(Uribe-Etxebarria 2002)

The general idea is this: the wh-phrase first raises into [Spec,CP] as per normal wh-movement (32a). Following that, the entire IP raises into a higher position (32b):

- (32) a. [<sub>CP</sub> wh<sub>i</sub> [<sub>TP</sub> ... t<sub>i</sub> ]]  
     b. [<sub>XP</sub> [<sub>TP</sub> ... t<sub>i</sub> ]<sub>j</sub> [<sub>CP</sub> wh<sub>i</sub> t<sub>j</sub> ]]

Uribe-Etxebarria calls the XP projection a “topic-like” position, although gives it no label pending “further investigation on the nature of this projection”. For concreteness, let us consider a derivation of (30a):

- (33) a. [<sub>TP</sub> tú [<sub>vP</sub> invitaste a **quién** a tu fiesta ]] (base order)  
     b. [<sub>CP</sub> [**a quién**]<sub>i</sub> [<sub>TP</sub> tú [<sub>vP</sub> invitaste t<sub>i</sub> a tu fiesta ]]] (wh-movement)  
     c. [<sub>XP</sub> [<sub>TP</sub> tú [<sub>vP</sub> invitaste t<sub>i</sub> a tu fiesta ]]<sub>j</sub> [<sub>CP</sub> [**a quién**]<sub>i</sub> t<sub>j</sub> ]]] (remnant movement)

In in-situ constructions, the object wh-phrase is sentence final, while in declaratives, the object precedes the PP. Uribe-Etxebarria also states that only in echo questions are wh-phrases allowed to be non-sentence final in its base order, shown in (33a).

- (34) Que Pedro se ha casado con quién por la iglesia?  
       that Pedro CL got married with whom by the church

According to Uribe-Etxebarria, (34) can only have an echo reading, a non-echo reading is impossible because of two reasons. The first being the overt complementizer *que*, and the second being that the wh-phrase is not sentence final.

- (35) a. \* Y tú le diste a quién la guitarra?  
           and you CL gave to whom the guitar  
   b. Y tú le diste a quién, # la guitarra?
- (36) a. \* Y tú compraste dónde el libro?  
           and you bought where the book  
   b. Y tú compraste dónde, # el libro?

This leads Uribe-Etxebarria to propose that there is a Sentence Final Requirement (SFR) in imposed on in-situ wh-phrases in Spanish. This requirement however, can be dispensed with if there is a pause (marked by # above) between the wh-phrase and the constituent which follows; that is, this constituent must be right dislocated, in the sense of Cecchetto (1999). The dislocated element *la guitarra/el libro* first raises to a topic position, followed by wh-movement to CP (possibly FocusP), further followed by remnant movement of the TP to a higher topic position.

Uribe-Etxebarria also notes that wh-in-situ questions in Spanish require a certain context to be rendered felicitous. This is not unlike what was discussed above for English and BP, certain presuppositional conditions must be met. Crucially, “the variable into which the wh-phrase is translated is assigned its values from a restricted set” (Uribe-Etxebarria 2002:ex. 32iii); more specifically, wh-phrases in wh-in-situ questions are contrastive foci. Uribe-Etxebarria appeals to Ortiz de Urbina (2001), who describes final foci in Basque being able to have contrastive interpretation. The argument is that the remnant (TP) is presupposed, and with respect to the focus, the wh-phrase in-situ in our case, it cannot be new information, thus yielding a reading from a restricted set of elements.

Reglero (2007) raises several counterarguments to the remnant movement analysis. Firstly, if we adopt a remnant analysis, we would expect that constructions involving wh-in-situ within an island would be ungrammatical, since overt wh-movement would violate island constraints.

- (37) a. Te has enamorado del hombre que vive  
           CL (you) have fallen-in-love of-the man that lives  
           **con quién?**  
           with who?  
           ‘Who have you fallen in love with the man that lives with?’
- b. \* **Con quién** te has enamorado del hombre que vive?

Since (37b) is ungrammatical, the derivation involving wh-movement followed by remnant is impermissible. According to Uribe-Etxebarria (2002),

such a problem would be resolved by maintaining that wh-in-situ elements within relative clauses can trigger pied-piping, following this, the remnant movement analysis holds as per normal.

- (38) a. [TP te has enamorado [DP del hombre [CP que vive **con quién** ]]]
- b. [CP [DP del hombre [CP que vive **con quién** ]]<sub>i</sub> [TP te has enamorado  $t_i$ ]]]
- c. [XP [TP te has enamorado  $t_i$ ]<sub>j</sub> [CP [DP del hombre [CP que vive **con quién** ]]<sub>i</sub> ]]

Following the argument presented above, the entire DP *del hombre que vive con quién* ‘the man that lives with whom’ must be the final focus, since regardless of whether wh-movement occurs to a focus or CP position, extraction of the wh-phrase is impossible. By contrast, if the wh-phrase alone were to be the target of contrastive focus, as in the wh-in-situ constructions above that involve no pied-piping, we would expect to see a difference in the answers available between a question with a focussed DP-relative versus a focussed wh-phrase alone. This difference is predicted by Reglero (2007), who notes that (37) can receive the answer *con Juan* ‘with John’, whereas the answer to a question possessing the over structure in (38b) must be a repetition of the entire DP-relative *del hombre que vive con Juan* ‘with the man that lives with John’ – the focus. Reglero also observes that there are argument/adjunct asymmetries involved with wh-in-situ constructions:

- (39) a. [Y] tú no sabes cómo llegó quién?  
and you NEG know how arrived who  
‘Who is such that you don’t know how he/she arrived?’
- b. \*[Y] tú no sabes quién llegó cómo?  
and you NEG know who arrived how
- c. [Y] tú dijeste que Pedro llegó cómo?  
and you said that Pedro arrived how

Considering that wh-adjuncts can be left in-situ (39c), a movement analysis should predict that (39b) should be grammatical if *cómo* raises before remnant movement. Reglero notes that multiple questions like *Quién llegó cómo?* ‘Who arrived how?’ are unacceptable in Spanish, although this does not hold for other wh-adjuncts:

- (40) a. Quién vive dónde?  
who lives where?

- b. Quién llegó cuándo?  
 who arrived when

Interestingly, these wh-adjuncts are grammatical when embedded and left in-situ:

- (41) a. [Y] tú no sabes dónde vive quién?  
 and you NEG know where lives who  
 b. Y tú no sabes quién vive dónde?  
 c. Quién no sabes dónde vive?  
 who NEG know where lives  
 d. \* Dónde<sub>i</sub> no sabes quién vive t<sub>i</sub>?

(41b) and (41d) are expected to have the same grammatical status as (41b) is derived from (41d). Moreover, in Uribe-Etxebarria (2002:n38), she notes that a construction like (42) is grammatical:

- (42) Quién dijo qué a quién?  
 who said what to whom

Since Spanish is not a multiple wh-fronting language, accounting for the *a quien* in-situ cannot be done through a remnant movement analysis, since *a quien* is not eligible to front. Instead, (42) is interpreted as a regular wh-question with *quién* (not *a quien*) moving to [Spec,CP]. The other two wh-phrases are licensed in-situ by unselective binding<sup>7</sup>. However, a problem does arise, notes Reglero, in the following multiple wh-construction, using examples from Zubizarreta (1998):

- (43) a. \* Donde compró quién el libro?  
 where bought who the book  
 b. Donde compró el libro quién?  
 'Where did who buy the book?'  
 (44) a. \* Quién puso qué cosa sobre la mesa?  
 who put what (thing) on the table  
 b. Quién puso sobre la mesa qué cosa?  
 'Who put what on the table?'

(Zubizarreta 1998:131)

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<sup>7</sup>In Bošković (1997), he notes that multiple wh-constructions such as *Quién dijo qué* and *Qué dijo quién* 'Who said what?' are grammatical in Spanish. He accounts for this superiority violation by appealing to the fact that both wh-phrases in a configuration

i. [ dijo [vp quién [v' t<sub>i</sub> qué ]]]

are in the same minimal domain and are valid options for movement. Note that this is a case of optional wh-movement, if analysed this way.

Consider (44). Given that such an expression should exhibit superiority effects, the higher wh-phrase *quién* ‘who’ should raise to [Spec,CP]. If this happens, a remnant movement account is no longer possible, since as discussed above, multiple wh-fronting is not possible in Spanish. However, at the same time, it is clearly the case that the Sentence Final Requirement (SFR) is in force in Spanish. If we want to abandon the analysis that wh-in-situ constructions occur via remnant movement, we have two options. We can either i) disregard superiority effects, Attract Closest and principles of similar nature and allow *qué cosa* to raise, or ii) maintain that *qué cosa* truly remains in-situ.

It appears to me to be easier to go with the latter option. Firstly, it is known that Romance languages lack the double object construction (see Demonte (1995) for a discussion of dative alternation in Spanish). Thus in Spanish, the neutral word order as shown at the start of this chapter in (30,31), is [V DO IO], however in wh-in-situ questions involving three-place predicates, the SFR imposes a constraint on the direct object wh-phrase to allowing it to appear sentence final and in-situ in a [V IO DO], not so unlike a double object construction – this is quite suspicious.

In light of the reasons mentioned above, the argument for a remnant movement analysis appears to be weakened. Recall that the aim of this entire investigation is to develop a framework which allows for wh-in-situ constructions in wh-movement (possessing an EPP) languages. The remnant movement approach qualifies. However, in-situ constructions have been shown repeatedly in the sections above to be able to escape island violations. This is a sign that there is no movement involved; or is it? Recall the unavailability of double object constructions in Spanish. If the double object construction is disallowed, this is perhaps evidence that all is not what it appears to be. As we shall see in chapter 5, in-situ wh-phrases in Spanish *do* undergo movement after all, although remnant movement is not the key.

## 2.4 French

In this section, we will consider the case of optional wh-movement in French, focussing on the analyses in Cheng and Rooryck (2000) and Mathieu (1999, 2004). French is known to exhibit alternation in wh-movement in matrix questions:

- (45) a. Qui as tu vu?  
who have you seen

- b. Tu as vu qui?  
 you have seen who  
 'Who did you see?'

There are several aspects of the wh-in-situ strategy in French that are rather similar to the ones discussed above. French wh-in-situ questions display clear intonational differences compared to wh-moved ones. This has been noted to be the case in English and BP, discussed at the start of this chapter. Likewise, in French, wh-in-situ questions are associated with a "strongly presupposed context" (Chang 1997:45). Cheng and Rooryck (2000) suggest that the presupposition conditions imposed on wh-in-situ questions disallow them from receiving a negative answer, since the question is presupposed to be true. What is being asked for are more details regarding the issue at hand (cf. +[specific]-Qs and expect-Qs in the sense of Pires and Taylor (2007), discussed above):

- (46) a. Qu' est-ce que Marie a acheté?  
           what EST-CE QUE Marie has bought
- b. Rien.  
           nothing
- (47) a. Marie a acheté quoi?  
           Marie has bought what
- b. ?? Rien.  
           nothing

The cornerstone of Cheng and Rooryck's analysis is the use of a question morpheme. They argue that the special intonation of in-situ questions and declarative yes/no questions with rising intonation is represented as a Q-morpheme in overt syntax. These morphemes can be specified or underspecified. Specified Q-morphemes can take wh or yes/no features (in languages with overt morphemes that distinguish between these two functions, like Chinese), while underspecified Q-morphemes are able to co-occur with either types of questions. Thus, in wh-in-situ questions, the Q-morpheme will be valued as [Q:wh], while in declarative yes/no questions with rising intonation, the Q-morpheme will be valued as [Q:y/n]:

- (48) Q Jean a acheté un livre?  
           Jean has bought a book

Since in French, the Q-morpheme is underspecified, Cheng and Rooryck propose that Q is valued by default as [Q:y/n] at LF if it is not valued in

overt syntax. However, if such an operation is applied to wh-in-situ questions, the derivation will crash; the in-situ wh-word would be interpreted wrongly, since Q is valued for y/n and not wh. To resolve this problem, the proposal is that at LF, the wh-feature on in-situ wh-words move to C<sup>0</sup>, valuing Q as [Q:wh]. Crucially, LF feature movement does not serve to check the Q-feature on C, as in the case of ordinary wh-movement. Instead, the Q-feature on C is checked by the merging of the Q-morpheme; feature movement merely serves to value (and disambiguate) the underspecified Q-morpheme.

Cheng and Rooryck propose that in *est-ce que* questions, *est-ce que* itself is a Q-morpheme. However, *est-ce que* involves overt wh-movement and therefore, the LF feature movement analysis for the null Q-morpheme is not possible. This is because *est-ce que* is an instantiation of an interrogative complementiser whereas the null Q-morpheme is base generated and head adjoined to C. In the case of head adjunction of the null Q-morpheme, the Q feature on C is checked in locality by the head adjunction configuration, rendering overt movement unnecessary; what happens instead is that LF wh-feature movement occurs to value the Q-feature on the Q-morpheme as [Q:wh] as mentioned above. *Est-ce que* on the other hand, being an instantiation of C itself, requires checking in locality and consequently, the movement of a wh-phrase into its specifier follows.

French wh-in-situ questions are rather restricted, negation, quantifiers and modals cannot precede the wh-in-situ element. Neither can wh-in-situ elements be located in an embedded clauses or in embedded indirect questions. The examples below list the different kinds of interveners which disallow wh-in-situ constructions.

- (49) a. \* Tous les étudiants ont rencontré qui? (*quantifier*)  
all the students have met who  
'Who did all the students meet?'
- b. \* Il n' a pas rencontré qui? (*negation*)  
he NE has not met who  
'Who didn't he meet?'

(Chang 1997)

- c. \* Il peut rencontrer qui? (*modal*)  
he can meet-INF who  
'Who can he meet?'
- d. \* Il admire toujours qui? (*quantificational adverb*)  
he admires always who

‘Who does he always admire?’

(Cheng and Rooryck 2000)

- e. \* Jean at Pierre croient que Marie a vu qui? (*clause*)  
Jean and Pierre believe that Marie has seen whom  
‘Whom do Jean and Pierre believe that Marie saw?’

(Bošković 1998)

- f. \* Je me demande Jean a vu qui. (*indirect*)  
I myself ask Jean has seen who  
‘I wonder who Jean saw.’

(Mathieu 1999)

Cheng and Rooryck (2000) account for the intervention effects of (49a-d) by interpreting wh-words in French as indefinites and that quantifiers, negation and modals form weak islands, in the sense of Honcoop (1997):

(50) *The Intervention Generalization*

$$^* \dots [\phi Q_i \dots [\text{WeakIsland Operator} \dots [\text{indefinite D}_i \text{ NP}] \dots] \dots] \dots$$

(Honcoop 1997:19)

If the intervener is any “operator-expression which gives rise to [weak island] effects (such as negation), the resulting structure is either ill-formed or severely degraded” (Honcoop 1997:19). LF wh-feature movement, which results in an operator-indefinite relationship (Q and D above) is subject to intervening expressions blocking the establishment of such a relationship.

In embedded and indirect questions, the idea is somewhat similar. Cheng and Rooryck (2000) suggest that the Q-morpheme is a root one; it can only appear in matrix clauses and yields only matrix scope. They do not give details for how this works, but merely stipulate that the root phenomenon disallows embedded questions. My understanding is that it can be inferred, based on the intervention condition above that embedded C must function as some kind of intervener in the operator-variable binding relationship. Otherwise, nothing would prevent the merging of the Q-morpheme in matrix C while still establishing an operator-indefinite relationship with an embedded wh-phrase.

To sum up Cheng and Rooryck’s analysis, the account that they give for the optionality of wh-movement in French reduces to a question of the optionality of selection, not unlike Denham’s (1997; 2000) proposal for Babine-Witsuwit’en. The difference is that in BW, the element that is optionality selected is C, whereas for Cheng and Rooryck (2000), it is the Q-morpheme

that is optionally selected for. If the Q-morpheme is selected, wh-in-situ results, and if not, wh-movement results.

Apart from the issues of optional selection as mentioned in the previous sections, Cheng and Rooryck's analysis faces another problem, making it rather difficult to bring in line with current syntactic theory. Recall that in Chapter 1 we introduced the notion of Q-completeness, which is necessary in order for the uninterpretable features of the C probe and wh-phrase goal to delete. Consider first the case of normal wh-movement in French. It must be the case that both C and the wh-phrase are Q-complete, triggering Agree and subsequent feature deletion, while an EPP feature on C triggers raising of the wh-phrase to its specifier position. Now, consider the case when the Q-morpheme is introduced into the derivation. The Q-morpheme itself must also be Q-complete, since it possesses both Q features<sup>8</sup> and wh-features.

If the the feature set of C and wh-phrases were Q-complete, the first Agree operation between C and the wh-phrase would result in feature deletion and in particular, render the wh-phrase ineligible for future operations, since it is located in-situ in a lower phase, has had its features deleted and spelled-out. The subsequent merger of the operator would disallow binding of the wh-variable and feature movement.

A possible solution to this problem would be to propose that when operators are present, C is somehow "defective" and therefore Q-incomplete, preventing deletion of the features on the wh-phrase. The ideal solution of course, would be to have the same C in both in-situ and ex-situ constructions while accounting for optional wh-movement. This is possible, as will be seen later, if the wh-phrase and Q-morpheme were introduced together in the derivation. Cheng and Rooryck suggest that this is the case for wh-phrases in Chinese, following Tsai (1994), although my proposal is somewhat different from Tsai's. Let us now turn to Mathieu (1999), whose account for French is more similar to what I will propose later.

Mathieu's proposal for French wh-in-situ also involves a question operator and a wh-phrase. However, unlike Cheng and Rooryck, who propose that LF feature movement is responsible, Mathieu proposes that it is the operator itself (although phonologically null) that overtly moves to [Spec,CP]. Mathieu presents several arguments that in-situ wh-elements do not move, even at LF. Firstly, he notes questions with single wh-phrases, when moved,

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<sup>8</sup>The feature in question is most probably interpretable but unvalued, in the sense of Pesetsky and Torrego (2007). Interpretable because the Q-morpheme is an operator and must be interpretable to yield semantic effects at the interfaces and unvalued because it can take either wh or y/n values.

are subject to subjacency effects. Mathieu assumes that subjacency effects must also hold at LF, precluding LF movement of in-situ wh-phrases in multiple wh-questions:

- (51) a. ? Qu<sub>i</sub>'est-ce que tu te demandes qui a vu t<sub>i</sub>?  
 what that you yourself ask who has seen  
 'What do you wonder who saw?'
- b. Qui<sub>1</sub> se demande qui<sub>2</sub> a vu quoi?  
 who himself asks who has seen what  
 'Who wonder who saw what?'

Since (51a) is impossible due to a subjacency violation, Mathieu concludes that the in-situ wh-phrases in (51b) does not move at LF. The next piece of evidence Mathieu provides for non-movement of in-situ wh-phrases in multiple wh-questions comes from constructions with *seulement* 'only'.

- (52) a. Il a seulement aimé le livre.  
 he has only liked the book  
 'He only liked (not loved) the book.'  
 'He only liked the book (not the film).'
- b. Le livre<sub>i</sub>, il l'a seulement aimé t<sub>i</sub>  
 the book he it has only liked  
 'He only liked (not loved) the book.'  
 \*'He only liked the book (not the film).'

Appealing to the Principle of Lexical Association<sup>9</sup> (PLA) in Tancredi (1990): if a wh-phrase c-commanded by *seulement* is moved from its base position at LF, it should not be able to receive two types of focus readings of the type as shown above in (52a). Instead only a single reading as in (52b) should be possible. This turns out not to be the case:

- (53) Qui a seulement aimé quoi?  
 who has only liked what  
 'Who only LIKED what?'  
 'Who only liked WHAT?'

Since (53) is able to receive both readings, Mathieu concludes that either the PLA does not hold at LF, or that (more ideally), the PLA is satisfied and the wh-phrase truly remains in-situ. In single wh-in-situ phrases on the

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<sup>9</sup>The PLA states that an operator like *only* must be associated with a lexical constituent in its c-command domain.

other hand, the conclusion is the opposite: they do move, or more accurately, some kind of movement is involved.

- (54) Quelqu'un a aimé tous les garçons.  
someone has liked all the boys  
'Someone liked every boy.'

(54) is ambiguous for scope; either the object or subject quantified DP can take wide scope. However in the presence of *seulement*, only *quelqu'un* 'someone' can take wide scope.

- (55) Quelqu'un a seulement aimé tous les garçons.  
someone has only liked all the boys  
'(A particular) someone liked every boy.'

In single wh-phrases, we observe a similar phenomenon. Single wh-in-situ questions in the scope of *seulement* are ungrammatical in French:

- (56) \* Il a seulement AIMÉ qui?  
he has only liked who  
'Which person (x) he only liked that (x)? i.e. he didn't love (x)'

The inability of the in-situ phrase in (56) to take wide scope reflects that there are constraints on the movement of the wh-phrase. This is somewhat misleading. What is actually constrained is not the movement of the wh-phrase itself, but rather the question operator that comes along with the wh-phrase. According to Mathieu (following Aoun and Li 1993), in wh-in-situ languages such as Chinese, wh-phrases are variables. These wh-phrases do not move but are instead coindexed with operators base generated in [Spec,CP]. These operators serve to i) mark scope of the wh-phrase, ii) provide a binder for the wh-phrase and iii) check strong features of C. In French on the other hand, the entire wh-phrase itself is a combination of variable and operator. This is a subtle but important difference. The argument then is that in French "the wh-operator cannot be separated from its variable". By separation, Mathieu means intervention, not separation in the sense that the operator moves to [Spec,CP].

Following Rizzi (1990), the variable in question is subject to a referential/non-referential distinction. Referential variables are arguments, which receives a  $\theta$ -role (agent, theme, patient, experiencer, goal etc.) and non-referential variables tend to be quasi-arguments or adjuncts (receiving a  $\theta$ -role but do not refer to a participant). Referential variables are bound

by operators if the said operators c-command them and share the same referential index (Rizzi 1997:87) while non-referential variables, unable to be bound (since binding is defined in terms of referentiality), must resort to antecedent government instead.

Mathieu's proposal is as follows: French wh-phrases consist of a wh-phrase and null operator base generated in the specifier of the wh-DP. The operator raises to [Spec,CP], leaving a trace that is *non-referential*, requiring antecedent government with no interveners.

- (57) *Intervener for antecedent-government in Wh-movement*

A filled  $\bar{A}$ -position specifier  $\alpha$  blocks antecedent-government between an  $\bar{A}$ -position  $\beta$  that c-commands  $\alpha$  and an **adjunct** trace that  $\alpha$  c-commands. (Mathieu 1999:462; emphasis mine)

Simply put, any filled  $\bar{A}$ -specifier will act as an intervener between the operator and its trace. This is the central reason why French exhibits the intervention effects as shown in (49). In multiple wh-questions, the operator-variable relationship does not apply, since the higher wh-phrase binds the wh-phrases *in situ*, which are pure variables.

According to Mathieu, the crucial difference between French and an in-situ language like Chinese is the nature of the binding relations involved. Wh-phrases in Chinese are referential, and the operator is base generated in [Spec,CP]. Because they are referential, only c-command is necessary and the intervention condition for non-referential variables do not apply. As such, Chinese in-situ wh-phrases do not show intervention effects with interveners in French such as negation, modals etc. French in-situ wh-phrases on the other hand, are non-referential and are thus subject to local government restrictions.

Let us consider this more closely. What does the operator actually do when it binds the wh-variable? Rizzi (1990) states:

There are two (nonexclusive) ways to connect an operator and its variable: binding and a chain of government relations. Binding requires identity of **referential indices**... when coindexation and binding are not available, the chain of government relations is the only connecting device. (Rizzi 1990:92, emphasis mine)

This appears to be a contradiction, because if the operator were to bind the wh-phrase, they must be referential. Suppose we put this aside and assume that in-situ wh-phrases in French are non-referential, as Mathieu claims. He speculates that these range over higher order entities not an individual.

This in itself is not impossible. However, without some means to type-shift the in-situ wh-phrase, a serious type mismatch occur.

For the sake of argument, let us use a simple verb like *see*. *See* is a function of type  $\langle e, et \rangle$ . Its saturation requires two arguments of type *e*. If *qui* in *Tu vois qui?* ranges over higher order entities, it is not eligible to be an argument of the verb. At some point, some operation must allow for the interpretation of *qui* to be of type *e* or the derivation will crash at LF. However, if this happens, then *qui* becomes referential.

The other contradiction arises from multiple wh-questions. In this case, Mathieu assumes that the in-situ phrase is a pure variable, i.e. referential, hence obviating island effects. How is it that the in-situ phrase is non-referential in single wh-questions and referential in multiple wh-questions? Moreover it seems that Mathieu appears to be rather unclear on the actual referentiality status of the wh-phrase. If it were non-referential, there is no need to even couch the theory on the binding of the trace left by the operator to begin with; it is sufficient to simply block the binding relationship between the operator and the wh-phrase, since both are non-referential.

The analysis seems unnecessarily complicated. I think it is better to explain the intervention effects (perhaps deriving it in some way from the Intervention Constraint in Beck 1996) as a constraint on overt movement rather than the government of a trace or an operator-variable binding relationship. We can simply state that the operator movement cannot evade weak islands but the wh-phrase can, since wh-arguments are known to be able to evade weak islands anyway.

## 2.5 Summary

To conclude this chapter, let us briefly consider again the different types of analyses available to us in the literature. First, in the discussion of English and Brazilian Portuguese, we entertained an analysis where different complementizers are present in a language's lexicon, one with an EPP feature and one without. The selection of different complementizers result in the different positions of wh-phrases in overt syntax.

Second, we looked at Babine-Witsuwit'en, which appears to show semantically vacuous optionality between wh-in-situ, full and partial wh-movement. The analysis for BW was accounted for by the optional selection of C in the numeration. The wh-phrase will move to wherever C is merged, if available. Several counterarguments were presented against any kind of analysis involving optional selection, keeping in mind that the availability

of movement should purely be a reflex of the EPP if we want to adopt a single grammar hypothesis.

Third, we looked at the remnant movement analysis for Spanish, and presented several counterarguments against the remnant movement analysis, such as the acceptability of wh-in-situ within islands and the unavailability of multiple wh-fronting in Spanish. There was also a recurring reference to the presuppositional nature of wh-in-situ constructions. I have argued strongly against allowing discourse factors to impact on narrow syntax and while the study of effects of wh-in-situ constructions on interpretation are important, they should not be a trigger for movement or its lack thereof.

Lastly, we looked at French, which possesses generally a more restricted distribution with regards to wh-in-situ, with numerous elements such as quantifiers, modals etc. being able to act as interveners. We reviewed two operator-variable accounts, and showed that one was difficult to bring in line with current Minimalist accounts, and the other unnecessarily complicated. Nevertheless, it was mentioned that a question operator/particle approach is the correct one to adopt, whose exact form and function will made clear as we progress. The next chapter will present new and original data based on Singapore English, a language which exhibits optional wh-movement *and* possesses phonologically overt question particles.

## Chapter 3

### Optional Wh-movement in Singapore English

In this chapter we will look at some new and original data from Singapore English (SgE). The Singaporean linguistic environment is highly complex and fluid. SgE is a language that has arisen through contact and dynamic bi-/multilingualism. The interactions in SgE between English and its Chinese substrates have linguistic impact on every level, across syntax, semantics, phonetics and phonology. More than this, these inter-grammar interactions exert forces on more fundamental aspects of SgE, appearing to influence even the parameters within the language. More specifically, the output that is predicted by the setting of a given parameter appears to be varied. Following our discussion over the past two chapters, where wh-movement is concerned, I will propose that SgE is parametrically valued for wh-movement and that cases of wh-in-situ is a direct result of the ability of syntactic operations – in our case, the satisfaction of the EPP on C – to yield equally economical but different outputs.

In SgE, wh-questions seemingly alternate freely between sentences of the type shown in (1) in non-echo question contexts.

- (1) a. You buy what?
- b. What you buy?  
      ‘What did you buy?’

Several key questions arise from this. Firstly, are truly optional wh-movement languages possible, or by extension any sort of optional movement? By true optionality, it means a system where a given numeration yields two (or more) semantically equivalent and converging derivations. The case of Babine-Witsuwit'en appears to be like so. We have also considered cases of wh-in-situ constructions which are claimed to have presuppositional effects (restriction of the answer set, subset selection etc.). The question is are these aspects present in narrow syntax or are they a reflex of discourse-pragmatic contexts? Consider a situation where a speaker walks

into a kitchen and sees her husband cooking and utters, “You’re cooking dinner↑?” with a rising intonation, a perfectly valid way of turning declaratives into yes/no questions. It is generally accepted that such questions have presuppositions associated with it. Is it meaningful to say then, that these presuppositions are encoded in narrow syntax itself? I am inclined to say no. Rather, these presuppositions are grounded in topics already established in discourse, more specifically in this case, from extralinguistic context. The crucial argument to make here is that as far as the semantics of the utterance is concerned, at the point when it is passed on from syntax to LF is concerned, is minimally different (if at all) from an utterance like “Are you cooking dinner?”. The presuppositional discourse-related is introduced at a later point, presumably at the semantics-pragmatics interface.

The same case can be made for optional wh-movement. There is little reason to believe that wh-moved and wh-in-situ variants differ in their core propositional content at LF. Essentially, assuming a Hamblin (1973) semantics, they denote the set of answers. How large this set is, or how the set is restricted, is a job for pragmatics, not syntax.

If we accept that the alternation of syntactic output is semantically vacuous at the point of spell-out, we essentially have two PFs possessing the same LFs. If we take this a step further and say that the different PF outputs are a result of a single derivation that at some point has the option to freely proceed in one way or another, from a point of view of economy, the alternation in PF output must be derived via equally economical syntactic operations. This is the sort of formal optionality we are concerned with here. Some accounts which have come close to accomplishing this would multiple EPP satisfaction in optional V2 constructions in Afrikaans (Biberauer and Richards 2006) mentioned above and stipulating that Move  $\alpha$  without Form Chain operations are free (Poole 1996).

Consequently, such an account of formal optionality necessarily rules out any analysis that, as far as wh-movement is concerned, involve the optional selection of C (Denham 1997) or the optional assignment of the EPP feature (Chomsky 2000 and Pires and Taylor 2007) because these involve different derivations. Without further ado, let us turn to SgE.

### 3.1 Brief background of SgE

SgE is a contact language that results from a multilingual and diglossic society. Singapore is young country with several interesting traits that are worth knowing to better put our language situation in context.

Before its founding in 1819, Singapore was only sparsely inhabited by indigenous people, assumed to be Malays. In 1819, Singapore was colonised by the British East India Trading Company and remained a British colony until her independence in 1965, with a short hiatus during the second world war. During the 19th century, Singapore burgeoned from a small fishing village into a large trading hub within Southeast Asia. As a result, the growing commerce and port industries attracted numerous foreigners, especially from southern China, who saw Singapore as a land of opportunity. Tamil speaking Indians also began trickling in. The linguistic system of the community saw various Chinese dialects, Hokkien, Cantonese and Mandarin, Malay of the indigenous people, Tamil and British English, the language of the colonial masters in the mix.

The influx of immigrants began to taper off in the early part of the 20<sup>th</sup> century as the society began to stabilise. Numerous groups of people with no common language was a sure way for pidgins to develop. As a result, up till the 1970s, a pidginised form of Malay called Bazaar Malay was the lingua franca (Lim and Foley 2004). In the 1970s, English began to gain increasing amounts of dominance and finally overtook Bazaar Malay as the lingua franca. SgE thus began to crystallise and develop into the form that it takes today.

Today, Singapore has a population of about 4.5 million people of the following demographic breakdown: Chinese 75.2%, Malays 13.6%, Indians 8.8%, Others 2.4%. Of these the main languages spoken at home are the following: SgE 26.8%, Mandarin Chinese (MC) 35.5%, Chinese Dialects 18.0%, Malay 12.7%, Tamil 3.4%<sup>1</sup>. There is an important assumption to be made here, I will assume that of the language spoken at home, which is listed as “English” in the Singapore Department of Statistics survey, is actually SgE rather than the standard variety Standard English (SE) which is reserved for more formal domains of governance, commerce and education.

Singapore is a very small country (approximately 710 km<sup>2</sup>, 274 sq. miles); an island whose only nearest neighbouring countries are Malaysia which lies to the north across a causeway and Indonesia to the south. As a city state, residents are extremely mobile, travelling to all ends of the island to gain access to services. There are no rural areas and practically every square inch of residential area is urbanised with access to all manner of amenities. Therefore, another assumption I will be making is that there will be insignificant (if any at all) geographical linguistic variation across the country. Furthermore, unlike established cities with long histories like Lon-

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<sup>1</sup>Singapore Department of Statistics, 2005.

don or New York, there are no clearly demarcated areas of different speaker groups; the mix of residents are generally homogeneous and we will not expect to find variation on the western side versus the eastern side of the island.

As mentioned above, SE is reserved for formal domains of governance, commerce and education. Almost everyone within the current generation (born after 1970) is bilingual in English and another language, corresponding to ethnicity: MC for Chinese, Malay for the Malays and Tamil for the Indians. This bilingualism is implemented, with varying degrees of success, through the education system as well as the languages spoken at home. Bilingual proficiency varies greatly across different speakers and even SgE itself possesses great variation. This great variation makes it very difficult, if not impossible to pin down an exact grammar of SgE. The varying amounts substrate influence found in SgE amongst different speakers renders several areas within its grammatical subsystem somewhat fuzzy, and I will have to abstract away from these differences since it would be practically impossible to take all the variation into account. I will instead consider the SgE spoken by educated (at least to a Degree level) speakers (like myself) and my informants who in turn are bilingual in SE and MC.

Gupta (1994) shows convincingly that SgE is independently acquired by children from their parents who speak to them in SgE before SE or MC is acquired through formal education in schools. She claims that Singapore exists within a diglossic situation, with SE being the high H variety and SgE being the low L variety and SgE (she uses Singapore Colloquial English) is the “normal variety used to small children, outside a pedagogical situation”. She goes further to claim that nearly all who learn English from birth will acquire SgE rather than SE as their native language. This is a view that I support, based on personal experience and that of my friends. Even those who are spoken to in MC or one of the Chinese dialects at birth will encounter SgE quickly at nursery school or kindergarten, still within the bracket for early acquisition. These issues are highly contentious and are beyond the scope of this thesis. I will abstract away from these issues and assume that SgE has some measure of homogeneity as mentioned above. Examples from SE and MC will also be drawn upon regularly to highlight differences and similarities, and possible sources of substrate influence.

The final assumption that I will make will be to discount the impact of Malay and Tamil on SgE. I do this not because I do not believe that these languages play a role in the development of SgE, but more because of logistical constraints. The Chinese population forms an overwhelming majority and

while there surely will be differences between different ethnic communities that speak SgE, I will focus on the SgE spoken by the Chinese population. I choose to pursue this course of action because firstly of a lack of access to subject data from other ethnicities as well as the fact that based on personal experience, the differences in SgE spoken between the ethnic groups is mostly lexical, at least for the issues we are concerned with.

### 3.1.1 On the grammar of SgE

Historically speaking, SgE could have been influenced by numerous Chinese dialects, the first Chinese immigrants did not speak much MC, but dialects corresponding to the regions that they came from in China. The two dominant dialect groups are Hokkien and Cantonese. Lim (2007) has shown this to be the case. However, since SgE has such a short history, having only really taken root in the past generation, it would not be implausible to classify SgE as linguistically unstable; it is in a state where it is constantly changing and where large amounts of variation is expected. At least with respect to the SgE that I am currently studying, I will assume that the grammar of SgE is a result of an interaction between SE and MC. I think Siegel (2008) describes best what SgE is:

...a post-creole continuum is characterized by a cline of lexical, phonological, and grammatical features ranging from those closest to a standard form of the creole's lexifier language (the acrolect) to those furthest from the lexifier language, and therefore most 'creole-like' (the basilect). Thus there is a great deal of variation in the speech community and the point at which a form of speech is located along the continuum depends on the context as well as the social characteristics of the speaker.

(Siegel 2008:235)

Such a description fits SgE perfectly. Wh-optionality, the issue in question, is even more interesting because it occurs at every level of the speaker community, from the basilectal to the acrolectal. This prevents us from taking the easy route out by explaining wh-optionality from a linguistic stratum point of view, but forces us to account for it for what it is. As far as SgE is concerned, if any progress is to be made in this area, a grammar of SgE should be charted out, regardless of whether it is decreolized or not, rather than simply using SE clause structure and fitting things in when they crop up. This is what we will do along the way as we examine the data. The

basic clause structure of SgE differs quite sharply from SE in several core areas, and these areas will need to be mapped out in order for us to make sense of the data presented here.

Before we begin examining the data proper, let us look at some broader features that SgE possesses. Only a brief introduction to these features will be done here as these are not the focus of my analysis but is necessary to better place in context the nature of this language.

### 3.1.2 Properties of SgE

SgE possesses many properties which are best loosely described as an amalgamation of SE and MC. Optionality is rife across numerous aspects of its grammar, not just wh-movement, which a one-to-one correspondence and syntax to output is sometimes difficult to account for. Let us consider some of the key defining features of SgE:

#### Reduced/optional morphology

Inflectional morphology in SgE is greatly impoverished compared to SE. Considering that MC has no inflectional morphology whatsoever, it is not surprising that SgE behaves in this way. We see that many morphological markings of tense or plurals are optional or omitted. Optionality seems to be a rather salient feature in SgE, notice (3)<sup>2</sup> has an inflected and non-inflected verb in the same clause.

- (2) I buy many book today.  
‘I bought many books today’
- (3) We went in, take half an hour to come out.  
‘We went in, and took half an hour to come out.’

#### Overt/optional aspectual markers

The perfect aspect is expressed by the past participle in SE. However, in SgE, this is optional. Instead, *already* is used to mark the perfect aspect, regardless of the form the verb is in.

- (4) a. I eat already.  
b. I ate already.

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<sup>2</sup>This example is from the Grammar of Spoken SgE Corpus (GSSEC) and cited in Fong (2004).

c. I eaten already.

'I have eaten.'

Crucially, this marker is not of the same status as the adverb, since the adverb *already* can co-occur with the perfect marker. Note the parallel with the MC construction:

- (5) I already eat **already**

I already eat ASP

'I have already eaten.'

- (6) wo yijing chi-le

I already eat-ASP

'I have already eaten.'

An analysis for this will be given later, since the position of *already* is an important diagnostic to ascertain that sentence-final particles are high in SgE's clause structure.

## Reduplication

Reduplication is a common feature in MC and is also used, to some extent in SgE. Reduplication can be used with nouns, adjectives, and verbs. Reduplicated nouns are used in affective or intimate contexts as shown in (7). Reduplicated adjectives have an effect of intensification (8) while reduplicated verbs are more complicated. Suffice to say that it lends a weakening or continuity effect to the verb. This can be seen in (9).

- (7) My boy-boy very clever.

'My little boy is very clever.'

- (8) You know that guy, the short-short one.

'You know that guy, the really short one'

- (9) a. He run-run-run then fall into the drain.

'As he was running, he fell into the drain'

- b. You knock-knock the flashlight then can work already.

'Knock the flashlight a little and it will work'

(9a) imparts a durative continuity to the action expressed by the verb while (9b) reflects a diminutive knocking of the flashlight, rather than an iterative meaning. A full treatment of reduplication will not be taken up here.

## Relative clause constructions

The formation of relative clauses in SgE is more complex than that of SE or MC. This is strange because we would expect any kind of contact language to be grammatically impoverished compared to its parents, especially in the formation of complex structures, instead in SgE, relative clause formation seems to be some kind of amalgamation between the head-initial structure of SE and the head-final structure of MC allowing for a more complex structure containing both head-initial and head-final relative pronouns. As complementizers and wh-words sit in [Spec,CP] while wh-words are relative pronouns, this is relevant to our study. A more extensive treatment will be given later.

- (10) a. the man who sell sweets  
b. the man sell sweets one  
c. the man who sell sweets one  
'the man who sells sweets'
- (11) mai tang de nei-ge ren  
sell candy DE that-CL person  
'the person who sells sweets'

It is easy to find common contexts where any of the above three constructions may be used. It appears that there are what seems to be two relative pronouns in (10c) since either *who* or *one* can be used.

## Pro-drop

SgE is a pro-drop language and subject and object NPs can be dropped in speech. Consider (12), a subject-NP drop and (13) an object-NP drop, with the dropped elements in italics in the translation:

- (12) What for? Don't want to get involved already lah.  
'What for? *I* don't want to get involved anymore.'
- (13) This is not the Chinese sea cucumber, you know. What you call worms. People eat raw, you know.  
'...People eat *them* raw, you know.'

## The copula and auxiliary *be*

One very salient feature of SgE is that the usage of the copula/auxiliaries are often optional. Fong (2004) analyses the distribution of *be* in SgE; her data is shown below, with my additions when necessary.

In attributive and some equative contexts, whose actual distribution will not be elaborated here, the copula is obligatory.

- (14) a. The book is/\*∅ red.  
b. He was/?∅ the one hit me.  
c. You should be/\*∅ happy.

*Be* is also obligatory with dummy subjects including existential clauses and *it*-clefts.

- (15) a. There is/\*∅ food left.  
b. It was/\*∅ that man who saw the murder.

The use of the copula is obligatory with modals and other auxiliaries.

- (16) a. I should be/\*∅ going.  
b. I have been/\*∅ sleeping.

*Be* however, is optional in non-existential and non-cleft constructions.

- (17) a. Your standard (is) a bit high.  
‘Your standard is a bit high’  
b. This one (is) not your car, it’s mine.  
‘This one is not your car, it’s mine.’

In perfect clauses marked by *already*, *be* cannot be used when the verb is in its infinitival form; it must be omitted.

- (18) I \*have/∅ eat already.

‘I have eaten

- (19) I have eaten already.

With progressives, *be* is optional.

- (20) They (are) trying to kill the man.

‘They are trying to kill the man’

As is the case with future clauses without modals, which as shown above, requires an auxiliary. However, in these cases, time adverbials must be present to align the clause with the future.

- (21) I go/going school tomorrow.  
‘I am/will be going to school tomorrow’

## Discourse particles

SgE is well known for its frequent use of discourse particles. In fact, it is arguably the most salient feature of SgE and the most widely studied as well. The history of these particles is controversial, but it is commonly agreed that they evolved from similar particles found in the Chinese dialects, as discussed in Lim (2007).

These particles also carry with themselves a lexical tone, but whether this tone is independent, meaning that the part of the language which deals with particles is tonal, or that this tone is simply encoded into the lexicon is under debate (Gupta 2006; Lim 2007; Wong 2004). This issue however, does not concern us directly. What seems to play a part however, is that some of these particles which possess a rising “tone”, seem to have complementary distribution with a null wh-particle expressed with rising *intonation* not tone. This will form the basis of arguing for the universal presence of a question particle.

- (22) Stop it lah!

‘Stop it!’ (strong assertion)

- (23) He got go meh

‘Did he go?’ (expressing doubt/questioning presuppositions)

There are numerous other particles whose usage in discourse and pragmatic features are discussed at some length in Wong (2004). This concludes our description of SgE, let us now turn to the data.

## 3.2 Question particles in SgE

Much work on wh-movement and wh-in-situ have focussed on languages such as English, German (wh-movement) or Chinese, Korean and Japanese (wh-in-situ). However, given the fact that SgE is a result of contact with a wh-movement and wh-in-situ language, interesting and peculiar examples are found in terms of its wh-constructions. In SE, we find that wh-elements must raise overtly in order to form a question:

- (24) what<sub>i</sub> did you eat t<sub>i</sub>

On the other hand, In MC, we find that a sentence with similar meaning has its wh-element in-situ:

- (25) ni chi-le shenme?  
you eat-ASP what

‘What did you eat?’

SgE is a result of language contact between SE and Chinese<sup>3</sup>. What would we expect to find in SgE with regards to wh-movement? If we assume the parameterisation of wh-movement, despite conflicting input to SgE grammar, we would expect that SgE would select for a particular setting of the wh-parameter: either movement or in-situ.

This is not what we find in its output. What we find instead, is a case of optionality with regards to wh-movement. Sentences such as (26) are perfectly fine, with the in-situ constructions not being echo questions:

- (26) a. You eat what?  
b. What you eat?

Thus, in order to develop an account of optional wh-movement, first and foremost, wh-movement must be an available strategy in SgE’s question formation. If it were not, then only a Chinese type wh-in-situ account would be available, and wh-movement must be accounted for by other means, such as topicalisation. The paradigm above can be further complicated with the inclusion of the particle *áh*. Essentially, we get a three way distinction between the way a question is formed with the use of a particle:

- (27) a. You eat what *áh*?  
b. What you eat *áh*?  
c. What *áh*, you eat?

‘What did you eat?’

If we contrast this with a similar question in MC, we see a parallel between (27a) and (28). Apart from the in-situ construction shown in (25), MC also allows for the optional use of a question particle. However, wh-fronting is obviously not available in MC, but it is in SgE:

- (28) ni chi-le shenme ne  
you eat-ASP what PRT  
‘What did you eat?’

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<sup>3</sup>I use the term Chinese here as a blanket term for MC and all its relevant dialects spoken in Singapore. I will abstract away from the differences between their dialects; as far as I know, the differences are superficial enough to be ignored. Given a personal lack of proficiency in the other Chinese dialects, it would simply not be feasible to conduct a fully extensive comparative cross-dialectal study. More importantly, given that today, most Chinese Singaporeans are predominantly bilingual in SgE and MC, I will assume that the MC input discussed here is sufficiently representative of all Chinese input.

In MC, *ne* is traditionally seen as a question particle; Cheng (1991) describes it as a wh-particle and is optional. Similarly, in SgE, we see a parallel, the use of an optional particle in questions. While it would be premature to say that both *āh* and *ne* perform similar functions in their respective languages, clearly, particles share a close relationship with questions in both languages.

Also, given that SgE is a topic-comment language, it would be worthwhile to consider the nature of the left periphery, given that questions are related to focus and that topicalisation is rampant in SgE. Effectively we need to identify if topicalisation is a valid strategy for wh-fronting in SgE. To show the extent of the topicalisation strategies employed in SgE, consider a text message that a friend of mine sent to me asking if he could bring his new laptop to my house and use it on my home network:

- (29) Yesterday I buy the laptop bring to your house can connect to network or not?

'Can I connect to the network if I bring the laptop that I bought yesterday to your house?'

We see topicalisation of object DPs as well as fronting of TPs in a relative clause construction (*yesterday I buy the laptop* 'the laptop that I bought yesterday'). Effectively, if we extend this analysis to wh-raised constructions, we can yield in-situ constructions through remnant movement. Because these strategies are possible, we cannot ignore this as a possibility and to make our case for optional wh-movement in SgE, we need to do two things: first, we need to determine the nature of the particles that are used in interrogatives, and second, we need to ascertain that SgE actually does possess wh-movement of the sort into [Spec,CP] and that wh-fronting in SgE is not a result of topicalisation. We will first consider question particles.

### 3.2.1 A variety of particles

SgE is arguably most well known for the usage of its numerous discourse particles. These particles, especially the ones associated with interrogative constructions, are important to our analysis of wh-constructions in SgE. I will argue that these particles are overt manifestations of question particles, not unlike those found in Chinese.

Cheng (1991) states that the purpose of syntactic wh-movement is to "type" a clause as an interrogative. Wh-in-situ languages lack the overt syntax to indicate that the clause is of the interrogative type and thus they require wh-particles in order to type it as such. Based on the principles of the economy of derivation by Chomsky (1995b), where the operation requiring

the “least effort” is preferred to that requiring greater effort, she then proceeds to conclude that no language uses both ways to type a wh-question. Therefore, question particles are predicted not to exist in wh-movement type languages. Cheng (1991) makes the following claim regarding in-situ languages.

- (30) In-situ languages have wh-particles. Languages with wh-particles are in-situ languages.

We do find particles in SgE which occur in interrogative contexts. The question is, whether these particles can be classified as question particles. If they are, then we are obliged to say that SgE is an in-situ language and that ex-situ constructions are a result of other motivations, rather than raising to [Spec,CP] because of EPP motivations, since doing so would render it a movement language instead.

However, considering the lineage that SgE has, namely that of SE where wh-movement is obligatory, and the increasing amount of SE influence on modern SgE speakers, can we truly abandon the idea that wh-fronted constructions in SgE are not cases of true wh-movement? We are somewhat faced with a paradox. Intuitively, and because of the dominance of wh-raising constructions, we want to say that SgE is a wh-raising language and account for wh-in-situ constructions along the grounds of presuppositional conditions. However, the free availability in-situ constructions pose a problem if C demands obligatory movement. The analysis that will be proposed is that question particles, much like the question operators proposed in Cheng and Rooryck (2000) and Mathieu (1999) can be used to satisfy the EPP features on C. Depending on whether the wh-word or the particle does this, overt wh-movement or wh-in-situ results. Ler (2006) summarises the basic features of discourse particles:

- (31)
- a. Syntactically optional
  - b. Multifunctional, operating on several linguistic levels
  - c. Generally non-truth-conditional
  - d. Expresses certain emotions/attitudes of the speaker
  - e. Contribute to procedural meaning

Let us briefly consider each of these points in turn, specifically with respect to question particles. Question particles and discourse particles are not one and the same thing, but at least with respect to a language like MC, question particles can also be used discoursally.

Firstly, it is true that particles are syntactically optional, as we saw in the introduction. However, saying something like this is slightly unclear, if we consider say a language like MC. In MC, the question particle is optional, however, when it is not present, we have to assume that a null particle exists to type the clause<sup>4</sup>, at least according to Cheng (1991). This reflects the difference between wh-particles which serve to type clauses and pure discourse particles. We need to modify this stipulation with regards to wh-particles to say that they are optional only in its overt syntax, but not necessarily on a level like LF. This will prove to be important, given that the particle fulfils a critical role for us, that of a variable over choice functions.

To say that particles operate on several levels is also true. It is well known that particles are not merely just syntactic phenomena, but also extend their influence into pragmatics. Furthermore, I will argue in the next chapter that question particles not only impact syntax and pragmatics, but in some cases, also extend their influence into phonology, where it conditions question intonation.

The truth-conditional semantics of particles are a little more tricky. While the case that they are non-truth-conditional can be made for discourse particles, it is unlikely that the same case can be made for questions particles, especially if they function as operators which bind wh-words<sup>5</sup>. I will not explore this issue in any great depth in this thesis.

We have said that particles have pragmatic uses, and thus the fourth point is also correct; as we shall see, particles that can be used in questions in SgE, can also be used in non-interrogative contexts to impart focus or to question presuppositions.

Finally, I am not fully clear what Ler means by saying that particles contribute to procedural meaning. We can take procedural meaning to mean two (related but distinct) things. Firstly it could be a conceptual versus computational relationship, or secondly, it could mean a semantics versus pragmatic distinction. We have established that particles do impact pragmatics, so we shall put that aside. The concept of computational load is another issue. What I assume this to mean is this: if the particles exist in syntax and are Merged because of the need of feature satisfaction/valuation, then these operations must contribute to procedural meaning. I will assume this to be true.

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<sup>4</sup>See Li (2006) for arguments against the standard classification of wh-question particles in Mandarin Chinese.

<sup>5</sup>Cable (2007) provides a compositional account for question particles in Tlingit, describing them as an element of the domain of choice functions.

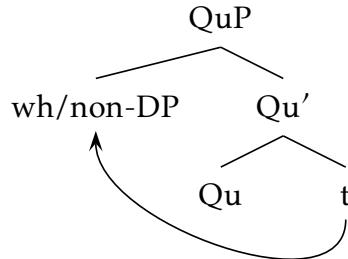
Let us now consider the particles in SgE within interrogative contexts. In SgE, there are several, we will take a look at the following:

- (32) a. *ah*, which comes in two varieties, used in wh-questions, declarative tag questions and non-interrogative topicalisation,
- b. *or not*, which is used in yes-no questions,
- c. *is it*, which is used in yes-no questions, but presupposes a “yes”,
- d. *meh*, which is used to question a presupposition,
- e. *leh*, used to highlight a comparison or contrast, or used to lend a *what about* meaning and
- f. *hor*, used to make an assertion or to garner support for a proposition.

We will focus mostly on *ah* and the yes/no particles *or not*, since these are the unmarked particles. The rest carry with them extra discourse affecting forces. The proposal for the syntax of particles will be able to be extended from these two cases to the rest.

The general proposal for particles will be that these particles take wh-phrases or (in the case of non-wh tag questions) non-DPs as their complements, yielding a larger constituent:

(33)



I use Qu to represent the question particle, and this can be phonologically realised or null. Qu itself possesses an EPP feature which raises the complement to its specifier to yield the correct word order. Of course, one could also speculate that we have instead that Qu is head-final. We will leave these issues aside till later.

### 3.2.2 *Ah*

*Ah* is a particle that generally comes in two flavours, one with a falling/low tone and the other with a rising tone. Lim (2007) describes these, using the Asianist tradition of labelling tones, where 5 represents a high tone and 1 a low tone. Number sequences show the starting and ending tone pitch:

... commonly found at the end of declaratives; if it has a mid fall or low pitch [21], a response is required from the interlocutor...

If the particle has a rise, however [24], then the question becomes rhetorical and is usually just to reiterate or check a fact with no response required from the interlocutor...

(Lim 2007:449)

The mid fall or low pitch particle will be labelled as *àh* while the rising one as *áh*. There are several points to add to Lim's description of the particle. By declaratives, Lim means that declaratives which possess this particle are transformed into questions. The point in question however, is that I feel that it is incorrect to state that questions formed with the rising *áh* are always rhetorical and do not require an answer from the interlocutor. The questions in the example below reflect questions which do require an answer. Most of the examples in this thesis will refer to the rising tone particle *áh*. Elsewhere in this thesis, if *áh* is unmarked without a diacritic, it is assumed to be rising *áh*.

### 3.2.2.1 Rising *áh*

We will consider the rising intonation/tone particle *áh* first in the above-mentioned paradigm repeated below:

- (34) a. You buy what *áh*?  
b. What you buy *áh*?  
c. What *áh*, you buy?

'What did you buy?'

In (34b), there is no prosodic pause after *what*, giving little evidence to consider such a construction as anything other than wh-movement. In fact, to include one would render the utterance downright ungrammatical. Interestingly however, when the particle occurs in a higher position between the wh-element and the subject, the sentence in (34c) does include a prosodic pause.

The point to note is that when wh-movement occurs, it seems to be able to either raise on its own, stranding the particle, or to seemingly "pied-pipe" the particle along with it as shown in (34c). This occurs with a prosodic pause, which gives rise to two possibilities: first, (34c) is a case of focussing and topicalisation whereas (34b) is not; the second option would be to say the prosodic pause is conditioned by the particle rather than topic or focus

movement. I assume the second case to be true, although this is speculative and much more work needs to be done to understand the syntax-prosody mappings involved.

The particle also works with wh-adjuncts. Let us consider *why* constructions with non-wh subjects and objects and following Ko (2005), assume that *why* which is the most likely to reside in [Spec,CP], even in wh-in-situ languages:

- (35) a. Why your car so fast áh?
  - b. Why áh, your car so fast?
  - c. \* Your car so fast why áh?
- ‘Why is your car so fast?’

We thus can establish two things: first, the particle can occurs between CP and TP as well in a (currently underdetermined) sentence-final position at surface structure and second, we can also establish that in-situ wh-adjuncts are also impossible in SgE. These issues will be taken up in greater detail later in this chapter. To further complicate matters, *áh* also comes in a non-interrogative version:

- (36) a. The food here áh, very good.
  - b. \* The food here very good áh.
- ‘The food here (pause), is very good.’

In this version, it appears to act as some sort of emphatic marker. Crucially, it is not able to appear sentence finally in a *non-interrogative*. In the case of (36b), it can only be interpreted as a tag question and also appears to be able to trigger topicalisation:

- (37) a. The food here very good áh?  
‘The food here is very good isn’t it?’
- b. [Very good áh]<sub>i</sub>, the food here t<sub>i</sub>?  
      c. [Very good]<sub>i</sub>, the food here t<sub>i</sub> áh?  
‘Very good isn’t it, the food here?’

The judgements are very subtle and I have tried to translate them as best I can. What is interesting is that in (37), we observe similar patterns of distribution of the particle as compared to the distribution that find in wh-questions. We can thus posit that the particle shares the same positions in (37) and in wh-questions, namely, in the C domain. To complete the paradigm, dislocation seems to be independent of whether it is used as a tag question or not.

- (38) a. He like apples.  
 b. Apples<sub>i</sub>, he like t<sub>i</sub>.  
 c. [Apples áh]<sub>i</sub>, he like t<sub>i</sub>.  
 ‘Apples, he likes.’  
 \*‘He (really) likes apples, doesn’t he?’  
 d. He like apples áh?  
 e. Apples, he like áh?  
 \*‘Apples, he likes.’  
 ‘He (really) likes apples, doesn’t he?’

The non-interrogative nature can be attested to by the insertion of an interrogative *áh*. Only (36) and (38) are able to accommodate the inclusion of another *áh*, turning them into tag questions. On the other hand (37) cannot take another interrogative *áh*, since it is already has one and is interrogative. I use *áh*<sub>1</sub> to denote the non-interrogative version and *áh*<sub>2</sub> to denote the interrogative version.

- (39) a. The food here áh<sub>1</sub>, very good áh<sub>2</sub>? (from 36a)  
 b. \* Very good áh<sub>2</sub>, the food here áh<sub>2</sub>? (from 37b)  
 ‘The food here, it’s very good isn’t it?’

Based on the distribution above, it appears that while the interrogative version of *áh* can appear in both positions in a sentence-final and non-sentence-final position, non-interrogative *áh* can only appear in non-sentence-final positions, even when attached to objects. Objects must dislocate and raise to a topic position. It also appears that only one instance of each version of the particle can appear in a clause.

There is also another issue. (38c) is not able to be interpreted as an interrogative, but (37b) is. This appears to be a restriction on the type of constituents which can front. If the particle fronts with a DP, it can only be interpreted as a topic. If, on the other hand, it fronts with a non-DP, it can only be interpreted as a question. We have shown the fronting of an AdvP above, the data below show VP and Adj fronting:

- (40) *VP-fronting*
- a. Your brother áh, run very fast.  
 ‘Your brother runs very fast.’  
 \*‘Your brother runs very fast, doesn’t he?’

- b. Run very fast áh, your brother?  
 \*‘Your brother runs very fast.’  
 ‘Your brother runs very fast, doesn’t he?’
- (41) *Adj-fronting*
- a. Your face áh, red.  
 ‘Your face is red.’  
 \*‘Your face is (really) red, isn’t it?’
  - b. Red áh, your face?  
 \*‘Your face is red.’  
 ‘Your face is (really) red, isn’t it?’

We know that the interrogative *áh* is in the C domain. From the topicalisation data, it further appears that it seems to form a constituent with the phrase that is dislocated, and depending on what the category of this constituent, a different functional head is projected. If it is a DP, a Top head projects, otherwise an interrogative C projects. Assuming this to be true for now, the question is, what pied-pipes what? The answer to this question will be the fundamental building block of the framework that we will propose. We turn now to the falling tone counterpart of the particle *ah*.

### 3.2.2.2 Falling *àh*

At the start of this section, it was mentioned that *àh* turns declaratives into questions. Example (42) is taken from Lim (2007):

- (42) A: Then you got to do those papers again àh?  
     ‘So, do you have to do those papers again?’  
     B1: No need.  
     ‘No, I don’t need to.’  
     B2: No, only a few.  
     ‘No, I only need to do a few papers again.’

The major difference between this particle and its rising tone counterpart *áh* is that it cannot be used in wh-questions:

- (43) a. \* You buy what àh?  
     b. \* What you buy àh?  
     c. \* What àh you buy?  
         ‘What did you buy?’

It can only be used to turn declaratives into yes/no questions which have a presupposed context. The nature of this context can be described as firstly, presupposing the truth of the question, and secondly, expressing disappointment or disdain. To form questions from declaratives, *àh* is inserted sentence-finally:

- (44) a. He like apples àh?
  - b. \* He àh, like apples? (topic reading ok)
  - c. ? Apples, he like àh? (topic reading ok)
  - d. \* Apples àh, he like? (only topic reading)
- ‘He likes apples?’

When *àh* is in a sentence-final position, it can always be interpreted as a question. However, there seems to be some oddness in constructions with a topicalised object DP and a sentence-final particle. When attached to a subject DP, it can only yield a topic and not a question reading<sup>6</sup>. It can also be used in topic-like constructions freely:

- (45) a. The food here very good àh.
- b. The food here àh, very good.
- c. Very good, the food here àh.
- d. Very good àh, the food here.

‘The food here is very good.’

---

<sup>6</sup>This is not completely accurate. I am not certain of the exact distribution here, but it seems attaching *àh* to subject DPs in equative sentences mitigate the ungrammaticality somewhat, and allow a question interpretation:

- (i) a. That man àh, (is) your brother?
- b. That man (is) your brother àh?

Contrast the examples above with the examples below. In the examples below, while (iia,c,d) are good, (iib) is quite bad, bordering on the ungrammatical. The subject DP has to be a full DP, requiring *this one* rather than just a demonstrative *this*, and more importantly, both DPs must be referring expressions.

- (ii) a. This (is) your car àh?
- b. ?? This àh, your car?
- c. This one àh, your car?
- d. Your car àh, this (one)?

However, this is further confounded by (iii).

- (iii) Yours àh, this one?

I am afraid that this is a puzzle that must be left unsolved here. These restrictions of course, as mentioned above, do not apply to non-DPs.

What is very interesting is that given the nature of the particle to be able to turn declaratives into yes/no questions, the constructions in (43) are mostly ambiguous. However, in this case, there are constraints. When attached to DPs, it does not readily form questions. Likewise when there is a dislocated non-DP constituent and the particle is not pied-piped and left sentence-finally, a question reading is hard to get. In the example above, only (45a,d) can receive question readings. However, like *áh*, when attached to non-DPs and fronted, question readings are readily possible. Substituting the particle in (40) and (41) for *àh*:

(46) *VP-fronting*

- a. Your brother *àh*, run very fast.  
 ‘Your brother runs very fast.’  
 \*‘Your brother runs very fast, doesn’t he?’
- b. Run very fast *àh*, your brother./?  
 ‘Your brother runs very fast.’  
 ‘Your brother runs very fast, doesn’t he?’

(47) *Adj-fronting*

- a. Your face *àh*, red.  
 ‘Your face is red.’  
 \*‘Your face is (really) red, isn’t it?’
- b. Red *àh*, your face./?  
 ‘Your face is red.’  
 ‘Your face is (really) red, isn’t it?’

The difference here as compared to (40) and (41) is that in the cases of VP and Adj fronting, the readings are still ambiguous.

The data shown here, though rather messy, makes it quite clear that in a non-wh scenario, these particles turn declaratives into yes/no question. This leads us to wonder about the true nature of the particle itself. To be more specific, consider the claim that “languages with special markings in yes-no questions are in-situ languages” (Cheng 1991:22). It seems that the particle seems to be a sort of special marking which imparts interrogative force, or typing a clause in Cheng’s terminology, which predicts SgE to be an in-situ language, contrary to fact.

Laden with presuppositions perhaps, but the constructions above are questions nonetheless. It leaves little doubt that these are overt manifestations of topic markers and yes/no question particles. What I will propose is

this: In the non-interrogative cases with topicalisation, the particle attaches itself to a DP and triggers raising into [Spec,TopP], while in questions, it attaches itself to a non-DP and raises into [Spec,CP]. This leaves us with the question of what the structural position is when the particle is in a sentence-final position. We will answer this question at the end of this section on particles.

To summarise, we have looked at a rather complicated distribution of the particle *ah*, in its two forms. I propose that interrogative *ah*, whether rising or falling are instantiations of Qu. The cases where *ah* is non-interrogative reflect a different but homophonous lexical item. This is not simply an ad hoc judgement. In MC, a similar strategy can be observed with the question particle *ne*:

- (48) ni mai-le shenme ne?  
       you buy-ASP what Q  
       'What did you buy?'
- (49) ni de lian ne, you dian hong  
       you DE face PRT have little red  
       '(As for) your face, it's a little red.'

As shown above, in (48), *ne* can be used as a question particle but crucially, in (49), the sentence can never be interpreted as a question. SgE adopts a somewhat similar strategy, with the added complication of being able to front wh-phrases as well.

### 3.2.3 Yes/no particles

Cheng (1991) discusses how MC uses particles in constructions of yes-no interrogatives, or for that matter, all wh-in-situ languages are proposed to have special markings in yes/no questions. In yes-no questions, MC uses either the *ma* particle or an A-not-A form by disjunction with *haishi* (*or*) followed by the eliding of the appropriate phonological material<sup>7</sup>. Both of these are deemed to be “special markings”, reflecting MC’s status as an in-situ language.

- (50) a. ni chi-le ma?  
       you eat-ASP Q  
       “Have you eaten?”

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<sup>7</sup>I am intentionally vague here. A full treatment of A-not-A constructions is too complex and beyond the scope of this thesis. See Hagstrom (2006) for a comprehensive treatment of A-not-A constructions.

- b. ni chi-le ~~haishi~~ mei **you chi**  
 you eat-ASP or not have eat  
 "Have you eaten (or not)?"

In SgE, a somewhat similar disjunctive strategy is adopted for constructing unmarked yes/no questions by simply adopting the use of an SE type disjunction *or not*. Unlike SE, subject-auxiliary inversion is not the canonical way of constructing yes/no questions in SgE; mostly because the auxiliary has very limited usage in SgE. Of course, this is not to say that an SAI question is not valid, it merely just sounds formal and standard.

The *or not* form is considered to be the unmarked form in SgE, often used alongside pro-drop<sup>8</sup> in (51a), the form with the particle *meh* is a marked form which questions a presupposition as shown in (51b)<sup>9</sup>, while the *is it*<sup>10</sup> form is described by Gupta (1994) as a “fossilised inversion interrogative”. Pragmatically, it is something akin to the “inverse” version of *meh*, it presupposes an affirmative answer to the yes/no question that is asked as shown in (51c). In other words, *meh* presupposes negatively while *is it* presupposes positively.

- (51) a. (You) eat already or not?  
 'Have you eaten?'  
 b. You eat already *meh*?  
 'You've eaten? (I thought you haven't)'  
 c. You eat already *is it*?  
 'You've eaten? (It looks like you have/I assume you have)

As mentioned above in 3.1.2, *already* is used to mark the perfect aspect in SgE. I will assume that it is adjoined to vP<sup>11</sup>. We can then conclude that *or not*, *meh* and *is it* are located in a higher position in the clause. The issue at

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<sup>8</sup>SgE is a prodrop language, see Wee (2003) for more information.

<sup>9</sup>It seems that pro-drop is not preferred (although not impossible) in the construction with the particle *meh*. At this point I am uncertain as to why this is the case. A postulation would be to say that *meh* constructions are questions with presupposed answers while *or not* constructions are the unmarked form, although I am not certain what bearing this has on the availability of pro-drop.

<sup>10</sup>It is important to note that *is it* in SgE is nothing at all like *is it* used to form tag questions in SE such as *It isn't hot today, is it?* In fact, such constructions would be bordering on the ungrammatical in SgE. It thus makes sense only to think of *is it* in SgE as a lexicalised Qu particle rather than anything else.

<sup>11</sup>It is also possible that *already* has its own aspectual projection or is an extension of the perfect aspectual projection of the SE clause structure. The reasons for believing this is so is that availability of constructions such as *I already eat already*, where one *already* functions as an aspectual adverb and while the other functions as perfective marker. I will put these issues aside here.

hand is what the relationship between these markers and the question particles is. Superficially, the markers in (51) appear to share the same position, but this is not the case. *Or not* can license the presence of the particle *áh* but *meh* and *is it* cannot. This is shown in (52). However, like wh-phrases, *or not* can only license *áh* and cannot license the other markers, as shown in (53).

- (52) a. (You) eat already or not áh?

‘Have you eaten?’

- b. \* You eat already meh áh?

‘You’ve eaten?’

- c. \* You eat already is it áh?

‘Have you eaten?’

- (53) a. \* You eat already or not meh?

‘Have you eaten?’

- b. \* You eat already or not is it?

‘Have you eaten?’

This leads us to conclude that firstly, *or not* does not share the same status as *meh* or *is it* and is not an instantiation of Qu. Rather, *or not* licenses *áh* in a similar way that wh-phrases do, while *meh* and *is it* are instantiations of Qu. Secondly, the licensing conditions of *áh* is different from *meh* and *is it*. *Áh* can only be licensed (apart from the tag question cases shown in the previous section) by wh-phrases and *or not*. Embedding these questions in (51) under a verb like *wonder* sheds some more light on the issue:

- (54) a. He wonders whether you eat already or not?

- b. He wonders whether you eat already or not áh?

‘He wonders whether you’ve eaten?’ (preferred reading)

A1: I haven’t.

‘Does he wonder whether you’ve eaten?’

A2: No, he doesn’t.

- (55) a. He wonders whether you eat already meh?

\*‘He wonders whether you’ve eaten?’

‘Does he wonder whether you’ve eaten?’

- b. He wonders whether you eat already or not meh?

\*‘He wonders whether you’ve eaten or not?’

‘Does he wonder whether you’ve eaten or not?’

- (56) a. He wonders whether you eat already is it?  
           '\*He wonders whether you've eaten?'  
           'Does he wonder whether you've eaten?'  
 b. He wonders whether you eat already or not is it?  
           '\*He wonders whether you've eaten or not?'  
           'Does he wonder whether you've eaten or not?'

Let us consider these cases one by one. In (54), what we find is that such a question is ambiguous in scope, with or without the particle, although the embedded scope reading is preferred. The reasons for these can only be explained when we establish the actual syntactic positions of Qu, since apart from providing interrogative force, it also an important part of the scope marking mechanism of questions. We will investigate these in detail over the next two chapters. Suffice to say at this point that the embedded reading comes about with Qu being interpreted in-situ and the matrix reading from Qu being in a higher position. This lends evidence to the proposal of Qu taking wh-phrases and in this case *or not* as its complement, forming a larger constituent and starting out in a lower position, rather than being independently motivated. The next two examples give more evidence for this.

(55) and (56) show other interesting facts. Firstly, they can only be interpreted as having matrix scope. Secondly, we see a co-occurrence of *or not* with *meh* and *is it*, proven to be ungrammatical in monoclausal constructions as shown in (53). Since their proximity in the right periphery is no indication of the syntactic position, this is further evidence that *or not* is merged in the embedded clause while *meh* and *is it* are merged high, as mentioned, *or not* cannot license these particles, making them impossible to be interpreted in an embedded position.

### 3.2.4 *Leh*

We will now consider the *leh* particle. Like the particles discussed in this section, *leh* is multifunctional. Wee (2004) describes the use of the *leh* particle as a pragmatic softener, signifying that a particular assertion it is attached to is tentative or that it expresses a weak opening. The use of the particle in this manner is often uttered low tone. This is not the function that we are concerned with. This particle can also be used in the formation of questions. When used in this way, it is uttered with a high pitch, "usually a step-up from the pitch of the previous syllable" and is used to highlight a

comparison or contrast, or used to lend a *what about* meaning (Lim 2007). Consider a case where speaker A sees speaker B without his mobile phone. Speaker A can utter (57):

- (57) Your handphone leh?  
‘Where is your mobile phone?’

Such a use is also observed in MC, with the use of the *ne* particle:

- (58) ni de shouji ne?  
you DE mobile phone Q  
‘Where is your mobile phone?’

As mentioned, *leh* can also be used to express a “what about” meaning. Consider Speaker A tells Speaker B that John, Mary and Jill are coming to a party. But Michael, who usually comes with them is not. Speaker B can utter (59).

- (59) Michael leh?  
‘What about Michael?’

The particle can also be used as a question marker for comparison as Lim (2007) describes, shown below:

- (60) My parents very old fashion àh? Then your parents leh?  
‘Are you saying that my parents are old-fashioned? Then what about your parents?’

*Leh* cannot usually co-occur with wh-phrases, unless the wh-phrase is explicitly *what about*:

- (61) a. \*Where your handphone leh?  
b. \*Your handphone where leh?  
(62) What about Michael leh?  
‘What about Michael?’

*Leh* also cannot co-occur with other particles:

- (63) a. What about Michael áh?  
b. \* What about Michael áh leh?  
‘What about Michael?’

(63a) and (62) show the particles *áh* and *leh* in complementary distribution; the former is licensed since *what about* is a wh-phrase. The reasonable conclusion here to make would that all the interrogative particles discussed so far, apart from *or not* (which is not inherently interrogative) share the same sentence-final syntactic position.

### 3.2.5 *Hor*

We have one final particle to discuss, the *hor* particle. Lim (2007) describes this as marking a declarative assertion, turning it into a question and trying to garner support for that proposition. Consider the example that Lim uses:

- (64) A: I bought a Prada wallet yesterday.  
B: You are very rich hor?  
'You are very rich, aren't you?'

*Hor* can only occur in declarative sentences, turning them into questions making it rather similar to the use of *ah* in tag questions. *Hor* can never occur in wh- or polar interrogatives, So, (64b) would simply be a declarative clause without the particle.

- (65) a. \*You eating what hor?  
b. \*What you eating hor?  
c. \*You going or not hor?

Multiple wh-particles are also not permitted, and the availability of the substitution of *hor* for other particles reflect once again that they are likely to share the same syntactic position:

- (66) a. \* You very rich àh hor?  
b. You very rich áh?  
c. You very rich meh?  
'You're very rich aren't you?'

So far we have examined several particles in SgE that can be used in the formation of questions. At many points, the discussion of the function of these particles have been intentionally left vague and partial, since a full treatment of their discourse functions are still pending. Interested readers are referred to the references cited in this section for more information. In this thesis, we are less concerned with the fine-grained nuances of their discourse properties and more concerned with their syntax and their ability to license optional wh-movement.

## 3.3 The position of particles

In the previous section, the question particles have been mostly shown to be in sentence final positions. In the case of preposing and wh-fronting,

they have also been shown to be attached to the right of the respective constituents such as topics and wh-phrases. This has led us to conclude that these particles can take certain constituents as their complements and following that, are able to trigger pied-piping and preposing. Before we are able to proceed any further with our analysis, we first need to decide where these particles reside.

We know that these particles end up in a position higher than vP, since they occur to the right of the right-adjoined perfective marker *already*. We also know that these particles are mostly interpreted with matrix scope. Given also that the CP is the locus of discourse function, it is not unreasonable to posit that the particles are located in a high position within the CP layer. Rizzi (1997), in his discussion of the left periphery, has this to say:

We can think of the complementizer system as the interface between a propositional content (expressed by the IP) and the superordinate structure (a higher clause or, possibly, the articulation of discourse, if we consider a root clause).

(Rizzi 1997:283)

In light of this, one could posit that particles are in a high position of the CP layer, perhaps in a head-final configuration above, with the particle functioning as either the head or as a specifier of such a functional projection. Recent work however, proves that this is not a straightforward issue. Languages tend not to be frivolous when it comes to headedness. For a head-initial language like English, or SgE for that matter, one would not expect a head-final projection to dominate head-initial ones. This was captured in an observation by Holmberg (2000a), which has come to be known as the Final-Over-Final Constraint (FOFC).

(67) The Final-Over-Final Constraint (FOFC)

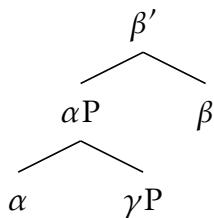
If a phrase  $\alpha$  is head-initial, then the phrase  $\beta$  immediately dominating  $\alpha$  is head initial. If  $\alpha$  is head-final,  $\beta$  can be head-final or head-initial. (Holmberg 2000a:124)

Given that the FOFC appears to be a empirically supported universal constraint on word order, the data presented in SgE is a contributor to apparent counterexamples. Determining the position of the question particles in SgE therefore, cannot be undertaken without recourse to the work that has been done from the view of the FOFC.

### 3.3.1 FOFC and its predictions

The FOFC predicts that constructions in configurations of the type shown in (68) are impossible.

(68) \*



We mentioned above that discourse and question particles should be seen as part of the CP layer. If this is the case, the constraint just shown applies and predicts sentence final particles to be impossible if they are head-final Cs that take head-initial clauses as their complements. The issue of particles and their respective FOFC violating positions are still a subject of much debate; however, BHR (Biberauer, Holmberg, and Roberts 2008) propose to modify the FOFC to apply to categories which are non-distinct. The problem of sentence-final particles in MC is thus mitigated if there is a categorial difference between the C particles and the clause that it dominates.

Such a postulation however, is not always possible. MC possesses VP-final aspect particles, as does SgE, which uses *already*:

(69) wo chi-fan le

I eat-rice ASP

'I have eaten.'

(70) I eat already.

'I have eaten.'

It would be virtually impossible to account for this by appealing to the fact that the verb and aspectual marker/particle are categorically distinct if we consider aspectual heads to be exponents of the vP layer. In fact, SgE possesses many aspects which appear to be outright violations of the FOFC. As mentioned above, FOFC predicts that no VO language should possess final complementisers. Apart from issues discussed above about SgE, it was also briefly mentioned in 3.1.2 that relative clause constructions in SgE are able to take final complementiser like particles. This is repeated below:

(71) a. the man who/that sell sweets

b. the man sell sweets one

c. the man who/that sell sweets one

This is similar to the circumpositional structures found in German, as noted in BHR:

- (72) auf den Berg hinauf  
 up the-textscacc mountain DIR-up  
 ‘up onto the mountain’

Most of the work on particles within the FOFC are discourse and yes/no particles. The problem at hand is further complicated in the case of question particles which are used in wh-questions, especially so if the language is one which possesses overt wh-movement, as in SgE:

- (73) a. What you eat ah?  
 b. What ah you eat?

Such a word order is especially problematic, given that the same particle can occur in both sentence-final and second position but crucially, not sentence-intially. However, there is one case for Hindi-Urdu and Marathi as observed by Biberauer et al. (2009), citing Davison (2007) that appears to be similar to the circumpositional relative clause construction in SgE. In Hindi-Urdu, initial polarity heads disallow final complementisers, while in Marathi, which has a final polarity head, allows both initial and final complementisers.

- (74) Hindi-Urdu
- a. **kyaa** aap wahaaN aa-be-Ngii?  
 POL you there go-FUT-2PL  
 ‘Are you going there’
- (Davison 2007:182)
- b. \* use [[vee aa rahee haiN] **yah/kah-kar** maaluum hai  
 3SG-DAT 3PL come PROG are this/say-PART known is  
 ‘He/she knows [that they are coming].’
- (Davison 2007:178)

- (75) Marathi
- a. [[to kal parat aalaa **kaa(y)] mhaaNun asa]  
 he yesterday back come.PST.3M.SG POL QUOT such  
 raam malaa witSaarat hotaa  
 Ram I.DAT ask-PROG be.PST.3M.SG  
 ‘Ram was asking me [whether/if he came back yesterday].’**

- b. raam maalaa witSaarat hotaa [ki to kal parat  
 Ram I.DAT ask.PROG be.PST.3M.SG that he yesterday back  
 aalaa kaa(y)]  
 come.PST.3M.SG POL  
 'Ram was asking me [whether/if he came back yesterday].'  
 (Davison 2007:184, attributed to R. Pandharipande)

Since SgE allows for final yes/no question markers (cf. (51)), the initial and final complementisers are predicted, as in the case of Marathi. Putting aside the issue of the relative clause construction in SgE, this still fails, however, to predict the case of (73b), where the particle is in second position. It appears that regardless of the approach we adopt towards particles, they seem to fail.

Bailey (2010), who considers the problem of yes/no question particles in VO languages rejects two current accounts for the position of particles. She shows, using data from the World Atlas of Language Structures (WALS, Haspelmath et al. 2008), show that both OV and VO languages have a preference for sentence final particles, an unexpected situation, given FOFC. The first approach that is rejected, is the head final position for particles, as discussed above. The second approach, which involves a head-initial particle followed by remnant movement of its complement, is also rejected, because remnant movement involves the movement of a head-initial phrase with no EPP feature on its head to the specifier of one which does have an EPP. To clarify, it was stated above the the FOFC was modified in Biberauer et al. (2008) to apply to non-distinct categories. Since one of the key assumptions of FOFC revolves around appealing to the Linear Correspondence Axiom (LCA) of Kayne (1994), head final structures are derived through roll-up movement. As such, (76) is the generalisation that captures FOFC.

#### (76) FOFC Generalisation

If a phase head PH has an EPP feature, then all heads in its complement domain from which it is non-distinct in categorial features must have an EPP feature. (Biberauer et al. 2008:102)

A structure that involves TP movement is untenable because “those featuring a head-initial TP, but final CP [require] the head-initial VP to [raise] to [Spec,CP]” (Biberauer et al. 2008:102). Given the PIC, the head-initial VP will have already been spelled out when the vP is completed, leaving only T, v and its edge available for further movement. BHR note however, that what is essential to this analysis is the fact that the processes that determine

the linearisation of head-final constructions are different from the processes that trigger Ā-movement, of the sort such as VP-fronting in VO languages.

In order to get around these issues, Bailey (2010) proposes that question particles are in fact head-initial. Appealing to the fact that yes/no question particles are often seen to be identical to the disjunction marker (Jayaseelan 2008) in Malayalam, Sinhalese and Japanese:

(77) Malayalam

- a. John-oo Bill-oo Peter-oo wannu  
John-DISJ Bill-DISJ Peter-DISJ came  
'John or Bill or Peter came.'
- b. Mary wannu-oo?  
Mary came-Q  
'Did Mary come?'

(78) Sinhala<sup>12</sup>

- a. Mahattee-ta tee da koopi da oone?  
mister-DAT tea DISJ coffee DISJ necessary  
'Does the mister want tea or coffee?'
- b. Chitra ee pota kieuwa da?  
Chitra this book read Q  
'Did Chitra read this book?'

(79) Japanese

- a. John-ka Bill-(ka)-ga hon-o katta  
John-DISJ Bill-DISJ-NOM books-ACC bought  
'John or Bill bought books.'
- b. Dare-ga kimasu-ka?  
who-NOM come-Q  
'Who's coming?'

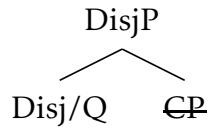
(Jayaseelan 2008:3ff)

Thus, the conclusion is that these yes/no particles are instantiations of disjunction. Following Aldridge (to appear), who provides a historical account for the yes/no particle *ma* in MC, where over time, head movement of the negative auxiliary (which *ma* is etymologically related to) to the head of the dominating disjunction phrase took place, followed by the acquisition of Q features originally on the disjunction led to its present day status. The general structure for the particle is as follows:

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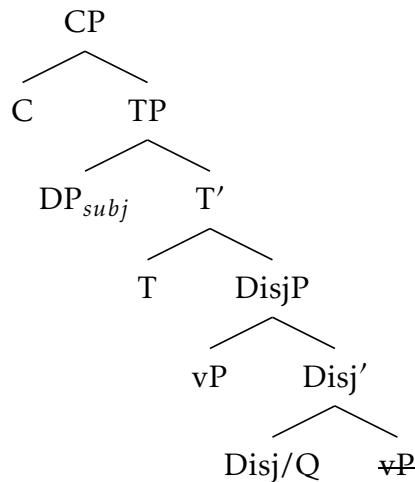
<sup>12</sup>Jayaseelan glosses *da* as *d@*, with @ representing a schwa. I have simply used *da* here to be consistent with the other literature I will cite later.

(80)



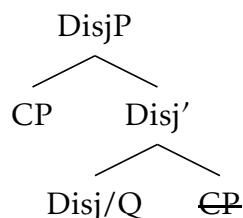
Bailey (2010) does not make clear where the pronounced CP is. Presumably it is in [Spec,DisjP]. If so, it is still unclear whether the elided CP is the first clause to be built up then elided after Disj takes it as its complement or whether the particle itself enters the derivation with a CP already elided and the pronounced CP built as its specifier. By contrast, Aldridge's proposal for MC works along the lines of (81), adapted and shown below:

(81)



Bailey's approach shows Disj taking a CP as its complement which means that the non-elided portion, that is, the uttered question minus the particle must be in the specifier of DisjP:

(82)



If instead this was the case, then DisjP' cannot be merged as a block, since nothing takes it as a complement. Rather, the derivation must be built step-wise from the elided CP and then phonologically elided. Essentially, two CPs are built; Disj takes one as its complement and another as its specifier and elides the complement. These are technical issues which are most probably an artifact of my (mis)understanding of Bailey. What is important however, is the fact that the conclusion that Aldridge draws is drastically different. Aldridge proposes that over time, a lack of learner input that a

disjunction exists in Chinese yes/no questions leading learners to analyse [Spec,DisjP] as the *complement* of Disj, yielding a head-final structure. The explanation as to why this does not constitute a FOFC violation is because of what Biberauer et al. (2009) say with regards to particles, that they are categorically deficient and are not able to project FOFC-violating structures. In short, this is a exception to FOFC-violating head-final over head-initial rule.

Bailey actually briefly suggests this as a hypothesis (Bailey 2010:35), and that they may actually have <sup>^</sup> (a linearisation diacritic signalling complement-to-specifier movement, abiding by the LCA) regardless of whether the lower heads that they dominate possess them or not. If this is true and unlike what Aldridge claims, particles instead take clauses as their complements and trigger raising into their specifiers; this brings us back to a remnant movement type analysis. Both of these analyses have already been shown to be rejected above.

Bailey makes another interesting proposal, following Cardinaletti (2008) that that particals are not functional heads, but are rather located in specifiers of functional projections. Bailey observes that such an approach could be tenable for the situations discussed above, where particles are closely related to other functional items, such as disjunction, in that in their particle manifestation, they do not project FOFC-violating structures.

None of these analyses are by their nature unattractive, each of them surely has their merit. However, in the grand scheme of things, it appears that we have made little headway with regards to these problematic particles. Furthermore if we extend our scope of inquiry to that of wh-particles, things become even more complicated. It would be difficult to come up with any convincing argument as to how sentence-final wh-particles are instantiations of negation or disjunction<sup>13</sup>. Unlike cases of yes/no questions, which by nature of their semantics are results of operations over binary answer sets, wh-questions operate over answer sets of arbitrary cardinality. Given this, I propose that a possibly feasible solution would be one which takes all of these approaches into account, and to essentially provide some sort of hybrid analysis. We turn to this now.

### 3.3.2 The QuP hypothesis

So far, what we do know is that particles are generally recalcitrant when it comes to the FOFC. They have resisted attempts to be analysed in various

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<sup>13</sup>Although I say this here, we do make some efforts in Chapter 5 and 6 to unify particles as a whole.

ways. However, I believe that we can make some progress with regards to this issue if we consider some of the SgE data presented above. Firstly let us consider a simple English yes/no question:

- (83)  $\emptyset_{WH}$  are you coming?

Radford (2004), following Grimshaw (1993) and Roberts (1993), propose that a null question operator is base-generated in [Spec,CP], checking wh and EPP features on C. Let us represent this by  $\emptyset_{WH}$ . Assuming this to be the case, consider a similar question in MC and SgE:

- (84) Mandarin Chinese

- a. ni lai ma?  
you come Q
- b. ni lai bu?  
you come NEG  
'Are you coming?'

- (85) SgE

- a. You coming (or not) áh?
- b. You coming àh?
- c. You coming meh?  
'Are you coming?'

Abstracting away from the presuppositions that come with the use of different particles in SgE, what we find is that in all these cases, declarative sentences are transformed into yes/no questions. Regardless of whether we want to consider these as cases of elided disjunctions, it is clear that all these constructions have something in common: particles in MC/SgE and the null operator  $\emptyset_{WH}$  in SE.

What I propose is that the use of null operators or particles (or particles which are operators) is a linguistically universal phenomenon. In the case of SE, the operator is initial, resulting in no FOFC violation. In SgE and MC however, they are final, apparently violating FOFC. Until their true nature is uncovered, I believe that part of the reason why they appear to be able to violate FOFC is because of PF effects. Specifically, question particles are able to condition the intonation of questions. The exact nature of this conditioning is unclear, but in the previous chapter, we have looked at a great deal of wh-in-situ constructions and all appear to possess special rising intonation. Also, Cheng and Rooryck (2000) propose that their Q-morpheme analysis for French is also an intonational morpheme; the link

between question operators/particles and intonation is a notion that has been entertained. Consider (83), which can be uttered without an auxiliary and with rising intonation:

- (86) You coming↑?

As far back as Hirst (1983), the conception of a tonal morpheme has been proposed which yields interpretation at LF. He cites the following examples in the Cameroun language Basaa, which uses in interrogatives, a low toned particle in words that end in a consonant and assimilates to a final fall in words ends in an open syllable:

- (87) a. mɛ ïkon

I ill

'I am ill.'

- b. mɛ ïkonè

I ill-Q

'Am I ill?'

- (88) a. mɛ ɳtí

I gave

'I gave.'

- b. mɛ ɳtíì

I gave-Q

'Did I give?'

These tonal morphemes, Hirst claims, are not applicable to English, since the rising question intonation results in ungrammaticality in (9ob).

- (89) a. Did he buy something?

- b. Did he buy anything?

- (90) a. He bought something↑?

- b. \* He bought anything↑?

Hirst thus believes these to "show conclusively" that these are not syntactic questions. However, this is untrue. Uttering (9ob) with a null subject or licensing the NPI *anything* with negation seems to be fine:

- (91) a. Bought anything↑?

- b. He didn't buy anything↑?

I do not fully understand why (9ob) is ungrammatical, given that *anything* is an NPI and requires licensing by either a Neg element or a question. While I do not have a conclusive answer to this problem, my hunch is that (9ob) is ambiguous between an interrogative and declarative reading whereas (89b) and (91a) are not, while (91b) has a Neg licensor.

Whatever the ultimate answer may be, it is well known that yes/no and wh-in-situ have special intonation properties; declaratives are able to express interrogative force by virtue of a different intonation, such as the rising intonation in English yes/no questions. Since there is overt syntax, there is no clear lexical item that distinguishes between a declarative and an interrogative in languages that do not have yes/no particles, one might suspect that there is an invisible element which contributes to the interrogative force. In the languages that do have these particles, it would not be unreasonable to say that these are the non-null counterparts to the invisible elements mentioned.

Following this, it is mostly likely the case that the intonation that distinguishes between a declarative and an interrogative is a result of either the phonologically null or overt (in languages that have them) particle being sent to the interfaces. When interpreted at LF, the particle imparts interrogative force, and at PF, establishes its intonation. To suppose further, it could also be that intonational conditioning effect the particle has on the output would have an impact on determining its surface position when linearised. This could be clear in some cases, as in the Basaa examples in (87) which imparts a falling tone, or a final rising intonation in languages like English.

This is of course an overly simplistic argument, as there is no one-to-one mapping of structural position to intonation. This issue I will leave open for further study, but it would be interesting to investigate if there are correlations between the (hypothetical) position of the question particle and its effects on intonation contours. This is not to say of course, that the linearisation of particles exclusively belongs in the realm of PF, as is also noted by Biberauer and Sheehan (2010); for example, initial question particles disallow final complementisers but the converse seems to be untrue, since final particles are common in VO languages.

Although particles are also subject to the core rules of narrow syntax, perhaps the apparent violation of the FOFC could be an artifact of the high level of PF influence involved, which is expressed as a preference for a particular position for question particles. One could further speculate that since this is a FOFC violating structure, maybe as a reflex of economy to move as little as possible or to minimise FOFC violations, this could explain

why particles predominantly tend to be monosyllabic and phonologically light.

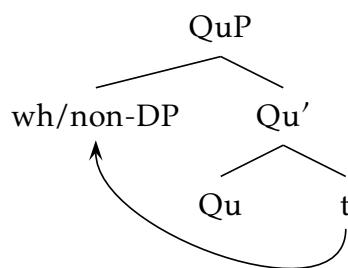
WALS (Haspelmath et al. 2008) reports out of 777 languages, 309 languages do not have particles, 118 have initial particles, 273 have final particles, while the rest have particles in other positions. When the position of polar question particles and word order are cross-referenced in WALS, out of 287 SVO languages displayed, 106 languages have final particles while 138 languages do not have particles. Out of 242 SOV languages displayed, 110 have final particles and 75 have no particles. This shows that in languages which do use question particles, the majority have a preference for a sentence-final position. These empirical facts warrant a serious investigation into the issue of particle position with respect to the FOFC.

I will not attempt to solve the FOFC violation problem here, but will speculate briefly. My proposal is this: particles can end up in a sentence final position, but could well be merged into the derivation elsewhere. There are several key factors involved. In order for particles to escape FOFC violations, recall that one of the proposals made above for particles (Bailey 2010; Biberauer et al. 2009) is that they are non-categorical and as a result, FOFC does not apply. However, in light of the data in SgE, where we can have question particles in a sentence final position or on the immediate right of a wh-phrase or preposed constituent (also found in MC), it appears that if we want to move towards developing a universal account of particles in general, writing them off as being completely categorically deficient might not be the best way to proceed, especially if it turns out that they end up being goals for probes.

This is where the hybrid analysis comes in. I will however, need to depart from the LCA in assuming that syntax follows a strict specifier-head-complement linear order, at least for this case. I propose that the sentence final position that particles are in a specifier position, something which Cardinaletti (2008) also suggests. The difference is that for my analysis, the specifier is on the right, and likewise, the head that projects this specifier is truly head-final. Let us call this head Prt. Given the discussion of PF effects above, Prt is categorically deficient, since it is the locus of particle influenced intonation. This deficiency allows it to escape FOFC violations, along the lines of what Aldridge (to appear) proposes for *ma* in MC. The particle itself is not deficient, for reasons that will soon be made clear. Assuming the Prt head does not incur a FOFC violation, if the particle is base-generated in a non-FOFC violating position and moves into [Spec,PrtP], it should not violate FOFC. Suppose next that the particle is able to take com-

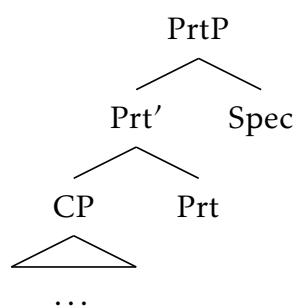
plements; specifically, in the case of wh-questions, it takes wh-phrases as complements (recall (33) earlier in this chapter), repeated below:

(33)



In languages which do allow for sentence-final particles, Prt is available in the lexicon and is merged head-finally on top of CP:

(92)



Obviously, this argument rests on the fact that the particle has a large enough impact on PF to warrant its “special” status allowing it to circumvent the FOFC. However, given the fact that intonation in itself is sufficient to distinguish between declaratives and interrogatives in some languages that have no particles, I will pursue this line of thinking throughout this thesis and assume the given position for Prt as shown above. Of course, the strength of this argument increases further if some relationship can be established between linear positions of particles and intonational effects. We may not know very much here, pending further research; what we do know however is that there are probably several other factors at play here, most of which we do not fully grasp as yet.

To recapitulate, what is being said here is that head-final Prt is a violation of FOFC, although this violation can either be taken to be an exception which must be motivated for by independent, perhaps PF reasons or suppressed by categorical deficiency. The particle itself is not categorically deficient and moves into the specifier of Prt and in itself does not constitute a FOFC violation. When the particle takes a complement to form a complex wh-phrase for example, it does not violate FOFC, by means of complement-to-specifier movement as shown in (91).

Consequently, [Spec,PrtP] functions as an escape hatch to allow the particle to be separated from the wh-phrase as is the case in SgE. I have thus presented the first fundamental pillar of my analysis for optional wh-movement, the QuP hypothesis. This hypothesis comes in two parts: first, particles take wh-phrases as their complements and second, the availability of a head-final PrtP projection which allows particles to end up in sentence-final position. Presumably, Prt can be seen as some part of an articulated CP layer or a functional head that takes CP as its complement. The precise workings that drives all of this will be explained in the next chapter.

### 3.4 Question Formation in SgE

The formation of questions in SgE exhibit two properties which differ from its Standard English (SE) superstrate. The first is the option of leaving wh-words in-situ, a phenomena also found in SE, although it happens much more frequently in SgE. The second is not found in SE<sup>14</sup> at all, which is the use of question particles. Question particles can be used to form both yes/no and wh-questions; the former has been investigated in the previous section, this section will focus on the latter.

The main puzzle that faces us is that wh-question formation with the use of a particle can exhibit a three way distinction: 1) in-situ wh-phrase and sentence-final particle, 2) fronted wh-phrase, sentence-final particle and 3) fronted wh-word and particle following the wh-phrase. However, what we do not find is the presence of a fronted (sentence initial) particle and an in-situ wh-phrase. The data presented in this section will either be extracted from existing literature on SgE, or will be constructions that have been agreed upon to be grammatical by myself and other speakers of SgE. Due to a great amount of speaker variation, there will be cases where certain constructions will be grammatical by some speakers and ungrammatical for others. It will be mentioned when such a situation arises.

Optional wh-movement in SgE has not been studied extensively, although it has been observed (Gupta 1994; Bao 2001). Gupta (1994) studies the acquisition of SgE interrogatives in children and the acquisition data is also briefly alluded to in Yip and Matthews (2007), who study bilingual acquisition of Cantonese-English speaking children in Hong Kong and expectedly, given similar Chinese-type substrate influence also find optional wh-movement in children. The only formal analysis that I know of is by Kim

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<sup>14</sup>We could of course consider sentence final tags in tag questions to be instances of question particles. If so, the tag is Qu and is base generated in [Spec,CP] and raised to [Spec,PrtP].

et al. (2009), who note that wh-movement is optional for wh-arguments but obligatory for wh-adjuncts. This claim is not completely accurate, as we shall see in the sections below.

### 3.4.1 Wh-arguments

As mentioned previously, in SgE, wh-arguments such as *what*, *who* and *where* show optional fronting and behave in a similar fashion. The use of the particle is also optional. As far as I know, there are no differences in behaviour between these three different wh-words. (34) is repeated below:

- (34) a. You buy what áh?  
b. What you buy áh?  
c. What áh, you buy?  
'What did you buy?'

In order make any claim about the optionality of wh-movement in SgE, we need to ascertain that the cases of fronted wh-phrases in SgE are truly cases of standard wh-movement to [Spec,CP] rather than topicalisation or clefting.

#### 3.4.1.1 No topicalisation or clefting

When an overt complementiser such as *that*, *if* or *whether* is present, raising of the wh-phrase to embedded [Spec,CP] is ungrammatical, obeying the Doubly Filled Comp Filter (DFCF), as is the case in SE. If left in-situ, the sentence is also grammatical. If raised to [Spec,CP] of the matrix clause, it is also grammatical, as is the case in SE. I omit the question particles here for convenience, since it is not our focus at the moment. However, if present, its distribution follows the same paradigm as described above, either in a final position or raised with the wh-phrase.

- (93) a. \* Mary know what that/if/whether he buy?  
b. Mary know that/if/whether he buy what?  
c. What Mary know that/if/whether he buy?

As mentioned previously, SgE is known to be a so called “topic-comment” language, and uses topicalisation productively as part of its discourse strategy. However, moving the wh-phrase to a topic position between CP and TP is ungrammatical. We can test this by again using the overt complementisers above, this time with the wh-phrase following the complementiser and preceding the subject. A similar pattern to (93) is exhibited:

- (94) Mary know that the book John bought yesterday.
- (95) a. \* Mary know that what John bought yesterday?
- b. \* Mary know that what ah John bought yesterday?
- c. You know that John bought what yesterday?
- d. What you know that John bought yesterday?

The topic position between CP and TP is available for DPs that can be topicalised as shown in (94), but is not available for wh-phrases, with or without a particle. Even given the fact that these particles are able to function as triggers for topicalisation as shown in 3.2.2, they are not able to perform such a function here.

Wh-raised constructions in SgE are not clefts either, as is the case in languages like Egyptian Arabic and Bahasa Indonesia. Cheng (1991) cites examples from these languages (citing Wahba (1984) for Egyptian Arabic and Saddy (1990) for Bahasa Indonesia) as arguments against optional wh-movement, shown below:

- (96) Egyptian Arabic
  - a. Fariid hawil yi'mil eeh?  
Fariid tried to-do what  
'What did Fariid try to do?'
  - b. Miin illi Mona darabit-uh  
who that Mona hit-him  
'Who did Mona hit?'
- (97) Bahasa Indonesia
  - a. Sally men-cintai siapa?  
Sally loves who  
'Who does Sally love?'
  - b. Siapa yang Sally cintai?  
who that Sally love  
'Who does Sally love?'

The central argument that Cheng (1991) makes against the fact that Egyptian Arabic and Bahasa Indonesia are optionally wh-fronting languages is based on the fact that in fronted constructions, they employ the use of a complementiser *illi* and *yang* 'that', which are also in relative clause and cleft constructions.

This does not apply to SgE. As shown, the DCFC disallows the fronting of wh-phrases to the specifier of *that*. Strategies similar to SE are employed in SgE to form such constructions:

- (98) a. What is it that you buy ah?  
       b. What is it ah that you buy?

There is little else to say here. We now turn to island constraints.

### 3.4.1.2 Islands and interveners

Island constraints apply when it comes to the extraction of wh-phrases in SgE, as they do in SE. The presence of particles do not mitigate island violations:

- (99) Adjunct Islands
- a. \* What John is broke [because he buy t]?
  - b. \* What John is broke [because he buy t] ah?
  - c. \* What ah John is broke [because he buy t]?
- ‘John is broke because he bought what?’
- (100) Complex-NP Constraint
- a. \* What Mary say John like [the man that bought t]?
  - b. \* What Mary say John like [the man that bought t] ah?
  - c. \* What ah Mary say John like [the man that bought t]?
- ‘Mary said that John likes the man that bought what?’
- (101) Wh-islands
- a. \* What Mary wonder [where John buy t]?
  - b. \* What Mary wonder [where John buy t] ah?
  - c. \* What ah Mary wonder [where John buy t]?
- ‘Mary wonders where John bought what?’

The data shown above proves that the extraction of wh-phrases from islands is impossible, a hallmark of overt wh-movement. Recall that this was also an argument against the remnant movement analysis of wh-in-situ. On the other hand, when wh-phrases are left in-situ, the sentences are all grammatical:

- (102) John is broke because he buy what ah?  
       (103) Mary say John like the man that bought what ah?  
       (104) Mary wonder where John buy what ah?

With in-situ constructions, similar to in-situ languages like MC, constructions in SgE do not display intervention effects of the sort shown in French.

If an auxiliary is present, wh-movement obligatorily triggers inversion. Questions without inversion are bordering on the ungrammatical. Note also the varying positions of the particle:

(105) Negation

- a. John didn't buy what ah?
- b. \* Didn't John buy what ah?
- c. What didn't John buy ah?
- d. What ah didn't John buy?
- e. ?? What John didn't buy ah?
- f. ?? What ah John didn't buy?

(106) Adverbs of Quantification

- a. John always do what ah on Sunday?
- b. John always do what on Sunday ah?
- c. What John always do ah on Sunday?
- d. What John always do on Sunday ah?
- e. What ah John always do on Sunday?

(107) Quantified Subjects

- a. Everybody like what ah?
- b. What everybody like ah?
- c. What ah everybody like?

'What is  $x$  such that everybody likes  $x$ ?'

'For pairs  $\langle x, y \rangle$ , what is  $y$  such that every  $x$  likes  $y$ ?'

In-situ constructions do not display intervention effects, and with quantified subjects, both wide and narrow scope readings are possible. The particle contributes to the scope assignment mechanism in SgE, allowing in-situ wh-phrases to be interpreted with wide scope without need for LF movement. Again, this will be explained in the next chapter when we analyse the syntax of these constructions.

With tensed verbs, the usage of the auxiliary is mostly optional in in-situ constructions.

- (108)
- a. John going to study what?
  - b. What John going to study?
  - c. John is going to study what?
  - d. What is John going to study?

- e. \* What John is going to study?
  - ‘What is John going to study?’
- (109) a. John has been doing what?
- b. ? John been doing what?

A similar case applies for inversion, all my informants prefer inversion when wh-movement occurs. However, as also noted by Fong (2004), speaker judgements vary when it comes to wh-movement without inversion, although the number of speakers that find wh-movement without inversion impossible exceed those that permit it. The exact distribution of auxiliaries is rather complex and beyond the scope of this thesis; interested readers are directed to Fong (2004).

To close this section we will discuss the case of preposition stranding in SgE. While not exactly an island constraint, as a prepositional object, *what* can also occur in-situ or with fronting, with the availability of preposition-stranding strategies as found in SE:

- (110) a. You stuck with what ah?
- b. What you stuck with ah?
- c. What ah you stuck with?
- d. ?? With what you stuck ah?
- e. ? With what ah you stuck?
- f. \* You stuck with ah what?

The distribution of the particle with wh-PPs are as per described above, with the particle in a sentence final position or “following” the wh-phrase around. It must be noted that the reason why (110d,e) are marked as odd is not because it is ungrammatical per se, rather, preposition-stranding is by far the most common way of constructing these questions. According to my informants, fronting the PP is cumbersome and seems formal (which it is) and the use of the particle, which is used in informal contexts, causes the utterance to be pragmatically clashing. By my judgement, pragmatic infelicities aside, the constructions are syntactically well-constructed. However, the main point of interest should be (110c) and (110e), which shows the particle attached to either the wh-phrase complement or the the entire wh-PP. I will show later that P always take QuP as a complement and the difference is a result of normal preposition stranding, either PP or QuP moves. Informants judge (110d) to be worse than (110e), despite the fact that P-stranding is heavily preferred.

### 3.4.1.3 Embedded constructions

Things become more complicated (and interesting) when we consider embedded wh-constructions. Partial movement is a phenomenon where wh-phrases move only to the specifier of an embedded CP. Partial movement type languages can come in several varieties: simple partial-movement (Babine-Witsuwit'en, discussed above), with a scope marking particle (Albanian, Iraqi Arabic) or with scope marked by the most unmarked wh-word, such as German (Fanselow 2006). Consider these German examples:

- (111) a. **was** meinst du **wen**<sub>i</sub> Peter Hans  $t_i$  vorgestellt hat?  
    WH think you who Peter Hans introduced has  
b. **wen** meinst du  $t_i'$  daß Peter Hans  $t_i$  vorgestellt hat?  
    who think you that Peter Hans introduced has  
    'Who do you think Peter has introduced to Hans?'

(Sabel 2000:410-11)

In SgE, the partial-movement strategies are similar to that of Babine-Witsuwit'en when there is no particle present, and when a particle is present, the particle serves to mark scope. Scope marking strategies will be discussed later; first let us consider the data. Due to the large amount of data, to avoid confusion, I will group them descriptively:

- (112) *Default Position*
- a. You think I buy **what ah?**
- Partial movement*
- b. You think **what I buy ah?**
  - c. ?? You think **what ah I buy?**
- Wh-movement*
- d. **What** you think I buy **ah?**
  - e. **What ah** you think I buy?
- Particle in an intermediate position*
- f. **What** you think **ah I buy?**
  - g. \* You think **ah I buy what?**
- Particle in an initial position*
- h. \* **Ah** you think I buy **what?**
  - i. \* **Ah** you think **what I buy?**

Descriptively speaking, the particle can never precede the wh-phrase. It must either occur in a sentence-final position, or it must move along with

the wh-phrase. When the entire QuP (wh-phrase + particle) is partially moved, as in (112c) the construction is very marginal. This marginality can be somewhat mitigated by making this utterance as a rhetorical question, with an answer following it, as in *You think what ah, I buy? A Ferrari is it?*, although even so, it is still bad for more than half my informants. (112f) was also judged by informants to be marked. It was not ungrammatical or deviant however, what was claimed was that it was used in contexts that were deemed to “challenge” the interlocutor. We will see later that this is a result of SgE projecting PrtP whenever possible. In the case of (112f), this requirement is suppressed, presumably for discourse-pragmatic reasons. Other than these, all other combinations are possible, just as long as either a wh-phrase is in matrix [Spec,CP] or if a particle is in sentence-final position.

#### 3.4.1.4 Structural constraints of Qu

So far, we have looked at the distribution of the wh-phrases and its interaction with the question particle. Their movement is not random; instead they take place in a consistent and principled way. From an in-situ position where they are base generated as a QuP, they follow cyclic movement through [Spec,CP], as is standard in wh-movement. What makes SgE different is the presence of a functional projection PrtP, whose head Prt motivates Qu-movement, allowing it to separate from its wh-phrase complement. This particle must never precede its wh-phrase complement in linear order, it can only follow it and there are two positions available, either in a sentence-final position in [Spec,PrtP] or to the right of the wh-phrase. In this section, we will investigate more closely the constraints on the positioning of Qu apart from those that have been mentioned.

(113) *No Qu in an initial position*

- a. \* Ah you buy what?
- b. \* Ah what you buy?

‘What did you buy?’

As shown in (113) and in the previous example, the fronting of Qu alone to [Spec,CP] is ungrammatical, regardless of whether the wh-phrase moves or not. It is also not possible for Qu to appear between a wh-word and its complement, regardless of whether the wh-word functions as a normal D head or as a possessor:

(114) *No Qu between wh-word and complement*

- a. \* You buy what ah car?

- b. \* What ah car you buy?
  - c. You buy what car ah?
  - d. What car ah you buy?
  - e. What car you buy ah?
- 'What car did you buy?'
- (115) a. \* You saw whose ah brother?
- b. \* Whose ah brother you saw?
  - c. You saw whose brother ah?
  - d. Whose brother ah you saw?
  - e. Whose brother you saw ah?
- 'Whose brother did you see?'

Likewise, Qu cannot intervene between a preposition and its wh-phrase DP. Although as mentioned above, SgE allows for P-stranding:

- (116) *No Qu between preposition and wh-complement*
- a. \* You live with ah who?
  - b. \* With ah who you live?
  - c. You live with who ah?
  - d. Who you live with ah?
  - e. Who ah you live with?
  - f. With who ah you live with?
- 'Who do you live with?'

Left Branch Extractions (LBE) are also impossible:

- (117) *No Left Branch Extractions*
- a. \* What ah you buy car?
  - b. \* Whose ah did you see brother?

This is not unexpected, since Qu cannot intervene between wh-word and its complement in SgE. Furthermore, LBEs are not permitted in both SE and MC. The account that I will propose however, will attempt to explain the availability of LBE in languages that do permit them by appealing to the fact that there is parametric variation of the size of the constituent that moves during comp-to-spec movement to the specifier QuP. More on this in Chapter 5; the constraints on particle positions in wh-adjunct constructions will be discussed in 3.4.3.

These data strongly suggest that Qu takes the wh-phrase as its complement, and obeys strict structural constraints on its positioning. If it did not, we would expect the particle to show up in a variety of positions, not necessarily intervening between wh-word and complement, but in other places, say adjoined to a vP, which has been shown to be incorrect, since the perspective marker *already* precedes the particle. Neither can we posit a fixed position for the particle, since they exhibit two clearly different positions: sentence-final or if fronted, to the right of the wh-phrase. There is also more evidence that *ah* is a wh-interrogative particle. In non-interrogative wh-relative clauses, a particle cannot appear:

- (118) *No Qu-particle in relative clauses*
- a. \* John is the man who hit me ah.
  - b. # John ah is the man who hit me.
  - c. # The man who hit me ah is John.
  - d. \* The man who hit me is John ah.

‘Then man who hit me is John.’

(118b,c) is possible, although it does not have an interrogative reading. This is merely the use of *ah* as a topic marker. When used in this way, the particle can be attached to any DP, just as long it is not in sentence-final position. None of these sentences can take a yes/no question reading either; in order to do so, a yes/no particle (such as *ah*, *meh*, *is it*) must be used instead:

- (119) a. John is the man who hit me ah/meh/is it?  
          ‘Is John the man who hit me?’  
       b. The man who hit me is John ah/meh/is it?  
          ‘Is the man who hit me John?’

This further strengthens the argument that *ah* is a wh-question particle, rather than a discourse particle without any contribution to clausal force. In contracted wh-constructions, the only position that Qu can be in is the sentence-final one.

- (120) *Qu blocks cliticisation of auxiliaries*

- a. Who's coming ah?
- b. \* Who's ah coming?
- c. \* Who ah's coming?

- (121) a. What's John doing ah?

- b. \* What's ah John doing?
- c. \* What ah's John doing?
- d. \* John doing what's ah?
- e. John is doing what ah?

Since the wh-phrase is in the specifier of QuP, the fact that Qu functions as an intervener for cliticisation cannot simply be explained by the Head Movement Constraint (HMC), since technically, T cliticising onto the wh-phrase is not head-to-head movement, rather it is head-to-spec movement. This is a problem which must be solved as well. The data also shows that despite the fact that the use of auxiliaries in SgE tends to be optional, its distribution when used is still very robust, similar, if not identical to that of SE. We cannot simply postulate that *what's* is lexicalised; rather, we should account for it under standard approaches to contraction.

### 3.4.2 *Where* and *do-support*

*Where* behaves in much the same way as the other wh-arguments, being able to be left in-situ or to be fronted, with or without a particle.

- (122) a. John go where ah?  
 b. Where John go ah?  
 c. Where ah John go?

'Where did John go?'

Despite the availability of optional wh-movement, SgE speakers strongly prefer the use of fronted constructions when asking about animate, human subjects:

- (123) a. Where's/Where is John ah?  
 b. ? John is where ah?

With inanimate subjects, such as locations, optional movement is fine:

- (124) a. The bus stop (is) where ah?  
 b. Where is the bus stop ah?  
 c. Where ah, is the bus stop?

This is by no means however, a hard and fast rule. The use of *where-in-situ* can easily be licensed when there is some kind of preceding context, of the sort discussed in the SE and BP data in Pires and Taylor (2007):

(125) A: Your father is in the supermarket.

B: (And) my mother is where ah?

These appear to be discourse-pragmatic preferences rather than true syntactic constraints. I will not consider these further. What is worth mentioning however, is the nature of the optionality of overt auxiliaries. When the auxiliary is absent, wh-constructions in SgE are interpreted as *wh + did + VP*, as opposed to *wh + do + VP*. This asymmetry is especially pronounced when *where* is the argument of verbs such as *put* or *go*. This is exemplified in (125):

(126) a. I put my shoes where ah?

b. Where I put my shoes ah?

c. Where ah I put my shoes?

'Where **did** I put my shoes?'

?Where **do** I put my shoes?

Although not fully germane to the issue of wh-movement, it is interesting to ask why in the cases of *where* constructions the null auxiliary is interpreted as past, rather than either past or present. It is not clear at present whether this asymmetry has to do with the property of *where*, since other wh-arguments do not exhibit this asymmetry, or whether this is an artifact of discourse-pragmatic preferences. I leave this open for further research. Regardless, this proves that SgE, despite being "defective" with respect to inflection and tense/aspect markings, this defectiveness belies a surprisingly robust system of discourse-extracted tense construal, whether or not these are overtly realised.

In the same way that L<sub>2</sub> speakers appeal to L<sub>1</sub> strategies, and the same applies for bilingual speakers. SgE speakers have access to SE and MC grammar strategies. Since the proficiency in the source languages have an impact on the output of the resultant, we should expect to find that along the lower levels of the SgE proficiency continuum, those who are less proficient in English (of both varieties) in general would be those who are subject to heavy substrate influence from MC, Malay or Tamil. These speakers would have less access to SE strategies and we would expect to find more in-situ constructions and less *do*-support and overt auxiliaries. Conversely, an SgE more proficient in SE would lean towards using more wh-raised structures and more "standard" constructions.

Unfortunately, the basis of this study is data based on informants who are highly proficient in SE, and so I am unable to draw any conclusions about the hypothesis made in the previous paragraph and its relationship

to superstrate language proficiency and the extent to which grammatical strategies in the superstrate become more and more accessible for transfer into the SgE substrate.

Previous studies of auxiliary use has shed little light on this. According to Fong (2004)<sup>15</sup>, *do*-support occurs in interrogatives and negation contexts when no other auxiliary support is available but is optional in both cases. This has been shown not to fully the case in wh-constructions. *Do*-support can be used as a last resort option to allow correct interpretability (*do* vs. *did*) when all else fails. Hamers and Blanc (2000) suggest that speakers with multiple grammars in competition will converge at a point to accomplish generating a certain output in the most economical way. Since *do* is by its very nature a last resort option, economy would dictate that it would not apply unless necessary.

For example, in SE, *do*-support is applied when negation is present and blocks the valuation of tense on the verb by say, affix hopping. In order to prevent a derivational crash, *do* is merged to allow an escape hatch for the overt realisation of tense. In the case of SgE, where tense marking is optional to begin with, no such situation arises. Instead *do*-support, at least in the case of *where* constructions are used as a last resort for semantic disambiguation between *do* and *did* readings.

Deeper questions to ask would be whether it is the case that formal optionality of wh-movement or, in the case of tense inflection or *do*-support, morphosyntactic variation are truly optional and governed only by discourse-pragmatic factors or presuppositions and purely random from a narrow syntax point of view? Or could there be some kind of stochastic processes (or even features) encoded in the grammar itself or even a more formal account of combinatorial variability through underspecification of uninterpretable features in the sense of Adger (2006)? These questions are ones that I must leave aside here, since they bring us too far away from the central topic at hand. I do not wish to belabour the point, let us move on.

### 3.4.3 Wh-adjuncts

In the previous section, we looked briefly at *where* constructions and optionality of *do*-support in SgE. In this section, we will take a look at the two wh-adjuncts *how* and *why* as they are used in SgE. Kim et al. (2009) note that wh-adjuncts display an asymmetry in SgE, being unable to exhibit the usual optionality of wh-movement found with wh-arguments.

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<sup>15</sup>She also discusses other aspects of the SgE verb cluster, such as auxiliaries, aspectual classes and verb reduplication.

- (127) a. Why John like Mary?  
 b. \* John like Mary why?  
     ‘Why does John like Mary?’
- (128) a. How John go to school?  
 b. \* John go to school how?  
     ‘How does John go to school?’

Extraction of adjuncts from islands renders the utterance ungrammatical, as is the case in SE:

- (129) \* Why John know Mary like Jane?  
     ‘For what reason x, Mary likes Jane for x.’  
     ‘Why does John know that Mary likes Jane?’

In (129) the only possible interpretation is the matrix one. Embedded scope readings are not possible by extraction of *why* from an island. Kim et al. note that this is odd, considering that in MC, wh-adjuncts remain in-situ:

- (130) Zhangsan weishenme qu xuexiao?  
     Zhangsan why       go school  
     ‘Why did Zhangsan go to school?’
- (131) Zhangsan zenme xiu na-liang-che?  
     Zhangsan how   fix that-CL-car  
     ‘How did Zhangsan fix that car?’

According to Kim et al., the reason why this is the case is that MC wh-adjunct constructions undergo covert LF movement, which yields intervention effects:

- (132) a. \* ta mei weishenme qu xuexiao?  
         he NEG why       go school  
         ‘Why didn’t he go to school?’
- b. ta weishenme mei qu xuexiao?  
         he why       NEG go school  
         ‘Why didn’t he go to school?’

The arguments proceeds to explain that because SgE has substrate MC influence, from which SgE obtains its wh-in-situ strategies, the mechanism underlying wh-constructions must be similar. That is, with wh-arguments, there is no covert movement, since no intervention effects are displayed,

while for wh-adjuncts, there is covert movement. The conclusion thus is that SgE wh-adjuncts, if left in-situ must exhibit covert movement.

Appealing to the Earliness Principle (Pesetsky 1989), Kim et al. suggest that the ungrammaticality of wh-adjuncts in-situ is a result of the preference of overt over covert movement, which they term the Overt-over-Covert Movement Principle (OCMP), shown below:

- (133) *Overt-over-Covert Movement Principle*

Overt wh-movement blocks covert wh-movement.

Given such an approach, it follows that such an account must account for the ungrammaticality of English *why*-in-situ in multiple wh-questions such as (134) by ECP violations along the lines of Huang (1982). Such a construction is also ungrammatical in SgE.

- (134) \*Who went to school why?

However, according to Stepanov and Tsai (2008), the ECP account is problematic for languages like German, shown in (135). If the OCMP as proposed by Kim et al. (2009) is true, whatever the analysis that is proposed for English or SgE should also apply to German, since German also has overt wh-movement. This is contrary to fact.

- (135) Wer ist warum gekommen?

who is why come

'Who is coming for what reason?'

(Stepanov and Tsai 2008:591)

In short, the OCMP account makes good some of the predictions in SgE but not all. The most crucial fact that it does not explain is that in-situ wh-adjuncts are actually possible in SgE. We turn to this now.

### 3.4.3.1 The Distribution of *how*

In SE, *how*-questions can result in manner, instrumental or resultative readings. Tsai (2008) shows this in (136):

- (136) How did John handle the matter?

- a. Quite skillfully, I think. [manner]
- b. By pulling quite a few strings. [instrumental]
- c. Rather successfully, I would say [resultative]

(Tsai 2008:84)

Causal questions can also be asked, with the use of *how come*, which performs very similarly to *why*:

- (137) How come John went home so early? [causal]

In MC, we would expect *how* to remain in-situ, and it does. However, the different types of *how* questions can be elicited via different strategies. MC possesses two lexical forms of *how*: *zenmeyang* and *zenme*. Tsai (2008) describes *zenme* as being able to express causal questions, while *zenmeyang* expresses resultative and descriptive questions, as we shall see below. Both forms are able to ask instrumental and manner questions. Consider:

- (138) a. ta zenme(yang) qu Lundun? [instrumental, \*resultative]  
he how go London  
'How will he go to London?'  
b. ta zenme(\*yang) qu-le Lundun? [causal]  
he how go-ASP London  
'How come he went to London?'

The *zenme* form of *how* in MC receives the instrumental reading in bare tense clauses, while causal readings in clauses marked by the perfect marker *le*. By contrast, the *zenmeyang* form can be used to ask resultative questions:

- (139) ta xiu-de che zenmeyang [resultative, \*instrumental]  
he fix-DE car how  
'How is the car that he fixed?'

Both forms can be used for manner and instrumental and the distribution is far more fine grained than that shown above when it co-occurs with adverbs, modals or negation. These will not be discussed in any detail. For our purposes of SgE comparison, we need to note that the preverbal form of *zenme(yang)* allows for an instrumental reading, while the postverbal form allows for a resultative reading. Now, let us consider the distribution in SgE:

- (140) a. \* You fix the car how?  
b. How you fix the car?  
c. How you fix the car ah?  
d. How ah you fix the car?  
'How did you fix the car?' [instrumental/manner, \*resultative]

The in-situ option for the instrumental/manner reading is not available in SgE. Particles are able to surface in a sentence-final position or in a clause second position, as has been noted for wh-arguments. Where the data diverges from Kim et al. (2009) is in resultative readings. Consider:

- (141) a. The car (that) you fix how?
- b. The car (that) you fix how ah?
- c. How ah the car (that) you fix?
- d. ?? How the car (that) you fix ah?

‘How is the car that you fixed?’ [resultative]

When a resultative reading is desired, optional movement arises. *How*-in-situ is perfectly grammatical, as is the fronted construction. In fact, it is the preferred way of asking a resultative question. What is interesting is that the particle *ah* cannot be separated from *how* as we have seen with wh-arguments. This is similar to another reading for *how* in SgE that is somewhat difficult to translate. The equivalent in MC would be *zenmeban*. Hsiao and Su (2010) translate *zenmeban* literally as ‘to ask for what and how to do something’ (Hsiao and Su 2010:1386), and is often used to express distress. Take for example a hypothetical SgE discourse fragment:

- (142) a. I never pass my exam # how (ah)?
- b. How (ah) # I never pass my exam?
- c. \* How I never pass my exam ah?

‘What am I going to do? I didn’t pass my exam!’

For lack of a better name, let us call this a *wh-how* ‘what-to-do-how’. What is interesting is that *wh-how* can be fronted or left in a sentence-final position but it can never be separated from its particle, should there be one. When uttered without a particle, even in a sentence-initial position, it always has rising intonation. It is also always uttered with a strong intonational pause (#), preceding *how* if sentence-final and following if sentence-initial. I will put these issues aside here; it seems to me that *wh-how* is a self-encapsulated question on its own and should be analysed as a clausal adjunct at best, if not as a separate clause altogether.

Having said this, the fact that the distribution of resultative *how* patterns in a similar way to *wh-how*, exhibiting optional movement but being unable to be separated from its particle suggests that perhaps no movement is actually involved.

The question then arises as to why such a strategy is not available for instrumental and manner readings. To answer this question, we need to make a quick detour to relative clause constructions. Apart from the use of the clause-final marker *one* in relative clauses as described in 3.1.2, relative clauses with phonologically null complementisers can allow topicalisation of the complement CP.

- (143) a. the car  $\emptyset_C$  you fix
- b.  $[\emptyset_C \text{ you fix}]_i \text{ the car } t_i$   
           'the car that you fixed'

In (143a), the embedded CP can be topicalised to yield (143b), giving it the superficial structure of a VP. In SgE, this is disambiguated by context. Given this, (141) can also be uttered with *how* in-situ with a (143b) form:

- (144) a.  $[\text{You fix}]_i \text{ the car } t_i \text{ how?}$
- b.  $[\text{You fix}]_i \text{ the car } t_i \text{ how ah?}$
- c. How ah you fix the car?
- d. \* How you fix the car ah?  
           'How is the car that you fixed?'

Similar to (141), separation of the particle from *how* renders it completely bad. The ungrammaticality of (140a) can thus be explained in this way. It is not actually ungrammatical per se. Rather, fronted and in-situ *how* is used to disambiguate between the different types of questions that the speaker would like ask. Fronted *how* constructions are used to ask instrumental and manner questions. These constructions allow for the separation of *how* and *ah* and apply to entire propositions. On the other hand, in-situ *how* constructions are always resultative. Given that the linear string of *you fix the car* in (144a) is ambiguous between a VP and a relative clause in SgE, the position of *how* is the only way to disambiguate between the two. The question that immediately follows is why resultative *how* allows for fronting as well.

The clue lies in the fact that resultative *how* applies to relative clauses or simple DPs while manner/instrumental *how* applies to propositions. The asymmetry will be accounted based on the fact that manner/instrumental *how* are not adjuncts; rather they are merged in [Spec,CP] whereas resultative *how* is an adjunct adjoined to DP. Base generation in [Spec,CP] also applies to *why* constructions as we shall see next. There is still optional movement in this case, but of a different nature. Because these adjuncts

are merged in [Spec,CP], the manifestation of their optional properties are only apparent in complex questions where there are multiple [Spec,CP] positions to move to. The lack of separability can be explained by the inability to subextract from adjuncts as per the CED of Huang (1982). A fuller analysis will have to wait till chapter 5.

### 3.4.3.2 The Distribution of *why*

Let us now consider another wh-adverbial *why*. In SgE, *why*, like instrumental/manner *how* must be sentence-initial<sup>16</sup> in overt syntax:

- (145) a. Why John like Mary ah?
- b. Why ah John like Mary?
- c. \* John like Mary why ah?  
‘Why does John like Mary?’

Wh-arguments and wh-adjuncts have long been noticed to display asymmetries in their properties, especially in their ability to evade island violations. Before we consider the SgE data, it is worth briefly considering MC *why* constructions, given that SgE is strongly influenced by MC. Even in a wh-in-situ language like MC, which allows in-situ wh-arguments within islands, wh-adjuncts exhibit a whole different set of properties. For example:

- (146) ni xiang-zhidao shei mai-le shenme?  
you wonder who buy-ASP what  
‘What is the thing x such that you wonder who bought x?’  
‘Who is the person x such that you wonder what x bought?’
- (Huang 1982:525)

Huang notes that in embedded multiple wh-questions in MC can have either wh-word taking matrix scope, yielding two possible interpretations<sup>17</sup>. On the other hand, this ambiguity vanishes with *why*.

- (147) ni xiang-zhidao shei weishenme mai-le shu?  
you wonder who why buy-ASP book

---

<sup>16</sup>In-situ constructions are acceptable to a small number of people, but even so, they are only marginal at best and require a strong discourse background as discussed in Pires and Taylor (2007). Here we are concerned more with out-of-the-blue utterances. Having said this, given that we will say that *why* is base generated in [Spec,CP], the presence of *why*-in-situ must be a result of QuP movement to PrtP. Since PrtP strongly prefers only having particles in its specifier for PF reasons discussed above, having phrasal elements in it will render the utterance very marked.

<sup>17</sup>Some of my MC informants are also able to get a pair-list reading from (146), yielding ‘For pairs <x,y>, what is x and who is y such that y bought x’.

‘Who is the person x such that you wonder why x bought books?’

\*What is the reason x such that you wonder who bought books for  
x?’  
(Huang 1982:526)

In (147), only the wh-argument *who* can take wide scope. If there are no island boundaries however, MC *why* questions can be embedded to arbitrary depth.

- (148) Zhangsan juede Lisi renwei ta weishenme mai-le shu?  
Zhangsan feel Lisi think he why buy-ASP book  
'Why does Zhangsan feel that Lisi thinks that he bought books?'

Finally, in MC, *weishenme* ‘why’ can take two positions, either following the subject, or preceding it.

- (149) a. ta weishenme mai-le shu?  
he why buy-ASP book  
b. weishenme ta mai-le shu?  
why he buy-ASP book  
'Why did he buy books?'

As has been shown in (145), *why* in SgE must be in a sentence-initial position. Particles take their usual positions, either following the wh-phrase or sentence-finally. In SgE, unlike MC however, does not exhibit the alternation as shown in (149).

- (150) a. Why he never come?  
b. ??/\* He why never come?  
'Why didn't he come?'

Having *why* follow the subject renders the utterance extremely marginal<sup>18</sup>, bordering on the ungrammatical. So far, I have been careful not to mention that wh-movement must obligatorily apply to *why* questions; rather, I have used the term sentence-initial. I say this because there is reason to believe that *why* behaves in a different manner. Consider:

- (151) No scope ambiguity in embedded [Spec,CP]  
a. You think **why** he never<sup>19</sup> come **ah**?

<sup>18</sup> One informant notes that (150b) sounds very “Chinese”, probably exemplifying the fact that such constructions are more freely permitted by speakers who are more proficient in MC and less in SE. As all my informants are SE dominant, I am unable to ascertain that this is the case. My judgements on this matter are anecdotal at best.

<sup>19</sup>Never is the unmarked way to express past tense negation in SgE.

- b. You think **why ah** he never come?

‘What is the reason x such that you think he didn’t come for x?’

‘\*What is the reason x such that you think for x that he didn’t come?’

*Scope ambiguity in matrix [Spec,CP]*

- c. **Why** you think he never come **ah**?

- d. **Why ah** you think he never come?

- e. ? **Why** you think **ah** he never come?

‘What is the reason x such that you think he didn’t come for x?’

‘What is the reason x such that you think for x that he didn’t come?’

In the embedded ‘partially-moved’ position, (151a,b) can only take an embedded scope interpretation, never a matrix-scope one. When *why* is in matrix [Spec,CP], an ambiguity arises, as it also does in SE. Interestingly, (151e) is marginal. This is because *ah* also has a function of marking scope, and (151e) results in a scope clash. Again, this will made clear be in chapter 5. In these examples, *why* cannot appear in a sentence-final position, regardless of the position of the particle, as has been shown to be the case in other constructions above. Note that this is not the case in MC. In MC, the overt position of *why* is also its scope marking position:

- (152) a. ni renwei ta weishenme meiyou lai?

you think he why NEG come

‘What is the reason x such that you think he didn’t come for x?’

‘\*What is the reason x such that you think for x that he didn’t come?’

- b. ni weishenme renwei ta meiyou lai

you why think he NEG come

‘\*What is the reason x such that you think he didn’t come for x?’

‘What is the reason x such that you think for x that he didn’t come?’

This raises the question as to why it is impossible for *why* to appear in a sentence-final position, on par with other wh-arguments and *how*. Given that the paradigm in (151) does seem to show that optionality of movement is permitted, even with *why*. Given that wh-arguments in embedded constructions can be found in all three positions, in-situ, partially-moved and

matrix [Spec,CP], one would expect that *why* should pattern like along similar lines if optional is also a viable strategy for *why* in SgE.

The SgE and MC data are actually quite telling. A plausible reason for this would be to say that *why ah* is base generated in [Spec,CP]. This is what Ko (2005) claims happens in Chinese, Japanese and Korean. This means that (151b) in fact, reflects the in-situ position. This accounts for the ungrammaticality of *why* in a sentence-final positions since this position is not available at all to begin with. If we adopt this line of thinking, then the optionality as shown above falls out naturally, since there are only two positions available for *why* in (151), that is, an embedded and a matrix [Spec,CP].

Furthermore, when *why* is in an embedded position, it displays intervention effects that wh-arguments do not. Interveners such as negation and quantified DPs induce ungrammaticality when precede *why*:

- (153) \*You don't think why he is happy? (Negation)

'What is the reason x such that you don't think he is happy for x?'

- (154) \*Everyone think why he is happy? (Quantified DP)

'What is the reason x such that everyone thinks he is happy for x?'

This is not surprising. Such intervention effects have been attested in many languages. SgE displays another kind of intervention effect. Recall that *why* in a matrix [Spec,CP] position results in scope ambiguity in SgE. If however, there is an intervener such as negation or a quantified-DP in the matrix clause, this ambiguity disappears, even if the the intervening element does not precede the wh-phrase:

- (155) Why you don't think he is happy?

'\*What is the reason x such that you don't think he is happy for x?'

'What is the reason x such that you don't think for x that he is happy?'

- (156) Why everyone think he is happy?

'\*What is the reason x such that everyone thinks he is happy for x?'

'What is the reason x such that everyone thinks for x that he is happy?'

Similar intervention effects accounting for (153) and (154) have been attested and accounted for in several languages. Beck (1996) for example, states that an intervening quantifier blocks movement (only) at LF. Therefore a construction such as (157) would be deemed at ungrammatical.

- (157) \*[... X<sub>i</sub> ... [Q ... [ ... t<sub>i</sub><sup>LF</sup> ... ]]] (Beck 1996:18)

Pesetsky (2000) follows up on this and describes this intervention effect as a linguistically universal characterisation in (158). He argues that covert feature movement allows the restriction on wh-quantification to remain inside the clause while phrasal movement pied-pipes the restriction along with it.

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

(Pesetsky 2000:67)

This intervention effect accounts for the ungrammaticality of separated *wh+all* constructions in German:

- (159) a. [Wen alles] hat Hans t gesehen?  
           whom all has Hans seen  
   b. Wen hat Hans [t alles] gesehen?  
       ‘Who all did Hans see?’  
   c. [Wen alles] hat niemand t gesehen?  
       whom all has no-one seen  
   d. ?? Wen hat niemand [t alles] gesehen?  
       ‘Who all did no one see?’

(Pesetsky 2000:68)

Ko (2006) cites yet another version of this intervention constraint, which applies to Japanese and Korean:

- (160) a. \* Amwuto mwues-ul ilk-ci-anh-ass-ni?  
           anyone what-ACC read-CI-not-PAST-Q  
   b. Mwues-ul<sub>i</sub> amwuto t<sub>i</sub> ilk-ci-anh-ass-ni?  
       what-ACC anyone read-CI-not-PAST-Q  
       ‘What did no one read?’

- (161) a. \* Hanako-sika nani-o yoma-nai no?  
           Hanako-only what-ACC read-not Q  
   b. Nani-o<sub>i</sub> Hanako-sika t<sub>i</sub> yoma-nai no?  
       what-ACC Hanako-only read-not Q  
       ‘What will only Hanako read?’

(Ko 2005:870)

Ko sums this up as the Intervention Effect Constraint:

- (162) *Intervention Effect Constraint*

At LF, a wh-phrase cannot move across an SBE (Scope Bearing Element) to its checking (scope) position.

- a. \* [...Q SBE wh ...]
- b. [...Q ← wh<sub>i</sub> SBE t<sub>i</sub> ...] (Ko 2005:871-2)

This explains why (160a) and (161a) are ungrammatical as the scope bearing element *anyone* prevents leftward movement of *what* at LF. On the other hand, the (b) examples show an overtly scrambled *what*, which precedes the SBE, thus allowing movement at LF to occur.

However, since we do not want to appeal to LF movement, all of these approaches do not explain why the ambiguity disappears when there is an intervener following *why* in [Spec,CP]. The answer is actually rather complicated and we will have to postpone the discussion of this till we have introduced the concept of Q-migration. To briefly preview, Q-migration is a mechanism that allows Qu-movement out of islands, allowing wh-in-situ elements within islands to receive the correct interpretation. The reason that *why* experiences intervention effects is because Q-migration is not available in *why* constructions.

### 3.4.3.3 *Or not* constructions

We have established that in SgE, *or not* constructions are the canonical way to construct yes/no questions.

- (163) You eating or not?  
‘Are you eating?’
- (164) You eat already or not?  
‘Have you eaten?’
- (165) Tonight you going to the party or not?  
‘Are you going to the party tonight?’

Unlike the other yes/no particles, *or not* forms are the only ones that are able to take the particle *ah*, which has been shown to be able to co-occur only with wh-phrases. The question that follows is with regard to the status of *or not*. In Wu (1999), he deems them to be wh-adverbials. In MC, the entire A-not-A predicate is taken to be a wh-adverbial, meaning that if we have a question morpheme Q in C, Q will bind the entire A-not-A form, not unlike Q binding a wh-word in-situ. In short, the entire A-not-A form is a parallel to a wh-word. Consider:

- (166) a. ta qu-bu-qu?  
he go-not-go  
‘Is he going?’

- b. ta weishenme qu xuexiao?  
 he why go school  
 'Why is he going to school?
- (167) a.  $Q_i$  ta [qu-bu-qu]<sub>i</sub>  
 b.  $Q_i$  ta weishenme<sub>i</sub> qu xuexiao

(166) contains a simple example of a yes/no question in MC. (167) gives an example of how such questions are interpreted in MC. Wu (1999) further describes how such a system works to eliminate any need for movement at LF of in-situ elements. This is known as Q-licensing, which is basically unselective binding. His analysis is pertinent and since it cuts close to the spirit of my analysis, though not quite in the same form. As such, we will need to go through some MC data before getting to SgE.

Specifically, Q-licensing applies to wh-adjuncts, such as *weishenme* 'why' and A-not-A constructions. A further stipulation regarding Q-licensing is as follows:

- (168) A Q-licensee must be bound by a Q-licenser in its immediate CP.  
 (Wu 1999:37)

This stipulation prevents long distance licensing between Q and the wh Q-licensee, predicting the only the correct scope readings are available in embedded questions.

- (169) Ni zhidao ta lai-bu-lai  
 you know she come-not-come  
 'You know whether she's coming.'  
 '\*Do you know if she will come or not?'

The inclusion of the yes/no particle *ma* turns it into a matrix yes/no question:

- (170) Ni zhidao ta lai-bu-lai ma?  
 you know she come-not-come Q  
 'Do you know or not whether she's coming?'  
 '\*Do you know if she will come or not?'

However, what Wu does not mention is that if we use *ne*, a wh-question particle that can also be used in A-not-A constructions, the embedded, but not the matrix reading can be elicited. This particle cannot associate with the verb *zhidao* 'know', as shown below.

- (171) a. Ni zhidao ma?  
           you know Q  
           'Do you know?'
- b. \*Ni zhidao ne?  
           you know Q  
           'Do you know?'
- c. Ni zhidao shenme ne?  
           you know what Q  
           'What do you know?'

- (172) Ni zhidao ta lai-bu-lai ne?  
           you know she come-not-come Q  
           '\*Do you know or not whether she's coming?'  
           'Do you know if she will come or not?'

Wu does however, note the asymmetry with non-factive predicates. A verb like *renwei* 'think' can allow licensing of the in-situ A-not-A form to arbitrary depth. This was shown to be true for *weishenme* 'why' as well, in the previous section:

- (173) Ni renwei ta lai-bu-lai?  
           you think he come-not-come  
           'Do you think he is coming?'

Wu's argument basically runs along the lines of the fact that the embedded clause in (173) is actually an clausal adjunct, rather than a complement of the verb, hence allowing operator-variable binding whereas factive (and other) islands and other usual scope bearing interveners block unselective binding of in-situ constructions, as is the case with wh-adjuncts.

In embedded questions, SgE and MC diverge. Putting aside what the relationship of SgE's *or not* constructions and MC's A-not-A constructions, SgE is able to take both matrix and embedded readings while MC only allows the embedded reading and does not constitute a question.

- (174) You know (if/whether) John coming or not ah?  
           'Q: Do you know whether John's coming? A: He is.'  
           'Q: Do you know or not whether John's coming? A: I don't know.'

Although deemed rather unnatural by SgE speakers, one can also disambiguate for the the matrix reading by uttering *or not ah* in an intermediate position. Crucially, *or not* and the particle cannot be seperated.

- (175) a. You know or not ah whether John is coming?  
 b. ??/\* You know or not whether John is coming ah?  
     '\*Q: Do you know whether John's coming? A: He is.'  
     'Q: Do you know or not whether John's coming? A: I don't  
       know.'

In the previous discussion on *why* it was shown that long distance scope assignment was blocked by interveners. In this case, one would expect that like MC, factive islands would also be a source of intervention for the relationship between *or not* and *ah*. Recall that we proposed that *why* was merged in [Spec,CP] rather than being adjoined lower down then moved up. Suppose instead, the element that was adjoined lower down was not *why* but *or not*. In the same way that Wu (1999) proposes that non-factives are clausal adjuncts that are not subject to local binding condition, *or not* being an adjunct essentially puts it outside of the factive island, allowing it to associate with the particle *ah*. Depending on the position of the adjunction of *or not*, one would expect the matrix reading if it were adjoined to the matrix VP and the embedded reading if it were adjoined to the embedded VP, confirming the data facts in (174).

### 3.4.3.4 Wh-adjuncts and its constraints

Before we conclude this section on wh-adjuncts, let us review the constraints and intervention effects that exist in SgE for *how* and *why*. *How* has been shown to exhibit limited apparent in-situ possibilities, which differentiate between manner/instrumental and resultative readings. Embedding *how* under *think* yields some interesting results:

- (176) *No scope ambiguity in [Spec,CP]*
- a. You think **how** he fix the car **ah**?
  - b. You think **how ah** he fix the car?
  - c. \* You think he fix the car **how ah**?  
     'How do you think he fixed the car?' [instrumental/manner/\*resultative]  
     '\*In what manner x such that you think x that he fixed the  
       car?'

#### *Scope ambiguity in matrix [Spec,CP]*

- d. **How** you think he fix the car **ah**?
- e. **How ah** you think he fix the car?

f. ? **How** you think **ah** he fix the car?

'How do you think he fixed the car?' [instrumental/manner/\*resultative]

'?In what manner x such that you think x that he fixed the car?'

When embedded under *think*, we note that instrumental/manner *how* pattern in the same way as *why*, in that can only have embedded scope readings. Matrix instrumental/manner readings do not obtain, as predicted by the fact that QuP is merged in embedded [Spec,CP] with a non-interrogative matrix C. On the hand, if matrix C was interrogative, QuP movement is possible and multiple scope readings are permitted depending on where QuP was merged initially, as was the case for *why*. Naturally, the matrix reading for *how* and *think* is rather odd; asking *How did you think?* is quite strange in this context, although not ungrammatical, hence the marginality of the free translation.

There is one more peculiarity about the data in (176). Given that *how* in-situ (right-adjoined to be more precise) results in resultative readings, one would expect (176b,c) to yield resultative readings. This is borne out only if *he fix the car* is interpreted as a CP-topicalised relative clause, in which case the instrumental/manner reading is blocked:

- (177) a. You think [[ $\emptyset_C$  he fix]<sub>i</sub>] the car  $t_i$ ] **how ah?**  
b. You think **how ah** he fix the car?  
c. \* You think **how** he fix the car **ah?**  
d. **How ah** you think he fix the car?  
e. \* **How** you think **ah** he fix the car?  
f. \* **How** you think he fix the car **ah?**

'How is the car that the fixed, you think?' [resultative]

A similar distribution applies with a fully spelled out standard relative clause:

- (178) a. You think the car (that) he fix **how ah?**  
b. You think **how ah** the car (that) he fix?  
c. \* You think **how** the car (that) he fix **ah?**  
d. **How ah** you think the car (that) he fix?  
e. \* **How** you think **ah** the car (that) he fix?  
f. \* **How** you think the car (that) he fix **ah?**

'How is the car that the fixed, you think?' [resultative]

Again with resultative readings, separation of *how* and *ah* is impossible due to the ungrammaticality of adjunct subextraction. This is strong evidence for the case that resultative *how* is adjoined to a DP whereas instrumental/manner *how* is merged in [Spec,CP] with the former always in a low position and the latter always in a high position structurally. However, when a matrix C is present, there is the option of the raising of QuP into matrix [Spec,CP]. A moved resultative QuP cannot be subextracted from, since this involves subextraction from a complex specifier. We will discuss this more as we progress.

Returning to the parallels between the distribution of instrumental/manner *how* and *why*, the brief explanation give for the distribution of the data in (151) alluded to scope assignment. Similar arguments apply here.

(179) *Embedded question only if particle is omitted*

- a. You know **how** he fix the car (\***ah**).
- b. You know **how** (\***ah**) he fix the car.

‘You know how he fixed the car.’ [instrumental/manner]

‘You know how is the the car that he fixed.’ [resultative]

*Sentence final position is always bad unless resultative*

- c. You know he fix the car **how** (\***ah**)?

‘\*You know how he fixed the car.’ [instrumental/manner]

‘You know how is the the car that he fixed.’ [resultative]

*Only matrix instrumental/manner reading possible*

- d. **How** you know he fix the car **ah**?
- e. **How ah** you know he fix the car?
- f. \* **How** you know **ah** he fix the car?

‘In what manner x such that you know he fixed the car x?’

‘How do you know that he fixed the car?’

‘\*You know how is the the car that he fixed.’

When embedded under *know*, both instrumental/manner and resultative *how* can only have an embedded question reading due to their in ability to cross *know* as shown in (179a,b). If in a final position, only an embedded resultative is possible. Crucially in these case, because the sentence is non-interrogative, the particle must be absent. If instead, *how ah* is merged in matrix [Spec,CP], only the instrumental/manner reading is possible; there is no DP for the resultative QuP to adjoin to in the matrix clause.

We observe a similar case for *why*. It patterns with instrumental/manner *how*:

- (180) *Embedded question reading only if particle is omitted*

- a. You know **why** he never come (\***ah**).
- b. You know **why** (\***ah**) he never come.

‘You know why he didn’t come.’

*Sentence final position is always bad*

- c. \* You know he fix the car **why ah?**

*Only matrix question reading possible*

- d. **Why** you know he never come **ah?**
- e. **Why ah** you know he never come?
- f. \* **Why** you know **ah** he never come?

‘\*What is the reason x such that you know he didn’t come for x?’

‘Why do you know he didn’t come?’

Given that these QuPs are merged into [Spec,CP] and Q-migration is not possible. Qu is not able to cross *know* yielding only in-situ scope, wherever that may be. The data is straightforwardly predicted: when merged in an embedded position, only embedded readings are possible, and likewise for when it is in a matrix position. There is a residual issue of why instrumental/manner *how* and *why* do not only exhibit matrix readings (like BW) when raised from an embedded to matrix [Spec,CP]. This has to do with the fact that these wh-adjuncts are inherently operators; again, more on this in chapter 5.

### 3.5 Wh-words as free relatives

Before we close the chapter, SgE uses wh-words in an environment which might not be so expected. This is worth mentioning for the sake of completeness and to provide a clearer insight into the inner workings of SgE and the extent of language contact it possesses.

In SE, wh-words can be interpreted as free relatives, with or without the use of *ever*.

- (181) a. We played follow the leader. I did what the leader did.

- b. I will do whatever he orders me to.

In SgE, these strategies exist as well, not surprising since SE is its superstrate language. In MC however, one must construct the following sentence:

- (182) ta zuo de shenme wo dou zuo-le  
 he do DE what I DIST do-ASP  
 'I did whatever he did.'

I have glossed *dou* as DIST signifying that is a distributor. In MC, *dou* can also combine with a wh-word to yield universal quantification:

- (183) wo shenme dou chi  
 I what DIST eat  
 'I eat everything.'  
 'I'll eat whatever.'

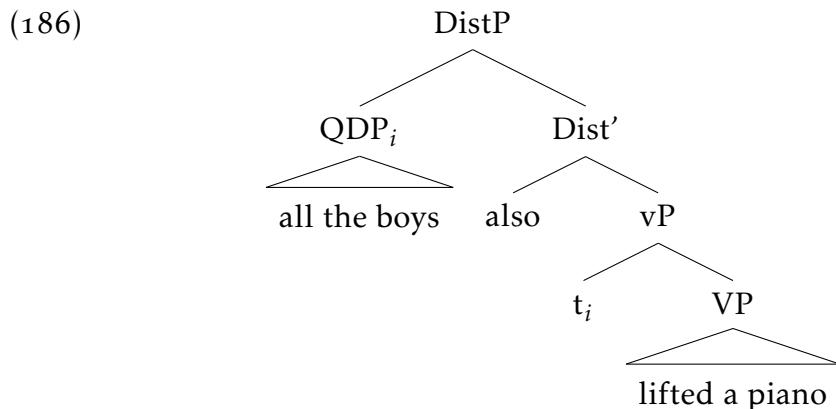
We expect SgE to adopt SE strategies in forming free relatives. Could we expect SgE to adopt MC strategies as well? As it turns out, we can. In Yeo (2005), I showed that *also* in SgE is multifunctional. Other than functioning as adverb as it is in SE to mean *as well* or *too*, there exists an *also* in SgE which functions in a similar way to the distributor *dou* in MC. For example, in (184), both in SE and SgE, the sentence is ambiguous. It could mean that either all the boys lifted a piano cooperatively, or that all the boys lifted a piano each.

- (184) All the boys lifted a piano.

However, in SgE, we can force the distributive reading by uttering (185).

- (185) All the boys also lifted a piano.  
 'All the boys lifted a piano each.'

Distributive *also<sub>d</sub>* heads its own unique functional projection DistP, above vP. This distributor head agrees with and attracts quantified DPs (QDPs) into its specifier to yield a distributive reading. This is exemplified in (186)



What matters for the discussion at hand, is that *also<sub>d</sub>* can also interact with wh-elements. When a wh-phrase passes [Spec,DistP] during the derivation, the wh-word takes on a free choice reading. For example:

- (187) Who come I *also<sub>d</sub>* don't care.  
 'I don't care whoever comes'
- (188) a. He eat what his mother *also<sub>d</sub>* will complain.  
 b. What he eat his mother *also<sub>d</sub>* will complain.  
 'Whatever he eats, he will complain.'
- (189) When I go *also<sub>d</sub>* can.  
 'It doesn't matter whenever I go.'
- (190) a. How I do *also<sub>d</sub>* cannot work.  
 b. \* I do how *also<sub>d</sub>* cannot work.  
 'However I do it, it will not work.'

*What* takes on the meaning of *whatever*, *who* becomes *whoever* and so on. As can be seen from (188), it is possible to yield the desired reading regardless of whether the wh-element remains in-situ or not. Having said this, (190b) is ungrammatical it is a manner *how* and can only appear in [Spec,CP].

Other wh-constructions can also interact with *also<sub>d</sub>*, resulting in free choice readings as shown below.

- (191) What time he come Jane *also<sub>d</sub>* not happy.  
 'Whatever time he comes, Jane will be unhappy'
- (192) He come or not I *also<sub>d</sub>* don't care.  
 'I don't care whether he comes or not.'

As shown above, wh-modified NPs and *or not* predicates can readily interact with *also<sub>d</sub>* to yield free-choice readings. *Also<sub>d</sub>* distributes among all possible outcomes within the restrictions of the wh-element variable. Whoever for *who...also*, whatever for *what...also* and so on. In *or not* constructions there are only two choices available, and *also<sub>d</sub>* distributes over the two choices.

While this has no immediate impact on the analysis to follow, it is perhaps an interesting avenue in which to pursue the nature of the parallels between MC and SgE, and the approach their grammars take towards the syntax and (especially) semantics of wh-words and phrases in SgE.

### 3.6 Summary

In this chapter I have illustrated the major aspects of question formation in SgE: its particles and their interaction with wh-phrases. The environments in which they can appear in and the constraints that they are subject to. We looked at theoretical issues of FOFC-violations surrounding particles and hypothesised that in SgE there is what seems to be a FOFC-violating head-final functional projection PrtP that attracts particles into their specifier. The Prt head is seen to be categorically deficient, being merged partially as a reflex of PF requirements to mostly render particles in a sentence-final position. The categorical deficiency mitigates the severity of FOFC-violations and should be seen as an exception to the general rule.

Wh-arguments and their corresponding constructions have been observed to exhibit optional wh-movement, with wh-raised structures showing sensitivity to islands and intervention effects, hallmarks of true over wh-movement. Yet at the same time, the wh-in-situ constructions in SgE fail to display these effects, symptoms of truly wh-in-situ languages.

Wh-adjuncts on the other hand, have been shown to cluster and to display an asymmetry, with *why* and instrumental/manner *how* being base generated in [Spec,CP] while *or not ah* and resultative *how ah* QuPs are true adjuncts adjoined to VP and DP respectively.

The data presented here has at times been messy, a necessary evil, considering the sheer amount of speaker variation that exists. To many informants wavered on judgements, with numerous qualifications as to why something could or could not be accepted. “It sounds very Chinese” was by far one of the most common comments made about many of the sentences discussed in this chapter. One informant went as far as to exclaim, “Everything is okay in Singlish [SgE]!” However, this is an exaggeration as we have shown that we *can* actually account for most of the data in a principled way. Much of the preliminary analysis in this chapter was highly descriptive and at times (intentionally) vague. In the next chapter hopefully, this will give way to a sound and coherent analysis, firmly grounded in our new theory.

## Chapter 4

### Explaining Optional Wh-movement

In chapter 2, we discussed at some length the nature of optional movement in syntax and the implications it has on developing a theory of grammar. Optionality has been shown to be an integral part of natural language and should not be explained away simply because the Minimalist framework that we adopt eschews it. On the contrary, optionality is vital to ensuring that linguistic expressions are kept rich and meaningful, allowing language users a variety of strategies to express what they mean. Such alternations serve to enrich our model of grammar, allowing multiple outputs of a single numeration through different, *equally economical* derivations, giving our grammar more explanatory power.

In chapter 3 we looked at a variety of constructions in Singapore English (SgE) that exhibit optional movement, and their interaction with question particles in both wh and yes/no questions. I have proposed that question particles, whether phonologically overt or not, take wh-phrases (and in the case of SgE *or not* markers as well) as their complements to form QuP. In languages that possess phonologically overt sentence-final particles, there is also the option of further projecting a head-final particle phrase PrtP which functions as a landing site for Qu.

In SgE, such a configuration allows for a three-way split in the surface output of questions: 1) wh-phrase and particle in a sentence-final position, 2) wh-phrase and particle in an initial position and 3) wh-phrase in an initial position and particle in a sentence-final position. There are also limited possibilities for the wh-phrase to be in an initial position and the particle to be in an embedded [Spec,CP] position. Although, at least in SgE, the particle must never precede the wh-phrase.

The essential mechanism that drives optional movement is one where the EPP feature on C can be satisfied in multiple ways: the particle can raise to [Spec,PrtP], leaving the wh-phrase in situ, yielding the first configuration; the entire QuP can raise into [Spec,CP] yielding the second and finally the

wh-phrase can raise into [Spec,CP] and the particle into [Spec,PrtP] yielding the third. This chapter will mainly deal with the formulation of the precise mechanism that allows this to happen.

## 4.1 Against the Clausal Typing Hypothesis

The discussion so far takes for granted the fact that SgE possesses question particles alongside overt syntactic wh-movement. This is actually not quite trivial an assumption to make. Question particles have often been seen to be solely within the domain of wh-in-situ languages whereas wh-movement languages are predicted not to possess these particles. This prediction is an especially strong one, and was a universal claim about language typology made by the Clausal Typing Hypothesis (CTH) in Cheng (1991). Cheng's work been influential in many ways and makes strong predictions about the typology of wh-question formation. One of these predictions is that wh-movement and the presence of question particles are mutually exclusive. However, given the data in SgE, we see that this is not the case. Let us evaluate the CTH and see why it cannot hold.

### 4.1.1 The Clausal Typing Hypothesis

The CTH essentially stipulates that every clause must be typed, that is, identified as interrogative, declarative etc. The CTH is presented below:

(1) *Clausal Typing Hypothesis*

Every clause needs to be typed. In the case of typing a wh-question, either a wh-particle in  $C^0$  is used or else fronting of a wh-word to the Spec of  $C^0$  is used, thereby typing a clause through  $C^0$  by Spec-head agreement. (Cheng 1991:29)

A consequence of (1) is that typing must be accomplished in one of the two mutually exclusive ways: either by the presence of a particle in  $C$ , which binds wh-phrases or by overt wh-movement. This means that the CTH rules out any sort of optionality and that languages that appear to exhibit optional movement must be accounted for the use of only one of these mechanisms, but not both.

As stated in chapter 2, the difference between wh-in-situ and wh-movement languages lies only in the setting of the wh-parameter; that is, the presence or absence of the EPP feature on  $C$ . Clause typing on the other hand, is a separate and independent issue altogether. The predictions that the CTH makes can be summarised below in (2).

- (2) I. No language has yes-no particles (and thus wh-particles) and also syntactic wh-movement.
  - II. No language has the option of using either a wh-particle or syntactic wh-movement of wh-words to type a sentence as a wh-question.
  - III. No language fronts more than one wh-word for Clausal Typing.
- (Cheng 1991:29)

If I understand correctly, Cheng seems to imply that clause typing is accomplished by the presence of a [+wh] feature on C, which “indicates the clause is a wh-question”. This is a somewhat odd thing to assume. Clause-typing is traditionally seen to be the presence of Q in the derivation, marking the force of the clause. [WH] features on the other hand are either means of driving movement (strong vs. weak features) or simply signifying the fact that C can successfully attract a wh-phrase. Let us put aside this issue for now.

Returning to Cheng’s account, clause typing can be accomplished by base-generating the particle in C in the case of wh-in-situ languages, or my move of wh-phrases to [Spec,CP] and the transmission of the [+wh] feature by spec-head agreement. The purpose of these particles is to type a clause as interrogative, which is what, Cheng claims, wh-movement does. In insitu languages that do not have an overt question particle, a phonologically null particle must exist in order to fulfil clause typing.

In current terms, when a question particle is base-generated directly in C, it fulfils the clause typing by Agree. The particle, which functions as a probe, agrees with the wh-word and its binding relations establish scope. There is no EPP feature, thus no wh-movement occurs. However, recall that such a strategy does not only exist in wh-in-situ languages. Consider yes/no questions in English, where null operators are merged into [Spec,CP]:

- (3)  $\emptyset_{WH}$  are you going?

Such a construction is seen to possess interrogative force because the clause is typed as such by Agree between the operator  $\emptyset_{WH}$  and C, allowing the necessary checking of features; crucially, checking of [uWH] on the operator and [uQ] on C. If we compare the “typing particles” that Cheng (1991) proposes and the null question operator in (3), we can observe that they are not all that different. Both of these possess interpretable [+wh] features. The difference is that for Cheng (1991) typing particles are merged in C while in English the operator is merged in [Spec,CP]. Cheng herself notes in the analysis of *if* indirect questions:

...the empty operator is a null counterpart of *whether*...when the empty operator moves to Spec of C<sup>0</sup>, by Spec-head agreement, the plus value of the feature [±Q] will then be filled in for *if*...[providing] an interrogative reading for it

(Cheng 1991:44)

Cheng goes on to say that *if* is not inherently interrogative and is licensed by this operator. It is not clear to me how this is any different from a typing particle typing a clause and allowing wh-phrases to be interpreted as interrogative. This is important for us, as what we have been proposing so far is fundamentally based on the fact that particles and wh-movement can co-exist side by side and in order to make any claims that such an account holds in SgE (or universally), the correlation between wh-in-situ languages and the presence of particles must be disproven.

Another important prediction that the CTH makes is that there are no languages with optional wh-movement, since only one of the two clause typing mechanisms can apply. Cheng cites examples from Egyptian Arabic, Bahasa Indonesia and Palauan as examples of languages that display only apparent optional wh-movement. These languages are in actual fact in-situ languages that adopt clefting strategies to allow fronting of wh-phrases, with the use of an overt complementiser 'that'. The fronting of wh-adjuncts in these languages, which do not use an overt complementiser are deemed to be effects of topicalisation, rather than true wh-movement. Cheng provides no explanation for as to why only wh-adjuncts can topicalise whereas wh-arguments cannot.

Cheng's analysis will prove problematic however, for languages such as Babine-Witsuwit'en, which displays optional wh-fronting without the use of clefts or focus markers. This same problem applies to SgE, which adopts SE strategies for forming clefts; wh-fronting constructions, on the other hand, display no such effects, merely manifesting itself as different positions for the wh-phrase. Furthermore, wh-in-situ constructions have been shown to evade islands constraints while overt wh-movement ones do not.

#### 4.1.2 On wh-particles and wh-movement

The dichotomy of clause typing strategies predict that wh-fronting languages do not use particles, while wh-in-situ languages have no recourse to wh-movement. Cheng raises the question as to why wh-in-situ languages prevents syntactic wh-movement from occurring. She subdivides this question into three sub-questions:

- (4) a. Given the presence of a wh-particle, what prevents the wh-word from moving to Spec of C<sup>0</sup>?
- b. Why is it the case that a language cannot use a question particle optionally? That is, what determines that a language with question particles must use them in questions?
- c. Assuming LF wh-movement of in-situ wh-words, why can't an in-situ wh-word move at S-structure, given that they eventually have to move at LF? (Cheng 1991:27)

Let us consider the answers she provides for each of these questions in turn. I argue that most of the answers that Cheng claims are answers to these questions are actually not fully valid.

**Question (4a):** Cheng claims that the answer to (4a) lies in the concepts of Last Resort and Least Effort. We recall Last Resort from the previous chapter which essentially states that movement only occurs if it can enter into a checking relationship, and if the derivation converges without the need to apply any operations, those operations are disallowed. This is correct, wh-words in wh-movement languages need to move to check off features in C. Least Effort, without going into details, basically states that shorter derivations are preferred to longer ones, with principles of Universal Grammar taking precedence over language specific (parametric) ones. This formed the basis for later conceptions of Attract Closest and the Minimal Link Condition. Cheng claims that wh-movement serves to type a clause as interrogative ([+wh] on C) and this happens as a last resort in order to type a clause.

However, given the current advancements in our theory of grammar, feature checking, valuation and deletion are now accounted for by Agree. Given that the uninterpretable feature on C can agree with and be valued by the wh-element bearing [+wh], the fundamental explanation of how the CTH is satisfied cannot hold. While clauses must still be typed as interrogative via the presence of [+wh] on C, this can now be accomplished by Agree. It is easy to conceive of a language which values C with [+wh] via agree, yet without wh-movement. In other words, the motivation of movement of wh-words into [Spec,CP] is not due to the need to satisfy clause typing, but because of the EPP.

This means then that clause typing in itself has nothing to do with movement. Clause typing simply requires C to be valued with [+wh], via whatever means available, such as Agree. Whether movement takes place or not is immaterial and availability of movement can solely reduced to the

presence of EPP on C. The implication of this is that when wh-particles are present, it is not true that “wh-movement will not and cannot take place”. The absence of wh-movement must be ruled out because of independent reasons. Therefore, since clause typing and movement are independent operations which only happen to occur together in the case of wh-movement, the presence of a wh-particle does not rule out wh-movement and neither Principles of Last Resort nor Least Effort is violated; it simply has no bearing where clause typing is concerned. In short, EPP drives movement, nothing else.

**Question (4b):** Cheng provides two possible ways to account for (4b), the Earliness Principle, the Principle of the Economy of Derivation and the Lateness principle.

The Earliness Principle, as developed by Pesetsky (1989), which seeks to hierarchically satisfy grammatical filters as early as possible: (DS>) SS > LF > LP, where LP is what Pesetsky terms as the Language Particular level, on par with our current PF or last resort options like *do*-support. Essentially, the Earliness principle dictates that operations should apply as early as possible in syntax.

Cheng’s argument is, if a language possesses a question particle, clause typing is fulfilled upon its initial Merging, before S-structure; on the other hand, wh-movement takes place at S-structure. This results in wh-particles always preceding wh-movement in syntax. There are several issues which we need to consider with such an account.

Given the CTH, this argument is again couched on the presupposition that clause typing is a result of movement. However, given that our current syntactic operations are reduced to Internal/External Merge and Agree, it must follow that clause typing must come about as some reflex of Agree, rather than movement itself. Movement, as mentioned is merely the satisfaction of the EPP feature in locality. Furthermore, appealing to the Earliness principle is not really tenable, since this presupposes that clause typing is some sort of syntactic operation. This is incorrect. Clause typing is *a result* of syntactic operations – operations that are non unique; to say that clause typing must be satisfied as early as possible is inaccurate, rather the syntactic operations that apply must be satisfied as early as possible. Whether clause typing falls out as a result of this is immaterial, the syntax only cares that these operations are satisfied. Clause typing is merely an epiphenomenon of syntactic operations.

Conversely, if clause typing is not achieved via the valuation of a clause-type feature on C, and particles are merged directly as C elements, then

clause typing ceases to be a syntactic operation that falls under merge or move and is not subject to the Earliness Principle. Rather, clause typing is merely a fact of whether C possesses a [+wh] or not. How [+wh] gets there is irrelevant, it can simply be present by Agree between C and the wh-phrase.

The second way to answer question (4b) is to appeal to the Principle of the Economy of Derivation, which as Cheng suggests, draws a divide between the cost of Merge and Move, the former being free while the latter being costly. Since the C is filled with a typing particle via Merge, which is free, this is in contrast to Move (Move  $\alpha$  in Cheng's thesis) in wh-movement languages which is costly. Thus, an in-situ strategy would always be preferred to an wh-movement one, hence, preventing wh-movement from typing a clause in wh-in-situ languages, while forcing the base generation of a typing particle in C.

The difference between the costs of External Merge and Internal Merge (Move) was always assumed to be true; Internal Merge especially, was seen by Chomsky to be an imperfection of language, although this a view which he abandons in Chomsky (2005):

It has always been presupposed without comment that [External Merge] comes for free... [Internal Merge], in contrast, has been regarded as a problematic operation, an “imperfection” of language... A few years go, it became clear that this is a misunderstanding. IM (= Move, with the “copy theory”) is as free as EM; it can only be blocked by stipulation. (Chomsky 2005:7)

The answer to this conceptual question is one that cannot be answered easily. Regardless, claiming that the cost difference between Merge and Move is the reason as to why wh-in-situ languages cannot adopt a wh-movement strategy is simply implausible. Movement occurs because of the need to satisfy EPP features, an indirect consequence of clause typing, or if we divorce movement from Agree (which we will), not a consequence altogether. There is no causal relationship between clause typing and wh-movement. Given then that wh-movement is a result of the presence of the EPP, while the merging of a typing particle is not, the presence of typing particles and wh-movement are actually not in opposition, the difference can merely be reduced to the presence or absence of an EPP feature. The answer to the question as to why typing particles must be used in wh-in-situ languages must be sought elsewhere. The claim we will make however, is that the presence of particles is a universal phenomenon, regardless of whether a language has wh-movement or not.

**Question (4c):** This question addresses the issue of why in-situ wh-words cannot move at S-structure, since in-situ wh-words eventually have to move at LF. Cheng's account is that LF movement (in the sense of Huang 1982) is not for purposes of clause typing, rather, it is for other reasons, such as to satisfy selection, absorption (Higginbotham and May 1981) and scope. Since the satisfaction of these conditions need only apply at LF, there Last Resort dictates that wh-phrases do not need to move in surface structure.

I agree with the the Huang's claim that if we choose to adopt an LF analysis of wh-in-situ (which I do not), LF movement serves to satisfy selection, absorption and scope requirements. But this again is not relevant. Movement occurs directly as a result of the the need to satisfy EPP, not because of the need to clause type.

To reiterate then, wh-movement occurs because of the need to satisfy the EPP feature, nothing else. Clause typing comes about independently regardless of wh-movement. A very problematic case in point is partial wh-movement in German, which appears to have both wh-movement followed by the base generation of a another wh-word in matrix [Spec,CP] to mark scope and to satisfy features on matrix C. Where would such a language fall under according to Cheng's typology? The matrix wh-word in a partially moved wh-question has many similar properties to the question particles of wh-in-situ languages, especially since the true wh-word does in a way stay "in-situ" in an embedded position. As such, clause typing must be defined in other terms other than wh-movement and/or the presence of a question particle.

#### 4.1.3 Q-morphemes and Q-features

Cheng (1991) devotes a section on the Q-morpheme and states that in a language like English, the CTH essentially rules out the possibility of the presence of a Q-morpheme or a [+wh] feature base-generated in C. Cheng reviews three pieces of literature, two for and one against the need for a Q-morpheme. As we have shown in the introduction chapter of this thesis, contrary to Cheng, the framework of wh-movement that we adopt does actually require an interpretable [wh] feature on C. Along with that, on C there is also an uninterpretable [uQ] feature which allows C to be an active probe. In languages that allow for T-C movement (inversion), C also possesses a [uT] feature that allows head-movement, or more accurately, as we shall discuss later, head-to-spec movement of T to C followed (possibly) by an m-merger operation of the sort proposed in Matushansky (2006). Let us first review the arguments that Cheng presents, while fleshing out the

details of our framework of wh-movement along the way.

#### 4.1.3.1 Arguments in Cheng (1991)

Firstly, citing Katz and Postal (1964), who argue that a Q-morpheme must be present because transformations do not change meaning. Although my motivations are different from Katz and Postal, the proposal above is compatible with such a view. In fact, in light of optional wh-movement, which we want claim are reflexes of a single derivation by the multiple satisfaction of the EPP, such a statement must hold, otherwise we could simply postulate that the variants of wh-questions could all be formed by separate derivations<sup>1</sup>, something that we do not want to say. To argue this case in point, take for example a pair like (5).

- (5) a. Did Bill see John?  
b. Bill saw John?

What the theory presented here predicts is that these two sentences are semantically equivalent. Both possess a yes/no question particle Qu in [Spec,CP] that yields the interrogative force by virtue of an interpretable [Q]. However, this is not the complete picture, as will be made clear as the discussion in this section unfolds, the burden of bearing interrogative force does not solely rest on the question particle. Rather, for reasons that will be made clear below, it is the interaction of the Qu and C that yield the full nature of the interrogative force. There are several advantages to such an approach, such as allowing us to capture the difference between echo question and in-situ wh-questions, which both have similar surface structures.

Returning to the example above: inversion in (5a), following Chomsky (1995b) and Radford (2004) is the result of the presence of a [uT] feature on C while an EPP feature triggers movement of T to C. The pair in (5) differ with respect to the presence or absence of an EPP feature that triggers T-to-C movement. Semantically they are identical. Even though the feature composition is superficially different, because [uT] and EPP are uninterpretable, there is no perceivable effect at the interfaces.

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<sup>1</sup>Of course, as has been discussed at length in chapter 2, I am not denying the possibility of the presence of discourse-pragmatic effects in the use of these different variants. However, for reasons that I hope have been made clear in the relevant discussions, crucially, these effects should be a factor in our discussion of narrow syntax. The relationship between syntax and pragmatics is therefore not a biconditional one. It is not the case that pragmatic “features” for lack of a better word, feed the derivations to yield different outputs. Rather, it is the production of different outputs that are interpreted by the hearer as having a certain pragmatic force. The syntax itself, at the point of the derivation of multiple viable structures, is completely blind to these issues.

Secondly, Cheng cites Baker (1970), who proposed the existence of the Q-morpheme, arguing that sentences like the pair in (6) are the result of the different positions of realisation of Q, shown in (7):

- (6) a. We discovered that the police know who Clyde shot.
- b. We discovered who the police know that Clyde shot.
- (7) a. [we discovered [that the police know [Q Clyde shot who]]]
- b. [we discovered [Q the police know [that Clyde shot who]]]

We know now that this is simply a result of different Cs in the two constructions. Depending on which complementiser bears EPP, the wh-phrase moves to the appropriate position. The rest of the derivation follows the rules as laid our by our definition of Q-completeness, repeated below:

(8) *(Q)uestion-completeness*

A probe or goal  $\alpha$  is Q-complete if it possesses wh- and Q features. For  $\alpha$  and  $\beta$  (one a probe and one a goal),  $\alpha$  can delete any uninterpretable features on  $\beta$  (and likewise) if they:

- i. are Q-complete
- ii. enter into an Agree relation with the other
- iii. Match in features (only matched features delete)

Cheng (1991) also notes that Baker (1970) suggests that Q functions as an operator which binds one or more wh-phrases. When Q and the wh-phrase are coindexed, the position of Q determines scope. In a loose sense, this is a view that I will also adopt, and will be explained in more detail below.

Cheng (1991) however, needing to maintain that Q-morphemes are not permissible given the CTH, adopts the sole argument, following Grimshaw (1977) that semantic interpretation is not performed at deep structure, but rather at LF, thus removing the need for positing the existence of a Q-morpheme. Essentially, the argument is as follows: since the surface structure of interrogative and declarative sentences are different, they will receive different LF interpretations.

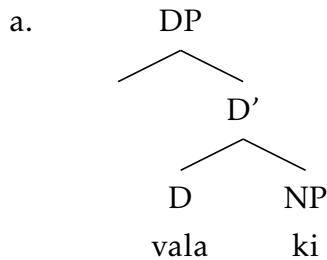
This is not true. We have shown examples of declaratives and interrogatives distinguished only by virtue their intonation. Such a view is also problematic for languages like Babine-Witsuwit'en, which exhibits free variation of wh-phrases between its CP-specifiers. Lastly, languages that do possess wh-movement and particles are forced to be interpreted as having different surface structures (presence vs. absence of particles) and to possess question particles. This then leads to claiming that these languages are wh-in-

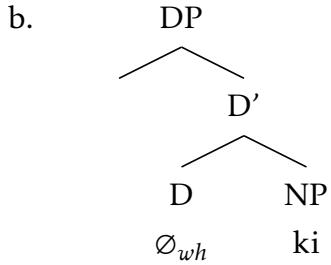
situ languages (by stipulation of the CTH), which in turn leads to accounting for wh-fronting by other means such as clefting. We have shown this to be not the case as well.

Given that the current Minimalist Programme does away with deep structure, leaving only LF, it renders this argument invalid. I do not see the connection between having the semantic interpretation done at LF and not having a Q-morpheme. The crucial question to ask then is, what exactly is a Q-morpheme? Is it simply the presence of a [+wh] feature in C? Or is it a morpheme which possesses a bundle of features. If I understand Cheng correctly, the fundamental feature of “Q-morpheme-hood” is the base-generation of a [+wh] feature in C. In her analysis, given that in-situ languages such as Chinese use wh-words as indefinites, the main argument is that wh-words in Chinese (or in-situ languages in general) is that wh-words inherently lack interrogative force. This interrogative force then is brought about by the [+wh] (and presumably [Q]) feature.

It is interesting that on the one hand, Cheng (1991:47) states that with complementizers such as *if*, the [+Q] feature is responsible for the interrogative reading, yet on the other hand her central claim about Q-morphemes revolves around the base-generation of the [+wh] feature on C. This essentially means then that the particle is basically some syntactic object that possesses [+wh] and binds indefinites and bestows interrogative force. Consider then the case in Hungarian. Cheng notes that in Hungarian, indefinites and wh-words are closely related by the general paradigm of affixing *vala-* to a wh-word. For example, *ki* ‘who’ and *hol* ‘where’ becomes *valaki* ‘someone’ and *valahol* ‘somewhere’. What Cheng proposes is that *ki* itself is a core that possesses no quantificational force and can either be bound by *vala*, which yields an indefinite reading or by a null determiner D, which has [+wh] in this configuration:

(9) *Hungarian* (Cheng 1991:85-6)





(9b) is very similar to what I have proposed works for wh-phrases in SgE (apart from additional complement-to-specifier movement and that Qu takes DPs not NPs as its complement), but what puzzles me is why  $\emptyset_{wh}$  is not considered a question particle by Cheng, who states “languages like [Polish] do not have wh-particles, the core cannot get interrogative force from a wh-particle, as in the case of Mandarin Chinese or Japanese” (Cheng 1991:85). The similarities between the so called wh-particles and  $\emptyset_{wh}$  are striking: firstly, it is a head; secondly, it has [+wh]; and thirdly it binds wh-phrases. What more is required to classify something as a question particle? Surely not its overt position; whether it is a C<sup>0</sup> or a D<sup>0</sup> should not really matter, what matters is the properties it exhibits.

The question to ask now, despite the fact that Cheng claims otherwise, is whether these Q-morphemes such a  $\emptyset_{wh}$  are “Typing Particles” in the way that Cheng means them to be. Given their properties, the answer must be yes. However, one may argue that since these particles are not base generated in C, hence not C<sup>0</sup> elements, they are not a counterexample to the CTH. Unless one chooses to adopt a position where it is the position of base-generation that determines whether something is a question particle or not (which is an incredibly weak argument), in this case, either Cheng’s Hungarian analysis or the CTH must be abandoned to avoid a blatant contradiction.

#### 4.1.4 Why the predictions of the CTH cannot hold

Having looked at several counterexamples to the CTH, let us consider precisely the exact predictions that the CTH makes, according to Cheng, as shown in (2) repeated below:

- (2) a. **Prediction I:** No language has yes-no particles (and thus wh-particles) and also syntactic wh-movement.
- b. **Prediction II:** No language has the option of using either a wh-particle or syntactic wh-movement of wh-words to type a sentence as a wh-question.

- c. **Prediction III:** No language fronts more than one wh-word for Clausal Typing.

**Prediction I:** This prediction essentially rules out the availability of yes/no particles and wh-particles in languages which possess syntactic wh-movement. As mentioned in the previous section, according to Cheng's theory, the presence of a wh-particle serve to type the clause as a wh-question. Yes/no particles serve to type the clause as interrogative. However, as shown above, a null operator (which qualifies as a yes/no particle) is base-generated in [Spec,CP] in yes/no questions in English. Clearly, the presence of this is a counterexample to this prediction, despite the fact that these particles are base-generated in [Spec,CP] rather than C.

Cheng gives two examples of potential counterexamples to this prediction, being *whether* and *if* in English, which Baker (1970) takes to be Q-morphemes and *czy* in Polish. Cheng's examples are below:

- (10) a. Amanda does not know whether Marcia is coming.  
b. Amanda does not know if Marcia is coming.
- (11) a. Whether Marcia is coming is obvious.  
b. \* If Marcia is coming is obvious.
- (12) a. *czy* pan dużo podròzuje  
Q you much travel  
'Do you travel a lot?'  
b. nie wie-m *czy* wyjecha-c (*czy* nie)  
not know-I whether leave-INF whether not  
'I don't know whether to leave or not.'  
c. czasanu chodz̄e do kina *czy* teatru  
sometimes I go to cinema or theatre  
'Sometimes, I go to the cinema or theatre.'

An in-depth analysis of these words is not relevant, and as such, I will gloss over them. Essentially, *whether* is analysed as a wh-phrase, rather than as a particle that is base-generated in C and is thus subject to wh-movement to [Spec,CP]. Moreover, *whether* does not occur in matrix questions and can only occur in embedded and extraposed clauses as well as sentential subjects. Yes/no particles, on the other hand, are expected to only be able to occur in matrix questions. Furthermore, *whether* can display scope ambiguity:

- (13) I know whether Bill should ask John to resign or retire.

*Whether* can scope over either the matrix or embedded clause yielding wide or narrow scope disjunction respectively. The claim then is that *whether* is base generated in the embedded position and raise cyclically to [Spec,CP] of the matrix clause. There is not much contention here, I mostly agree, although the null counterpart of *whether*, merged directly in [Spec,CP] in English yes/no questions as described by Radford (2004) has been seen as a particle. Cheng also adopts such an analysis for *if* although she calls it an operator, as we shall see below. Once again, Cheng appears to appeal to structural position as a diagnostic for the status of particles. We reject such an approach, choosing rather to adopt an approach where particles are defined by the function they perform.

*If*, on the other hand resides in C, and the claim is that it is not inherently interrogative. In fact, it is underspecified for Q. Crucially then, according to Cheng, an empty operator, which is valued for [+Q], moves to [Spec,CP] and thus values *if* for [+Q]. Granted that if *if* is not inherently interrogative, it is not a particle, however, what about this empty operator? This operator has the same functions as a particle, since according to Cheng, wh-words in in-situ languages are not inherently quantificational and thus require a wh-particle in order to elicit an interrogative reading. This is precisely what this empty operator does. If Cheng goes as far as to propose that an empty operator with a [+Q] feature is present in typing a clause and imparting interrogative force to it, then I do not understand why such an analysis is not adopted for yes/no questions in English, especially given the fact that Cheng's account also has phonologically null counterparts of particles in wh-in-situ languages. The null counterpart of *whether* is not so different.

The Polish word *czy*, unlike *if* and *whether*, is able to occur in matrix clauses as shown in (12). In (12a), it appears to be a sort of yes/no question marker, while in (12b) it looks like *whether* in English and in (12c), it functions as a disjunctive element in a non-question environment. This leads Cheng to surmise that *czy* behaves like English *whether* and that it is a wh-phrase rather than a yes/no particle/operator like A-not-A constructions in Chinese, which are also disjunctive and are seen as "special markings" in yes/no question environments. The point that seems to be missed however is that if *czy* is not a yes/no particle, then there must be an empty yes/no particle to type the clauses as questions, much like in English.

Another issue regarding Polish is that it is a multiple-wh-fronting language and like Hungarian, shows morphological consistency in that it affixes a morpheme to wh-phrases to turn them into indefinites. Similar arguments for Hungarian, regarding the status of the null D<sup>0</sup>  $\emptyset_{wh}$  apply here.

As we will show in the next section, there is evidence that there is no correlation whatsoever between whether a language is wh-fronting or wh-in-situ with respect to whether it has question particles or wh-indefinites.

**Prediction II:** The second prediction states that in-situ languages which have wh-particles, must use them, and by extension, the wh-movement strategy is not available. In short, there can be no optional movement languages, a hypothesis that this thesis precisely aims to disprove. Cheng cites examples from Egyptian Arabic, Bahasa Indonesia and Palauan as being potential examples of optional movement languages:

- (14) Egyptian Arabic
  - a. Fariid hawil yi'mil eeh  
Fariid tried to-do what  
'What did Fariid try to do?'
  - b. eeh illi Mona ?arit-uh  
what that Mona read-it  
'What did Mona read?'
- (15) Bahasa Indonesia
  - a. Sally men-cintai siapa  
Sally PREF-love who  
'Who does Sally love?'
  - b. siapa yang Sally cintai  
who that Sally love  
'Who does Sally love?'
- (16) Palauan
  - a. k-osiik er a te'ang  
2s-look for NOM who  
'Who are you looking for?'
  - b. ng-te'a a l-ulekod-ir a rubak  
CL-who NOM IR-3-PF-kill-3s NOM old man  
'Who did the old man kill?'

In these examples, Cheng shows that in each of the wh-fronting constructions, there is a recurring element: *illi* in Egyptian Arabic, *yang* in Bahasa Indonesia and *ng-* and *a* in Palauan. She goes further to show that these elements consistently recur in relative and cleft constructions and thus concludes that this is not a true case of wh-movement, rather it is a cleft construction derived from a default wh-in-situ construction. I agree with Cheng that these are all *not* instances of optional wh-movement. Also to be

ruled out along with these are the type of focus wh-movement and the affixation of morphemes to wh-words in ex-situ positions, common in Bantu languages, examples of which are cited from Sabel and Zeller (2006):

- (17) Kinyarwanda (spoken in Rwanda and Southern Uganda)

- a. Umogore jiše nde  
woman killed who  
'Who did the woman kill?'
- b. Ni-nde umogore jiše  
FOC-who woman kill  
'Who did the woman kill?'

- (18) Zulu

- a. U-cabanga ukuthi uBev u-thenge ini  
2SG-think that Bev1a SP1a-bought what9
- b. Y-ini o-cabanga ukuthi uBev u-yi-thengile  
COP-what9 RC-2SG-think that Bev1a SP1a-OC9-bought
- c. U-cabanga ukuthi y-ini a-yi-thengile-yo uBev  
2SG-think that COP-what9 RC1a-OC9-bought-RS Bev1a  
'What do you think Bev bought?'

In (17), we can see that object wh-words in Kinyarwanda can occur in its canonical in-situ object position or be fronted. Crucially however, when fronted, it requires an overt focus marker *ni*. This means that the movement of the wh-word is analogous to syntactic wh-movement in languages like English, with movement into a [Spec,FocP] headed by the focus marker *ni*.

Zulu on the other hand, adopts a different wh-raising strategy. (18) shows a construction where a wh-word in object position resides in an embedded clause. (18a) shows the in-situ object position while (18b,c) show the fronted construction and the intermediate position respectively. Again in the movement examples, we see the presence of an extra copular element, *y* and thus must be discounted as a case of optional wh-movement.

None of these examples violate Prediction II; indeed, none of the languages described above has the option of using a wh-particle or syntactic wh-movement to form questions. What would serve as true evidence for optional wh-movement would be constructions where the in-situ and ex-situ constructions are (at least) identical in the types of lexical items used, with differences only in the position of the wh-word.

However, these are not the sort of languages we are concerned with. We are concerned with languages that exhibit optional movement as discussed

in SgE, Babine-Witsuwit'en and other constructions showing only alternation of the position of the wh-word without the use of any discernable cleft or focus markers. These are the languages that violate Prediction II and must be accounted for.

**Prediction III:** The third prediction states that no language fronts more than one wh-word for Clausal Typing. This prediction I agree with, although the motivations are different from that of Cheng. For Cheng, clausal typing is a direct consequence of the binding of wh-words by particles or overt wh-movement. My stand is that neither of these is responsible for clause typing. Rather, clause typing is a result of the interaction, that is, the agreement and valuation of features between C, the wh-phrase and the Qu particle, which we will discuss later in this chapter, after we have established that the CTH cannot stand.

To summarise, I have shown in this section that the Clausal Typing Hypothesis cannot be upheld for several reasons. Firstly, the concept of clausal typing needs to be readdressed and reformulated. The presence of [+wh] in C is not a sufficient condition for clausal typing. Instead, the presence of [+wh] in C and the presence of the [Q] feature must be present, and more importantly, both of these must be interpretable at the interfaces (i.e. the derivation must not crash) and be fully interpreted. Secondly, the stipulation that only wh-in-situ languages possess yes/no and wh-particles cannot hold. Cheng stipulates that these particles are base generated in C and nowhere else. I maintain that this is not true. Particles can also be generated elsewhere, in [Spec,CP] for example, as in the case of the yes/no operator in English yes/no questions. In other words, we look for function not form. To reiterate, structural positions are not a diagnostic for whether something is particle or not, it is what the particle does that matters. Thirdly, I have shown that the predictions that CTH makes, apart from Prediction III, are completely untenable.

#### 4.1.5 Bruening (2007) and WALS (Haspelmath et al. 2008)

Typologically, wh-in-situ languages are assumed to possess two unique properties, the presence of question particles (Cheng 1991) and wh-indefinites (Cole and Hermon 1998). Bruening (2007) shows typological evidence that such a correlation does not hold in either direction; that is, languages occur in all permutations with regards to wh-movement, wh-indefinites and question particles.

#### 4.1.5.1 Question particles

In Cheng (1991), question particles belong solely in the realm of wh-in-situ languages. Wh-in-situ languages must possess question particles for purposes of clause typing. On the other hand, languages which allow for (single or multiple) wh-movement cannot and must not possess particles. To put this more explicitly, no language can possess both wh-movement and question particles and no language can have neither. As such, Cheng accounts for cases in Mandarin Chinese where the particle is used optionally by stating that that particle is always present, the only thing in alternation is whether the particle is an overt or null one.

- (19) ta chi-le shenme (ne)  
 he eat-ASP what PRT  
 ‘What did he eat?’

Bruening shows that this completely untrue: more wh-movement than wh-in-situ languages actually possess particles. Bruening bases his results on the findings of Dryer (2004), and lists the following distribution, where a particle is classified as a sentence-peripheral word or clitic. Dryer’s results are shown below as found in Bruening (2007).

Table 4.1: The relation between wh-movement and Q-particles

Q-Particle?	Wh-in-situ	Wh-movement
Yes	258	123
No	143	53
Total	401	176

According to Dryer’s database, Bruening states that the languages which tend to lack question particles are the (a) languages with interrogative morphology, (b) languages that use a different word (non wh-words) for questions, (c) languages that only mark polar questions intonationally and (d) languages that do not distinguish polar questions even intonationally. Crucially what is important is that 64% of wh-in-situ languages and 70% of wh-movement languages possess question particles. This means that contrary to the predictions made by the CTH, there are wh-in-situ languages that do not possess question particles and likewise, there are wh-movement languages that possess particles.

I turned to a more recent database, the World Atlas of Languages Structures (WALS) Online (Haspelmath et al. 2008) to see if these results are borne out and indeed they are. I input two cross-reference criteria, Position of Interrogative Phrases in Content Questions (Feature 93) and Position of

Polar Question Particles (Feature 92). Since wh-in-situ languages are predicted to always have special overt markings in yes/no questions while wh-particles are used optionally, and yes/no question particles are a necessary condition for wh-particles, such a cross referencing should reveal the distribution and corresponding correlation between wh-in-situ and question particles in general.

Table 4.2: Wh-movement/in-situ vs. position of polar question particles

Interrogative Phrase	Particle	Number of Languages
Initial	Initial	59
Initial	Final	28
Initial	Second position	23
Initial	Other Position	1
Initial	In either of two positions	7
Initial	No question particle	61
Non-initial	Initial	31
Non-initial	Final	184
Non-initial	Second position	14
Non-initial	Other position	6
Non-initial	In either of two positions	8
Non-initial	No question particle	155
Mixed	Initial	4
Mixed	Final	6
Mixed	In either of two positions	3
Mixed	No question particle	3

Table 4.2 shows a more detailed breakdown of the distribution of wh-movement and the presence of particles. Without going into the details of each of these languages, and even granting that some of these languages may be controversially categorised, such a diverse distribution should be reason enough for us to abandon (or at least strongly doubt) the idea that only wh-in-situ languages have particles. In fact, it seems that wh-movement is not dependent on any other feature of language. Such typological distinctions breaks down even further when faced with a language like Singapore English, which is optionally wh-fronting while possessing a question particle. There is no listing in the database for Babine-Witsuwit'en although it is stated with regards to the position of the interrogative phrase, languages such as English which has wh-fronting but uses in-situ in echo questions and discourse motivated contexts are listed as having an initial position for interrogative phrases.

This supports the idea I have proposed above that there is not much to say about wh-movement, other than whether an EPP feature is present on C to motivate movement of wh-words to its periphery. It would be impossible

(and erroneous) to place wh-movement in a implicational or biconditional relationship to any other linguistic feature, such as the presence or absence of particles. At best, we can only observe general tendencies. Barring further cross-linguistic research, I have nothing to say regarding what these tendencies may be other than it appears that are more languages which possess particles than those which do not. We must therefore abandon the idea that only wh-in-situ languages possess question particles, rather, it makes more sense, given the distribution above that the inclusion of question particles in general, within a theory of question formation, should be the null hypothesis, or indeed, a universal property of language in general.

#### 4.1.5.2 Wh-indefinites

Another general typological assumption that exists is that only wh-in-situ languages allow for wh-indefinites. Cole and Hermon (1998) predict that typologically, wh-in-situ languages contain a separable operator/wh-word construction and therefore must have wh-indefinites. In contrast, wh-movement languages generate the operator/wh-word as a single inseparable lexical item, therefore disallowing wh-indefinites to exist in such languages. This is incorrect. Even in their paper, they note that potential counterexamples are languages such as Tzotzil, where words can be used as both indefinites and interrogatives, must move to a pre-verbal position, or languages such as Turkish, which is wh-in-situ but disallow wh-indefinite readings (Cole and Hermon 1998:24on26).

These are not the only counterexamples to the claim that wh-indefinites are unique properties of wh-in-situ langauges. Bruening (2007) discusses examples from German and Passamaquoddy, both of which are wh-movement languages which allow wh-indefinites.

(20) German

- a. es hat wer geklingelt  
it has who rung  
'Somebody has rung the bell'

(Postma 1994:188)

- b. ich habe was eingekauft  
I have what bought  
'I have bought something'

(21) Passamaquoddy

kesq yaq pemacqim-a-htit otuhk-ol, on keq (')-nutom-oni-ya  
while QUOT drag-DIR-3P<sub>CONJ</sub> deer-OBV then what 3-hear-N-3P  
'While they were dragging the deer they heard something'

(Newell 1974:5)

In fact, Passamaquoddy seems to disallow wh-in-situ and even multiple questions do not exist. Passamaquoddy strictly requires wh-words to be raised if they are to have question meaning. If wh-words are left in-situ, they can only have an indefinite reading, as can be seen in (22):

- (22) keq wen nemiht-aq  
what who IC.see-3<sub>CONJ</sub>  
'What did someone see?'  
\*'Who saw what?'

This means that, as Bruening states, "using wh-words as variables cannot be a sufficient condition for wh-in-situ". There is no correlation between the way wh-words are interpreted in a language and its status with regards to wh-movement. Passamaquoddy is a prime counterexample, wh-words require raising for question interpretation, meaning that it is a wh-movement language. The fact that indefinites on the other hand, must be left in-situ suggests that there may be a correlation between the *syntactic position* of a wh-word and whether it may be an indefinite or not, but there is no correlation whatsoever between the so-called parametric status of wh-movement in a language and the presence of indefinites. If it is true that wh-words left in-situ are somehow more amenable to being indefinites, the fact that wh-in-situ languages allow indefinites is merely an epiphenomenon of that fact, hence the tendencies observed in languages. What must be made clear ultimately is that there is no strict typological correlation between wh-in-situ languages and the presence of wh-indefinites.

Singapore English seems to be the opposite of Passamaquoddy. Singapore English is a language which has wh-movement, yet allows for wh-in-situ but not wh-indefinites. I deem it to be a wh-movement language in the sense that it possesses an EPP feature on C, but at the same time possesses wh-in-situ strategies and properties which seem to be more in-line with wh-in-situ languages. These include the use of question particles and the availability of disjunctive “A-not-A”-like constructions, presumably because of Chinese substrate influence. However, the use of wh-indefinites is very restricted, one cannot utter (23) with an indefinite reading.

- (23) %I buy what

‘I bought something.’

This is somewhat unexpected, considering that SgE has strong MC substrate influence. In MC, wh-words can function as indefinites, as the example below in (24) clearly shows:

- (24) a. ni mai-le shenme (ne)  
           you buy-ASP what      PRT  
           ‘What did you buy?’
- b. ni mai-le shenme ma  
           you buy-ASP what      PRT  
           ‘Did you buy something?’

(24a) shows the question word *shenme* used as to mean “what”. However, when turned into a yes/no question in (24b), *shenme* loses its wh-question meaning and instead, functions as an existential indefinite. To complicate matters further, in MC, this indefinite also allows binding by the distributor *dou* which gives rise to universal quantification:

- (25) ta shenme dou mai-le  
           he what    all buy-ASP  
           ‘He has bought everything’

What is interesting is that in SgE, despite the fact that wh-indefinites were shown to be impossible in (24), when wh-words are quantified over by a distributor *also*, universal quantification is possible.

- (26) he see what also buy  
           ‘Whatever he sees, he buys.’

The common analysis in MC is to take wh-words as existential variables which are then bound by operators or quantifiers. In the case of questions, the operator is (by some accounts) realised as a particle. If SgE allows particles in questions and licenses universal quantification when bound by a distributor but *does not* license wh-indefinite readings in non-quantificational sentences, this must mean that the operator-variable binding system must work differently in SgE.

A similar observation is also made in Sato and Yuliani (2008) regarding Bahasa Indonesia (BI). Cole and Hermon (1998) have noted that in Malay, three options for question formation exists: in-situ, partial wh-movement and full wh-movement. In BI, which is very similar to Malay, a similar paradigm exists (example (1) in Sato and Yuliani (2008)):

- (27) a. apa<sub>i</sub> yang kamu pikir Esti kira Pak Yanto beli t<sub>i</sub> kemarin  
what that you think Esti expect Mr. Yanto buy yesterday
- b. kamu pikir apa<sub>i</sub> yang Esti kira Pak Yanto beli t<sub>i</sub> kemarin  
you think what that Esti expect Mr. Yanto buy yesterday
- c. kamu pikir Esti kira Pak Yanto beli apa kemarin  
you think Esti think Mr. Yanto buy what yesterday  
'What do you think Esti expects Mr. Yanto bought yesterday?'

Sato and Yuliani (2008) note that neither overt or covert syntactic movement nor unselective binding are sufficient to account for the facts in BI, and instead, a choice function is the appropriate mechanism for accounting for the distribution of wh-question formation. Despite the fact that BI is not a wh-movement language, due to the use of *yang* as a clefting strategy<sup>2</sup>, I will argue that a choice function analysis is the correct way to analyse questions in general.

One final piece of evidence against the correlation of wh-in-situ and indefinites is the fact that there are wh-in-situ languages which do not use wh-words as indefinites. An example of this is shown in Bruening (2007), citing examples from Owens (1985), where a description of Hara Oromo, a language spoken in Ethiopia and Northern Kenya is given:

- (28) a. Sun magalaa én yúu itt déme?  
that market who to-it went  
'That is the market who went to?' (Owens 1985:206)

---

<sup>2</sup>Presumably, *yang* is a complementiser that has an EPP feature but crucially is not interrogative. This does not meet our definition of a wh-movement language as given in chapter 1. Only languages that have interrogative complementisers with an EPP feature are classified as wh-movement languages. I am inclined to agree with Cheng (1991) that this is a cleft construction.

- b. Eeruu-f bakká xám beet-t-a?  
 field-and place which know-2-IMP  
 'You know the field and which place' (Owens 1985:206)

The examples in (28) show in-situ constructions where wh-words are insensitive to islands. However, as shown below, they do not use wh-words as indefinites, but instead, use generic nouns:

- (29) Nama takká-llé hin-árkine  
 person one-even NEG-saw  
 'We didn't see anyone' (Owens 1985:193)

While the evidence provided in this section is far from exhaustive, it does reflect the presence of striking counterevidence for the standard assumption that wh-indefinites can only be found in wh-in-situ languages. Both wh-movement and wh-in-situ languages have been shown here to use or not use wh-words as indefinites. It must be reiterated then that at best, the wh-in-situ to wh-indefinite relationship reflects a typological tendency, but in no way are they in an implicational or biconditional relationship.

#### 4.1.6 Conclusion

This section has provided strong theoretical, empirical and typological evidence against the Clausal Typing Hypothesis. The CTH requires that languages are cleanly split between movement and non-movement ones, with nothing in between. Two broad claims are made: firstly, movement languages require overt movement into [Spec,CP] while in-situ languages merge question particles into C which binds question words in-situ. Secondly, only wh-in-situ languages license wh-indefinites due to unselective binding while wh-movement languages do not license wh-indefinites. The evidence provided above clearly shows that the distribution is not, unfortunately, so cleanly split between two opposing paradigms of wh-question formation. Typologically, languages run the gamut of all possible combinations of wh-movement/in-situ coupled with the presence (or absence) of question particles. In order to develop a theory which accounts for these requires a radical shift in the way we construe questions and wh-movement in general. All of this however, is possible, even within the constraints of the current Minimalist framework and the framework that will be developed below will attempt to do this. There are thus three main questions from this point forward: first, what exactly is the particle Qu and what does it do? Second, how do we account for the various positions of the wh-phrase and the

particle, especially in languages that exhibit optional wh-movement? And third, how can we account for scope assignment and intervention effects in these languages?

## 4.2 The particle Qu: Form and function

So far, the proposal is that a particle Qu takes wh-phrases as its complement, yielding a larger QuP phrase. In the previous section we have looked at the typological distribution of languages, and this has revealed that in fact, contrary to what may have been thought before, the majority of languages actually do possess overt question particles. According to WALS (Haspelmath et al. 2008), out of 777 languages, 468 languages (60%) display the use of overt particles in polar questions in a variety of positions. As such, the idea that will be entertained here is that the presence of question particles is a language universal, regardless of whether the language has a phonologically overt particle or not. There are several advantages to such a hypothesis, as we shall see in the following discussion, the least of them not being the fact that this allows us to develop an account of optional wh-movement. This section is devoted to asking and answering the question why languages should adopt the use of a question particle and why it should take wh-phrases as its complement. We will investigate in more depth the formal syntactic features of such a particle and the impact this has on the subsystem of interrogative formation.

The proposals explaining wh-in-situ constructions can broadly be divided into two camps. The first of these is LF movement, as proposed by Huang (1982), and as mentioned above this is not the approach that we will adopt. The second camp adopts a question morpheme approach, dating back to Baker (1970). The idea is that question morphemes bind wh-phrases via unselective binding (Heim 1982) thus allowing wh-phrases to remain in-situ without need for LF movement. I have made vague allusions to adopting an unselective binding type approach. This was of course, not fully accurate, having not yet laid down the exact formulation of Qu, as will be presented here.

The aim of this section is to put forward an account of wh-question formation that attempts to unify the universality of language-internal syntactic processes. The central pillar of this account is essentially the hypothesis mentioned in the previous section: that all languages, wh-movement or otherwise, possess question particles that take wh-phrases as their complements. Binding approaches to wh-phrase formation has often been used to

account for wh-in-situ facts or the fact that in certain languages wh-phrases are inherently indefinites and require binding to yield interrogative interpretations.

However, given that the typological data presented above reveal that there is no correlation one way or the other with regards to these features of languages, the ideal approach to take would be one of unification. This would entail that the underlying mechanisms of both wh-movement and wh-in-situ languages are the same, given that the notion of wh-movement is “relegated” to being solely a reflex of satisfying EPP. This aside, there should be no other differences in the internal mechanics of wh-phrase or question formation. Scope assignment, intervention conditions and other facts observed over the past decades of study should automatically fall out from such an account. Of course, this is a hugely bold claim to make, and I do not presume to have all the answers. Nevertheless, the proposal that follows is one that I believe to be on the right track.

#### 4.2.1 What is Qu?

In order to answer the questions pertaining to the nature of Qu, we would do well to first look at its behaviour. Why does Qu takes a wh-phrase as its complement? To answer this question, we need to consider the basic semantics of questions. Adopting a Karttunen (1977) approach to questions, questions denote the set of propositions which are true answers to that question. In turn, wh-phrases then are seen as existential noun phrases, basically individuals of type  $e$ . However, if we assume that wh-words denote sets of individuals of type  $\langle e, t \rangle$ , then the answer as to what Qu is follows. Qu takes wh-phrases, which are sets and returns individuals. This basically describes a *choice function* (CF) as described at length in Reinhart (1992, 1998, 2006). With respect to question particles, Hagstrom (1998), Yatsushiro (2001) and Cable (2007) (amongst others) have described Q particles<sup>3</sup> along these lines. More accurately, Qu is a variable over CFs, with existential closure applying at TP<sup>4</sup> (or a higher) position. Assuming *what* to be the set of non-human individuals, this would work in this way, abstracting away from complement-to-specifier movement as mentioned:

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<sup>3</sup>Hagstrom and Yatsushiro discuss *ka* in Japanese; Cable discusses *sá* in Tlingit. Their exact implementation differs, for example, Hagstrom considers Q particles as operators which, after movement, binds its trace, which in turn, are the variables over choice functions. However, Hagstrom does assume that Q particles are head-adjoined to C heads. Cable on the other hand, adopts a more direct approach of having a Force head act as an operator, binding the Q particle. The latter view is the one I will adopt here.

<sup>4</sup>Existential closure should apply over the CF variable at propositional level, vP or CP are also possible candidates. This is not relevant for purposes of our discussion here.

(30) [ Qu what ]

$$\exists f.f(\{x : x \in \text{non-human}\})$$

'There exists a choice function  $f$  that takes a set of non-human entities and returns a particular entity  $x$ .'

According to Reinhart, the advantage of such an approach allows us to avoid issues of leaving the restriction of the wh-phrase in-situ. Consider the following argument from Reinhart (2006:36-7):

(31) Who will be offended if we invite which philosopher?

If we adopt a purely unselective binding approach to interpreting such a sentence, Reinhart argues, we obtain the wrong interpretations:

- (32)
- a. for which  $\langle x, y \rangle$ , if we invite  $y$  and  $y$  is a philosopher, then  $x$  will be offended
  - b.  $\{P \mid (\exists \langle x, y \rangle \ \& \ P = {}^\wedge((\text{we invite } y \text{ and } y \text{ is a philosopher}) \rightarrow (x \text{ will be offended})) \ \& \ \text{true}(P))\}$
  - c. Lucie will be offended if we invite Donald Duck.

Because of the nature of the conditional, if the restriction occurs in the antecedent clause, then even if the antecedent clause is false, the proposition  $P$  will still be vacuously true. The antecedent clause is a conjunction, meaning that just as long as one of the conjuncts ('we invite  $y$ ' or ' $y$  is a philosopher') is false, it renders the entire antecedent false, resulting in a (vacuously) true implication. This is not desirable, since the meaning of (31) should not have as a possible answer (32c). The CF analysis solves this problem by returning an element from the set of philosophers, disallowing false conjuncts and ensuring the integrity of the answer set:

(33) for a set of choice functions  $G$ ,

$$\{P \mid (\exists x)(\exists f \in G \ \& \ (P = {}^\wedge((\mathbf{we invite } f({}^\wedge \mathbf{philosopher})) \rightarrow (x \text{ will be offended})) \ \& \ \text{true}(P))\}$$

The precise formulation of the semantics are not relevant to the discussion at hand; interested readers are directed to the references mentioned above. What is important is the portion in (33) marked in bold. Essentially, the choice function ensures that only a member of the set of philosophers is returned as a value, allowing the antecedent to always be true and avoiding the problem of vacuous truth with false antecedents as in (32b). This illustrates the use of the choice function in allowing us to obtain the correct interpretations. We return now to syntax and the overt movement of Qu.

#### 4.2.2 Previous accounts of Qu-movement

We have established that Qu takes wh-phrases as its complements, yielding individuals extracted from a set of individuals denoted by wh-phrases. Since Qu is a *variable* over CFs, this means that in turn this variable can be bound by a higher operator. In the sense of Cable (2007), I propose that this is higher operator is an interrogative C, which binds Qu. This makes sense, especially if we consider C to be the locus of interrogative force.

This is not merely some ad hoc stipulation. We do know that C agrees with wh-phrases and in languages with wh-movement, motivate raising of the wh-phrase into its specifier. In semantics, existential closure over the choice function Qu results in a proposition. Binding of Qu by C, in turn generates a set of true propositions, each corresponding to a member of the domain of CFs. In syntax, what we are more concerned with, this process is seen to be a reflex of Agree, or more precisely, it is a reflex of the valuation of Q and wh-features via Agree, a system that we will consider in detail later in this section.

We have mentioned that the movement of Qu is one of the cornerstones of explaining optional wh-movement through the multiple satisfaction of the EPP and therefore, we need to develop a system to account for its movement. Before I present my proposal, let us first consider two important accounts of a Q-movement approach to question formation. The first of these is a Qu-adjunction approach, which assumes that a particle Qu adjoins (usually) to a wh-phrase, and the second is a Qu-merger approach, which assumes that Qu takes wh-phrases as their complements, similar to what I have proposed.

##### 4.2.2.1 Qu-adjunction in Sinhala and Japanese (Hagstrom 1998; Kishimoto 2005)

Hagstrom considers three languages, Sinhala, Japanese and Okinawan. We will focus on his analysis of the former two, as they are sufficient to illustrate the ideas that he presents. Sinhala questions exhibit some interesting properties. All examples in this section are from Hagstrom<sup>5</sup> unless stated otherwise:

- (34) Gunapaala sinduvak kivva.  
          Gunapaala a.song   sang-A  
          ‘Gunapaala sang a song.’

---

<sup>5</sup>Hagstrom glosses the Qu particle as *də* although as mentioned in chapter 3, I will gloss them as *da* for consistency.

- (35) Siri **mokak da** keruwe?

Siri what Q did-E

'What did Siri do?'

We should draw our attention to the parts of the sentence in bold. Sinhala is basically a wh-in-situ language. It also uses question particles as exemplified by *da* and interestingly, the particle agrees with the verb, resulting in an *-e* ending instead of an *-a* ending. Kishimoto (2005) refers to this as Particle-Predicate Concord (PPC). PPC is also used as a scope marker, and can be used to differentiate between matrix and embedded questions:

- (36) a. Ranjit [kau **da** aawe kiyəla] dannəwa.

Ranjit who Q came-E that know-A

'Ranjit knows who came.'

- b. Ranjit [kau **da** aawa kiyəla] danne?

Ranjit who Q came-A that know-E

'Who does Ranjit know came?'

In certain cases, the particle *da* can undergo displacement to the right periphery of the clause:

- (37) Ranjit [kau aawa **da** kiyəla] dannəwa.

Ranjit who came-E Q that know-A

'Ranjit knows who came.'

Crucially in these cases, the verb does not take the interrogative *-e* suffix; rather, it possesses a declarative *-a* suffix instead. In other words, the interrogative strategy of Sinhala alternates between a wh-word adjacent *da* with interrogative verb marking or with a clause final *da* with no verb marking.

In matrix questions, wh-words in Sinhala can also be interpreted as an indefinite. However, in these cases, the alternation solely resides in the realisation of the PPC:

- (38) a. mokak **da** waetuna.

what Q fell-A

'Something (unidentified) fell.'

- b. mokak **da** waetune.

what Q fell-E

'What fell?'

The final important aspect of *da* in Sinhala is that it cannot appear within islands. Instead, it must be on the outside of the island, although as close as possible to the wh-word:

- (39) a. \* oyaa [kau da liyəpu potə] kiuwe?  
           you who Q wrote book read-E  
           'You read the book that who wrote?'  
       b. oyaa [kauru liyəpu potə] da kiuwe?  
           you who wrote book Q read-E  
           'You read the book that who wrote?'

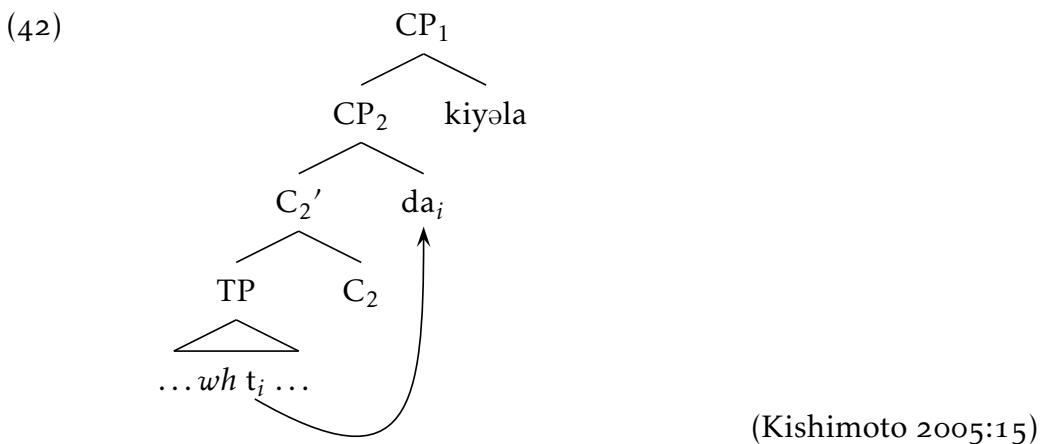
This can be generalised as:

- (40) a. \* ... [island... wh-word Q...] ... V-E?  
       b. ... [island... wh-word...] Q... V-E?  
       c. \* ... [island... wh-word...].... Q... V-E?

To account for these facts, Kishimoto (2005) suggests that *da* is adjoined to a wh-phrase:



Kishimoto argues that *da* is both minimal and maximal, on par with clitics. When *da* moves to the right periphery of the clause, its ability to precede the complementiser *kiyəla* prompts Kishimoto to propose that a split CP exists in Sinhala:



Essentially then, *da* serves to "delimit" wh-constituents, just as long as it is not inside an island. Following this, overt movement yields (42) while covert movement yields the in-situ position of *da* right-adjoined to the wh-phrase as shown in (41). Most importantly, the claim is that *da* is never

merged in its scope-marking position of [Spec,CP<sub>2</sub>]. Also, *da* cannot appear within islands but must instead be in a position outside an island, but as close as possible to a delimited constituent containing the wh-phrase.

With regards as to what motivates such a movement of *da* to the clause periphery, Kishimoto claims that the PPC can be explained by means of an optionally assigned [+Q] feature on verbs. If [+Q] is weak, no overt movement is motivated and the feature serves to mark scope. Consequently, since *da* moves covertly instead, [+Q] survives to PF and is interpreted as the -*e* suffix on verbs. If however, [+Q] is strong, overt movement is motivated and *da* marks scope. In this case, feature checking takes place overtly and deletion follows, disallowing [+Q] to be interpreted at LF, yielding the -*a* suffix instead. Kishimoto further assumes that for this to take place, verbs must be head-moved to C<sub>2</sub>, allowing movement of *da* into [Spec,C<sub>2</sub>].

The realisation of the verbal morphology of the PPC is attributed to the overt realisation of the [+Q] feature. Given that -*e* is present only when *da* is not overtly moved, the idea is that covert movement yields -*e* on V whereas overt movement yields -*a*. This is because when overt movement takes place, [+Q] is checked in locality and subsequently deleted. However, given our present formulation of Agree and feature deletion, it is not clear how such an approach can be accommodated. The fact that Kishimoto appeals to strong and weak [+Q] for movement entails that C<sub>2</sub> and *da* must agree. If so, then feature-deletion should take place, regardless of whether *da* moves or not. I propose that the movement of *da* should be analysed along the lines of what has been previously mentioned: the presence of Prt in the numeration. If Prt is present, *da* moves. Otherwise, it remains in-situ and scope is assigned solely by verbal morphology through the binding of *da* (which is a variable over choice functions, given our definition of question particles) by C<sub>2</sub>. There is no need to propose any sort of covert movement of *da* to the clause periphery to take scope if it is overtly in-situ since there are already overt scope-marking strategies in place.

Essentially then, Kishimoto's analysis is a combination of both overt and covert movement and appeals to the optionality of feature strength to drive optional movement. In our discussion of Babine-Witsuwit'en, we have already noted that appealing to the optionality of feature strength is not ideal. If this is case, then the lexicon of Sinhala must contain two versions of (almost) every verb, one with a strong [+Q] and another weak. Another problem is such an approach is deciding how exactly *da* selects a position for adjunction. Kishimoto claims that this is accomplished via the percolation of a focus feature from the wh-word to the wh-constituent. The problem

with such an analysis is that it presumes that look-ahead is possible. If the merging of *da* is predicated upon the presence of a focus feature, it requires that the derivation somehow knows when this focus feature is no longer percolated as a basis for initiating adjunction. A better and more consistent solution would be to assume the proposal that I have presented for QuP, that question particles take wh-DPs as their complements. This way, all we require is that the wh-word has satisfied its selectional requirements (selection of complements) and is maximal. Such an approach is also adopted by Hagstrom (1998) although like Kishimoto, he assumes adjunction to a wh-word rather than complementation of the wh-phrase to the particle, as I do. We now turn to Hagstrom's analysis for Japanese.

Hagstrom's main claim is the *-ka* in Japanese is analogous to Sinhala's *da*, in that it is adjoined to a position adjacent to the wh-word and is driven to the clause periphery by overt movement. Crucially, Japanese only has overt movement of *-ka* in questions, unlike Sinhala, which adopts both overt and covert movement strategies. This portion of the discussion will be rather brief, since most of the relevant points have already been mentioned in the discussion of Sinhala above. Again, all examples here are from Hagstrom (1998) unless stated otherwise.

- (43) John-ga nani-o kaimasita-**ka**?  
 John-NOM what-ACC bought.POLITE-Q  
 'What did John buy?'

Like Sinhala *da*, Japanese *ka*<sup>6</sup> can also mark the scope of questions:

- (44) a. John-ga [Mary-ga nani-o katta ka] sitteiru.  
 John-NOM Mary-NOM what-ACC bought Q knows  
 'John knows what Mary bought.'  
 b. John-ga [Mary-ga nani-o katta to] omotteiru no?  
 John-NOM Mary-NOM what-ACC bought that thinks Q  
 'What does John think that Mary bought?'

Japanese also uses *-ka* in forming wh-indefinites:

- (45) John-ga nani-ka-o katta.  
 John-NOM what-Q-ACC bought  
 'John bought something.'

---

<sup>6</sup>Japanese also possesses other question particles such as *no*, *ndai* as well as using rising intonation without a particle. The differences between these particles are not important to the discussion at hand and will be treated as equivalent.

In order to prove that the base merger position of *-ka* is next to a wh-word, Hagstrom adopts the use of an intervener *ittai* ‘in the world’ within islands to show ungrammaticality:

- (46) a. \* Mary-wa [John-ni **ittai** nani-o ageta hito-ni] atta no?  
Mary-TOP John-DAT ittai what-ACC gave man-DAT met Q
- b. Mary-wa **ittai** [John-ni nani-o ageta hito-ni] atta no?  
Mary-TOP ittai John-DAT what-ACC gave man-DAT met Q  
‘Mary met the man who gave what (in the world) to John?’

What we observe is that when *ittai* is located within an island, the sentence becomes ungrammatical. However, when *ittai* is scrambled to the outside edge of the island, the ungrammaticality vanishes. The important thing to note here is that *ittai*, which is an intervener, c-commands the wh-phrase or more precisely, it c-commands the proposed base-generation site of *ka*. At the same time however, Japanese clearly allows for wh-words to be within islands:

- (47) kimi-wa [dare-ga kai-ta hon-o] yomi-masi-ta ka?  
you-TOP who-NOM wrote book-ACC read-POLITE-PAST Q  
‘You read books that who wrote?’

As opposed to the intervening *ittai* cases, (47) is problematic for an approach that proposes that *ka* is generated as an adjunct to the wh-word since it entails that *ka* must move across an island boundary in order to reach its clause peripheral position. In order to finally prove that question particles are actually based generated next to a wh-word within an island, rather than at the edge of the island (cf. Kishimoto’s 2005 discussion of Sinhala above), Hagstrom embeds a declarative clause with an intervener *inside* an island. This is schematically shown in (48) with the actual examples in (49)<sup>7</sup>:

- (48) a. ??? ... [island ... [... intervener... *wh*... that]...] t<sub>Q</sub>...-Q?
  - b. ... [island ... *wh*<sub>i</sub> [... intervener... t<sub>i</sub>... that]...] t<sub>Q</sub>...-Q?
- (49) a. ??? Taroo-wa [Hanako-ga [John-ka Mary-ga nani-o sita  
Taroo-TOP Hanako-NOM John-or Mary-NOM what-ACC did  
to] itta ato de] kaetta no?  
that said after go.home Q

---

<sup>7</sup>In Japanese, *ka* takes many guises. Although not mentioned above, a disjunctive marker is one of them, and it does act as an intervener. Basically from what I can gather, all forms of *ka* are interveners.

- b. Taroo-wa [Hanako-ga [nani-o<sub>i</sub> John-ka Mary-ga t<sub>i</sub> sita  
 Taroo-TOP Hanako-NOM what-ACC John-or Mary-NOM did  
 to] itta ato de] kaetta no?  
 that said after go.home Q

‘Taro goes home after Hanako said John or Mary did what?’

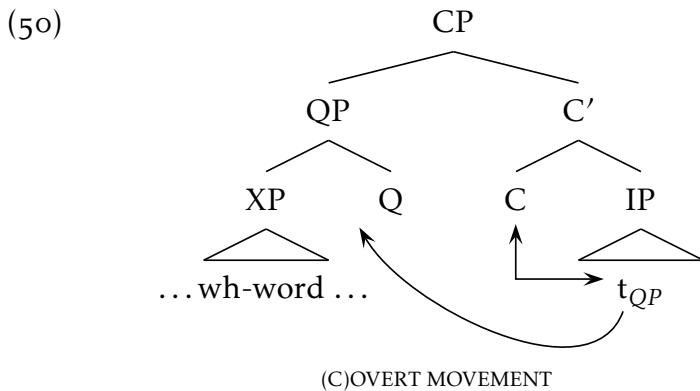
This proves that *ka* is base generated within the island and is subject to certain interveners, such as other question particles. Crucially though, island boundaries are *not* a barrier to the movement of *ka* to the edge of the island. What Hagstrom proposes is that there are actually two movement operations. The first is the standard feature-driven movement operation, which is responsible for the movement of *ka* from its “launching site” (island edges) to its relevant clause-peripheral position. The second is one that is responsible for moving particles from their base-generated position (adjacent to wh-words) to the launching site. This operation is what Hagstrom terms Q-migration which is not driven by feature attraction. While Hagstrom provides no conclusive account for how Q-migration works, he does speculate on how it works.

The proposal is that the base-generation position of Q is semantically vacuous, accounting for the ungrammaticality of *iitai* inside islands since as mentioned earlier, Q is seen to be a variable over choice functions. Since *iitai* is not able to operate over the CF variable, it does not yield the correct interpretation. This means that the island edge launching site of Q is where the choice function variable is introduced. Q-migration is thus a case of “semantically” traceless movement, allowing it to evade island violations. I will speculate further on the nature of Q-migration at the end of 4.5.3.1.

To summarise this section, we have considered cases of question particle movement in Sinhala and Japanese and arrived at the conclusion that particles are base-generated as an adjunct to either wh-words (Hagstrom 2006) or delimited wh-constituents (Kishimoto 2005). Further feature-driven movement then allows the particle to move up to the right periphery of the clause. Both accounts face problems and these must be kept in mind in the course of developing our analysis. Recall that the analysis that I will propose does not involve the adjunction of Qu. Rather, Qu takes wh-phrases as their complements. Cable (2007) discusses such an approach for Tlingit and this is what we shall turn to next.

### 4.2.3 Qu-merger and complementation in Tlingit (Cable 2007)

The general proposal that Cable (2007) makes with regards to Tlingit is that question particles take maximal wh-phrases as their complements. It is the feature attraction between a complementiser and the particle that actually determines wh-movement. When such movement occurs, the entire QuP phrase is raised into [Spec,CP]. Along these lines, wh-movement is recast purely in terms of QuP movement, since wh-movement is a secondary effect brought about by QuP movement<sup>8</sup>:



By contrast, covert movement can also apply to QP, yielding wh-in-situ. Cable proposes that wh-in-situ languages are split into two kinds, the first being Q-projection type languages, which involve a structure like (50), only with covert movement of QP. The second type of wh-in-situ languages are termed Q-adjunction languages, more along the lines of movement as proposed by Kishimoto (2005) and Hagstrom (2006). Cable is more inclined to adopt the analysis of Hagstrom, where Q is adjoined to a wh-phrase, followed by overt movement of Q to a peripheral position. However, Cable rejects the unification of wh-construction strategies of Sinhala and Japanese and instead proposes that only Japanese type languages possess the movement strategies of the sort as discussed in Hagstrom and Kishimoto, where particles must end up in a clause-final position. Sinhala on the other hand, is a case of Q-projection (50) with covert movement.

Essentially then, what Cable proposes is that typologically there are three kinds of languages, Q-projection with overt movement (Tlingit), Q-projection with covert movement (Sinhala) and Q-adjunction with overt movement of the particle (Japanese).

In Tlingit, Cable observes that there are very strict conditions imposed on the positions of the wh-phrase and particle. Tlingit is seen to generally

<sup>8</sup>Cable, Kisihimoto and Hagstrom all use Q as a label for the question particle. I use Qu to disambiguate between the particle and quantifiers. This is merely a labelling difference. For comparison to Kisimoto and Hagstrom's analysis however, I will use Q in this section.

free word order language, all permutation of S, V and O are permitted although the OV order occurs most frequently. However, in wh-constructions, the QP must always precede the main predicate. Examples from Cable:

(51) Subject Wh-phrase

- a. Aadóoch sá kgwatóow      yá x'úx?      ( $S_{wh}VO$ )  
who.ERG Q he.will.read.it this book
- b. Aadóoch sá yá x'úx akgwatóow?      ( $S_{wh}OV$ )  
who.ERG Q this book he.will.read.it
- c. Yá x'úx aadóoch sá kgwatóow?      ( $OS_{wh}V$ )  
this book who.ERG Q he.will.read.it
- d. \* Yá x'úx akgwatóow aadóoch sá?      ( $*OVS_{wh}$ )  
this book he.will.read.it who.ERG Q  
'Who will read this book?'

(52) Object Wh-phrase

- a. Daa sá kéet      axá?      ( $O_{wh}SV$ )  
what Q killer whale he.eats.it
- b. Kéet      daa sá axá?      ( $SO_{wh}V$ )  
killer whale what Q he.eats.it
- c. \* Kéet      axá      daa sá?      ( $*SVO_{wh}$ )  
killer whale he.eats.it what Q  
'What do killer whales eat?'

It is not immediately apparent from the above examples that Tlingit has overt wh-movement. However, in embedded questions, wh-phrases obligatorily front as well, while the sub-ordinate clause follows the matrix verb, although a pre-verbal order is also possible, shown in (53). Crucially, in-situ constructions are not possible, as shown in (54):

- (53) a. Daa sá uwajée wutoo.oowú?  
what Q they.think we.bought.it

- b. Daa sá wutoo.oowú uwajée?  
what Q we.bought.it they.think  
'What did they think we bought?'

- (54) a. [Daa sa]<sub>i</sub> i tuwáa sigóo [t<sub>i</sub> yéi isaneiyí]?  
what Q your spirit it.is.glad you.do.it

- b. \* I tuwáa sigóo [daa sá yéi isaneiyí]?  
your spirit it.is.glad what Q you.do.it  
'What do you want to do?'

Cable provides numerous examples indicating that wh-movement is obligatory, which I omit here. I have no issues with his analysis that shows that Tlingit possesses wh-movement. However, assuming that the default word order is SOV<sup>9</sup>, with subject wh-phrases we can expect SVO and OSV structures to be accountable by scrambling of the verb or the object respectively. With object wh-phrases on the other hand, wh-movement would transform an SOV order into an OSV one, as is the case in English (SVO to OSV). However, in (52), we observe an alternation between SVO and SOV word orders, essentially an in-situ and a moved construction. Cable does not address this issue, neither does he mention whether echo questions (if they exist) possess SOV structures or adopt some other strategy. I will say nothing more here regarding this issue, given that I do not have sufficient knowledge of Tlingit, but this is a point worth mentioning, since if it does turn out to be a case of optional movement, Tlingit is very similar to French, which allows optional wh-movement in matrix questions only but requires movement in long distance ones.

The general thrust of Cable's proposal revolves around the typological difference between Q-projection and Q-adjunction structures shown above. Q-projection languages which have overt movement will never allow "stranding" of Q, since wh-movement is no longer seen in terms of movement of a wh-phrase to [Spec,CP], rather, only C and Q are involved, motivating QP movement. Q-adjunction languages on the other hand, freely allow Q to be relocated to a peripheral position. It is difficult however, to account for optional wh-movement within such a theory. Any language that exhibits wh-movement must be seen as a Q-projection language since agreement between C and the wh-phrase is no longer in play. It follows that any kind of optional movement must still be accounted for by a overt/covert optionality paradigm or one of the optional wh-movement proposals reviewed in chapter 2, all of which we want to reject. Especially problematic would be a language like SgE, which appears to exhibit traits of both Q-projection and Q-adjunction since it allows wh-in-situ with sentence final particles, essentially Q-adjunction and overt movement into the periphery as well as Tlingit type QP movement as well as wh-movement to a sentence-initial position followed by particle movement into the periphery.

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<sup>9</sup>In the syntactic trees that cable provide for Tlingit constructions he illustrates VPs and QPs to be head-final.

#### 4.2.4 Concluding remarks

In this entire section, we have reviewed two approaches to Qu-movement. The first being a Qu-adjunction approach which allows for covert and overt movement, deriving the split between Sinhala and Japanese type languages. The second approach is a Qu-projection one, which covers languages like Tlingit where the entire QuP fronts. Both of these approaches however, are only able to capture part of the data in SgE. None of these approaches are able to systematically capture optional wh-movement, without recourse to optional EPP assignment, overt/covert optionality or remnant movement. This is not to say that all the proposals so far are without merit; each of the authors have made significant claims about how their theory works for a vast number of languages. Our aim then is to build upon this knowledge and develop a theory that allows us to capture all of these facts as well as optional movement.

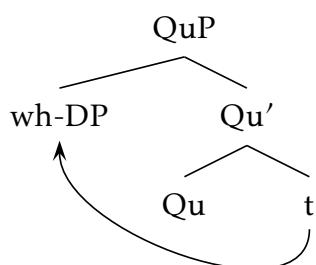
### 4.3 The syntax of QuP

In the previous section, we have established Qu to be a variable over choice functions. Wh-words are sets of individuals that Qu operates over, selecting an appropriate member of that set. In spirit, the analysis that I will propose is similar to a Q-projection account that Cable (2007) proposes. The crucial difference however, is that I will not adopt the idea that languages are typologically split between Q-projection and Q-adjunction; rather, I propose that the complementation of Qu is a language universal and all the data facts are couched in other terms. This section will specifically deal with the syntax of Qu, its featural composition and the syntactic mechanisms that it interacts with.

#### 4.3.1 Featural composition of Qu

Earlier, I proposed that Qu takes wh-phrases as their complements, repeated as (30) below. Qu possesses an EPP feature which motivates comp-to-spec movement:

(55)



#### 4.3.1.1 Qu, EPP and the Head parameter

One might question whether Qu is parameterised for an EPP feature, allowing comp-to-spec movement and no comp-to-spec movement in some cases; or whether Qu can be head-initial or head-final. If the headedness of Qu can vary, then the linear position of the particle with respect to the wh-phrase can be simply couched in terms of headedness. For example, Japanese would have a head-final *ka*, which predicts the correct facts. However, this would be problematic for a language like MC, which is head-initial but possesses phrase-final particles (even non-question particles). If on the other hand, the linear position wh-word and particle is determined by an EPP feature (and thus comp-to-spec movement), we should be able to find variation between languages that do have particles on the left of wh-phrases and those that have particles on the right. So far, all the languages discussed so far appear to show particles on the right. An ideal language that will allow us to test for this would be a head-initial language with no EPP on Qu (particle to the left of wh-phrase) yet possessing overt wh-movement. Edo, a Volta-Niger family language spoken in Nigeria, appears to exhibit such a property, although this is debatable as we shall see in the discussion that follows.

- (56) a. Òtà gbèn èbé.  
Ota write.PRES.TRANS book  
'Ota writes a book.'
- b. Dè èmwí nè Òtà dé?  
Q thing that Ota buy  
'What is the thing that Ota buys?'

(Beermann et al. 2002:3-4)

As can be seen above, Edo, an SVO<sup>10</sup> language, displays overt wh-movement in questions, with a sentence initial particle *dè*. Cable (2007), citing Baker (1999) notes that Edo also appears to form QuPs:

- (57) a. Dè òmwàn nè Àdésuwà bó!ó?  
Q who that Adesuwa comfort  
'Who did Adesuwa comfort?'
- b. Dè èmwìn nè Òzò há!é Úyi rè?  
Q what that Ozo pay Uyi it  
'What did Ozo pay Uyi?'

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<sup>10</sup> As listed in WALS (Haspelmath et al. 2008) under the entry 'Bini', another name that Edo is known by.

- c. Dè ebé òmwán nè Úyì dé?  
Q book whose that Uyi buy  
'Whose book did Uyi buy?'
- d. \* Ebé dè òmwán nè Úyì dé?  
book Q whose that Uyi buy

(Cable 2007:192)

Note however, that Cable glosses *èmwìn* as 'what' but Beermann and Baker glosses *èmwí* as 'thing'. Cable states that he assumes that because these words can take an indefinite meaning, hence these words are wh-words in an interrogative context with combined with the particle *dè*. Crucially, the supporting point of the QuP analysis is that (56d) is ungrammatical, since the particle cannot intervene between a wh-word and its complement. Strangely though, it appears that *dè* can also take as its complements full NPs, rather than just wh-DPs:

- (58) Dè òmó nè Àdésuwà bó!ó?  
Q child that Adesuwa comfort  
'Which child did Adesuwa comfort?'

Baker (1970) suggests that *dè* is a head within the CP layer that takes matrix wh-questions as their arguments, not unlike an account where particles are C heads and base-generated there. Cable (2007) speculates that Edo could instead possess null wh-determiners that take NPs as their complements, after all, as shown above the so-called indefinites *òmwàn* and *èmwìn* also double up as 'person' and 'thing' respectively. In turn, *dè* could be a Qu head that takes these null-headed DPs as arguments: [dè [DP Ø NP]].

While a dearth of Edo data or native-speaking informants precludes a conclusive analysis, I turned to a less formal avenue which could possibly shed some light on the issue. An online informative portal on the Edo people and language<sup>11</sup> provides an online dictionary that conveniently has a list of translations and glosses. When searching for question words in this dictionary, it appears that there are two ways of representing wh-words (di-acritics omitted on this website):

- (59) a. De ede ne u dee?  
what day the you coming  
'What day are you coming?'

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<sup>11</sup>Edofolks - The Edo language Dictionary and CDs online, <http://www.edofolks.com/words/index.htm> (accessed September 13, 2010)

- b. Vbo na khin?  
what is this  
'What is this?'
- (60) a. De eke ne u rie?  
what place the you going  
'Where are you going?'
- b. Vbe eke no khin?  
where place is this  
'Where is the venue?'
  - c. Asan vbo?  
cane where  
'Where is the cane?'
- (61) vbo a ya wo na he?  
how is to do is this?  
'How is this done?'
- (62) a. Gha na khin?  
who is this  
'Who is this?'
- b. De omwan no kpolo?  
what person is sweep  
'Who is the person sweeping?'

Although inconclusive, it appears that in Edo, *dè* + *NP* can yield a ‘what NP’ reading, allowing for various constructions such as ‘what time’ ‘what person’, ‘what place’, yielding *when*, *who* or *where* respectively. On the other hand, words such as *gha* ‘who’, *vbe* ‘what/where’ and *vbo* ‘what/how/where’ do not co-occur with *dè*, somewhat challenging the analysis that *dè* is a question particle; rather, it suggests that *dè* is a determiner on par with *gha*, *vbe* and *vbo*. Cable (2007) notes that the Q-based analysis predicts that *dè* must precede the wh-phrase, given that Edo is head-initial. However, drawing attention to (56c), it shows that the possessor is in a final position. WALS (Haspelmath et al. 2008) confirms this as well, noting that the noun-demonstrative order (and all other NP-X orders) in Edo is noun-initial. Beermann et al. (2002) notes however, that possessors may either follow or precede the head noun. However, this has implications on its ability to be extracted<sup>12</sup>:

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<sup>12</sup>The word *èré*, glossed as PLUG is a strategy for overtly marking the extraction site. It could perhaps be an overt pronunciation of a trace, although this is speculative.

- (63) a. Ímoótò gbé èwé (òghé) Òtà.  
           car      kill.PAST goat POSS Ota  
           ‘A car killed Ota’s goat.’
- b. Òtà òré ímóto gbé èwé èré  
       Ota FOC car    kill.PAST goat PLUG  
       ‘It happened to Ota that a car killed her goat.’
- c. \* Èwéòré ímóto gbé èré        Òtà  
       goat    FOC    car kill.PAST PLUG goat
- (64) a. Ímoótò gbé        Òtà èwé.  
           car      kill.PAST Ota goat  
           ‘A car killed Ota’s goat.’
- b. Òtà òré ímóto gbé     èré    èwé  
       Ota FOC car    kill.PAST PLUG goat  
       ‘It happened to Ota that a car killed her goat.’
- c. Èwéòré ímóto gbé Òtà     èré  
       goat    FOC    car kill.PAST Ota PLUG  
       ‘It was a goat that a car killed depriving Ota of its possession.’

If we assume that possessive structures are head-final in Edo<sup>13</sup>, and that focus extraction can only occur from a specifier position, we might speculate that a structure for possessive-DPs might be as shown below:

- (65) a.
- ```

      DP
      /   \
      D'   Ota
      |   |
      goat  Òtà
      |   |
      èwé  òghé
    
```
- b.
- ```

      DP
      /   \
      DP   èwé_i
      |   |
      D'   Òtà
      |   |
      t_i  POSS
    
```

Regardless of the analysis we ultimately adopt for Edo DPs (which I have to put aside here), we are still left with no definitive conclusion regarding

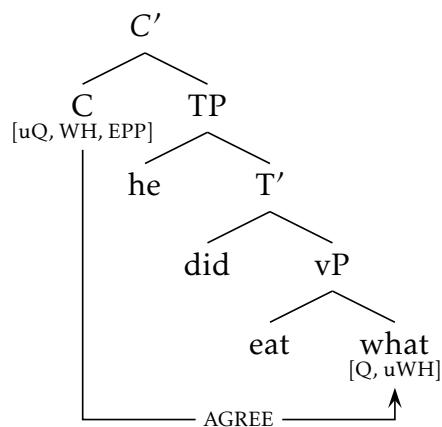
<sup>13</sup>Note that this is not a FOFC violating structure, since this head-final structure does not dominate a head-initial one.

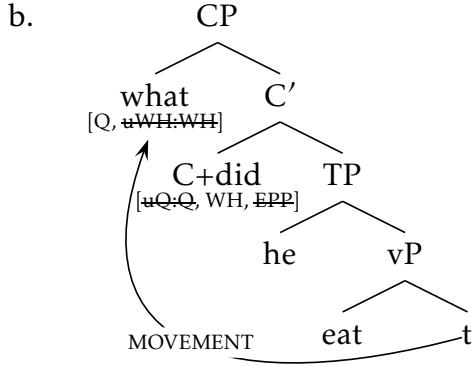
the nature of the EPP feature on Qu. If *dè* turns out to be a question particle, which it does appear to be in certain contexts, such as co-occurring with indefinites to yield interrogative readings, then assuming that Qu is always head-initial, this is evidence for a language that has no EPP feature motivating comp-to-spec movement. It could also be the case that headedness is a factor in QuP constructions and that Edo has head-final QuPs with an EPP triggering comp-to-spec movement to the right, yielding an initial Qu. I leave this open for further research. What I do maintain, is the fact that a head-initial Qu has an EPP feature triggering comp-to-spec movement. For reasons that will be made clear below, the presence of an EPP feature on Qu predicts cases of left branch extraction in languages that permit them as a reflex of optional movement. We now return to our discussion of the formal features of Qu.

#### 4.3.1.2 The formal features of Qu

As discussed in the Introduction chapter, the standard approach to wh-movement is something along these lines: a wh-phrase possesses an interpretable [Q] and an uninterpretable [uWH]. An interrogative C possesses an uninterpretable [uQ], an interpretable [WH] and an EPP feature. Agree takes place between C and wh-phrase and the EPP triggers raising. Uninterpretable features are deleted as per our definition of Q-completeness:

(66) a.





However, given the construction in (30) that we would like to adopt and that QuP movement is possible, such an approach obviously no longer works and we will need to restructure the featural composition of wh-phrases. Crucially, since under my analysis, wh-words are no longer inherently interrogative, universally requiring an obligatory Qu, we can do away with the Q feature on wh-words. Wh-words thus only possess a categorial D feature and an uninterpretable [uWH] feature but no Q feature. The Q feature is instead borne by the Qu particle. The Qu particle possesses a categorial Qu feature, allowing it to be attracted by the head of PrtP, a selectional [uD] feature that allows it to select for wh-phrases, a [uWH] feature, a Q feature and an EPP feature. We can summarise their featural composition as thus:

- (67) Wh-word: {D, uWH}  
Qu: {Qu, uD, uWH, Q, EPP}

A question that arises from this is why Qu cannot select for non-interrogative DPs. I see two possible ways of answering this question, one syntactic, one semantic. The first way would be to propose that wh-determiners in fact possess a different categorial feature in comparison to normal determiners. This could be accomplished by stating that the D features of wh-words have a second order value, say [D:wh]. When a selectional feature is merely specified as [uD], only the first order categorial component is necessary and any type of D is sufficient to satisfy it. However, if a value is specified for D, as in the case of wh-words, the selectional requirement can be more stringent, requiring [uD:wh]. Of course, this presupposes the existence of a featural system of the sort as proposed in Pesetsky and Torrego (2007), which allows for uninterpretable but valued and interpretable but unvalued features<sup>14</sup>, in addition to the standard uninter-

<sup>14</sup>In Pesetsky and Torrego (2007), they propose that apart from the standard uninterpretable/unvalued features that can function as probes, interpretable/unvalued features can do so as well. Since we are merely dealing with selection, supporting or defending this hypothesis does not concern us here. Having said this, I do not see an a priori reason to reject such an idea.

pretable/unvalued and interpretable/valued feature types. In essence, Qu selects for not just a D, but a specific type of D.

The second way to answer this question would be from a point of view of semantics. Beck (2006) proposes that given the fact that focus markers often act as interveners when it c-commands a wh-words, wh-words only have a focussed semantic value but not a normal one<sup>15</sup> That is to say, wh-words only serve to introduce a set of alternatives which is bound by the choice function Qu. In turn, Qu is a focus-sensitive operator and when another focus element intervenes between Qu and the wh-word, ungrammaticality ensues because Qu cannot bind the wh-word. The question operator Qu (unlike normal focus operators) is only able to associate with focus semantic values and not normal ones and therefore it works only with wh-phrases, which only has focus semantics. This however does not rule out the possibility of Qu binding a focussed non-wh-DP constituent, unless we further stipulate that it is not the case that Qu must just associate with semantic values and that Qu cannot bind anything with a normal semantic value. I will leave this issue aside here though it should be noted that these two (speculative) analyses are not mutually exclusive, it could well be the case that both of these are in effect. If so, then there is no need to make any further stipulations on the binding condition of Qu, the categorial selection requirements in syntax will ensure that Qu binds an appropriately focussed wh-element.

Now that we have assumed that Qu takes a wh-DP as its complement without further complication, the derivation proceeds normally. Qu selects a wh-DP complement and the EPP feature then raises the wh-DP to its specifier. Such a configuration of QuP straightforwardly accounts for some of the constraints on the position of *ah* in SgE as described in 3.4.1.4. Qu cannot intervene between a wh-word and the NP complement it takes, repeated in (68); neither can it intervene between a preposition and its DP complement,

---

<sup>15</sup>The general idea that Beck (2006) proposes relies on the following contrast. When an unfocussed utterance is made, it can only represent a single proposition, its normal semantic value:

- (i) John left.
- (ii)  $\lambda w.John \text{ left in } w$

However, if *John* is focussed, it introduces a set of alternative propositions. In addition to the interpretation in (ii) we get:

- (iii) John left.
- (iv) a.  $\lambda p \exists x[p = \lambda w.x \text{ left in } w]$
- b. that John left, that Bill left, ...

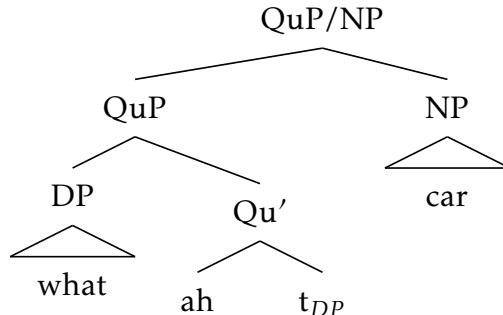
The argument is that wh-questions such as *Who left?* have the exact same representation of focussed alternatives as (iv.b), but most crucially, no normal semantic value as in (ii).

shown in (69):

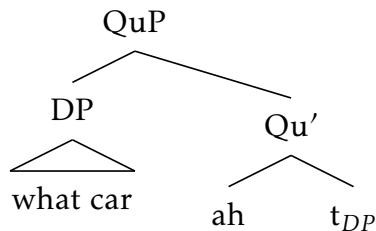
- (68) a. What car ah you buy?  
       b. \* What ah car you buy?  
             ‘What car did you buy?’
- (69) a. You live with who ah?  
       b. \* You live with ah who?  
       c. Who ah you live with?  
             ‘Who do you live with?’

The facts in (68) can be explained simply by the fact that a Qu head takes a maximal DP phrase as its complement. In order to generate the incorrect structure of (68b), *ah* would have to take *what* as a complement, trigger comp-to-spec raising then somehow merge *car* in by adjunction, shown in (70a). Since *car* is clearly not an adjunct, the correct structure is one where Qu takes the DP *what car* as its complement, shown in (70b).

- (70) a. \* *Incorrect adjunction structure*



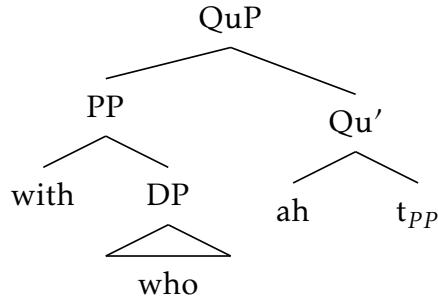
- b. *Correct complementation structure*



For (69), the explanation is also straightforward, since the preposition *with* in a sense, competes with *ah* in taking the DP *who* as its complement. Assume then that this happens, yielding the PP *with who*. In this case, *ah* must then take a PP as its complement, violating its selectional requirements. Even if we concede that *ah* can take wh-PPs as its complements, given that *ah* has been shown to be able to take a variety of complements in its non-interrogative form, we are faced with the issue of sub-extraction

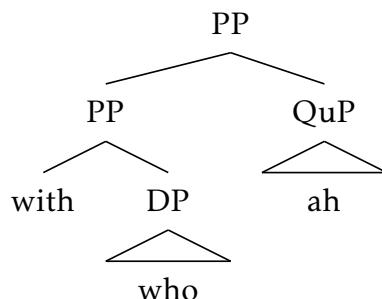
from a specifier position in cases of P-stranding, generally deemed to be bad (Ormazabal et al. 1994; Gallego and Uriagereka 2007):

- (71) \**Incorrect PP complementation*



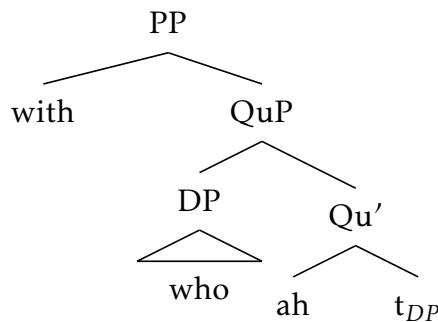
Suppose instead that *ah* proceeds to adjoin to the PP, in the sense of Q-adjunction as discussed in the previous section:

- (72) \**Qu-adjunction to a PP*



Despite the fact that it accommodates P-stranding and Qu-movement to the periphery, this structure is also wrong, in that it will not be able to obtain (69c), where *who ah* is fronted and the preposition stranded. There is no syntactic operation that allows us to extract an adjunct and the complement of the PP at the same time. Two (or more) operations instead must be used in its place to yield such a structure. Therefore, the only correct structure is again one where Qu takes the wh-DP as its complement, followed by P taking QuP as its complement, yielding (73):

- (73) *Correct complementation structure*



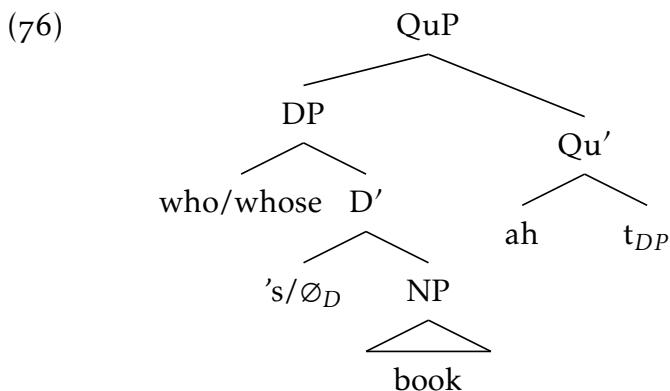
Recall in section 3.4.1.2 that P-stranding is generally dispreferred in SgE. When it does occur over, speakers feel that there is a contrast between whether Qu is in a sentence-final position or not:

- (74) a. ? With who(m) ah you live?  
 b. ??? With who(m) you live ah?  
 ‘With whom do you live?’

Despite the fact that the reasons that I proposed for their oddness were speculative<sup>16</sup>, we can perhaps interpret the contrast in (74) as violation of subextraction from complements. Considering that *ah* is embedded within QuP, the prepositional complement, in order to derive (74b), there must be further extraction of *ah* to PrtP.

A similar analysis applies for possessive *whose* constructions with little modification necessary. Regardless of our approach to possessives, such as genitive ’s as a head (Chomsky 1995b:263) or a null D as head (Radford 2004:215), Qu can still take them as complements. I conflate these two analyses in one tree in (76):

- (75) a. You read whose book ah?  
 b. Whose book ah you read?  
 c. Whose book you read ah?  
 d. \* Whose ah book you read?  
 ‘Whose book did you read?’




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<sup>16</sup>As mentioned in section 3.4.1.2, I suggest that this could be a pragmatic clash between a formal and informal register. PP fronting is seen to be rather formal, while the use of particles is solely used in spoken informal contexts. This aside, speakers still judged (74b) to be worse than (74a). Some speakers also felt that there was a contrast in PP fronting cases between *who/whom*. Those speakers felt that the sentence sounded better if the dative form was used, even to the point that the contrast between (74a) and (74b) disappeared. I do not have an explanation for this at this point.

On the basis of what we have established so far, Qu takes wh-DPs as their complements. An important prediction that this makes is that Left Branch Extractions are not possible, as we have shown above. However, it is well known that some languages (Slavic), allow for such constructions. We will discuss this in more depth in section 4.4 on the mechanism of optional movement. Nevertheless, to preview the analysis somewhat, we will say that in languages that allow it, optionality also applies at the step of comp-to-spec raising. In languages that allow LBE, there is an option to raise either D or DP and in languages that do not, only the DP option is available. In turn, extraction from [Spec,QuP] is also possible, yielding the necessary contrast.

#### 4.3.2 Interaction of C and QuP

Now that we have established the properties of QuP, let us examine in more detail how the complementiser system works with QuP to allow for movement. This section will only be concerned with ordinary QuP movement, optional movement will be discussed in the next section.

##### 4.3.2.1 Matrix questions

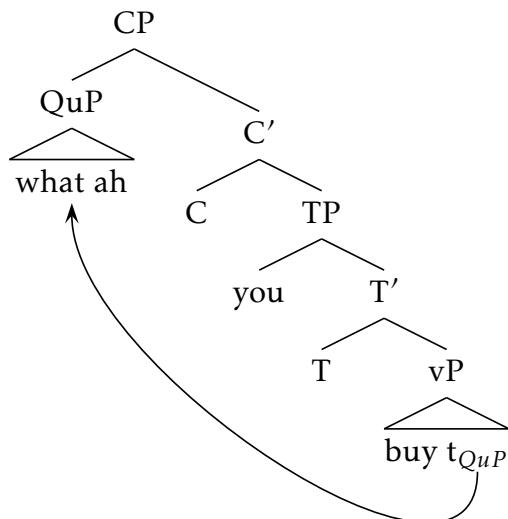
In our discussion of Cable (2007) above, we noted that he establishes wh-movement as a secondary effect of QuP movement. To recast this in our terms, consider a simple SgE sentence:

(77) What ah you buy?

‘What did you buy?’

Such a sentence will have the following structure:

(78)



We know that the featural composition of *Qu* is [Qu, uD, uWH, Q, EPP] and the featural composition of *what* is [D, uWH]. When *Qu* takes a DP as its complement, its selectional [uD] is deleted; after comp-to-spec movement, EPP is deleted. We are left with *Qu*:[Qu, uWH, Q] and *what*:[D, uWH]. Complementisers are assumed to have the standard featural composition of a categorial C, an interpretable wh [WH], an uninterpretable Q [uQ] and an EPP. In (78) above, the derivation proceeds as follows: the C head ([uQ] probe) agrees with a *Qu* goal [Q], triggering Agree. Interpretable [WH] on C values [uWH] on *Qu*. This is where the a QuP analysis diverges. Recall that the wh-phrase in [Spec,QuP] still has a [uWH] on it, which is also a probe. Once C values [uWH] on *Qu*, assuming feature sharing in the sense of Pesetsky and Torrego (2007), which basically states the following (where [3] is some arbitrary index):

...Agree between two unvalued occurrences of F ( $F_\alpha$  and  $F_\beta$ ) is far from vacuous, since its output will be a structure that contains only one occurrence of F with two instances:

(7) ... $F_\alpha[ ]$ ... $F_\beta[ ]$ ...  $\Rightarrow \dots F_\alpha[3] \dots F_\beta[3] \dots$

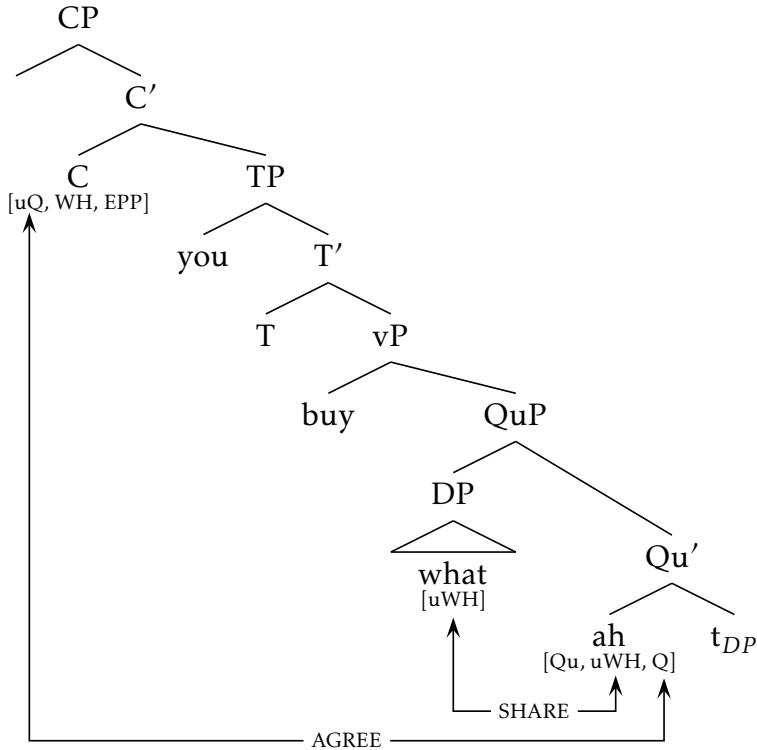
(Pesetsky and Torrego 2007:268)

If such we accept such an approach, this means that some operation Agree that applies to any of the unvalued Fs will result in the value being present on both. Although Pesetsky and Torrego's approach applies to "downward" valuation of goals by higher probes, the fact that *Qu* and the wh-phrase share some syntactic relationship (head-complement), it follows that at the point of merger, when *Qu* selects for the wh-DP, the two [uWH] features are linked in this way<sup>17</sup>. The tree below illustrates this:

---

<sup>17</sup>An alternative approach that does not require a feature-sharing mechanism would be to posit that an uninterpretable but valued feature can value an uninterpretable unvalued feature: [uF:]...[uF:val]  $\Rightarrow$  [uF:val]...[uF:val]. Another approach would be to consider a multiple-Agree kind of approach in the sense of Hiraiwa (2001). More precisely, it must function as a "reverse" multiple-Agree, since it is the interpretable [WH] that values [uWH]. This seems less feasible though, considering that technically speaking, C has no relationship with the wh-phrase, since the wh-phrase inherits its valuation by virtue of agreement between C and *Qu*.

(79)



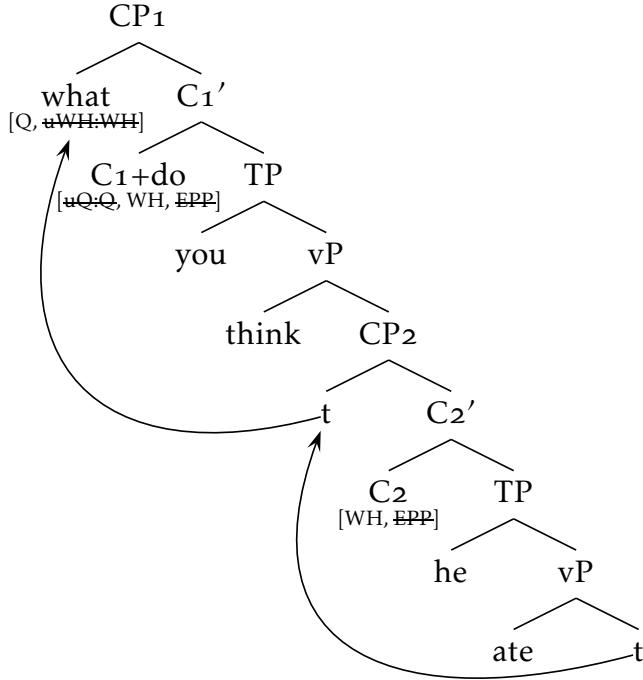
The derivation proceeds as follows: [uWH] of *ah* and *what* are linked and are able to be simultaneously valued by C. The EPP on C then proceeds to raise QuP to [Spec,CP], as shown in (78). Following this, since Qu and C are both Q-complete, Qu deletes [uWH] on *what* and C and Qu delete each other's uninterpretable [uQ] and [uWH] respectively. Crucially, this presupposes that such valuation operations occur simultaneously, reason being that if it did not, the features of C and Qu will delete, since they are both Q-complete. However, given again that these features are linked, that is, two instantiations of the same feature, changing the value of one should immediately effect a change of value of the other.

#### 4.3.2.2 Complex questions

In complex questions things are more complicated. According to our notion of Q-completeness, the general idea is that the intermediate C is not Q-complete, and disallowing feature deletion on the wh-phrase, which would render it inactive. In the Introduction where we introduced the notion of Q-completeness, (81) was a tree for a sentence like (80):

(80) What do you think he ate?

(81)

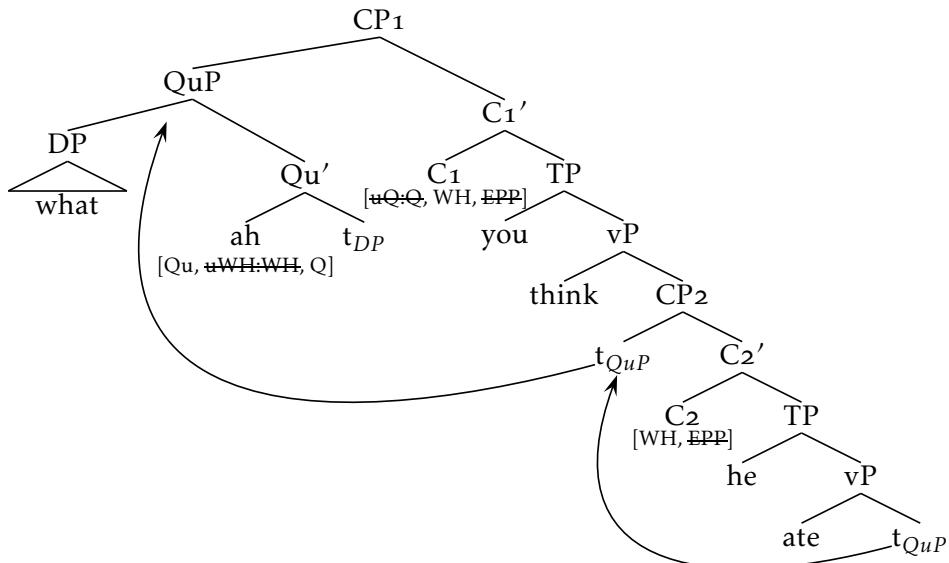


In such constructions, it is easy to recast it in terms of QuP movement. The equivalent SgE sentence is shown in (82) and its structure in (83):

(82) What ah you think he ate?

'What do you think he ate?'

(83)



Since the only relevant probe here is an EPP feature, it triggers raising of QuP into [Spec,CP]. Ideally, we must conceive of raising to satisfy EPP as an Agree operation, and as such, [uWH] on Qu and [uWH] on *what* are valued by interpretable [WH] of the embedded C, but crucially, since embedded C is lacking a [uQ] feature and is not Q-complete, feature deletion does not occur.

#### 4.3.2.3 Multiple wh-questions

In multiple wh-questions, an immediate question that arises is whether each wh-phrase should be allowed to have a Qu particle each. As it turns out, this is a non-trivial question and one that is not very easy to answer. First, let us consider the SgE data:

- (84) a. Who bought what ah?  
b. Who ah bought what?  
c. \* What who bought ah?  
d. \* What ah who bought?  
e. \* Who ah bought what ah?  
f. \* What ah who ah bought?

‘What did who buy?’

There are two observations to be made here. Firstly, SgE disallows the presence of multiple *ahs*. However, the position of *ah* possesses the standard variation between a sentence-final position and a position that is right-adjacent to the fronted wh-phrase. The second observation is that SgE, like SE, observes superiority effects. At first blush, it may seem that it could perhaps be a universal property of language to possess only one question particle, especially if we adopt an absorption approach to binding in the sense of Higginbotham and May (1981). Unfortunately, this turns out to be untrue. Cable (2007) observes that in Tlingit, multiple wh-questions allow for multiple question particles and multiple wh-fronting, both with arguments and adjuncts:

- (85) a. Aa sá daa sá aawaxáa?  
who Q what Q they.ate.it  
‘Who ate what?’  
b. \* Daa sá aa sá aawaxáa?  
what Q who Q they.ate.it
- (86) a. Aa sá goodéi sá woogoot?  
who Q where.to Q they.went  
‘Who went where?’  
b. \* Goodéi sá aa sá woogoot?  
where.to they who Q they.went

(Cable 2007:71)

- (87) a. [CP [Aa sá]1 [daa sá]2 [IP du<sub>1</sub> tuwáa sigóo [t<sub>2</sub> who Q what Q their spirit it.is.glad wutoo.oowú]]]?  
           we.bought.it  
           ‘Who wants us to buy what?’
- b. \* [CP [Daa sá]2 [aa sá]1 [IP du<sub>1</sub> tuwáa sigóo [t<sub>2</sub> what Q who Q their spirit it.is.glad wutoo.oowú]]]?  
           we.bought.it

(Cable 2007:89-90)

While Tlingit allows for multiple question particles (and multiple fronting), multiple-wh questions also display superiority effects, as is the case in Bulgarian.

- (88) a. Koj kakvo vižda?  
       who what sees  
       ‘Who sees what?’
- b. \* Kakvo koj vižda?  
       what who sees  
       ‘What does who see?’

(Pesetsky 2000:22)

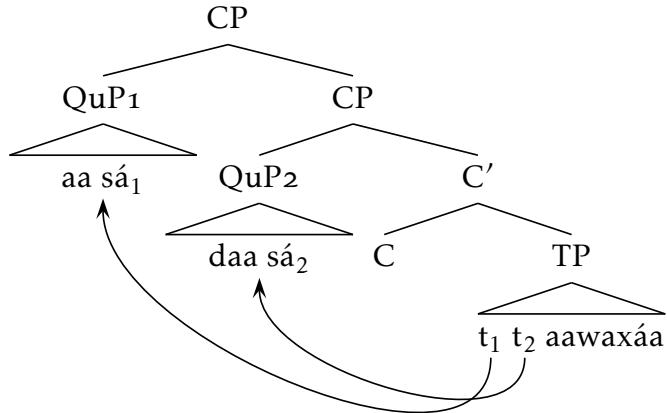
Let us start with the null hypothesis that all multiple-wh questions contain multiple question particles. Assuming that the Vacuous Movement Hypothesis does not hold and that wh-subjects move to [Spec,CP], an English multiple wh-question would have the following structure:

- (89) a. [TP [QuP<sub>1</sub> who Qu] bought [QuP<sub>2</sub> what Qu]]  
     b. [CP [QuP<sub>1</sub> who Qu]<sub>1</sub> [C' C [TP t<sub>1</sub> bought [QuP<sub>2</sub> what Qu]]]]]  
     c. \* [CP [QuP<sub>2</sub> what Qu]<sub>2</sub> [C' C [TP [QuP<sub>1</sub> who Qu] bought t<sub>2</sub> ]]]]

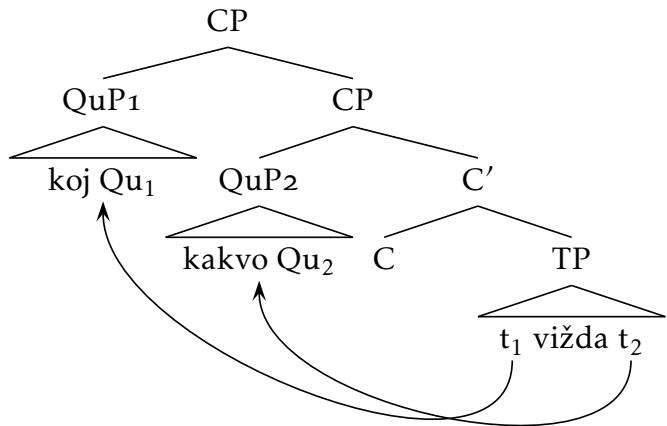
The explanation for the superiority effects are the same for that of a non-QuP approach to question formation. (89c) is blocked over (89b) because the subject QuP is closer to the attracting head than the object QuP. Attract Closest predicts that two QuPs should exhibit superiority effects in a straightforward way without extra stipulations.

Similarly, for multiple wh-questions in Tlingit and Bulgarian, we can posit that there are two QuPs. In Tlingit, the Qu heads are overtly pronounced whereas in Bulgarian, they are not. The presence of superiority effects in these languages can be explained by adopting a multiple-specifier “tucking-in” approach of Richards (1997):

(90)



(91)



Such an approach seems plausible so far; there is little difference between a QuP or a traditional DP approach to wh-phrase formation and Superiority. Since we have established the null hypothesis that multiple wh-questions have multiple question particles, we should question what sort of cases would motivate us to reject this hypothesis. Let us suppose then that a language that permits multiple wh-questions has less than the maximal number of question particles. For simplicity, let us consider a case of two wh-phrases and one particle, resulting in the following configuration:

- (92) [TP wh<sub>1</sub> [vP V wh<sub>2</sub>]] ⇒
- a. [TP [QuP wh<sub>1</sub> Qu] [vP V wh<sub>2</sub>]]
  - b. [TP wh<sub>1</sub> [vP V [QuP Qu wh<sub>2</sub>]]]

Given that we have two wh-phrases and only one particle, we should, in principle be allowed two possible derivations at the TP level as shown in (92). Consider what happens if we merge an interrogative C next that probes for a QuP. We should again get two possible derivations. (92a,b) yields (93a,b) respectively:

- (93) a. [CP [QuP wh<sub>1</sub> Qu]<sub>1</sub> [TP t<sub>1</sub> [vP V wh<sub>2</sub>]]] (from 92a)  
b. [CP [QuP Qu wh<sub>2</sub>]<sub>2</sub> [TP wh<sub>1</sub> [vP V t<sub>2</sub>]]] (from 92b)

Essentially what this suggests is that languages that have only one question particle display no superiority effects. This is the case for a language like German:

- (94) a. Wer hat was gesehen?  
who has what saw?
- b. Was hat wer gesehen?  
what has who saw?  
'Who saw what?'

If we suppose that languages such as German possess only one instance of Qu, we can also predict a lack of superiority effects, depending on which wh-phrase Qu takes as its complement. This is also an observation that is shared by Cable (2007), although for somewhat different reasons<sup>18</sup>. This analysis can be extended for multiple-wh-fronting languages. More precisely, the prediction that is made here is that multiple-wh-fronting (MWF) languages that possess multiple particles (Bulgarian) will display superiority effects, as shown above. It follows then that a direct consequence of an MWF language not possessing multiple particles should be that like German, they would not display superiority effects. These sorts of languages, I propose, are languages like Serbo-Croatian, Polish and Czech.

Rudin (1988) notes that there is a split where MWF languages are concerned. She focusses on five languages, Bulgarian, Romanian, Serbo-Croatian (SC), Polish and Czech. Since the discussion here is not about the intricacies of multiple wh-fronting, I will put aside the language specific differences that occur between these languages. The main point is that while these languages appear to show multiple wh-fronting, Bulgarian and Romanian display superiority effects, while the other three do not.

- (95) *Serbo-Croatian*
- a. Ko koga vidi?  
    who whom sees
- b. Koga ko vidi?  
    whom who sees?

---

<sup>18</sup>Cable ties the lack of superiority effects with the presence of intervention effects of the in-situ wh-word. This is shown in great detail in Beck (1996). Although the syntactic accounts of movement are similar, the crucial difference between my analysis and Cable's is that Cable assumes that wh-in-situ phrases move at LF, an assumption I do not make. Cable's analysis thus presupposes that in multiple wh-questions in English, wh-phrases multiply front at LF, again an assumption I do not make. Rather, my account for intervention effects are to do with the blocking of binding between the in-situ wh-phrase by the question particle, as is the case with intervention effects displayed in wh-in-situ constructions in French. This will be explored in the section below on scope assignment.

'Who sees whom?'

While superficially, Bulgarian and SC appear to both multiply front wh-phrases, in complex questions, it is not the case:

(96) *Bulgarian*

- a. Boris **na kogo kakvo** kaza [če šte dade t t ]?  
Boris to whom what said that will give.3SG  
'What did Boris say that (he) would give to whom?'
- b. \* Boris na kogo kaza [če šte dade kakvo t ]?  
Boris to whom said that will give.3SG what
- c. \* Boris kakvo kaza [če šte dade t na kogo]?  
Boris what said that will give.3SG to whom
- d. \* Boris kakvo kaza [na kogo šte dade t t ]?  
Boris what said to whom will give.3SG
- e. \* Boris na kogo kaza [kakvo šte dade t t ]?  
Boris to whom said what will give

(Rudin 1988:451)

Bulgarian requires multiple fronting of wh-phrases to the matrix [Spec,CP] and may not remain in-situ or in an intermediate [Spec,CP]. SC exhibits a different distribution:

(97) *Serbo-Croatian*

- a. **Ko želite** [da vam **šta kupi** t t ]?  
who want.2PL to you what buy.3SG  
'Who do you want to buy you what?'
- b. **Šta želite** [da vam **ko kupi** t t ]?  
what want.2PL to you who buy.3SG  
'What do you want who to buy you?'
- c. \* Ko **šta želite** [da vam kupi t t ]?  
who what want.2PL to you buy.3SG
- d. \* **Šta ko želite** [da vam kupi t t ]?  
what who want.2PL to you buy.3SG
- e. \* Ko **želite** [**šta da vam kupi** t t ]?  
who want.2PL what to you buy.3SG
- f. \* **Šta želite** [**ko da vam kupi** t t ]?  
what want.2PL who to you buy.3SG

(Rudin 1988:453-4)

SC requires fronting of either one wh-phrase to matrix [Spec,CP] and another to a focus position above vP. We have discussed how a multiple QuP approach works for explaining the superiority effects in Bulgarian. The explanation for the SC data naturally follows from a single QuP approach. If matrix [Spec,CP] attracts a single QuP, depending on which wh-phrase is taken as the complement of Qu, we get (97a) or (97b) when Qu takes *ko* ‘who’ or *šta* ‘what’ respectively. There is another point that we should note: the raising of the in-situ wh-phrase to a focus position shows that wh-phrases, despite not being in a QuP structure, are not impervious to feature attraction and movement. This leads us to question the nature of the EPP and the way in which it motivates movement. In fact, as Rudin notes, some speakers allow for optional fronting of the in-situ wh-phrase:

- (98) a. Ko misliš [da je koga video t ]?  
who think.2SG that has whom seen
- b. Koga misliš [da je ko video t ]?  
whom think.2SG that has who seen
- c. Ko koga misliš [da je video t t ]?  
who whom think.2SG that has seen  
'Who did you think has seen whom?'

Regardless of the position of the second fronted wh-phrase (Rudin assumes [Spec,IP]), this appears to be a case of optional movement. To sum up this section, it seems that we must reject the null hypothesis that all multiple wh-phrases form multiple QuPs. As shown, languages can vary (most probably parametrically) in the number of QuPs that can be present. Multiple QuPs predict the presence of superiority effects while single QuPs do not. Unfortunately, due to space constraints, I will not be able to investigate multiple wh-questions in any great length although I will mention them again in chapter 6. In the next section, we will look at the mechanism that drives optional wh-movement.

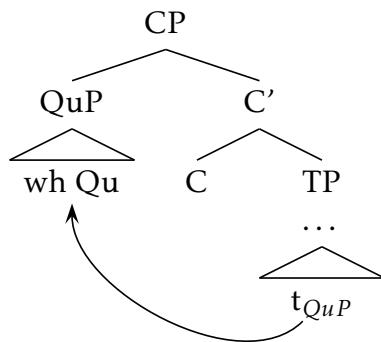
#### 4.4 Formal optionality in grammar

As discussed in chapters 1 and 2, optional movement is a problem for a Minimalist theory of syntax. EPP motivates movement, and the movement that takes place is obligatory. In the previous section, we have looked at how QuP movement replaces “traditional” wh-movement. So far, the cases we have looked at presupposes that QuP moves in its entirety to [Spec,CP].

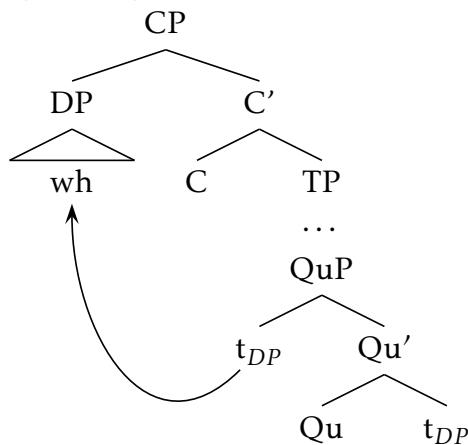
However, given that this thesis is about optional wh-movement, the question that this section addresses is how the QuP accounts feeds into notion of optional wh-movement.

The general idea is this: when a probe on C attracts a QuP goal, languages that productively allow for optional wh-movement will allow other possible candidates for movement to [Spec,CP]. In fact, there are three of these: the first is QuP movement (99a), as we have seen in the previous section. The second sort of movement is movement from [Spec,QuP] to [Spec,CP] (99b), that is, wh-movement in the traditional sense and third, Qu to [Spec,CP] movement (99c), which yields wh-in-situ.

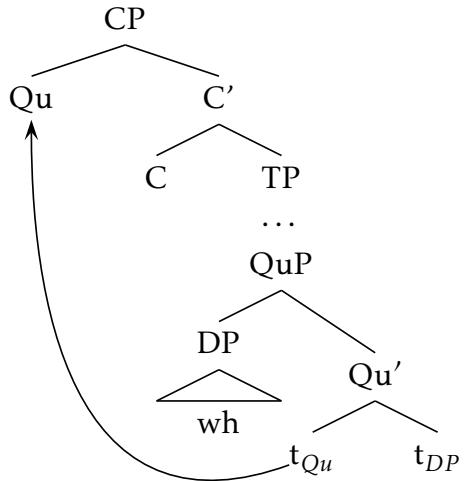
(99) a. *Phrasal Movement*



b. *Spec-to-Spec Movement*



c. *Head-to-Spec Movement*



Such a model for optional movement relies on several key assumptions that will need to be justified: first, the EPP on C can be satisfied by each of the movements shown above. Second, optional movement like this needs to be constrained in some way; we cannot allow the EPP to exhibit optionality when it should not. And third, the proposal requires that head-to-spec movement (rather than head-to-head adjunction) is a necessarily legitimate operation of syntax. These issues will be discussed over the course of the next two sections.

#### 4.4.1 Reconsidering EPP satisfaction

The nature of the EPP is a murky subject. As mentioned in the introduction, we will not be concerned with the issues of the semantic contribution of the EPP; as far as we are concerned, the EPP feature is something that motivates movement. In the current conceptions of the Minimalist Programme, the EPP is seen to be a property of features; to borrow a term from Adger and Svenonius (to appear), a second order feature. Features (and probes) can thus be seen to possess this second order feature of an EPP. Movement by the EPP is thus seen as a parasitic reflex of Agree, when a uninterpretable feature probe [uF] searches for and locates a goal, it enters into an Agree relationship; the EPP feature on [uF] motivates movement of the goal into its specifier of the head bearing [uF].

In earlier conceptions of the Minimalist Programme, feature strength was seen to be the trigger for movement. A strong feature was seen to require feature checking in locality and thus, triggers movement, such as the strong [D] feature on T that allows the merging of subjects. The current implementation of the EPP is looser, it simply requires the merging of something in the specifier that it projects. In order to constrain this, the EPP

is tied to the relevant uninterpretable features, as shown above, ensuring that only the goals of Agree raise, rather than some other random syntactic object in the derivation.

Alongside this, it appears while constrained, the category that satisfies the EPP is not always fixed. Take the case of stylistic fronting in Icelandic for example. Holmberg (2000b) notes that stylistic fronting appears to target various categories and moves them into what appears to be a subject position. I omit the examples here, but Holmberg shows adjectives, participles, negation, adverbials, verbal particles, PPs and DPs to [Spec,IP]. The moved and unmoved variants display no semantic effects. The details are not important here, but the general idea of Holmberg's analysis suggests that the satisfaction of the features on I should be divorced from the requirement that [Spec,IP] be filled: essentially the EPP. Instead, the closest phonologically overt category moves to fill the subject position while the features on I are satisfied by agreement.

As such, there are two antagonistic principles at play: there is a need on one hand to constrain how the EPP is satisfied while on the other, if we accept Holmberg's account of stylistic fronting, a need to loosen EPP satisfaction. This section aim of this section is to develop a framework that allows for these two principles to be unified. Before I propose the framework, let us consider other cases where the EPP may be satisfied by multiple categories.

#### 4.4.1.1 Optionality in Afrikaans (Biberauer and Richards 2006)

In our considering of stylistic fronting above, we have looked at how the EPP feature appears to be allow unbounded satisfaction by any category that is phonologically overt. It is not the case however, that such satisfaction is always unbounded. Biberauer and Richards (2006) note that Modern Spoken Afrikaans (MSA) permits semantically vacuous optionality in embedded declaratives:

- (100) a. Ek weet dat sy dikwels Chopin gespeel het.  
I know that she often Chopin played has  
b. Ek weet dat sy het dikwels Chopin gespeel.  
I know that she has often Chopin played  
'I know that she has often played Chopin.'
- (Biberauer and Richards 2006:37)

Biberauer and Richards (B&R) argue that the case of "optional" verb movement should not be accounted for by the optional application of an EPP

feature. In fact, there is nothing optional about the movement of the verb; rather, *het* is always located in T, and what varies is the size of the category that fulfils EPP on T. In (100a), the entire vP raises to [Spec,TP] and in (100b), only the DP subject *sy* raises, not unlike what we have have termed ‘phrasal movement’ and ‘spec-to-spec movement’ in (99) above.

In order to account for why the EPP can be satisfied by multiple categories, B&R assumes, following Alexiadou and Anagnostopoulou (1998), the  $\varphi$ -feature probe on T may agree with either the DP in [Spec,vP], or with the  $\varphi$ -features of an “agreement morpheme<sup>19</sup>” on V in languages with rich agreement. As a result, the goal of a probe T in these languages may be either D or V. This is known as the “source” parameter of variation.

B&R also consider that given this, a second parameter of variation “size” is also possible, that is whether the ultimate satisfaction of the EPP is  $\pm$ pied-pipe. In all cases, [+pied-pipe] would yield vP raising: the culprits responsible however, are different either the DP argument in the specifier or the V head, depending on the value of the “source” parameter mentioned above. As such, four possible modes of EPP satisfaction are possible, listed by [source,size]. This paradigm is shown here:

- (101) a. *English, Mainland Scandinavian*  
[D, -pied-pipe]  $\Rightarrow$  [Spec,vP] to [Spec,TP]
- b. *Greek, Italian (pro-drop)*  
[V, -pied-pipe]  $\Rightarrow$  v to T
- c. *Afrikaans, Faroese*  
[D, +pied-pipe]  $\Rightarrow$  vP to [Spec,TP]
- d. *German, Icelandic*  
[V, +pied-pipe]  $\Rightarrow$  vP to [Spec,TP]

Despite the fact that (101c) and (101d) appear to be the same, there are actually two crucial differences with respect to optionality in both parameteric dimensions of source and size:

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<sup>19</sup>See also Bobaljik and Thráinsson (1998) who propose that a simple versus split IP (with multiple Agr projections) is parameterised based on whether a language has multiple inflectional morphemes or not. Languages that do not only allow for a simple IP whereas languages that do permit split IPs. Crucially, in languages that allow a split IP, we find the co-occurrence of overt verbal morphology such as tense and agreement. A second point to note is that simple IP languages prohibit multiple inflectional morphemes whereas split IP languages are not forced to use multiple morphemes. The claim is that such an account predicts the similarities and differences between the verbal morphology of Icelandic and Faroese.

- (102) a. *Optionality in the source dimension*

Spec-piedpiping is ‘backwards compatible’ with head-piedpiping in the absence of a suitable goal in [Spec,vP] and the presence of one in the head of vP.

- b. *Optionality in the size dimension*

Spec-piedpiping is ‘forwards compatible’ with spec-raising.

(Biberauer and Richards 2006:47ff)

I omit most of the lengthy arguments and examples in B&R but essentially, spec-piedpiping languages of the [D, +pied-pipe] sort (Afrikaans, Faroese, Dutch) permit an optionally filled [Spec,vP] if an suitable goal is present on the vP head. One piece of evidence for this lies in the permissibility conditions of expletives<sup>20</sup>, assuming expletives to be a last-resort strategy for allowing vP to bear  $\varphi$ -features to feed agreement and EPP satisfaction:

- (103) a. *German*

... daß (\*es) getanzt wurde  
that (expl) danced became  
'...that there was dancing.'

- b. *Danish (Mainland Scandinavian)*

... at \*(der) er blevet danset.  
that (expl) been danced  
'...that there was dancing.'

- c. *Afrikaans*

... dat (daar) gedans word  
that (expl) danced becomes  
'...that there is dancing.'

In impersonal passive constructions, head-piedpiping [V, +piedpipe] languages disallow expletives, shown in (103a), since no last resort strategy is needed. (103b) shows that in spec-raising languages [D, -piedpipe] expletives must be present, since agreement occurs between T and D, whereas in (103c), spec-piedpiping languages [D, +piedpipe] optionally allow expletives in [Spec,vP], illustrating the optionality as expressed in (102a).

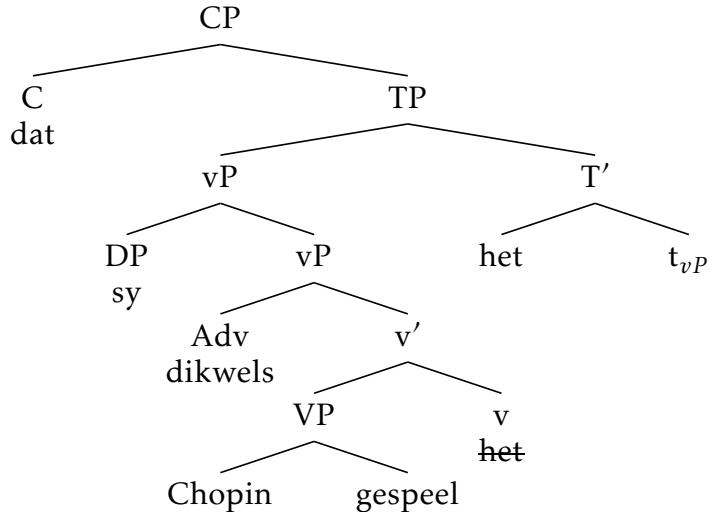
The optionality in (103b) on the other hand, is expressed by the data shown at the start of the section (100). In the case of Afrikaans, the presence of  $\varphi$ -features on the DP argument in [Spec,vP] in conjunction with the fact

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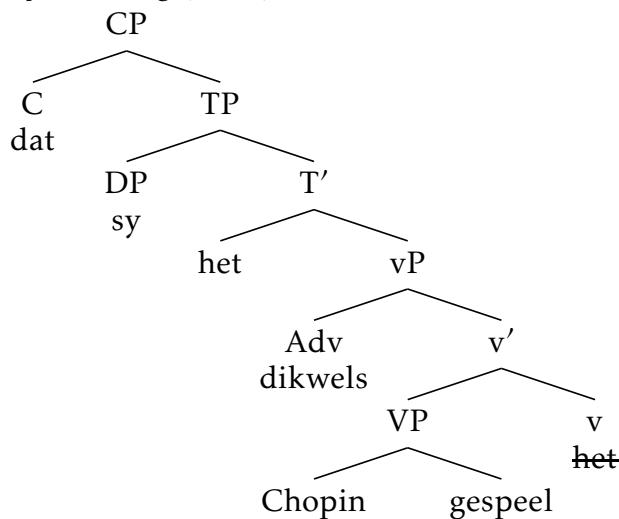
<sup>20</sup>See also Richards and Biberauer (2005) for an in-depth discussion of cross-linguistic distribution of expletives and motivations for their base-generation in [Spec,vP] rather than [Spec,TP].

that it is a spec-piedpiping language allows for two possibilities: the first sole satisfaction of the EPP on T by the goal bearing the necessary features: the DP. However, it is also possible to exercise the spec-piedpiping option as well, resulting in movement of the vP. As a result, this optionality condition is manifested as such:

- (104) a. *Spec-piedpiping* (100a)



- b. *Spec-raising* (100b)



The structures above show the availability of semantically vacuous optionality falling out from a single numeration within a single grammar. I will make a similar case for optional wh-movement, although the precise mechanics are different. Specifically, I appeal to the availability of optionality of pied-piping as formulated in (102b) to explain the extraction of either [Spec,QuP] (phrasal movement) or the entire QuP (spec-to-spec movement). Recall that there was also a third option, where the Qu head moves (head-to-spec movement). We turn now to an account of particle shift that shares

some parallels with the analysis that I will propose, in that head-movement can be used to satisfy the EPP.

#### 4.4.1.2 Optionality of particle shift (Svenonius 1996)

Another area where optionality seems to be rife is verb-particle constructions. Similar to preposition stranding in wh-constructions, verb-particle constructions exhibit optionality with regards as to whether the particle is stranded or not:

- (105) a. John took the garbage out.  
b. John took out the garbage.

Svenonius (1996) argues that under the right conditions, free variation is possible and the movement operations in (105) are equally economical; economy simply dictates that movement is necessary by virtue of an EPP feature, but in essence, it does not care how it is satisfied. There are certain constraints on the optionality of the verb-particle construction. While not immediately relevant, I will briefly mention them for completeness.

Firstly, if the object DP is an unstressed pronoun, it must never follow the particle, only precede it:

- (106) a. Lock it up.  
b. \*Lock up it.

Secondly, if the DP is phonologically heavy, it must follow the particle, with the ungrammaticality weakening as the DP shortens.:

- (107) a. \*Lock all the doors on the second and third floors that lead into rooms with expensive equipment up.  
b. Lock up all the doors on the second and third floors that lead into rooms with expensive equipment in them.  
c. ?Lock all the doors on the second and third floors up.  
d. ?Lock all the doors to rooms with equipment up.

The nature of the verb-particle construct also makes a difference. If the verb is not obligatorily a verb-particle construct, as in *lock* above, the claim is that the sentence is grammatical without the particle, which is superfluous. However, a verb like *turn off* mitigates this oddness, although if the DP is very heavy, oddness still results<sup>21</sup>:

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<sup>21</sup>My judgement differs from Svenonius with regards to (108c). The sentence is not too bad for me actually, certainly not warranting a ?? judgement.

- (108) a. Turn all the lights on the second and third floors off.  
 b. Turn all the lights in rooms with equipment off.  
 c. ?? Turn all the lights in rooms on the second and third floors that have equipment in them off.

Thirdly, particles that take complements or are modified by adverbials must follow the DP.

- (109) a. Curt wrung the towel right out.  
 b. \* Curt wrung right out the towel.  
 c. The butler brought the bags in the house.  
 d. \* The butler brought in the bags the house.

There are also other issues with regards to phonological contours and semantic interpretation<sup>22</sup> that I will omit here. Also omitted here are the corresponding Norwegian examples. Focussing on the core cases with permissible DP length and intransitive particles, I will turn to the syntactic analysis that Svenonius proposes. Consider the following two sentences:

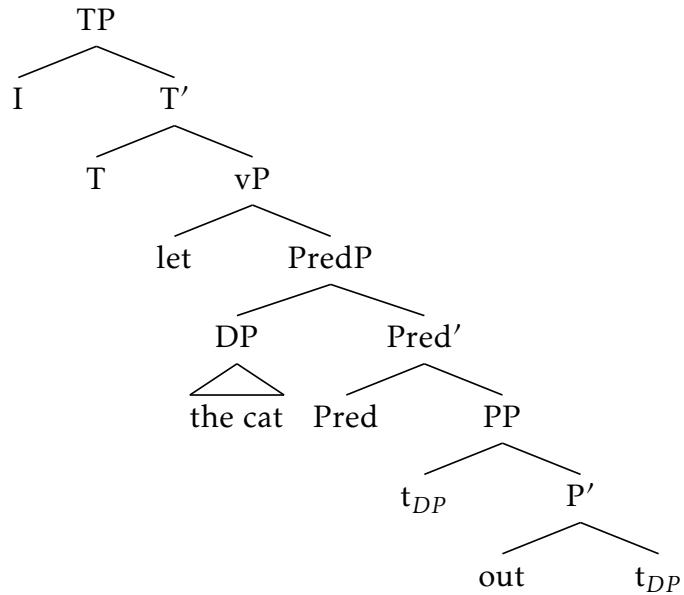
- (110) a. I let the cat out.  
 b. I let out the cat.

As we shall see in the discussion that follows, the structure that Svenonius proposes is very close in spirit to our structure for QuP. Svenonius proposes that verb-particle constructions form biclausal structure: the particle *out* selects as an argument *the cat* forming a PP, followed by movement into [Spec,PP] (cf. comp-to-spec movement in QuPs). Next a functional head of a small clause Pred takes the PP as its argument, yielding PredP. A strong N feature on Pred (EPP) requires that [Spec,PredP] be filled, and it thus either raises the DP in [Spec,PP] or the particle head itself:

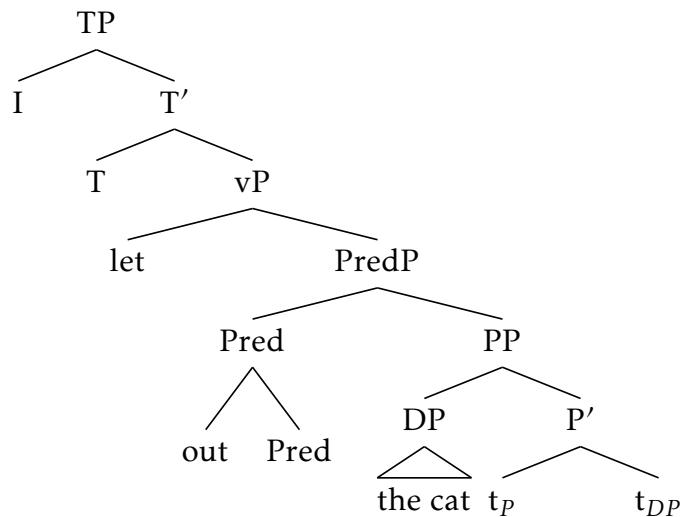
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<sup>22</sup>See Ramchand and Svenonius (2002) for an account that particle shift involves resultative semantics.

(111) a. *Structure for (110a)*



b. *Structure for (110b)*



The reason why such optionality should be possible relies on the notion of equidistance (with minor modifications) in the sense of Chomsky (1995b). Essentially, for any probe P with valid goals  $\alpha$  and  $\beta$ : if  $\alpha$  and  $\beta$  are within the same minimal domain, then they are equidistant to P and the raising of either  $\alpha$  or  $\beta$  would not block each other. A straightforward example is the case of object shift constructions, where if they are assumed to be in a higher position than the subject DP, still allow for agreement between T and the subject:  $[T [Obj [Subj [v t<sub>o</sub> ]]]] \Rightarrow [Subj [T [Obj [t<sub>s</sub> [v t<sub>o</sub> ]]]]]]$ . This should not be unfamiliar, and has been reiterated many times throughout Chomsky's work. The cornerstone of this analysis is that the specifier positions of v are

within the same minimal domain of  $v$  and are thus equidistant to any given probe.

The issue however, is the case of particle shift, the minimal domain of any head  $H$  does not include itself. In order to ensure that the head is equidistant as well, Svenonius makes a minor modification to the definition of domain, which entails that the minimal domain changes as well. Consider first Chomsky's definitions, for  $\alpha$  a feature or  $X^0$  category,  $CH$  a chain  $(\alpha, t)$  or the trivial chain  $\alpha$ :

- (112) a.  $\text{Max}(\alpha)$  is the smallest maximal projection including  $\alpha$ .  
b. The *domain*  $\delta(CH)$  of  $CH$  is the set of categories included in  $\text{Max}(\alpha)$  that are distinct from and do not contain  $\alpha$  or  $t$ .  
c. The *minimal domain*  $\text{Min}(\delta(CH))$  of  $CH$  is the smallest subset  $K$  of  $\delta(CH)$  such that for any  $\gamma \in \delta(CH)$ , some  $\beta \in K$  reflexively dominates  $\gamma$ .  
(Chomsky 1995b:299)

The change that Svenonius (and I) proposes is to do with (112b). If we replace the definition of domain by allowing  $\alpha$  to be in the domain, we get the desired results:

- (113) *Domain* (new definition)

The domain  $\delta(CH)$  of  $CH$  is the set of categories included in  $\text{MAX}(\alpha)$  that do not contain  $\alpha$  or  $t$ .  
(Svenonius 1996:69)

It thus follows trivially that for any head:  $H$  itself, its specifiers and complement are in the minimal domain of  $H$  (where previously it was only specifiers and complement)  $H$  and its specifiers are equidistant from any given probe, allowing equally economical movement of either. The only issue Svenonius has left is to posit that the particle  $P$  has  $N$  features as well, allowing the satisfaction of EPP on Pred, something we are not concerned with here. Armed now with the assumption that a head and its specifier(s) are equidistant to probes, we can close this section and consider how this works for our QuP framework.

#### 4.4.2 Rethinking the EPP

We have just looked at how a head and its specifiers are equidistant from probes. It is easy to see how the spirit of such an analysis lends itself to accounting for the formal optionality of wh-movement. More formally however, there is a problem. In the case of QuP, the relevant probe is  $C [uQ]$  while the goal is  $[Q]$  on  $Qu$ . This triggers phrasal movement as we have

seen in the discussions above. As it stands at present, the wh-phrase is not a valid goal for the [uQ] probe since it does not bear [Q] features. This section will propose a change to the mechanism of the EPP to accommodate the optional movement paradigm.

#### 4.4.2.1 The Featural Subset Hypothesis

Let us frame the problem in this way: we know that there are two antagonistic principles with regards to EPP satisfaction, as mentioned above. The first is the unbounded nature of the EPP; the EPP requires something – anything, to be merged in locality, traditionally, what we call its specifier. The second principle that works against this is that the EPP is parasitic upon Agree. An uninterpretable feature acting as a probe can bear an EPP property, that triggers movement into a specifier position upon Agree.

In order to account for the optional movement paradigm as shown (99), we need the EPP to either attract Qu, QuP or the wh-DP. Let us consider the options available to us. For one, we could adopt a Holmberg (2000b) stylistic fronting analysis, where the EPP is divorced from Agree and have any category that is phonologically overt move. We immediately run into several problems. The first would be that if the EPP is conceived in this way, the EPP reduces to a privative feature, loosely speaking, it is simply a probe that attracts anything that is overtly pronounced. Conceptually, this does not quite capture what we are looking for, we want to establish some sort of relationship between C and the Qu complex; C does after all, bind Qu, a variable over choice functions. Another problem we run into is that even if we conceive the EPP as a universal “catch-all”, it should still obey the syntactic rules of Agree, that is, Attract Closest. What would result would be the attraction of some element in the T domain, or whatever was closest to C. Again undesirable. This formulation is too loose, although in my opinion, it does capture conceptually the nature of the EPP quite well: that is simply a mechanism for motivating movement into specifiers.

Let us turn next to the EPP as a property of features, parasitic on Agree. One might go so far as to say that the EPP is a second order feature in the sense of Adger and Svenonius (to appear). This casts the EPP as a feature type, on par with say accusative or nominative being a type of Case feature. Miyagawa (2005) notes that the notion of the EPP is merely stipulative but should follow from some “deeper properties of the grammar”. Miyagawa proceeds to show that there is a relationship between the parameterisation of the EPP and an agreement/focus parameter. Languages, Miyagawa claims are parameterised between being agreement prominent

(Indo-European languages) and focus-prominent (Japanese, Turkish, some Bantu languages and wh-in-situ languages in general). The relevant argumentation is as follows: agreement and focus features (their exact formulation is not important here) are located in C and are percolated down to T, which universally bears an EPP feature. Both these features must be associated with an EPP by stipulation. Agreement prominent languages percolate agreement features to T, while focus prominent languages percolate focus features to T. The prediction is that overt wh-movement occurs only in agreement prominent languages whereas focus prominent languages do not necessarily require wh-movement. Let us consider a case of an object wh-phrase.

Because agreement prominent languages allow agreement features to percolate from C to T, the EPP feature on T is satisfied as a reflex of agreement between T and say, the thematic subject. The subject raises to T and satisfies EPP. The focus feature, which remains on C however, requires satisfaction in the context of an EPP feature (by stipulation), and thus forces raising of the wh-phrase to [Spec,CP].

On the other hand, focus prominent languages percolate focus features from C to T. If I understand correctly, the account for this case is that focus features (now on T) agree with the wh-phrase, but the Attract Closest demands that the EPP attracts the closest DP – the subject to [Spec,TP]. Subsequently, this raises to [Spec,CP] to satisfy agreement (left on C) and EPP. Crucially, this also allows wh-phrases to undergo raising, presumably in the case of scrambled wh-objects by object shift or subject wh-phrases. Oddly though, Miyagawa notes that the trigger for object shift, EPP on v is optional, although crucially not so on C.

The analysis Miyagawa provides is very interesting, albeit admittedly somewhat confusing. If such a typological distinction pans out, it makes very strong predictions about the nature of wh-movement. However, despite the fact that the EPP is tied to agreement or focus, it does not change the fact that the EPP is ultimately, still just a trigger for movement. Deep questions about the nature of the EPP are still left unanswered.

The discussion so far may have been a little misleading. I do not propose to answer any of these “deep” questions. Rather, I will adopt a rather extreme and somewhat pessimistic view, in absence of any convincing argument otherwise, that the EPP feature is simply a trigger for movement – nothing more. I will take one step further to propose that the EPP is simply a privative feature, veering away from the formulations in (Adger and Svenonius (to appear)) that the EPP is a second order feature or in (Pesetsky

and Torrego (2000, 2007)) that it is a feature predicated on other features, a “subfeature of a feature”. Essentially, what I want to propose is that the EPP is unbounded in nature and is formulated as such:

(114) *EPP* (Working definition)

An EPP feature on a head H projects a specifier [Spec,HP]. The EPP is satisfied by the merger of any *head* or *phrase* in [Spec,HP].

This is an extremely loose definition, and if left to its own devices, would clearly be disastrous, apart from perhaps the cases of stylistic fronting discussed above. What we need to do now is to constrain the EPP to capture the commonly observed facts about the parasitic nature of the EPP on Agree. The means for doing so will be what I term the Featural Subset Hypothesis (FSH). What the FSH proposes is simply that features can “group” to form subsets and only one goal can (and must) satisfy the all features of each subset simultaneously. These subsets are what imposes the necessary constraints on the EPP. Though stipulative in nature, I think that it is no different from the other incarnations of the EPP. In fact, I believe that such a conception of the EPP comes at little if any cost to the grammar.

The notion of ‘subsets’ are already an integral part to the current theory of the computational system. Consider first the most fundamental syntactic operation Merge. Taking two syntactic objects  $\alpha$  and  $\beta$ , Merge yields either  $\{\alpha, \{\alpha, \beta\}\}$  or  $\{\beta, \{\alpha, \beta\}\}$ . This is nothing new. Minimal domains are defined in terms of subsets. In MP, Chomsky suggests that languages generate a set of derivations and two further subsets, convergent and admissible ones (Chomsky 1995b:220). Semantic theory is also rife with sets and nested subsets; the list goes on. I do not think that there is much need to make a strong case here, as will be shown in the discussion that follows. Positing that the EPP is a property of features is not far off from saying that the EPP is privative and forms a subset with an uninterpretable feature. In fact, it could turn out that such a formulation is more economical, since allowing features to take values presupposes that it in fact forms an ordered pair (Adger and Svenonius (to appear); Adger (to appear)). The FSH merely puts them in sets, with no recourse to ordering. I will not pursue this claim in any detail here; I will only focus mostly on its applications to the EPP and optional movement<sup>23</sup> and continue to adopt a system of valuation where necessary. Let us formulate this:

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<sup>23</sup>A plausible approach would be one that supposes all features, including values are privative. By arranging features in subsets, one could account for feature valuation by positing a variable that needs to be filled. For example a typical  $\varphi$ -feature probe for person might work like something along these lines: a probe will consist of  $\{\text{uPers}, x\}$ ,  $x$  a variable requiring saturation. A valid probe would have the set  $\{\text{Pers}, 3^{rd}\}$ . Agree and valuation

(115) *Featural Subset Hypothesis*

Any number of features  $F_\alpha, F_\beta, \dots, F_n$  may enter into a subset relationship  $\{F_\alpha, F_\beta, \dots, F_i\}$  forming subset  $\sigma$ . The satisfaction of  $\sigma$  must be simultaneous and complete by Merge or Agree.

We can define the notion of simultaneity and completeness quite straightforwardly. Let us call this the Principle of Complete Simultaneous Satisfaction (PCSS) for lack of a better name:

(116) *Principle of Complete Simultaneous Satisfaction*

For any featural subset  $\sigma$ , all members of  $\sigma$  must be satisfied in a single cycle of operations.

These formulations are not much different from the way things worked traditionally. The only difference is that partial satisfaction of  $\sigma$  is not possible. For example, if a probe  $\pi$  bears  $\sigma = \{uF, uG\}$ , then a goal  $\gamma$  must have both features  $F$  and  $G$  (though not necessarily in a further subset relationship beyond its root set of features) and a single Agree operation is sufficient to ensure completeness. The standard notion of an EPP feature on any given probe  $[uF]$  is simply formulated as  $\{\text{EPP}, uF\}$  under the FSH. This states that at the point when Agree takes place, only the raising of the goal is possible since it is the only available candidate given the PCSS; while satisfying  $\sigma$ , the probe is “blind” to everything else, only its goal. This allows to permit the unbounded nature of the EPP while constraining it to behave in the way that it should. We are now able to make a minor adjustment to the definition of the EPP by applying this definition in the context of the FSH:

(117) *EPP (Final version)*

An EPP feature on a head  $H$  projects a specifier  $[\text{Spec}, \text{HP}]$ . The EPP is satisfied by the merger of any *head* or *phrase* in  $[\text{Spec}, \text{HP}]$ , **subject to constraints of the FSH**.

The FSH also gives us the added flexibility and advantage of accommodating the facts of both stylistic fronting type movement and more specific movement. In the former case, a privative EPP in no subset relationship should suffice, Attract Closest determining the category that moves, basically the closest category. In the latter case, as already shown putting uninterpretable features and EPP features in a subset relation allows raising under Agree. The FSH also allows for another method of satisfaction, namely

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then takes place as per usual. It is uncertain at this point what deeper implications such an approach may have for a theory of grammar in general, though at the outset, I do not see any, barring further research.

long distance merger of a specific category, a crucial linchpin in our theory of optional movement.

## 4.5 Applying the FSH

Recall that the purpose of proposing the framework presented here in the first place was to account for the sorts of alternation we see in SgE wh-constructions. We wanted to say that these alternations were a reflex of a single grammar and a single derivation; syntactically, they were equivalent and that the most economical way to view things was to say that these derivations were equally economical. Figuratively, the derivation meets a fork in the road, and either path seems just as good. At the same time, there were several approaches that we specifically did not want to take, as discussed in chapter 2. The presence of an EPP on interrogative C was seen as a crucial factor in determining cross-linguistic parameteric variation – the wh-parameter. The optional selection of C was also seen to be untenable, given that it was a core component of phrase and phase structure in current syntactic theory while remnant movement was seen to not predict the lack of island effects in many in-situ constructions.

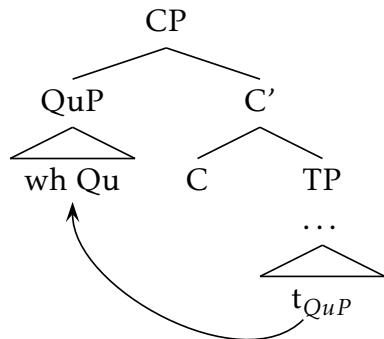
At the end of the day, this may well turn out to simply be an academic exercise. Despite this, it is difficult to deny the fact that languages possess all kind of optionality as we have seen in the cases of optional pied-piping in Afrikaans, stylistic fronting in Scandinavian and the optionality of particle shift in English and Norwegian. A central trend that seems to keep surfacing throughout the works of the scholars reviewed revolves around the EPP in some way. In a way, we have little choice, the EPP is our only means of allowing the rearrangement of the linear order of syntactic objects that are already merged in place. Therefore, it seems wise to press on in this direction and see where things lead us.

Having established the FSH as a central component of a theory of optional wh-movement, the aims of this section is to explain the application of the FSH in yielding optional output. The discussion will centre around the proposal that the interrogative C, while having a fixed feature composition of [uQ], [WH] and EPP can yield different configurations via the FSH to allow for optional movement. The remainder of the section will discuss briefly some motivations for adopting a head-to-spec rather than head-adjunction analysis for head movement and lastly, we will develop a system of scope assignment in our framework.

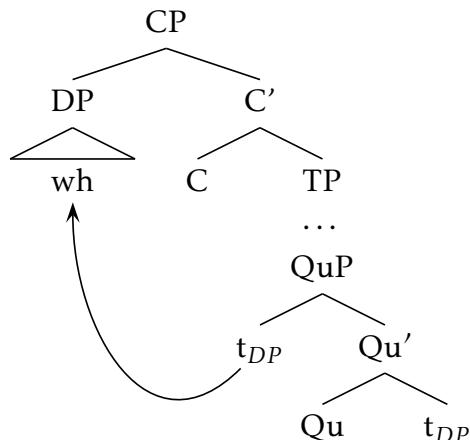
#### 4.5.1 The FSH predicts optionality

The three structures that the FSH would have to predict were those discussed at the start of 4.4. I repeat these below:

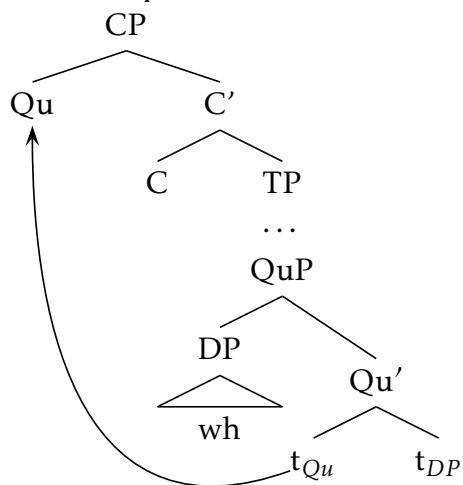
- (118) a. *Phrasal Movement*



- b. *Spec-to-Spec Movement*



- c. *Head-to-Spec Movement*



Let us review the relevant ingredients we have at hand. We know that Qu possess [Qu, Q, uWH]. Wh-phrases possess the feature set [D, uWH] and C has [EPP, uQ, WH]. Now in the case of a language that always only has

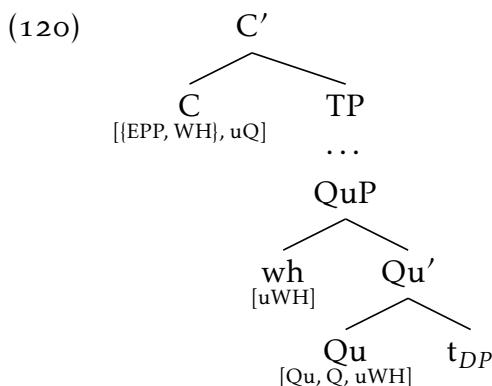
phrasal movement of the type in (118a), this is quite straightforward. [uQ] on C acts as a probe, finds a QuP goal and QuP raises in a more or less standard way. We have seen Tlingit to be a language of this sort, as discussed in Cable (2007). Such a language would have the following FSH configuration of its features on C:  $\{[EPP, uQ], WH\}$ . This gives us the same results as if we allowed [uQ] to bear an EPP property, we have raising under Agree.

However, in a language like SgE, we have seen that such an account is insufficient. SgE exhibits the alternation as shown below:

- (119) a. What ah you eat?
- b. What you eat ah?
- c. You eat what ah?

We can see that (119a,b) corresponds roughly to (118a,b). The odd case is (119c), which does not quite correspond to (118c), since we have shown repeatedly that SgE does not permit sentence initial particles. We do however, have another tool in our arsenal, the sentence final projection for particles PrtP. We will return to this later where I will show that (118c) is the correct way to yield (118c) by further movement.

Returning to the featural composition of C, I propose that in optional wh-fronting languages, the EPP is not associated with [uQ] in the configuration  $\{[EPP, uQ], WH\}$ . Rather, the EPP is associated with WH like so:  $\{[EPP, WH], uQ\}$ :



The FSH dictates that given a configuration  $\{EPP, WH\}$ , the EPP functions as probe and the PCSS requires that the object that raises into  $[Spec, CP]$  must be any syntactic object bearing a WH feature. Recall that we have reworked our definition of Domain, in the sense of Svenonius (1996), to allow both a head and its specifier to be in the minimal domain of a head. That is, both Qu and the wh-DP are equidistant to a  $\{EPP, WH\}$  probe.

If we accept such a line of reasoning, then two initial possibilities are permitted: if the probe selects the wh-DP in [Spec,QuP] as its goal, we get the raising of the wh-DP to [Spec,CP], yielding (118b). Since Qu and the wh-DP are equidistant, C can also select for Qu, triggering head raising, yielding (118c). This is a very similar in spirit to what Svenonius (1996) proposes for optional particle shift, either [Spec,PP] moves or P head-raises. Recall that in the case of Afrikaans, Biberauer and Richards (2006) notes that spec-raising can feed into spec-piedpiping, in other words, spec-raising is “forwards compatible” with spec-piedpiping. If such an option is selected, we get phrasal movement as in (118a).

To spell this out more explicitly, what is being proposed here is that the three options as discussed above are all *equally economical* and tenable options. This occurs at the point when EPP probes for a goal. Given our new versions of Domain as discussed in (112) and (113), the minimal domain of any given head H and by extension the valid search space for any probe probing H is H itself, its specifier and complement, all three positions are equidistant goals as far as the probe is concerned. We are only concerned with the specifier and head position (because of comp-to-spec movement); the relevant participants in current discussion would be the EPP on C and QuP: either [Spec,QuP] and Qu are equidistant and the operation of raising either would be indistinguishable as far as the grammar is concerned. By further extension as mentioned in the previous paragraph, [Spec,QuP] raising can feed into the pied-piping of the entire QuP phrase, again at no cost to the grammar. This point cannot be emphasised enough: at the point of EPP satisfaction, all three options are equally economical and valid options; the EPP is blind as to how it is satisfied. The factors that ultimately determine which option is selected falls outside the jurisdiction of narrow syntax. This is in essence what formal optionality is.

Crucially, this entails that the operation of Agree between C’s [uQ] feature and Qu’s [Q] feature is divorced from movement. That is, in the cases of optional wh-movement, movement is *not* parasitic on Agree. Instead, the FSH is responsible for constraining the EPP, requiring movement of something with a wh-feature. Given this, a keen observer would note that a similar scenario actually applies to constructions where C contains {EPP, uQ}. Given that the satisfaction of this featural subset requires movement of something with a Q feature, this predicts that the movement of QuP would not be the only means of satisfying the EPP. We should expect as well movement of the Qu head, since it is within the minimal domain and contains [Q].

While this may seem to be a undesirable result at the outset, it is precisely this that allows wh-in-situ constructions in English and Brazilian Portuguese, as discussed in Pires and Taylor (2007). The alternation between Qu-raising and QuP-movement results in the wh-in-situ/wh-raised variation. This will be discussed at length in Chapter 5.

I have thus laid out the general schematic for optional movement that will be applied to account for the data that we have considered in SgE and other languages. The framework presented here is general one, more specific details and language specific differences will be discussed over the course of the rest of this chapter and the next. Before we do so, there are two more points that need to be addressed before we move on.

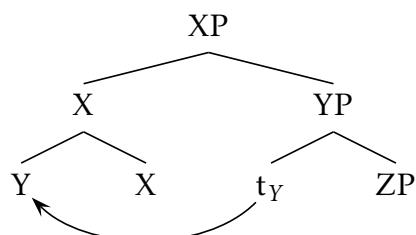
#### 4.5.2 Head-to-Spec Movement

One might have noticed that I have chosen to adopt a less common approach to head movement as shown in (118c). The claim made here is that all movement targets a specifier position. This applies to head movement as well. Since we have reduced the sole motivation for movement to the presence of an EPP, and we have defined the EPP as a feature that projects a specifier and merges something in it, the only way that this framework can account for head movement is to say that all movement, head or phrasal, targets a specifier position.

I will not argue at length for adopting such an approach to head movement here. This is not what this thesis is about. Arguments for head-to-spec movement have been made elsewhere (Donati 2006; Matushansky 2006; Toyoshima 1997; Vicente 2007 amongst others; see also Roberts (to appear) for a good overview of head movement within the MP). My stand regarding the issue is that a head-to-spec movement allows us to adopt a more unified view of movement in general and the alternation of head vs. phrasal can open up interesting avenues in the study of syntax: optional wh-movement in our case. Nevertheless, I will briefly review some of these arguments below.

Head movement, in the traditional sense, is seen to involve head-to-head adjunction, schematised as such:

(121)



One of the core problems with such an approach is that it is counter-cyclic, violating the Extension Condition by not allowing Merge to always apply at the root. Another problem is the nature of the triggers that motivate head movement. How is the syntax able to distinguish between requiring head movement or phrasal movement. These and other problems leads Chomsky (2001) to suggest that head movement should be reduced to the PF component. A consequence of such an assumption is that head movement should not display LF effects. Lechner (2006:52ff) however, argues convincingly that head movement does actually have an impact on scope relations. Consider:

- (122) Not every boy can make the basketball team.  $\neg\Diamond > \forall$

The full details of Lechner's analysis are too lengthy to be included here<sup>24</sup>, but the general idea is that given the the modal takes scope of the universal, it has to be interpreted at a higher position than T, where it is base-generated. This can only be accomplished by head-movement, contrary to Chomsky's claim.

Roberts (to appear, ex. 13) suggests that head-movement can affect LF by changing c-command relations of the moved head, as in the case below, where the NPI *anybody* is licensed by T-to-C movement; assuming that licensors must c-command NPIs at LF:

- (123) a. \* Which one of them does anybody like?  
 b. Which one of them doesn't anybody like?

Moving on from this PF discussion, the current conception of the MP cannot, in theory, explicitly ban movement of a head to a specifier position. Such constraints have been based on an adaptation of the Structure Preserving Hypothesis (SPH) of Emonds (1970) and reformulated for  $\bar{X}$ -theory in Chomsky (1986). In Chomsky (1995b:318) however, Chomsky states "the minimalist approach overcomes the redundancy by eliminating the SPH: with D-structure gone, it is unformulable, its consequences derived...[by] Merge and Attract/Move." By this time, bare phrase structure is already in place, and syntactic objects are defined in terms of  $X^{\min}$  and  $X^{\max}$ . The SPH is thus jettisoned and the Chain Uniformity Condition (CUC) appears to constrain movement:

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<sup>24</sup>A brief rundown of Lechner's analysis follows: there is an abstract Neg head above TP, while the subject *not every boy* is in [Spec,AgrSP], above NegP but is LF-reconstructed in [Spec,TP] and interpreted as an indefinite, yielding split scope. The point relevant here however, is that the modal must somehow be "sandwiched" between the abstract negation Neg and the subject in order to yield the correct scope.

(124) *Chain Uniformity Condition*

A chain is uniform with regard to phrase structure status.

(Chomsky 1995b:253)

This still does not solve the problem. As noted in Chomsky (1995a), V to Infl raising is problematic for the CUC since it forms a nonuniform chain:  $X^{min}$  at its base generated position (since it projects), but  $X^{max}$  when adjoined to Infl. Chomsky stipulates the following workaround:

- (125) At LF,  $X^0$  is submitted to independent word-interpretation processes WI, where WI ignores principles of of  $C_{HL}$ , within  $X^0$ .

(Chomsky 1995a:409)

Vicente (2009) questions critically the need for the CUC and notes that with respect to Internal Merge, the CUC ensures two things: first, that a moved phrase will land in a specifier position, rather than say a head position which is  $X^{min}$ , yielding a non-uniform chain. And second, that the moved phrase targets a specifier position where it does not project and is  $X^{max}$  maintaining uniformity. Vicente argues that this is redundant, since the Extension Condition already suffices to ensure that movement targets specifier positions and that a moved phrase cannot project by virtue of the fact that there are no features on it that allow it to do so.

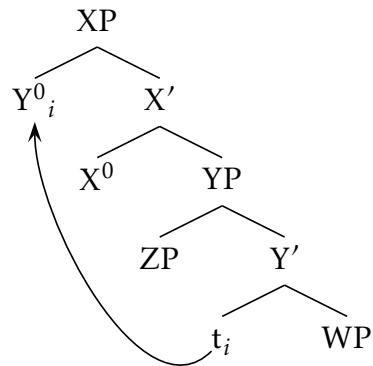
In light of these problems, the simplest way to proceed with this issue then is to assume that all movement targets a specifier position. Given our formulation of the EPP, movement will always target the root. The size of the element that satisfies the EPP on the other hand, does not matter, this must be constrained by independent means; or not at all, as in the case of optional movement.

Matushansky (2006) provides an interesting approach to addressing the issue of head movement. In some ways, her approach attempts to unify the head-adjunction properties of head movement (cliticisation for example) with Minimalist constraints such as the Extension Condition. The result of this is what she terms m(orphological)-merger. To summarise, head-movement always targets a specifier position, and a separate operation takes the specifier-head configuration<sup>25</sup> and outputs a head-adjoined one:

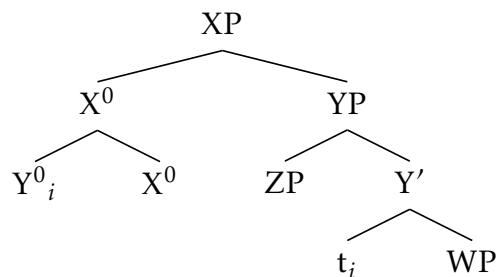
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<sup>25</sup>Matushansky notes that the inputs to m-merger are two heads, but considering a sentence like *Your friend's here to stay*. might suggest that m-merger is less picky and basically converts any spec-head configuration into an adjunction one.

- (126) a. *Head-to-Spec Movement*



- b. *M-merger*



Matushansky strongly emphasises that m-merger is a morphological operation, obviating the violation of the Extension Condition in deriving structure (126b). In principle, since m-merger is a separate operation from movement, it leads one to posit that it should be possible to have head-to-spec movement without m-merger. This is of great importance to the QuP theory of movement that we have proposed here. Since we only have movement to specifier positions, cases where head-adjunction clearly occurs must be clearly differentiated from the cases where heads do not m-merge, as in the case of Scandinavian stylistic fronting.

Despite the fact that m-merger is an independent operation, Matushansky does not, unfortunately, make clear when m-merger should or should not apply. I have nothing intelligent to say regarding this issue and I must put it aside here. Since m-merger is a purely morphological operation, the operation itself and the resulting structure that it yields is opaque to syntax. One might however, speculate whether m-merger can actually be expressed as a syntactic operation. Considering the generalisation that Pesetsky and Torrego (2000) makes with regards to head-movement:

- (127) *Head Movement Generalisation*

Suppose a head H attracts a feature of XP as part of a movement operation.

- a. If  $XP$  is the complement of  $H$ , copy the head of  $XP$  into the local domain of  $H$ .
- b. Otherwise, copy  $XP$  into the local domain of  $H$ .

(Pesetsky and Torrego 2000:363)

If head and phrasal movement are indeed in complementary distribution as claimed, we could construe m-merger as a reflex of movement. We have the means to do so, since the EPP is now a first order feature, we can state that instead of it being purely privative, the EPP can take a value, say [EPP: $\pm m$ ] which signifies whether to execute m-merger upon movement to a specifier position. I leave this question open, although it must be noted that placing m-merger in the realm of syntax goes against the spirit of Matushansky's analysis for m-merger in the first place. Furthermore, it would force us to account for the violation of the Extension Condition, a problem that a purely morphological account does not have. Nevertheless, for the sake of exposition, I will use [EPP: $m$ ] to signify that m-merger takes place here at a certain point in the derivation, such in the case of T-to-C movement. It does in no way however, signify some kind of syntactic operation.

One final point to note is with regard to the trigger for head vs. phrasal movement. The head movement generalisation seems to be blatantly violated in our case of Qu movement. Essentially, the QuP approach to optionality relies on some kind of mechanism for long head-movement<sup>26</sup>, something which the head movement generalisation does account for. Furthermore the generalisation appears to be more descriptive rather than operational. Granted that Pesetsky and Torrego (2000) note that such a generalisation is speculative, but one wonders how the grammar encodes such instructions given a feature driven theory of movement? Movement in itself is quite a primitive operation; alongside triggering movement, the grammar would have to know whether any given goal is a complement or not, and if so, move only the head.

Perhaps one might speculate, given that the grammar is sensitive to  $X^{min}$  and  $X^{max}$  that an EPP feature could perhaps a second-order value of the sort [EPP:min/max] triggering either head or phrasal movement. If left unspecified, optionality ensues. Constraints such as the HMC can be recast in terms of the distribution of min/max values for EPP; or better yet, the HMC abandoned altogether and the constraints on head movement expressed as a more general rule based on head movement patterns of when

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<sup>26</sup>See especially the works by María Luisa Rivero (1991, amongst many others) and collaborators. The references are too numerous to list here; see Roberts (to appear) and references therein.

and where [EPP:min] can occur, capturing both the HMC facts and long head-movement facts. Obviously this is an ideal that warrants much more research to bear fruit. Nevertheless it does seem that recasting head movement in this way is more consistent with a feature driven theory, though admittedly just marginally so.

This small section has concluded with so many speculations. Despite this, I will continue to pursue an analysis that assumes that head-to-spec movement is possible and attempt to express the head vs. phrasal movement dichotomy along more specific, although occasionally stipulative constraints.

#### 4.5.3 Scope Assignment

Before we close this chapter, let us consider how scope marking works within the QuP framework. I will only provide a general picture here, and fill in the specifics as we go along. Since this a thesis on optional wh-movement, I will mainly focus on the scope assignment of these languages. Technically, these would be wh-movement languages, given that the assumption is that optional wh-movement languages are categorically classified as so, by virtue of an EPP feature on C in the framework presented here. However, for completeness, I will briefly mention wh-in-situ languages although I will not focus on them in any great detail; their properties have already been extensively discussed in the literature. Additionally, I will also consider the notion of Q-migration in the sense of Hagstrom (1998) and attempt to provide a syntactic account compatible with our theory here.

##### 4.5.3.1 Wh-in-situ languages

Within the QuP framework, an account of wh-in-situ languages are rather similar to an unselective binding approach. The crucial difference however, is that most unselective binding approaches propose that an operator is base-generated in a C position, which then serves to bind the wh-word. While there is nothing wrong with this, under the QuP analysis, we would like to ideally posit that all wh-phrases form a constituent with the particle. A direct consequence of this however, is that we need to resort to overt movement (or LF movement, see Kishimoto (2005)) of particles in order for them to take scope. According to WALS (Haspelmath et al. 2008), out of the 468 languages that possess polar interrogative particles, 391 of them have

particles in either an initial or final position<sup>27</sup> that particles can, and must in some languages, move to a CP (initial) position or a PrtP (final) position.

In the discussion that follows, I will focus on Sinhala. Apart from the fact that Sinhala is a wh-in-situ language, it also exhibits the property of *optional* particle movement, an issue that is quite germane to the central topic of inquiry here. Let us review the facts and present some new ones. Data from Kishimoto (2005) presented earlier is repeated below:

- (36) a. Ranjit [kau da aawe kiyəla] dannəwa.  
Ranjit who Q came-E that know-A  
'Ranjit knows who came.'
  - b. Ranjit [kau da aawa kiyəla] danne?  
Ranjit who Q came-A that know-E  
'Who does Ranjit know came?'
- (37) Ranjit [kau aawa da kiyəla] dannəwa.  
Ranjit who came-E Q that know-A  
'Ranjit knows who came.'

What we noted was that there is a complementary distribution between the overt position of *da* and the type of marking the verb takes. When *da* is in an in-situ position, the verb must take an *-e* ending to impart interrogative force. When *da* moves however, the verb only can take a declarative *-a* ending. Kishimoto accounts for the optionality of particle movement by appealing to an overt vs. covert movement asymmetry and correspondingly for a strong/weak alternation of a [+Q] feature on one of the C heads. The verb ending is a result of whether [+Q] is checked overtly or covertly. If it is checked overtly, it deletes and if checked covertly, it survives to PF. This is something that we would not like to say, as mentioned in our discussion of Babine-Witsuwit'en. Even though we do not adopt a feature strength approach in our system, the strong vs. weak distinction, if one chooses to adopt it, is something that is the locus of typological variation, akin to saying that the assignment of EPP is optional.

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<sup>27</sup>The breakdown is as follows, listed in descending order of frequency: No particle (309), Final (273), Initial (118), Second position (45), Either of two positions (24), Other positon (8). Second position particles often cliticise to their first constituent (see notes in WALS entry: Feature 92), while "other position" particles are often seen in proximity to verbs. Most probably, we can account for these in a QuP framework by positing m-merger between the first constituent (see footnote 25 for speculation that m-merger can apply not just to heads but to phrases as well) and Qu; other positions of particles can perhaps be explained by modifying the selectional requirements of Qu followed by unselective binding by a C head. Note however that we are talking about yes/no particles here, not wh-particles. It is likely that while similar to wh-particles, they do not exhibit identical properties. Unfortunately, WALS does not provide information on wh-particles.

Furthermore, in the case of Sinhala, both overt and covert particle movement displays the same island effects; unexpected since covert movement should be able to escape island violations in general. Regardless, the QuP approach does not adopt a covert movement analysis, and thus leads one to wonder whether we can recast the optionality of particle movement in Sinhala via a purely overt movement approach, which better reflects the fact that island violations are in force regardless of whether the particle moves.

Consider further the sentence pair in (36) repeated above. Interrogative force appears to be marked by inflection on the verb, rather than by Qu-movement, something quite unexpected given our discussions of QuP so far. This leads one to suspect further whether we can even construe *da* movement as Qu movement. What adds to this suspicion is that *da* can also be used to express indefinites, and to express focus, sharing properties with another focus particle *tamay*:

- (128) a. Chitra ee potə tamay kieuwe.  
Chitra that book FOC read-E  
'It was that book that Chitra read.'
  - b. Ranjit ee potə kieuwa tamay.  
Ranjit that book read-A FOC  
'Certainly, Ranjit read that book.'
- (129) a. Chitra ee potə da kieuwe?  
Chitra that book Q read-E  
'Was it that book that Chitra read?'
  - b. Chitra ee potə kieuwa da?  
Chitra that book read-A Q  
'Did Chitra read that book?'

As such, Kishimoto suggests that either *da* or the verb-marking can mark scope, depending on whether overt or covert movement is chosen. What I would like to propose is that we can perhaps unify the facts in Sinhala with a QuP approach. While Kishimoto entertains some sort of QuP analysis, I think that there is something missing, in light of the above mentioned "suspicions". Let us slightly modify Kishimoto's proposal and suppose that *da* is only a focus particle, and has no question particle properties, yielding the configuration:

- (130) [<sub>FP</sub> DP [<sub>F'</sub> *da* <sub>DP</sub> ]]

For consistency, let us assume that the F head *da* takes some DP as its complement, and comp-to-spec movement is triggered, as is the case for QuP.

There is no reason to believe that *da* is inherently interrogative, since it does appear as an indefinite as well.

- (38) a. mokak da waetuna.  
what Q fell-A  
'Something (unidentified) fell.'
- b. mokak da waetune.  
what Q fell-E  
'What fell?'

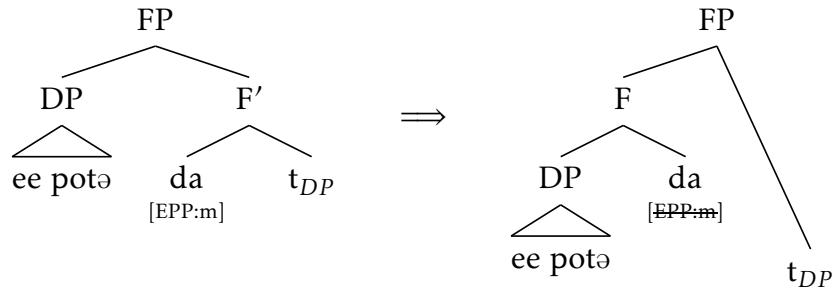
Assuming that this is correct, in order to turn FP interrogative, we need to merge in a Qu. This is done straightforwardly, for all cases of QuP, just that Qu selects for FP rather than a wh-DP in this case:

- (131) [Qu' Qu [FP DP [F' da t<sub>DP</sub> ]]]

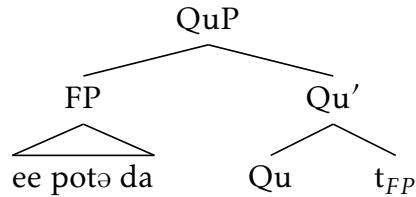
Now, comp-to-spec movement should occur. Before this however, let me bring to bear m-merger, a powerful tool we have at our disposal. Consider first the case of *da*-in-situ. Suppose that m-merger applies over FP: [FP DP [F' da t<sub>DP</sub> ]]  $\Rightarrow$  [FP DP da ]. When Qu takes FP as its complement and triggers comp-to-spec raising, FP which is syntactically opaque has to move as a unit into [Spec,QuP]. Qu-raising then takes place into PrtP (Kishimoto's CP<sub>2</sub>, it does not matter what label we use). There are two things going on here. First, QuP raising is impossible, since PF constraints are violated: DPs do not appear in sentence-final positions in Sinhala and the derivation crashes at PF. Only Qu-movement is permitted. Second, both *kishimoto* and *hagstrom* assume that the verb moves to C in Sinhala, allowing checking and the realisation of the *-a/-e* suffixes. I will assume this as well. Likewise, in my approach [uQ] on the V-C complex is always checked by Agree. Where my proposal differs however, is that it does not rely on a overt/covert asymmetry to explain the realisation of verbal affix. Rather, I propose that it is not the valuation of [uQ] that yields the affix; it only yields clausal force. The affix is rendered by a more traditional affixation, in our case, head-to-spec movement followed by m-merger of Qu. Let us consider (129a), illustrating with a tree for clarity. I will use PrtP instead of C<sub>2</sub>. First let us consider a step by step derivation of QuP:

- (132) a. *Building FP: Comp-to-Spec*

*M-merger of DP and F*

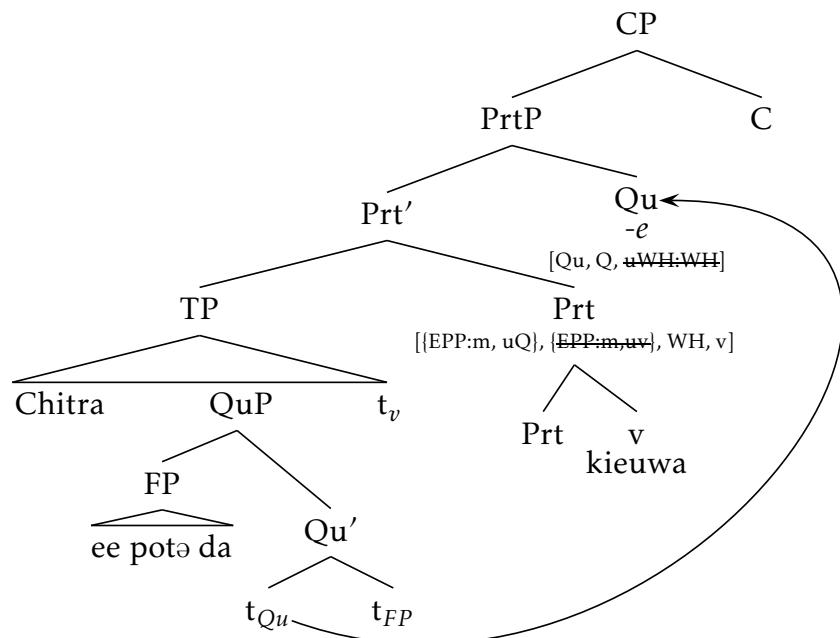


- b. *Building QuP: Comp-to-Spec*

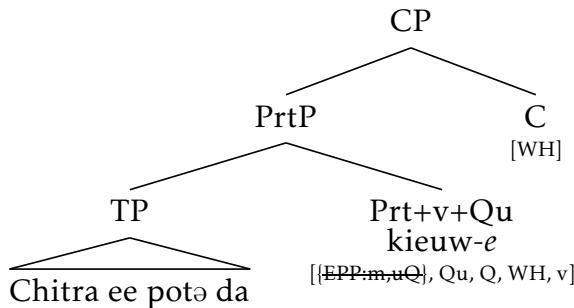


First *da*, which is now analysed as a focus head *F*, takes the DP *ee potə* as its complement. M-merger is applied to form an opaque FP constituent. This accounts for why *da* can no longer be separated from the DP and raise. This is exemplified by the derivations in (132a). Next, *Qu* which is no longer phonologically overt by our analysis, takes FP as its complement and comp-to-spec raising is triggered. No m-merger applies at this point, since *Qu* must be free for further raising. The derivation continues:

- (133) a. *Building the clause: Qu-movement*



b. *M-merger of Qu and Prt*

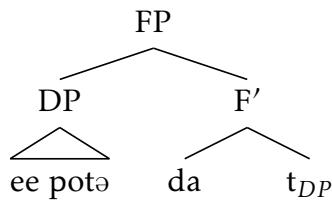


According to Kishimoto, the verb takes its affix by the presence of a Q feature. The verb *kieuwa* thus has a [uQ] feature. Prt (Kishimoto's C2) triggers verb raising into C. In our current framework, the EPP projects only one specifier, and therefore, to allow for both v-raising and Qu-movement, we require two EPP features. By the FSH, these EPP "bundles" will be {EPP:m, uv}, reflecting that it requires v to move and merge in locality under m-merger and {EPP:m, uQ}, raising under Agree, plus m-merger. A more technical point: assuming that all probes are simultaneously active, and probes try to satisfy features as soon as possible; at the point when Prt is merged into the derivation, v is closer to Prt than Qu is, so v raises first and m-merger applies. This is simply V-to-C2 raising that Kishimoto assumes. Next, {EPP:m, uQ} probes, requiring raising under agreement. It finds a goal QuP, but as mentioned earlier, QuP raising is not possible, given that this will cause the derivation to crash at PF and so only Qu moves into [Spec,PrtP]. M-merger applies, giving the verb *kieuwa* the correct affix, allowing it to be pronounced as *kieuwe*. The derivation then terminates. A simpler approach perhaps, might be to say that there is no m-merger at the point of the formation of FP, yielding *ee potəda*; it does not seem likely that they are morphologically related to require m-merger. Because FP will be in [Spec,QuP] and subextraction from a specifier is bad anyway, there might be no need to necessitate m-merger. Moreover, the only recourse to raising into [Spec,PrtP] is through raising under agree {[EPP, uQ]} and presumably, *da* does not possess these features; it only has focus features. However, as we shall see next, m-merger is necessary for the second case where *da* raises.

Next, accounting for the movement of the particle *da* to the clause periphery, we see that the source of variation lies in the optionality at the point when Qu takes FP as its complement. In the previous *da*-in-situ case, we have FP movement to [Spec,QuP]. Given that we mentioned that such a configuration should predict optionality between phrasal and head movement, Qu also has the option to raise only the focus head *da*. When this

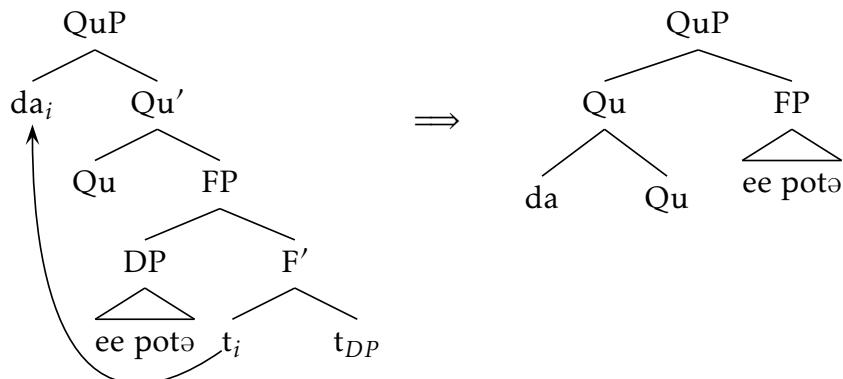
happens, m-merger must apply and *da* and *Qu* form a head-adjoined construct and the DP is left in its base position. The derivation then proceeds in the same manner as before: Prt probes with [uQ] and it finds QuP. QuP raising is again impossible due to a PF crash since it contains a DP the only option is to raise the *da+Qu* complex. When raised into [Spec,PrtP], crucially, m-merger *cannot* apply since the Qu-complex is opaque and there is no way to extract the Qu affix from it. The derivation must then terminate, with *da* in a clause final position.

- (134) a. *Building FP: No m-merger*

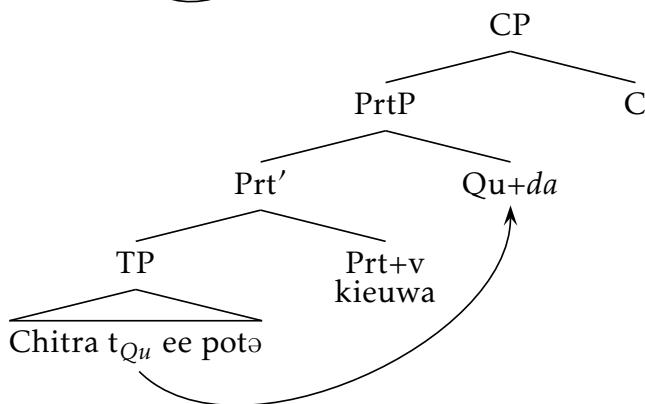


- b. *Building QuP: Head-to-Spec*

*M-merger of F and Qu*



- (135)



An additional piece of evidence as to why such an analysis is appealing is the case of focus constructions with an overt marker *tamay*. In these constructions, the verb exhibits a similar kind of affixal alternation. The data is repeated below:

- (128) a. Chitra ee potə tamay kieuwe.  
           Chitra that book FOC read-E  
           ‘It was that book that Chitra read.’
- b. Ranjit ee potə kieuwa tamay.  
           Ranjit that book read-A FOC  
           ‘Certainly, Ranjit read that book.’

In this case, the overt marker *tamay* replaces *da* as the F head, and the derivation proceeds in exactly the same way. The basic idea of this analysis for Sinhala should be applicable to other wh-in-situ languages with minor modifications. We can summarise scope assignment of wh-in-situ as follows:

(136) *Wh-in-situ Scope Assignment*

A wh-in-situ element can be assigned scope either by

- a. Overt movement of Qu to a scope position PrtP, or an equivalent position in the periphery, such as FocP or
- b. ? Binding of Qu by C under Agree

(136a) has been demonstrated by movement of Qu to a scope-taking position, in the case of Sinhala and any language that allows wh-in-situ with clause peripheral particles particles. (136b) is more questionable. That is, is it possible for a language to unselectively bind particles in-situ without movement? For (136b) to hold, what we should find is that there is no wh-movement, and the particle remains in-situ, not moving a clause-peripheral position. Sinhala appeared to one such case, although we have argued that *da* is actually *not* an instantiation of Qu, rather, it is a an instantiation of a focus head while the Qu head remains phonologically non-overt, only surfacing as *-e* morphology on the verb. Qu always raises to PrtP in some form, either in a complex structure with *da* yielding peripheral *da* and no verbal affix or with in-situ *da* and an *-e* verbal affix.

A possibility of a language that exhibits property (136b) would be Navajo. Navajo does not appear to allow sentence final particles, but it displays optional particle movement. Navajo either attaches the particle to the wh-phrase or raises to a second position. Examples below are from Barss et al. (1992) and Schauber (1979); diacritics are omitted:

- (137) a. Jaan hai-la yiyiiltsa?  
           John who-Q saw
- b. Jaan la hai yiyiiltsa?  
           John Q who saw  
           ‘Who did John see?’

- (138) a. \*Hai-la haatii-la nayiisnii?  
           who-Q what-Q bought  
 b.    Hai-la haatii nayiisnii?  
       who-Q what bought  
 c.    Hai haatii-la nayiisnii?  
       who what-Q bought  
       ‘Who bought what?’

Barss et al. (1992) describes the particle *la* as being able to next to an in-situ wh-word or moved to a second (Wackernagel's) position. Multiple instantiations of the particles are also not possible although we have seen that lack of multiple instantiations does not equate to lack of multiple instances of Qu. Putting this aside, tying Sinhala and Navajo together does not seem possible, since unlike Sinhala, Navajo uses a different particle for focus, but is not able to co-occur with the question particle:

- (139) a. Ashkii ga' lii nabiilgo  
boy FOC horse threw  
'It's the boy that the horse threw.'  
b. \* Hai-la lii ga nabiilgo  
who-Q horse FOC threw  
'It was the horse that threw who?'

Hagstrom (1998) notes that the movement of *la* appears to be able to cyclically raise, citing Schauer (1979):

- (140) Jaan la Bil Mary haagoo diinaal yilni ni?  
John Q Bill Mary where.to 2.FUT.go 3.say 3.say  
'Where did John say Bill told Mary to go?'

This however, is confounded by the fact that an in-situ particle can appear to yield either matrix or embedded scope of the wh-word with a different question particle *sh*:

- (141) Jaan haatii-sh nahideeshnih bu  
John what-Q will.buy say  
'What did John say he'll buy?'  
'John asked what he should buy?'

I do not have full grasp of the Navajo facts, but the evidence appears to be rather inconclusive. If we consider *la* or *sh* to be a question particle, we

would then have to accept (136b) that unselective binding of particles are possible. If on the other hand, we press on to adopt a Sinhala type analysis for Navajo, stating that the particles are actually focus particles, not instantiations of Qu, and that their different forms comes through agreement with the wh-features on the wh-phrase – *ga* becomes *la/sh* when it co-occurs with wh-words. Although this seems like quite a stretch to me without conclusive evidence, we can explain the optionality of *la* movement in the same way we did for Sinhala. Naturally, being able to conflate the optionality of particle movement for both Sinhala and Navajo would be the more attractive option for me, but in absence of conclusive empirical evidence, I am forced to withhold judgement. As such, although this situation will not crop up again in this thesis, I will permit (136b) to (tentatively) stand as a possibility for means of wh-construal and scope marking.

In any case, I do not see a need to posit a distinction between Q-projection and Q-adjunction languages in the sense of Cable (2007). A universal account of Q-projection is more unified and appears to do the job equally well. This is not to say of course, I am categorically ruling out Q-adjunction languages. However, my thoughts are that most languages should be able to be accounted for by Q-projection in the framework we have presented here.

#### 4.5.3.2 The syntax of Q-migration

Before we move on to the discussion of scope assignment in wh-movement languages there is one other thing to consider, that will have implications for our theory in general. It is well-known that wh-in-situ constructions are able to rather freely evade island violations; these include some wh-in-situ constructions in wh-movement languages. Recall that in our review of Hagstrom (1998), he proposes that particles universally start out adjoined to a wh-word, similar to our QuP approach, except for a complementation vs adjunct distinction. When this occurs within islands, Hagstrom proposes that a non-feature driven movement takes place that transports the particle to the edge (and only the edge) of island boundaries. Q-migration can obviate island effects and is not sensitive to interveners; basically it is a mostly “free” movement that allows particles to move from islands into their scope taking positions. All examples are from Hagstrom. The island data as follows:

(142) *Complex NP Island*

kimi-wa [dare-ga kai-ta hon-o] yomi-masi-ta ka?  
you-TOP who-NOM wrote book-ACC read.POL Q

‘Who did you read books that t wrote?’

(143) *Adjunct Island*

Mary-wa [John-ga nani-o yomu mae-ni] dakaketa no?  
Mary-TOP John-NOM what-ACC read before left Q

‘Mary left before John read what?’

Sinhala on the other hand, does not allow the particle to appear next to wh-phrases (which it usually does) within islands:

(144) *Complex NP Island*

- a. \* oyaa [kau da liyəpu potə] kieuwe?  
you who Q wrote book read-E
- b. oyaa [kauru liyəpu potə] da kieuwe?  
you who wrote book Q read-E  
‘You read the book that who wrote?’

(145) *Adjunct Island*

- a. \* [kau da enə kotə] Ranjit paadam kəramin hitie?  
who Q came time Ranjit study doing was-E
- b. [kauru enə kotə] da Ranjit paadam kəramin hitie?  
who came time Q Ranjit study doing was-E  
‘Ranjit was studying when who came?’

These data leads Hagstrom to suggest that the base-generation position of Q is the same in both Japanese and Sinhala, just that Japanese always requires Q-movement to the periphery whereas in Sinhala this is optional. The Sinhala data we have already discussed above. The case for Japanese would be that PrtP is always projected but in the case of Japanese, while *ka* shares with Sinhala the environments in which it can appear, it is crucially different in that it is not used as a focus marker. If this is correct, then *ka* is Qu in Japanese while *da* is F in Sinhala. Assuming then that the base-generation position of Q in Sinhala and Japanese is the same, and the island-edge/clause-final alternation in Sinhala, the conclusion is that particles in Japanese must also pass through this position. This means that some point in the derivation, *ka* in (142) must have had the position of *da*

in (144b). However, the issue is the motivation of Q-migration in the first place and the means by which it can escape islands.

Apart from stating that Q-migration is “non-feature driven”, Hagstrom makes no claims as to how this works. It simply does. He does however, provide a (speculative) semantic explanation of why Q-migration should occur. The core ingredient of his argument lies in the concept of flexible functional application. Consider the sentence (142). The claim for Q-migration is that *ka* starts out within the island, and moves to the outside edge by Q-migration, allowing it move further to the clause periphery without being trapped within the island. Since *ka* is a choice function variable, it must as a function take the island as its semantic argument; Q-migration in itself is a semantically vacuous movement as is the trace it leaves behind. The semantic motivation for an island internal base generation of Q however, is far from vacuous. Recall that choice functions take sets as arguments and returns a member of that set. The problem however, is that the island is semantically problematic:

$$(146) \quad \llbracket \text{dare}-\text{ga kaita hon-o} \rrbracket = \lambda x. [\text{BOOK}'(x) \& \text{WROTE}'(\text{WHO}, x)]$$

The problem lies with  $\text{WROTE}'(\text{WHO}, x)$ , since *wrote* is of type  $\langle e, et \rangle$ , it should take two type  $e$  arguments. *Who* however, is a set of individuals of type  $\langle e, t \rangle$ , as mentioned earlier, requiring that a choice function variable take it as its argument. The means of solving this semantic type mismatch is called functional application. The details of the semantics are not important, but the basic idea is to apply the predicate to each of the individuals of the set yielding a set of propositions  $\{ P : \exists y \in \text{WHO} : P = \lambda x[\text{BOOK}'(x) \& \text{WROTE}'(y, x)] \}$ . Each member of this set is a proposition with an individual from the set of individuals expressed by *who*.

The claim then, is that flexible functional application is *costly* for the computational subsystem and should be avoided when possible. In order to do this, *ka* (a choice function variable) is merged immediately adjacent to the wh-word. Since *ka* can immediate take as its sister a set, yielding an individual, the semantic composition proceeds without the need to apply flexible functional application. Other details regarding this are not important now and will be brought up as we go along if necessary.

I will now provide an account for how Q-migration works. Let us suppose that Q-migration does actually take place. In essence, Q-migration is an escape hatch for question particles from all kinds of island constraints. The challenge that we face regarding this issue is that we need to devise some method of allowing extraction of a syntactic object, in this case a par-

ticle to the *outer* edge of an island. We need some way to temporarily “dissolve” the island boundary, allow the particle to escape and to make sure that whatever remains is still an island, disallowing the other components of the island to escape.

Hagstrom posits an approach where, in order to account for the fact that *ka* can escape from islands by overt Q-migration but is not able to cross an intervener in the process (see examples (46-49) and discussions aforementioned), Hagstrom shows that *ka* always moves cyclically across intermediate CP boundaries. More precisely, *ka* attempts to move; depending on what complementiser is selected. He supposes that there could be two kinds of declarative complementisers, which he terms  $C_{att}$  and  $C_{non}$ . The former attracts *ka* while the latter does not. The latter case represents the sorts of *ka* found in indefinite constructions (e.g. *dareka* ‘someone’). However, regardless of the complementiser chosen, given the unbounded nature of Q-migration, there is nothing that prevents *ka* in these indefinite constructions from Q-migrating to the edge of a clause and moving to the clause periphery, an undesirable result. Hagstrom (1998:103n9) wonders if it could be possible to propose some property P that governs Q-migration; crucially, this property would distinguish between islands and block Q-migration in the cases where it should not happen (i.e. indefinites) but yet permit it in other islands.

Ultimately though, Hagstrom abandons this approach and adopts a subarray approach in the sense of Chomsky (2000), stating that if  $C_{non}$  is selected, *ka* does not move and this phase is sent to spell-out. When the next complementiser is selected and merged, regardless of what it is, *ka* cannot under any circumstances be attracted, presumably by the PIC, if I understand Hagstrom correctly. Despite this, the selection of either type of complementiser is purely arbitrary; both will yield convergent derivations anyhow. Raising *ka* from an indefinite to a clause periphery turns it into a question. Hagstrom admits, there is still a need to question “what property is shared by islands triggering Q-migration”.

What I propose is quite simple: Rudin (1988) and Richards (1997) (amongst others, although see Bošković (2003) for counterarguments) show that the availability of multiple wh-phrases in [Spec,CP] allows for the obviation of wh-island effects. In the cases of cyclic *ka*-movement, Hagstrom requires a mechanism that always enforces cyclic movement (and Q-migration) while selectively banning the cases when it should not happen. To allow Q-migration to be compatible with a standard theory of movement, we must depart from the notion that Q-migration is non-feature driven.

However, we can maintain that it yields no effects for semantic interpretation, by stating that the trigger for movement, whatever it is, is vacuous ( $\lambda p.p$ ) for purposes of semantic composition. Syntactically, our aim is to “build” an escape hatch for Q(u) that allows it to escape from the selected types of islands. Hagstrom states the following description for Q-migration:

(147) *Q-migration*

At a point where (a) an island is constructed, or (b) a wh-word is merged, Q may migrate to adjoin (overtly) to the root.

(Hagstrom 1998:187)

Such a claim presupposes that the syntax “knows” what islands are and consequently apply Q-migration. As mentioned, in order to build an escape hatch for Q, we need to allow it to move to the outer edge of the island without actually leaving it. Suppose we propose some head H which could take as their complements phrases headed by only one of the complementisers that Hagstrom proposes:  $C_{att}$ . Now, suppose further that H bears the featural composition  $\{\{EPP, Qu\}, \{EPP:m, C_{att}\}\}$ .  $\{EPP:m, C_{att}\}$  will ensure that only the correct complementiser is selected for, one that allows *ka* movement. Here is where we hit a slight snag; when H takes  $C_{att}P$  as its complement, m-merger applies, yielding a head-adjoined configuration [H  $C_{att}$ ]. Crucially though, while previous we assumed that m-merger allows the head of the target to project, we have to ensure that only  $C_{att}$  projects such that  $[C_{att} [H C_{att}]]$ . Unfortunately, we can only do this stipulation. If we permit this much, then  $\{\{EPP, Qu\}\}$  triggers only head movement, phrasal movement presumably causes a crash at PF as in the case of Sinhala Qu-extraction. The resulting configuration puts Qu at the edge of the island, amenable to extraction:  $[Qu [C_{att}' [H C_{att}] [TP \dots t_{Qu}]]]$ .

Whether such an approach will be able to survive to be a general component of the theory remains to be seen; much more (especially empirical) research is in order. It seems unlikely though, it is far too stipulative and somewhat ad hoc. Nevertheless it was worth spending some time exploring this avenue, shedding a little more light on such a murky yet central component to Hagstrom’s theory. It is in my opinion, a slight improvement to Hagstrom’s account, placing it within the boundaries of feature-driven syntax. I will leave this here as it is, attempting to sharpen this in the coming chapter.

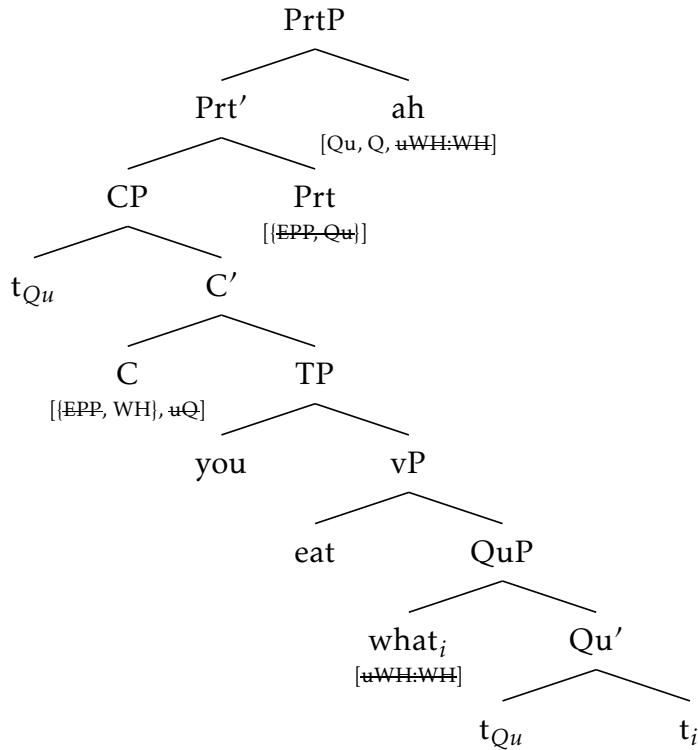
### 4.5.3.3 Optional Wh-fronting languages

In this section, I will discuss the scope assigning mechanisms in optional wh-fronting languages. I do not want to preempt too much of the analysis in the coming chapter and as such, I will provide a very general account of the distribution below in SgE and proceed to fill in the rest of the details over the next chapter. Consider the now unsurprising three-way alternation in SgE:

- (148) a. You eat what ah?  
b. What you eat ah?  
c. What ah you eat?

In section 4.4, we suggested that the relevant derivations for these sentences, at least in part involved a three-way distinction between phrasal movement, spec-to-spec movement and head-to-spec movement. Let us begin with (148a), since that was the sentence that we were not able to account for then. The main source of this optionality, I claimed, was that unlike obligatory fronting languages such as Tlingit, wh-raising is not parasitic on Agree. That is, we do not have an {EPP, uQ} featural subset on interrogative C. Rather, Agree and movement are divorced and instead we have {EPP, WH}. Since both the wh-DP and Qu have [uWH], they are valid goals for raising into [Spec,CP]. Further, this is not movement under Agree, so phrasal movement is not expected, unless triggered by spec-piedpiping. The derivation for (148a) is as follows with irrelevant features and traces omitted:

(149)



The only new thing to add here is that in SgE, a PrtP is always projected if possible. As mentioned in earlier discussions, at least for the case of SgE, PrtP is simply an escape hatch for particles to end up in a sentence final position. This could well include other discourse particles as well, not just question particles although it may be possible that there are multiple projections with different particles although I do not pursue this here. There does not seem to be any extra motivation for such an extra projection; the differences in interpretation in all three sentences in (148) are delicate and subtle, if they exist at all. I do not rule out the possibility of discourse-pragmatic effects motivating movement of the particle to the periphery although the exact nature of these effects elude me at present. Certainly, it is not for reasons of scope taking, since movement of Qu to [Spec,CP] is sufficient to yield matrix scope for the in-situ wh-phrase. Anyhow, let us capture this as a descriptive generalisation:

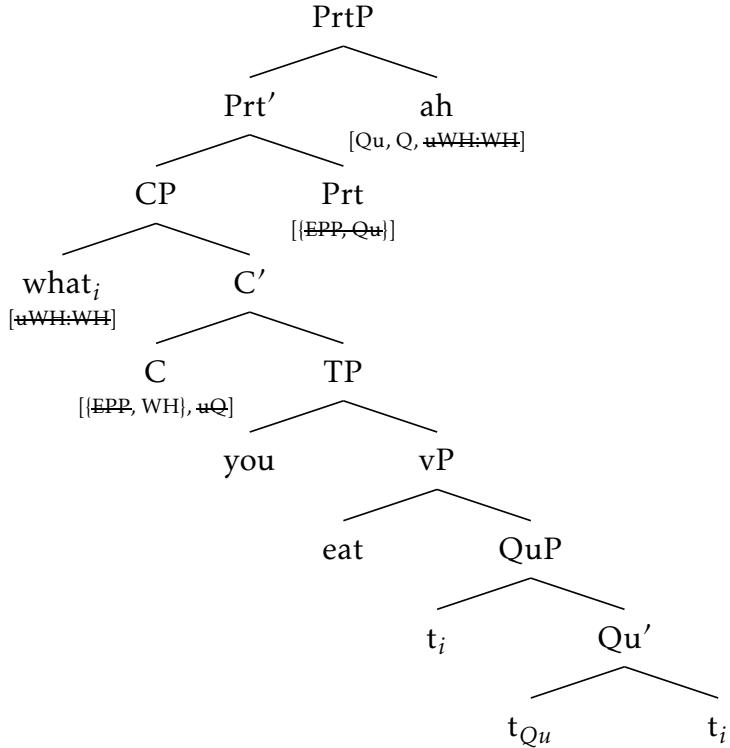
(150) *Particle Phrase Generalisation*

A language that has sentence-final or sentence initial particles always projects PrtP if possible.

This is purely descriptive, it does not seem to capture any other facts at the moment, other than to develop a consistent approach to the phrase structure of languages with sentence-final particles. It is more economical for the grammar to always project PrtP and raise Qu, unless prevented from

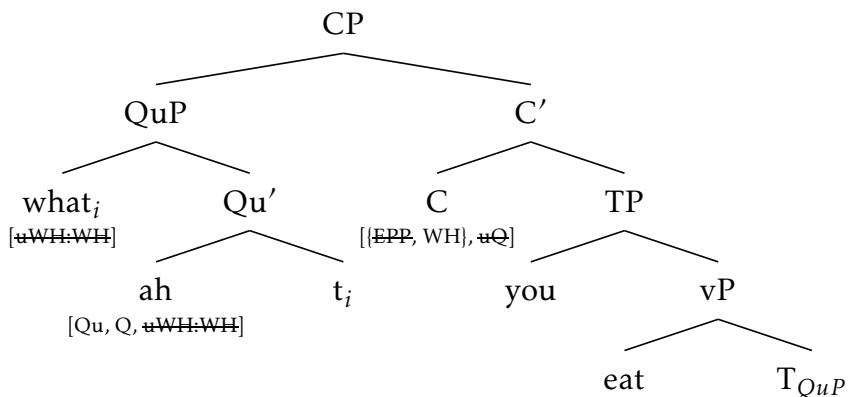
doing so as in the case of (148c). We will look at this in more detail in the next chapter. We turn to (148b) next. (148b) was seen as spec-to-spec raising. This is rather straightforward, akin to traditional wh-movement. The only additional difference in SgE is that the particle must also raise to [Spec,PrtP], which is projected by the generalisation in (150).

(151)



The satisfaction of the EPP on C is accomplished by the movement of *what* into [Spec,CP], precluding any other movement into that position, including Qu, which raises straight into [Spec,PrtP] accounting for (148b). The derivation for (148c) follows:

(152)



In this case, spec-piedpiping is triggered instead of spec-to-spec movement. Feature checking and valuation remains the same. Crucially in this case,

PrtP is not projected, contrary to the generalisation in (150). If it did project, Prt would be forced to subextract *ah* from a complex specifier position. To avoid the thorny issues regarding subextraction, I assume that the argument in [Spec,CP] is frozen in place as some artifact of the subject island constraint (Huang 1982) and its internal structure opaque to syntax (cf. ‘Edge Condition’ (Gallego and Uriagereka 2007), ‘Criterial Freezing’ (Rizzi 2006) and references therein; see also Chomsky (2005) for discussion).

If these assumptions are correct, then it straightforwardly predicts that no element, neither the wh-DP nor the Qu head can be subextracted from QuP in a [Spec,CP] position. The only possible way to ensure cyclic movement from this point on is to only move QuP. Consequently, if subextraction is no longer possible, there is no need to project PrtP; it is redundant. QuP is already in a scope taking position, all features are checked and deleted. There is even no need to project PrtP as a last resort to allow for a sentence final particle, since the internal structure of QuP is already inaccessible to syntax. The only thing that could possibly happen if PrtP were to project would be to have the entire QuP in a sentence final position: a redundant operation given that (152) already yields this linear structure, in which case was to satisfy EPP features on Prt as well as to avoid being bound by existential closure (Cable 2007) which would cause the wh-phrase to be interpreted as an indefinite, an undesirable result. And so, the derivation converges and terminates.

We can thus sum up this section by summarising the scope taking mechanism for wh-(QuP)-movement languages:

(153) *QuP-movement Scope Assignment*

Scope can be assigned in QuP-movement type languages by

- a. Movement of Qu to [Spec,PrtP] or
- b. Movement of a wh-phrase to [Spec,CP]

None of either states anything radically different from what is already established in the literature. The movement/base-generation of a particle to some higher clause-peripheral position to bind in-situ wh-phrases is a core mechanism of the unselective binding approach. Nothing needs to be said about movement of a wh-phrase to [Spec,CP], it is the default position for assigning scope in wh-movement languages.

#### 4.5.3.4 Featural subset satisfaction

Before we close, let us lay out more explicitly what the FSH actually does for us with respect to the EPP. This is more of a technical point, but one which

will recur throughout the rest of this thesis. If we observe closely, we notice that the featural subset that EPP forms deletes in two ways. For the sake of discussion, consider closely (151). We see that there are two EPP featural subsets, {EPP, WH} and {EPP, Qu}. In the former, only the EPP feature is deleted, and in the later the entire subset is deleted.

To make clear why this should happen, when the EPP forms a featural subset, there are several, four to be precise configurations that it can get into. The first is just a plain privative EPP feature. In this case, the closest object of any category satisfies it, as in the case of stylistic fronting. We are not concerned with this type here. The second type is of the form {EPP, uF}. This is the standard raising under Agree approach, not very much needs to be said. The subset acts as a probe, looks for a an instance of F as a goal, undergoes Agree and raises the goal.

The next two cases are of the sort {EPP, F}. All this means is that the EPP is looking for an object bearing some feature F to raise into its specifier. Whether F is interpretable or not, it does not matter, where movement is concerned. What does matter however, is that the type of goal ultimately determines which features get deleted from the subset. In the case of {EPP, WH}, the subset searches for some WH-bearing object and finds a wh-phrase with [uWH]. In this case, the WH in {EPP, WH} and the [uWH] on the wh-phrase do not Match, since one is interpretable and the other is not. The EPP is satisfied by movement of the wh-phrase and WH in the feature subset can value [uWH], and subsequently delete if it is Q-complete which in the case of (151) it is. To put this informally, since some member of the featural subset actually did something, in this case value an uninterpretable feature, it is still of some semantic import at LF and in this case *does not* delete. As such, only the EPP feature is deleted since it is satisfied by the merger of an element in its specifier. What this does is that it ensures that interpretable features on like WH on C are sent to LF, whatever their semantic contribution may be.

The other case if when {EPP, F} meets an [F]-bearing goal, unlike the previous case where it was a [uF]-bearing goal, F in the featural subset and [F] on the goal Match. In this case, the features F does not do anything, all it does is function as a restrictor on the types of objects that the EPP permits to merge in its specifier, something like a strong D feature on T, as the EPP used to be formulated. In this case, when there is raising under Match, the entire featural subset deletes, since it makes no further contribution once its job is complete.

Obviously, this is a technical stipulation and could be reconceived in

many other ways and still be made to work. Nevertheless, I will adopt this approach here, since there is a need for us to distinguish between i) raising under Agree, ii) movement followed by feature valuation and iii) movement with no feature valuation<sup>28</sup>.

## 4.6 Summary

To summarise this rather long chapter, we presented several arguments and hopefully, convincing theoretical and empirical motivations to reject the Clausal Typing Hypothesis as proposed in Cheng (1991). This was presented, drawing on data from SgE and other languages that the predictions that the CTH makes simply cannot hold. Furthermore, the typological database WALS (Haspelmath et al. 2008) clearly shows that there is no correlation whatsoever between the presence of wh-movement and particles. Following this, we presented some basic semantics for what a question particle does; essentially a question particle is a variable over choice functions, which in turn is bound by interrogative C. We then reviewed previous accounts of Qu-movement, looking at data from Sinhala and Japanese (Hagstrom 2006; Kishimoto 2005) as well as Tlingit (Cable 2007). We then proposed a systematic and featural account for Qu and wh-phrases and their interaction with C and we showed that the appropriate way to go about things was to allow Qu to take a wh-phrase as its complement. In turn, such a configuration was shown to predict and allow for optional wh-movement under a Featural Subset Hypothesis and a head-to-spec movement approach. Arguments for the latter were presented and these were argued to be consistent with the Extension Condition, circumventing issues of counter-cyclicity and the contradictory  $X^{min}/X^{max}$  status of head-adjoined constructions under traditional head movement. We do however, adopt an m-merger approach of Matushansky (2006), which has proven to be useful in predicting particle movement alternations in Sinhala. We considered briefly the Q-migration theory of Hagstrom (2006), adapted it and proposed a revised theory involving the application of a unique head, which under m-merger, allows Qu to escape from certain islands. However, the notion of Q-migration was left behind rather unsatisfactorily, an issue we hope to re-

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<sup>28</sup>A question that does arise is whether it is possible for a configuration {EPP, uF} to target another object with [uF], that is not raising under Agree but raising under a Match of uninterpretable features. This might have applications elsewhere, supposing we observe alternation between the raising of two objects with different categorial features but sharing a common uninterpretable/unvalued feature. Nothing comes to mind at the moment, although this is certainly a possibility.

solve shortly. Lastly, we looked at the various scope taking mechanism for both wh-in-situ and wh-movement languages. In the next chapter, we will concentrate solely on explaining the SgE data in full, applying and further developing the theory of QuP movement presented so far.

## **Chapter 5**

### **Applying the Theory**

So far, we have put forward a theory of optional movement. This theory comprises of three main points, the first is that question particles (Qu) takes wh-DPs to form QuPs. Such an approach has been shown to account for the way question phrases are formed in Sinhala, Japanese, Tlingit and was argued to be a universal property of language. This chapter will apply the theory to Singapore English (SgE) and show that this is the correct way to understand the strategy of question formation and the optionality of wh-movement. The second point revolves around the Featural Subset Hypothesis (FSH). The FSH proposes an alternative way to looking at feature configuration in syntax, and in particular, suggests that the EPP driven movement should be seen as an independent operation, divorced from Agree. The EPP feature instead, should be construed as a privative feature, although it was speculated that it could possibly take second order values as well; the FSH allows feature bundles to be further partitioned into smaller subsets. Working in tandem with the Principle of Simultaneous Satisfaction (PCSS) which stipulates that featural subsets must be satisfied simultaneously and completely, this allows us to capture the phenomenon of optional wh-movement. The third point is more speculative and has to do with Q-migration in the sense of Hagstrom (1998). It was proposed that Qu is always merged as a sister of a wh-phrase and then moves to its relevant position from there. The ability of question particles to evade island constraints was seen to be a reflex of Q-migration, which basically allows islands to project specifiers, allowing particles to move to their edges for subsequent extraction. Our general discussion of Q-migration proved to be rather inconclusive, and as promised, we will address this issue first.

## 5.1 Q-migration, islands and intervention

In the previous chapter, we looked at how our general QuP theory looks like. We were however, left with the pressing question of how particles can escape from islands. Recall that in section 3.4.1.2, we noted that extraction of wh-words from adjuncts was impossible, repeated below:

- (1) a. \* What John is broke [because he buy t]?
- b. \* What John is broke [because he buy t] ah?
- c. \* What ah John is broke [because he buy t]?

‘John is broke because he bought what?’

The impossibility of these constructions has nothing to do with the particle, rather it is a restriction on the permissibility of extraction. This is expected, considering that extraction from adjuncts is generally bad, as observed in Huang (1982). If our theory of question formation is to be a universal one, we would have to propose that the QuP theory holds in general, regardless of the location of the wh-phrase; any deviation from this<sup>1</sup> would presuppose the presence of “look-ahead” since at the point of the merger of the wh-phrase, there is no way to predict if an island would be formed further in the derivation.

Returning to the examples above, when the wh-phrases in (1) are left in-situ however, the ungrammaticality disappears:

- (2) John is broke [because he buy what ah]?

In the previous chapter, we made vague allusions to some head H and m-merger allowing the the island to project a specifier and consequently, an escape hatch. This is problematic: assuming H takes the island as its complement, it would be quite a stretch to devise some mechanism to allow H to m-merge with  $C_{att}$  of the island: the configuration is simply wrong, m-merger applies to elements in a spec-head configuration, not a head-comp one. Even if we allow for comp-to-spec movement, the necessary configuration still will not obtain, we instead get this:  $[HP [C_{att}P C_{att} XP]_i H t_i ]$ . We do not want the entire island to freeze via m-merger. If instead we allow  $C_{att}$  to head raise into [Spec,HP], we need to ensure that H does not project after m-merger, since this will still result in a extraction from an adjunct since HP is an adjunct. Hagstrom and Cable both observe that if Qu

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<sup>1</sup>For example, Cable (2007), (contra Hagstrom 1998) generally proposes that Q is adjoined on the outside of an island domain from the outset, rather than move there via some means of Q-migration.

is adjoined to the edge of the island, the particle is free to move to a higher position. Essentially, we need to move the particle from within the island to what Hagstrom terms the “launching site”, the edge of the island in order to allow Qu to be available for further movement without violating the CED.

Despite this problem, we still want to stand by the assumption that Qu is base-generated as the sister of a wh-phrase, not an unreasonable assumption, given the Sinhala facts and the distribution of *da*. Of course, it would be much easier to simply say that Qu adjoins itself to the closest point to a wh-phrase that does not occur within an island. Although descriptively correct, it would be difficult to pursue such a line of analysis for two reasons. The first reason has been discussed above, to do with issues of look-ahead. The second reason would be that this would force us to either abandon the idea that Qu takes wh-phrases as their complements or that somehow, Qu has variable subcategorisation properties: it takes wh-phrases as complements when it can, and adjoins itself to the outside of islands when it cannot. As such, let us stand firm by our claim that Qu starts off as sister to a wh-phrase, within islands or not.

### 5.1.1 L-absorption: from specifiers to adjuncts

Let us frame the problem we are facing in this way using Japanese as an example, making it easier to see the problem. Suppose we have the following configuration in Japanese:

- (3) ... [island C ... [wh *ka*] ...]

We are faced with two options. In Japanese, the wh-phrase and *ka* can either be interpreted as an indefinite, from which we do *not* want *ka* extraction; or it can be interpreted as a question, in which case, we do want *ka* to be extracted to the edge of the island allowing further onward movement to the clause periphery. Left as it is, the island makes extraction impossible. Suppose we put aside the issue of the Q-migration head H for now and adopt instead a  $C_{att}$  vs.  $C_{non}$  distinction of Hagstrom (1998). The former complementiser attracts *ka* to its specifier while the latter does not. This appears to give us the configuration we need to allow *ka* to move further. However, suppose that  $C_{att}$  heads an adjunct island. The extraction of *ka* from its specifier is still extraction from within an adjunct, something we do not want.

However, we mentioned that if the particle were adjoined to the island at its edge, it would be available for movement. This means that somehow, if we can get *ka* to move to the edge of the island as an *adjunct*, rather than

a specifier, this would solve the problem since we are technically no longer extracting from within an adjunct; rather, we are moving *ka*, now an adjunct at the island's edge.

In order to accomplish this, we need some mechanism to trigger movement of *ka* from within the island and places it in an adjunct configuration. Given that the only trigger for movement we have is the EPP, and that the EPP projects a specifier, we need to somehow “convert” the specifier-head structure to a adjunct-phrase one. I will argue that this is not impossible, contrary to what one may think, especially given the fact that the line between specifiers and adjuncts is rather blurred<sup>2</sup> Chomsky (Chomsky 1995b:248ff) for example, reduces the specifier-adjunct distinction to an issue of labelling. Consider two terms  $\alpha$  and  $\beta$ . These merge, as head-complement, yielding  $\{\alpha, \beta\}$ . One of these must project; assume  $\alpha$  projects yielding  $K = \{\alpha, \{\alpha, \beta\}\}$ . Suppose next there is another term  $\gamma$ , that is to be merged to  $K$ . If  $\gamma$  is a specifier, the result is  $\{H(K), \{\alpha, K\}\}$ , where  $H(K)$  is the label of the head of  $K$ , in this case  $\alpha$ . Adjuncts on the other hand, require some label that is distinct from  $H(K)$ , although it cannot be a new category  $\delta$ , which would mean that complementation has occurred. Chomsky thus proposes that in an adjunction structure, the “minimal choice” would be form a label  $\langle H(K), H(K) \rangle$  and the corresponding structure  $\{\langle H(K), H(K) \rangle, \{\alpha, K\}\}$ . In effect, this allows specifier and adjunct labels to be derivable from but not identical to the terms of the structure.

Returning to the problem at hand, we know that we need to extract *ka* to an edge position of the adjunct. More specifically, we need to allow *ka* to transform into an adjunct, allowing it to be extracted. This means that simple movement to a specifier position is insufficient, because this would still entail subextraction from an adjunct. To make this clear, suppose we allow the island's complementiser to have an EPP feature that allows the raising of *ka* to [Spec,CP]. Now this would predict the intervention effects of within islands, as shown above, but it would not solve the problem of the violation of subextraction from adjuncts. Returning to our Q-migration head  $H$ , suppose we have  $H$  take CP as its complement, projecting a specifier. This has an added advantage of allowing all complementisers to be consistent, without a need to posit an EPP vs. no EPP feature distinction (essentially Hagstrom's  $C_{att}$  vs.  $C_{non}$  distinction), something that we argue strongly against. This pushes us one step ahead where Hagstrom's original

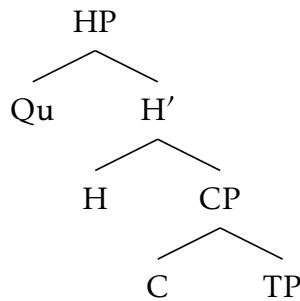
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<sup>2</sup>Although see Duffield (1999) for discussion of the specifier-adjunct distinction. The difference is based on whether some element in the derivation is related to a subjacent head  $H$  through agreement, predication or indirect selection. Any element failing to meet these conditions are adjuncts.

theory was concerned, but the same problem still arises. [Spec,HP] is still within an adjunct island and subextraction is barred. We need some other way.

Assuming that such a system of labelling, as discussed above actually exists in the grammar's construal of phrase structure, this actually turns out to yield some rather nice results; if not, this will merely be an academic exercise. Recall in our discussion in the previous chapter on Q-migration, we proposed that in order for Q-migration to work, we needed H to take C as a complement, but allow C rather than H to project. This point was left unclear but now we are in a position to see why this works. Consider:

(4) *Spec-Head Configuration*



The structure shown in (4) is bad for reasons discussed above. Extraction of Qu from [Spec,HP] still entails extraction from an adjunct island. Regardless of the number iterations H applies to CP, because CP is an adjunct,  $H^n P$  is an adjunct as well. Suppose now that m-merger applies to yield a complex head [C H]. So far, we have considered that such a configuration yields a head [<sub>H</sub> C H], as is the case with other kinds of head movement, such as V-to-T or T-to-C and rightly so, or else the derivation could not proceed should T or C vanish, subsumed by some other lower head.

Let us consider this in more detail by taking a simple case of V-to-T raising for example, considering the labelled structures that are projected: T takes VP as its complement, forming  $K = \{H(T), \{T, V\}\}$ . V raises to [Spec,TP] via head-to-spec movement forming  $T' = \{H(T'), \{V, T'\}\}$ , where  $H(T') = H(T) = T$ .  $T'$  replaces T to form  $K' = \{H(T), \{T', V\}\}$ . At this point m-merger applies to form [<sub>T</sub> T V]. The question is do the labels of the structure change? According to Chomsky, an adjunction structure should be of the form  $L = \{\langle T, T \rangle, \{T, V\}\}$ . Should the structure of  $K'$  somehow change to L to reflect this? Assuming that V-to-T raising occurs at the point  $T'$  when T takes VP as its complement, that is structure K in the above discussion. A traditional head-adjunction approach will require that  $H(T)$ , by some means transforms into  $\langle H(T), H(T) \rangle$ . Chomsky (1995b:250) merely states that "we

hope to establish the standard convention that the target projects... $H(K)$  or  $\langle H(K), H(K) \rangle$ , depending on whether the operation is substitution or adjunction." This seems quite opaque. I will proceed to show that the labels of adjunction can be derived by more straightforward, though rather technical means.

Returning to the issue of head adjunction, we do know that m-merger is a purely morphological operation, invisible to syntax. I do not have a knock-down argument either way, but it does seem apparent that a head-adjoined structure should not be labelled any differently from its preadjoined form. We would like  $T$  to behave as  $T$ , regardless of whether  $V$  raises to adjoin to it or not. I will thus assume that  $K'$  rather than  $L$  in the previous paragraph holds in this case, that is to say, the so-called head adjunction structures are not truly adjuncts so to speak; as far as the syntax is concerned, they are a single structure. Perhaps we could state this as  $\{T, \{T_V\}\}$  to illustrate that  $V$  has been subsumed by  $T$ , with  $T$  still as its label, reflecting some sort of "incorporation". Anyhow this is not immediately relevant to our discussion just as long as we assume that there is no recourse to subextraction from within the structure formed by m-merger as is the case for standard theories of head movement and adjunction, a very reasonable assumption.

Proceeding with the derivation, a DP subject  $\alpha$  raises, targeting  $T'$  forming  $T'' = \{H(T'), \{\alpha, T'\}\}$ . Substituting  $T''$  for  $T'$  in  $K'$ , we form  $K'' = \{H(T), \{T'', V\}\}$ . Since  $H(T'') = H(T') = H(T) = T$ , this predicts a specifier-head-complement structure as desired. Chomsky (p260) explicitly disallows the raising of  $\alpha$  to target  $T'$  to  $M = \{H(\alpha), \{\alpha, T'\}\}$  or  $\langle H(\alpha), H(\alpha) \rangle, \{\alpha, T'\} \rangle$ , that is,  $\alpha$  raising to a specifier position and projecting, either by adjunction or (re)complementation. When  $M$  replaces  $T'$  in  $K'$ , we get  $\{H(T), \{M, V\}\}$ .  $T'$ ,  $M$  and  $V$  are all distinct and this is an invalid structure.

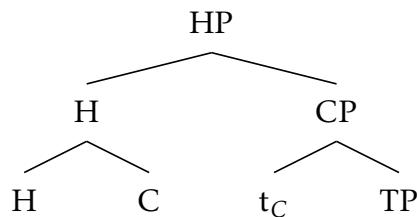
We are however, concerned with deriving the following structure:  $\langle \{H(T), H(T)\}, \{\alpha, T\} \rangle$  from  $\{H(T), \{\alpha, T'\}\}$ , where  $T' = C$  and  $\alpha = ka$ ; that is, we want  $ka$  to raise to a higher specifier position but be interpreted as an adjunct to the island, allowing extraction. Simple raising to a specifier position is insufficient, as shown and we do not want to simply stipulate that the label is arbitrarily projected as a specifier or an adjunct. We hope to derive the specifier-adjunct asymmetry by more principled means. I argue that this can be done, if we permit a flexible approach to m-merger; in fact, such an approach actually predicts the specifier-adjunct symmetry with the added bonus of always extending the root through a specifier, including the merging of adjuncts, allowing the formulation of the EPP to

remain unchanged.

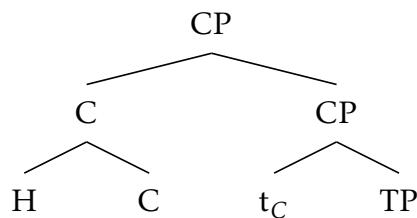
Consider now the case of the Q-migration head H and some island  $\alpha P$ . For simplicity, I will use  $\alpha$  rather than  $H(\alpha)$  to represent the label of the island phrase. Head H merges with complement  $\alpha$  to form  $K = \{H(H), \{\alpha\}\}$ . H triggers head to spec raising of  $\alpha$  (i.e.,  $\alpha$  targets H) forming  $H' = \{H(H), \{\alpha, H\}\}$ . By substituting  $H'$  into H in K we form  $K' = \{H(H), \{H', \alpha\}\}$ . Now in the previous case of V-to-T raising followed by m-merger, we proposed that the formation of the V-T complex yields no (or minimal) change in its labelling structure. Consider the structure shown above in (4). Is it possible however, using the V-to-T analogue, to suppose V raises to [Spec,TP] but instead yields a VP rather than TP after m-merger? I propose that this is possible and after m-merger we can obtain two different structures:

(5) *After m-merger*

a. Standard m-merger



b. Reprojective m-merger



(5a) shows the standard m-merger operation as in the case of V-to-T movement or its equivalent. We are not concerned with this here. What we are more interested in is structure (5b). Readers familiar with the literature would notice that this is very similar to the analysis (minus the m-merger) in Donati (2006), what Roberts (to appear) terms “reprojective movement”. Donati adopts such an approach to account for the structure of free relatives and comparatives, which are complex nominal structures:

- (6) a. \* I shall visit [<sub>CP</sub> [what town] you will visit t].  
 b. I wonder [<sub>CP</sub> [what town] you will visit t].(phrasal movement)  
 c. I shall visit [<sub>DP</sub> [what] you will visit t]. (head movement)

Donati suggests that in interrogatives, phrasal movement raises the wh-phrase to [Spec,CP] – the usual case and thus verbs like *wonder* are compatible with CP complements. On the other hand free relatives (6a,c) allow verbs such as *visit*, which takes DP (but not CP) complements, explaining the grammaticality of (6c) on one hand and the ungrammaticality of (6a) on the other. Head and phrasal movement are in complementary distribution, the former allowing head-to-spec movement followed by the category of the target reprojecting whereas in the latter, it is a case of normal phrasal wh-movement and no reprojection occurs. Recall that such a case is one that Chomsky (1995b) does not allow, since a specifier projecting would result in three distinct labels after substitution. I have little to say about this. However, this label clash (if it is a problem to begin with) can be potentially be resolved, at least partially by m-merger. The reasons for this will become obvious as we proceed with the discussion. Despite the fact that m-merger is a nonsyntactic operation, reprojective movement, with or without m-merger, must redefine the labels in the current structure as opposed to non-reprojective m-merger.

Returning from our short detour and picking up where we left off, we were at this stage:  $K' = \{H(H), \{H', \alpha\}\}$ , where  $H' = \{H(H), \{\alpha, H\}\}$  and  $K = \{H(H), \{H, \alpha\}\}$ . At this point we want m-merger to apply to yield the reprojective configuration in (5b). Clearly, the label of the new structure cannot be  $H(H)$ ; reprojection must redefine the labels in the structure. Let us expand  $K'$  for clarity:  $K' = \{H(H), \{\{H(H), \{\{\alpha^\Delta, H^\Delta\}, \alpha^\Delta\}\}, \alpha^\Delta\}\}$ . For convenience, I have arranged the elements in their linear order in the structure. We can see that the linear order is  $[_{HP} \alpha [H [_{\alpha P} \dots t_\alpha \dots]]]$ , corresponding to specifier, head and complement (trace) respectively; these are marked with triangles. Reprojective movement requires that the two instances of  $H(H)$  be replaced by  $\alpha$ . The first  $H(H)$  corresponds to the label of the top projection. The second  $H(H)$  is the label that is projected by the merging of the specifier  $\alpha$  that targets the head  $H$ . Since this is reprojective, we want  $\alpha$  instead of  $H$  to project. To be clearer, the first replacement represents the changing of the label  $HP$  to  $\alpha P$ . The second replacement reflects the changing of the label of  $H$  to  $\alpha$ , given that the head  $H$  is subsumed by  $\alpha$  through reprojective m-merger. These two replacements accurately reflect what actually happens in reprojective m-merger: the label of the root node changes, and the head of the root is subsumed into the head in its specifier. After replacing the two instances of  $H(H)$  with  $H(\alpha)$ , a new reprojected structure  $R$  is created such that  $R = \text{REPROJECT}(K') = \{H(\alpha), \{\{H(\alpha), \{\alpha, H\}\}, \alpha\}\}$ .

Here is where the main proposal comes in. I want to propose that when we get a structure like  $R$ , such that the label of both its terms are the same, i.e.  $\alpha$ , we apply what I will call  $L$ (abel)-absorption, in honour of Quantifier Absorption as first proposed in Higginbotham and May (1981). What this does is that given a structure  $\{L, \{\alpha, \beta\}\}$ , if the labels of  $\alpha$  and  $\beta$  are the same ( $L$ ),  $L$ -absorption applies to form  $\{\langle L, L \rangle, \{\alpha, \beta\}\}$ . From this point, the next item  $\delta$  that is merged with this structure will either project the label  $\delta$ , or  $\langle L, L \rangle$ . In the former case,  $\delta$  is a head that takes  $\{\alpha, \beta\}$  as its complement and the its resultatnt label is no longer of concern to us, on par with a determiner taking an NP modified by an adjective as its complement: the NP is of label  $\langle N, N \rangle$ . The latter case is the one that concerns us: when  $\langle L, L \rangle$  projects. What this means that  $\delta$  is an *adjunct*. While the reasons for which  $L$ -absorption should apply are not immediately obvious, I hope what is clear is that this is a significant improvement over Chomsky's system, and more importantly, over Hagstrom's Q-migration which simply occurs by stipulation. Moreover, we have a systematic series operations that allow for adjunction in a way that is consistent with our theory so far: that merge always takes place at the root. Merging into a specifier position yields either a specifier or an adjunct. The former case is the standard. The latter case however, only happens when reprojective m-merger is applied. Let us summarise this:

(7) *Reprojective m-merger*

For any structure  $S = \{L, \{\alpha, \beta\}\}$ ,  $L$  a label such that  $L = H(\alpha)$  or  $H(\beta)$ ,  $\alpha$  and  $\beta$  syntactic objects such that  $H(\alpha) \neq H(\beta)$ ;

$\text{REPROJECT}(S)$  is defined such that:

- a. if  $L = H(\alpha)$ , replace the labels of  $L$  and  $\alpha$  in  $S$  with  $H(\beta)$  *or*,
- b. if  $L = H(\beta)$ , replace the labels of  $L$  and  $\beta$  in  $S$  with  $H(\alpha)$ .

(8) *L(abel)-absorption*

For any structure  $S = \{L, \{\alpha, \beta\}\}$ ,  $L$  a label,  $\alpha$  and  $\beta$  syntactic objects;  $L$ -absorption applies on  $S$  yielding  $R = \{\langle L, L \rangle, \{\alpha, \beta\}\}$  iff  $H(\alpha) = H(\beta) = L$ .

In essence, this is basically the mechanism that allows for Q-migration. We have a system that is quite consistent with the theory that we have developed so far, putting aside the stipulativeness of  $L$ -absorption. Nevertheless, what this accomplishes is to combine a general theory of root-extending operations through the application of an EPP feature, regardless of whether it is the internal/external merger of specifiers or adjunction.

In the case of Q-migration, for some island  $\alpha P$  that requires Qu extraction, H possesses two relevant featural subsets  $\{\text{EPP}, \alpha\}$  and  $\{\text{EPP}, \text{Qu}\}$ . The former allows the raising of the head of the island phrase  $\alpha P$ , for example, a complementiser in the case of a CP island to  $[\text{Spec}, \text{HP}]$ . The latter allows for the raising of Qu to a specifier position. Crucially, reprojective m-merger first applies and  $\{\text{EPP}, \text{Qu}\}$  is preserved in the formation of the complex reprojected head. L-absorption defines the specifier position of the now reprojected  $\alpha$  head complex to be an adjunct and when Qu raises into  $[\text{Spec}, \alpha P]$ , it is for all intents and purposes, treated as an adjunct available for extraction. This is explained with trees in the next section.

A question that does arise is how H selects for islands. By the FSH, we can allow for the EPP on H to be a purely privative feature, allowing free selection of a phrase to which we would like to generate an adjunct. However, this may perhaps be too unconstrained, in which case we will need to propose that there are different H-heads with different featural subsets of  $\{\text{EPP}, F\}$ , F a categorial feature. The former approach is more minimal, although it remains to be seen how we can constrain it to yield the correct output<sup>3</sup>. Potentially, such an analysis could also be extended to the application of other adjuncts. Cinque (1999) for example suggest that adverbial phrases are located in numerous the specifier positions above VP. One seeking to unify Cinque's approach with more standard theories of adjunction could apply L-absorption<sup>4</sup> to allow specifiers to be adjuncts, although I do not pursue this here.

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<sup>3</sup>See Ernst (2002) for discussion about the selection of adjuncts. Ernst proposes that there are two aspects to adjunct selection, cognitive and formal, although they may not necessarily be distinguishable in any given theory. For example *loudly* modifies something that is related to sound. Regardless of the constraints on adjunct selection may be, it should not be difficult to incorporate them into our theory, given the FSH, just as long as the features formed by the FSH are visible to the syntactic component. The problems lies more with developing an explanatory theory of adjunction.

<sup>4</sup>We can consider a simple example. Say we wish to adjoin an adjective A to a noun phrase NP. First, we merge a reprojective head H with NP. H takes NP as its complement forming  $K = \{H(H), \{H, NP\}\}$ . NP targets H, raising to  $[\text{Spec}, \text{HP}]$  forming  $H' = \{H(H), \{NP, H\}\}$ . Substituting  $H'$  into H in K forms  $K' = \{H(H), \{\{H(H), \{NP, H\}\}, NP\}\}$ . Reproductive m-merger applies as per (7a). In this case  $L = H(\alpha)$ ,  $\alpha = H'$  and  $\beta = NP$  and so we replace L and  $H(H)$  on  $H'$  with  $H(NP)$  forming  $R = \text{REPROJECT}(K') = \{H(NP), \{\{H(NP), \{NP, H\}\}, NP\}\}$ . L-absorption applies to R yielding  $R' = \{\langle H(NP), H(NP) \rangle, \{\{H(NP), \{NP, H\}\}, NP\}\}$ . Crucially, the head-adjoined structure  $\{NP, H\}$  and NP (now a trace) are not adjuncts to each other, because their labels are  $H(NP)$  not  $\langle H(NP), H(P) \rangle$  (contra Chomsky 1995b). However, since the structure that is created has the label  $\langle H(NP), H(P) \rangle$ , this is a structure that *preempts* adjunction. The derivation proceeds in a trivial way: merging the adjective A yields  $\{A, R'\}$ . Since A is a specifier of  $R'$ ,  $\{\langle H(NP), H(NP) \rangle, \{A, R'\}\}$  is formed, yielding the desired result – A adjoined to NP.

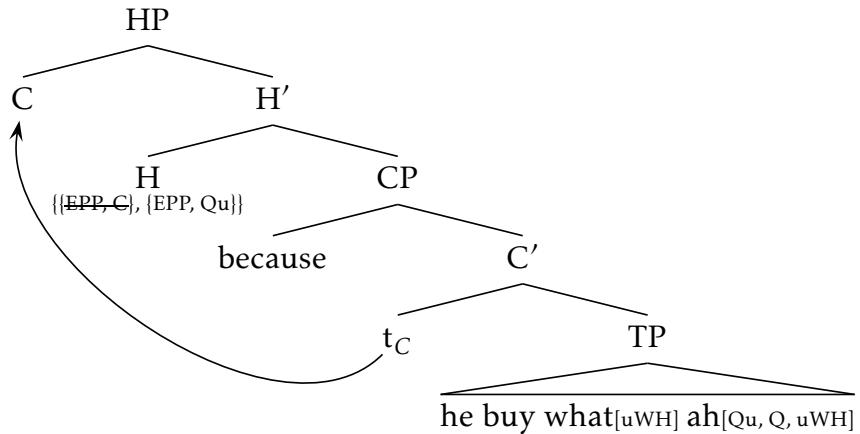
### 5.1.2 Escaping from islands in SgE

Equipped with means to transform specifiers of reprojected heads into adjuncts, let us consider again (2) in SgE, repeated below:

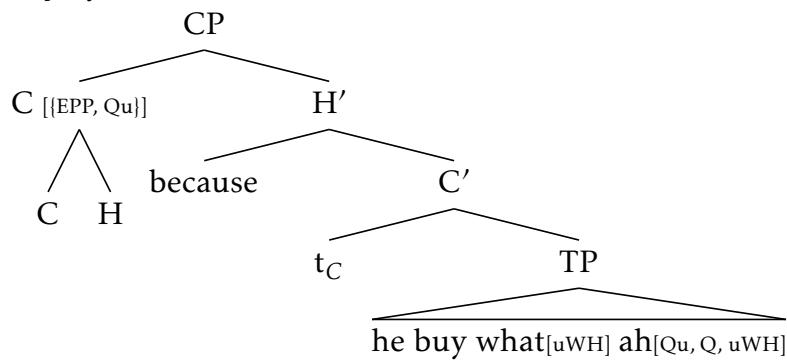
- (2) John is broke [because he buy what ah]?

Let us assume the adjunct island is headed by a non-interrogative C and *because* is in [Spec,CP]. We have the following structures, showing step-by-step how Q-migration takes place:

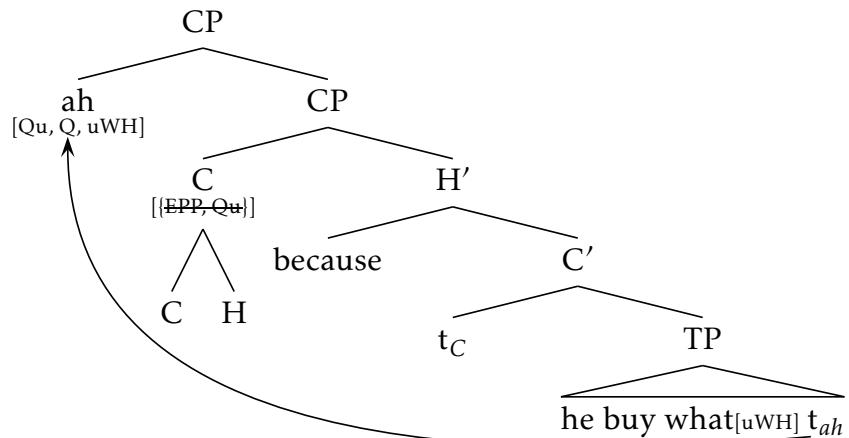
- (9) a. *C-to-H movement*



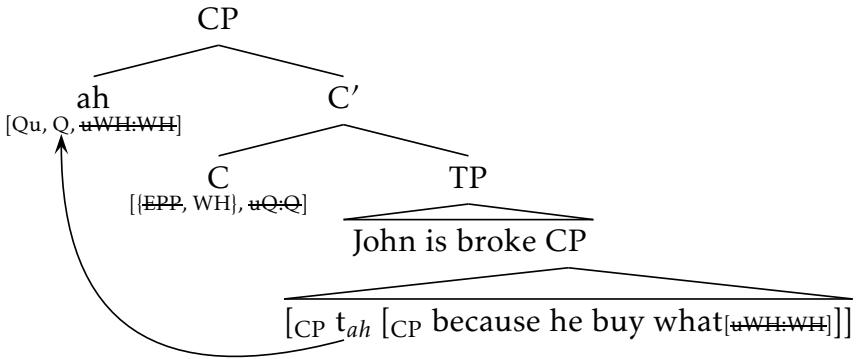
- b. *Reprojection*



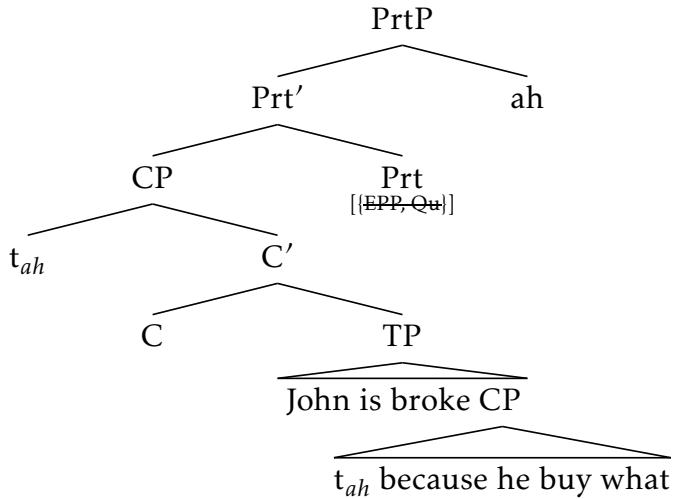
- c. *Q-migration*



d. Clause-typing/Scope taking



e. To [Spec,PrtP]



The steps for (9a-c) have already been discussed at the end of the previous section. To summarise, H is merged, taking the island CP as its complement. C-to-H movement is triggered, followed by reprojection. {EPP, Qu} on the complex C head triggers movement of *ah* into its specifier. The specifier position of the reprojected CP is an adjunct by L-absorption. The derivations proceeds normally in (9d) when an interrogative C is merged. {EPP, WH} on matrix C looks for some element with a [WH] feature (uninterpretable or otherwise) to raise into its specifier. Since only *ah* is an adjunct outside of the island, it is the only available element available for extraction and movement takes place. By our particle phrase generalisation principle as discussed in the last chapter, PrtP is projected since [Spec,CP] contains only QuP and no wh-DP. {EPP, Qu} on Prt looks for a particle to raise into a sentence final position. The derivation converges and terminates.

One might question why the entire QuP does not raise to escape the island, followed by raising into CP and PrtP since {EPP, Qu} should predict optionality between raising Qu or QuP. Or to rephrase this question, how can we ensure that Q-migration really only affects Qu, rather than QuP?

Movement to PrtP can be ruled out for similar reasons as when QuP raises to [Spec,CP]. Moving Qu or QuP to [Spec,PrtP] yields no difference in output in this case and thus is superfluous. Unlike the case of optional pied-piping in Afrikaans, which does yield different PF outputs, despite the optionality being semantically vacuous. In this case, Qu and QuP movement yields the same output, both at LF and PF; assuming we would like to move as little material as possible for convergence, the former option will be preferred. Explaining why QuP does undergo Q-migration is a little more difficult. I do not have a good explanation for this; the speculation that the EPP can take second order features of min/max does seem rather appealing now, allowing to constrain the satisfaction of the EPP on reprojected C. Another option would be to assume along the lines of Donati (2006) that reprojective movement always involves  $X^0$  heads, rather than phrases. Assuming this however, would preclude any possibility for extending L-absorption to a general theory of adjunction, which might target, say PP adjuncts. While my aim is not to provide a general theory of adjunction here, one does hope that the theory could be extensible in some way. I am unfortunately forced to leave this mystery unsolved. I can only stipulate that Q-migration only involves Qu heads, not phrases.

In fact, it can be shown that the wh-phrase does not move. If we adjoin a temporal adjunct like *yesterday* to the right of the clause we get:

- (10) a. John is broke because he buy what ah yesterday?
  - b. John is broke because he buy what yesterday ah?
  - c. \*John is broke because he buy yesterday what ah?
- (11) a. John buy what ah yesterday?
  - b. John buy what yesterday ah?

Let us first consider the adjunct itself as a matrix clause, as can be seen in (11). *Ah* is able to appear both preceding and following *yesterday*. (11a) is not very useful for us, since we cannot discern the structure of *what ah*. (11b) on the other hand, shows that *yesterday* is in between *what* and *ah*, suggesting that Qu has been separated from QuP. Returning to the adjunct islands, the sentence that should concern us is (10b). No matter whether *yesterday* scopes over the embedded or matrix clause, *what* clearly is not in PrtP. It cannot be in [Spec,CP] of the adjunct island either, the word order is wrong. It must therefore be in its base position. In MC, similar facts are observed:

- (12) a. Zhangsan pochan-le yinwei ta mai-le shenme ne  
           Zhangsan bankrupt-ASP because he buy-ASP what Q  
           zuotian?  
           yesterday  
           ‘Zhangsan is broke because he bought what yesterday?’
- b. \* Zhangsan pochan-le yinwei ta mai-le shenme  
           Zhangsan bankrupt-ASP because he buy-ASP what  
           zuotian ne?  
           yesterday Q
- c. Zhangsan pochan-le yinwei ta mai shenme le ne?  
           Zhangsan bankrupt-ASP because he buy AS Q  
           ‘Zhangsan is broke because he bought what?’

Unlike SgE, MC does not allow *zuotian* ‘yesterday’ to be in between the wh-phrase and the particle. What we can do however, is to move the aspectual marker *le* from the verb to the verb phrase. In this case, it appears between the wh-phrase and the particle. We know that wh-phrases do not move in MC. Even though the facts in SgE and MC are not identical, the combination of evidence here should be sufficient to prove that the wh-phrase in fact in-situ within the island. A similar analysis for SgE can be extended to SE, with a phonologically null Qu and perhaps no PrtP<sup>5</sup>.

Having said this, it is well known that extraction from adjuncts are not categorically impossible. Truswell (2007), for example, observes the following distribution:

- (13) a. \* What does John work [whistling t]?  
       b. \* What did John write the cheque [complaining about t]?  
       c. \* What did John see the spectacle [looking through t]?  

(14) a. What did John arrive [whistling t]?  
       b. What did John drive Mary crazy [complaining about t]?

(Truswell 2007: ex 7-8)

Truswell suggests that in order to account for these distribution facts, a purely syntactic approach is insufficient, and that we need to also take into account the semantics of the predicates involved. The details cannot be discussed here, but in short, wh-extraction is only possible when the predicate describes a single event, what Truswell terms the Single

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<sup>5</sup>We will see below in our discussion of yes/no questions that perhaps it might be possible to posit the presence of an overt Qu and PrtP even in SE, accommodating tags in questions like *You didn't go right?*.

Event Condition. Truswell's argumentation is as follows: consider (13a): say we have its declarative counterpart *John works whistling tangos*. The event of whistling describes the event of working and thus the sentence can be represented by a conjunctive relationship, reflecting their dependency:  $\exists e_1.\text{work}(j, e_1) \wedge \exists e_2.\text{whistle}(j, \text{tangos}, e_2)$ . By contrast, the declarative counterpart of (14) type sentences *John drove Mary crazy whistling tangos*, the truth of *John drives Mary crazy* is not dependent on what John does<sup>6</sup>, and as a result, the two events form a single macroevent:  $\exists e_1, e_2.E.\text{whistle}(j, \text{tangos}, e_1) \wedge \text{crazy}(m, e_2) \wedge E = \langle e_1, e_2 \rangle$ .

While I do not presume to propose an analysis of the distribution of extraction from adjunct islands, we can however, consider more closely the nature of Q-migration in these cases. SgE shares the same distribution as in (13) and (14) regarding the extractability of the wh-phrase without a particle; of course, if left in-situ the reading is fine, since we know that Q-migration can allow Qu to escape from islands. We proposed that Q-migration can only target heads and not QuPs. We can then test this by overtly raising the wh-phrase and including a particle in (14). We get:

- (15) a. What did John arrive whistling ah?
- b. ? What ah did John arrive whistling?
- (16) a. ? What did John drive Mary crazy complaining about ah?
- b. ?? What ah did John drive Mary crazy complaining about?

Unfortunately, the results are rather inconclusive. Let us consider (15) first. It should be noted that all speakers I consulted preferred to leave the wh-word in-situ, not unexpected considering we are after all extracting from adjuncts. Putting this aside, (15a) is better than (15b) although this is not a judgement shared by all informants. (16) on the other hand was rather odd. Despite the fact that SgE speakers permitted (14b) when no particle is present, they did not really like (16a), for which I have no explanation for. However, there was again a split in judgements of whether (16b) is degraded compared to (16a).

Despite all of this, if the scale of degradedness is any indication, then it does suggest that Q-migration only allows, or at least strongly prefers Qu rather than QuP movement. The (b) examples must both involve Q-migration involving QuP; after movement, Qu is no longer extractable from

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<sup>6</sup>Note that my understanding is that the intended reading is not *John drove Mary crazy while/because he whistled tangos* but more of something like *John, in the process of driving Mary crazy, whistled tangos*. At the same time however, this also hints at a possible counter-argument if two readings are possible for *What did John drive Mary crazy whistling*, i.e. two separate and dependent events vs. one macroevent with two subparts.

QuP, following Ormazabal et al. (1994) who state that subextraction from an object moved into a specifier position is impossible. Let us assume this to be true for QuPs. Therefore the (b) examples can only be derived by Q-migration of QuP followed by phrasal movement into [Spec,CP].

The (a) examples on the other hand, must involve some other mechanism. We have two options: the first would be follow Truswell (2007) in saying that these adjuncts are not islands for extraction at all, although this would predict that all the sentences above have the same grammaticality status. The second option would be to posit two Q-migration operations, one for *ah* and another for *what*, although this again would predict equal grammaticality. Alternatively, we can adopt a mixed approach: Q-migration always takes place, targeting Qu heads. The degradation of the (b) examples can be accounted for by the preference of Q-migration to only target Qu rather than QuP. We can maintain this claim since explaining the grammaticality when wh-phrases are left in-situ entails that at least Q-migration must apply freely to Qu heads. The movement of the wh-phrase on the other hand, must be accounted for by some other means. One can speculate that in cases where macroevents are formed, the adjunct is weakened from a strong island to a weak one, since if we accept Truswell's analysis, the event of the adjunct is integrated into the event of the matrix predicate. If so, this weakened island should allow extraction of wh-phrases. Though speculative, this is not completely implausible, if we place the wh-argument *what* with a wh-adjunct by *how*, extraction is impossible:

- (17) \*How did John arrive whistling?

Crucially in this case, *how* cannot be used to question the manner of whistling. At best, it can be used to question the manner of the arrival. If we take the asymmetry of the extractability of wh-arguments and adjunct as an indication of a weak island, then we have a case to make. Since it is still an island, Q-migration must apply, extracting the particle. In turn, wh-movement takes place in the usual way, without Q-migration, moving straight to [Spec,CP] while the particle raises into [Spec,PrtP].

The evasion of wh-in-situ from complex-NPs<sup>7</sup> can also be explained in a similarly straightforward manner.

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<sup>7</sup>See Davies and Dubinsky (2003) for discussions about the constraints on extraction from NPs. They too, like Truswell (2007), suggest that semantic factors contribute towards determining extractability. They tie this to the argument and event structure. Concerning the latter, they also note that complex event nouns permit extractions. A more difficult question that arises from their research and Truswell's is whether (and how) these semantic constraints can be integrated in a systematic and principled way into our syntactic theory.

- (18) a. \* What Mary say John like the man that bought ah?  
       b.     Mary say John like the man that bought what ah?  
             ‘Mary said John likes the man that bought what?’

Q-migration can take place at the boundary of the offending CP, allowing *ah* to escape to the clause periphery. Consider next:

- (19) a.     Mary say John like the man who bought books.  
       b. \* Mary say John like the man who bought books ah?  
 (20) a.     John is someone who you can trust.  
       b. \* John is someone who you can trust ah?

With *who* as a relative pronoun, the inclusion of *ah* is plainly ungrammatical, regardless of whether the relative pronoun undergoes movement or not. For obvious reasons, relative pronouns, being uninterrogative are not taken as complements by question particles.

### 5.1.3 Escaping from islands in other languages

In the previous two sections we have described in detail how Q-migration works and applied it to SgE. In this section I will discuss, though not at great length, the island facts of Japanese and Sinhala, showing that they too show evidence that corroborates a theory of Q-migration.

#### 5.1.3.1 Japanese

Let us consider Japanese first. We have shown that Q-migration is insensitive to island boundaries; the Q-migration head H takes islands as complements and builds an escape hatch allowing Qu to escape from within islands, making it amenable to further movement. I show a simple case of an adjunct island:

- (21) Mary-wa [John-ga nani-o yomu mae-ni] dakaketa-no?  
       Mary-TOP John-NOM what-ACC read before] left-Q  
       ‘Mary left before John read what?’

(Pesetsky 1987:110)

Q-migration, in this case allows *no* to escape the island, a familiar case at this point. Hagstrom (1998), amongst many others observe that Japanese also displays intervention effects when it comes to Qu-movement:

- (22) a. \* [John-ka Bill]-ga nani-o nomimasita ka?  
       John-or Bill-scnom what-ACC drank Q

- b. nani-o<sub>i</sub> [John-ka Bill]-ga t<sub>i</sub> nomimasita ka?  
 what-ACC John-or Bill-scnom drank Q  
 'What did John or Bill drink?'

There are several interveners that can interfere with the movement of *ka*, in the above example, another instantiation of *ka* is shown. The intervening *ka* can appear in any of its various forms: disjunction, indefinite etc. Tanaka (1998) notes that the NPI *sika* 'only' is also such an intervener. When paired with NEG *nai*, it means 'nobody but':

- (23) a. \* John-sika nani-o yoma-nai no?  
 John-but what-ACC read-NEG Q  
 b. nani-o<sub>i</sub> John-sika t<sub>i</sub> yoma-nai no?  
 what-ACC John-but read-NEG Q  
 'What does nobody but John read?'

Crucially in both cases shown above, when QuP is scrambled over the offending intervener, grammaticality is restored. There are two conclusions one can draw from these facts: first, *ka* overtly moves to the clause periphery and second, interveners affect the movement of *ka* but not the scrambling of QuP. Hagstrom (1998) devises a very clever test: we know that the point that Prt agrees with Qu is at the boundary of an island. Movement of Qu to the boundary is brought about by Q-migration, which is not sensitive to island boundaries or interveners (barring *ittai* which we will discuss soon). This means that if we embed the ungrammatical examples, (22a) or (23b) *within* an island, Q-migration should come to "rescue", restoring grammaticality. Hagstrom shows that this unexpected prediction is borne out, although he does admittedly note that the majority though not all of his informants found such embedding to yield an improvement. Furthermore, he also notes that *sika* constructions do not improve with such embedding and hypothesises that it could have something to do with its NPI nature:

- (24) a. Mary-wa [[John-ka Bill]-ga nani-o katta ato de]  
 Mary-TOP John-or Bill-NOM what-ACC bought after  
 dakaketa no?  
 left Q  
 'Mary left after John or Bill bought what?'  
 b. \* [John-ka Bill]-wa [Mary-ga nani-o katta ato de]  
 John-or Bill-TOP Mary-NOM what-ACC bought after  
 dakaketa no?  
 left Q?

'John or Bill left after Mary bought what?'

In (24a) Q-migration takes place across an intervening *ka* and is free to move to the clause-periphery. In (24b), Q-migration does not rescue the construction, since *ka* is outside the island. This leads Hagstrom to suggest that if *ka* is made to move to an embedded [Spec,CP], that is, movement *not* by Q-migration, intervention effects should reappear, crucially, originating from within the island itself. The examples below were shown in the previous chapter, repeated below:

- (25) a. ??? Taroo-wa [Hanako-ga [John-ka Mary-ga nani-o sita  
Taroo-TOP Hanako-NOM John-or Mary-NOM what-ACC did  
to] itta ato de] kaetta no?  
that said after go.home Q
- b. Taroo-wa [Hanako-ga [nani-o<sub>i</sub> John-ka Mary-ga t<sub>i</sub> sita  
Taroo-TOP Hanako-NOM what-ACC John-or Mary-NOM did  
to] itta ato de] kaetta no?  
that said after go.home Q  
'Taro goes home after Hanako said John or Mary did what?'

In (25a), a declarative clause is embedded in an island. In this case, according to Hagstrom, *ka* must be attracted to [Spec,CP] of the declarative and is blocked by the *ka* on *John-ka Mary*. Hagstrom does not make clear, but presumably because this prior movement is blocked to begin with, either Q-migration is not given a chance to take place before the derivation crashes, or more plausibly, Q-migration does take place but the features of embedded C are not satisfied and the derivation crashes. In (25b) on the other hand, when the wh-phrase is scrambled over the intervener, movement to intermediate [Spec,CP] is possible, and Q-migration follows, extracted *ka* from the island and the derivation proceeds normally.

Before we close this section on Japanese, we have one more thing to discuss. There appears to be one exception to the seemingly unchecked freedom of Q-migration. The presence of *ittai* 'in the world' cannot appear within islands<sup>8</sup>. Data is again repeated below:

- (26) a. \* Mary-wa [John-ni **ittai** nani-o ageta hito-ni] atta no?  
Mary-TOP John-DAT ittai what-ACC gave man-DAT met Q

<sup>8</sup>Hagstrom (1998) discusses differences in the availability of *ittai* in complements of bridge and non-bridge verbs in that *ittai* is licensed in the former but not in the latter. For reasons of space, I cannot discuss this here.

- b. Mary-wa **ittai** [John-ni nani-o ageta hito-ni] atta no?  
 Mary-TOP ittai John-DAT what-ACC gave man-DAT met Q  
 'Mary met the man who gave what (in the world) to John?'

It appears that *ittai* blocks Q-migration in this case of (26a) but not Qu-movement in (26b). Consider next when *ittai* is in a simple question:

- (27) a. Taroo-ga ittai nani-o yonda no?  
 Taroo-NOM ittai what-ACC read Q  
 b. ittai; Taroo-ga t<sub>i</sub> nani-o yonda no?  
 ittai Taroo-NOM what-ACC read Q  
 'What in the world did Taro read?'  
 c. (\*) nani-o; Taroo-ga ittai t<sub>i</sub> yonda no?

In this case, *nani* 'what' does not seem to able to cross *ittai*. Hagstrom does note that this judgement is not shared by all speakers, for some (27c) is fine. Anyhow, the conclusion that Hagstrom draws from this is that *ittai* is base-generated at the launching site of Q. That is, not necessarily its base-position, but rather "any clause between (and including) the clause containing the wh-word and the clause in which -ka eventually appears" (Hagstrom 1998:99). This means that *ittai* can be generated in any intermediate [Spec,CP] that *ka* travels through, although if I understand correctly, these intermediate [Spec,CP]s cannot include the one *inside* the island, since *ittai* cannot appear inside islands.

Let us put aside whether *ittai* is base-generated adjacent to wh-phrases or not, it should not matter for the proposal here. From the distribution we have seen, there appears to be a rather clean split in the sorts of interveners and the intervention effects induced. First, consider Q-migration: Q-migration does not seem to be affected by any sort of intervener, except *ittai*. Second, consider Qu-movement: Qu-movement does not seem to be affected by *ittai* but is affected by island boundaries and interveners such as other instances of Qu or *sika* 'only'. Third, consider QuP movement (scrambling): scrambling<sup>9</sup> does not seem to be affected by island boundaries or interveners such as Qu or *sika* but is blocked by *ittai*, as shown in (27c). To summarise then, Q-migration and QuP scrambling appears to pattern in one way, while Qu-movement patterns in another. In a sense Q-migration and QuP scrambling are head and phrasal analogues of each other. Could they be unified in some way? It could well be the case, I leave that open here. Permit me one final case to drive this point home, from Richards (2000):

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<sup>9</sup>See Saito (1992) amongst many other for information of long distance scrambling in Japanese.

- (28) a. \* [Syatyoo-ga      ittai dare-o    Tookyoo-ni yatta kara]  
                  president-NOM ittai who-ACC Tokyo-DAT sent because  
                  umaku itta no?  
                  well    go    Q  
                  ‘Who the hell did things go well [because the president sent t to Tokyo]?’
- b. [Syatyoo-ga      ittai dare-o    Tookyoo-ni yattara] umaku iku  
                  president-NOM ittai who-ACC Tokyo-DAT send-if well    go  
                  no?  
                  Q  
                  ‘Who the hell did things go well [if the president sends t to Tokyo]?’

In these examples, *ittai* blocks Q-migration and QuP scrambling, but Qu-movement is not blocked. If we assume that *kara* ‘because’ is in [Spec,CP] and *yattara* ‘send-if’ is in C, then in (28a), [Spec,CP] is filled by *kara* and there is no way that Qu *no* can escape the island. In (28b) on the other hand, [Spec,CP] is free and Qu-movement can take *no* into embedded [Spec,CP] and Q-migration can follow, explaining the contrast. We turn now to Sinhala, which displays very similar properties.

### 5.1.3.2 Sinhala

Recall in our discussion above about optional particle movement in Sinhala. It should be noted however, that those constructions are actually more exceptions than the rule. The relevant examples were shown in (36) and (129) in chapter 4 and I will not repeat them here since they are not relevant. Kishimoto (2005) notes that the optionality of particles are only occur in yes/no questions and in bridge verbs<sup>10</sup>. Turning away from optional particle movement, we find that Sinhala patterns alongside Japanese with regards to the placement of *da* and islands, in that *da* can never appear inside islands to yield matrix scope; it can only yield embedded scope. To allow a matrix question reading, *da* must always appear at the edge of the island. Examples from Kishimoto (2005) unless stated otherwise:

- (29) a. Chitra [[Ranjit monəwa gatta      kiənə ] katəkataawə] da  
                  Chitra Ranjit what    bought-A that    rumour    Q  
                  aehuwe?  
                  heard-E

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<sup>10</sup>Recall a similar bridge vs. nonbridge distinction in Japanese; see footnote 8.

‘Chitra heard the rumour that Ranjit bought what?’

- b. [Chitra monəwa kanə kotə] da Ranjit pudumə unee?  
Chitra what ate time Q Ranjit surprise became-E  
‘Ranjit was surprised when Chitra ate what?’

Recall that I have claimed here contrary to Cable (2007), Hagstrom (2006) and Kishimoto (2005) (CHK) that *da* in Sinhala is actually a focus particle rather than Q, although I will continue to gloss *da* as Q for consistency. The patterns that Sinhala *da* exhibits pattern so well with Japanese that the authors CHK mentioned above tie it the question particle *ka*. However, we did show that *da* actually patterns very strongly with *tamay*, a focus particle. I propose that instead of associating *da* with Japanese *ka*, we should associate *da* with *ittai*. Given that *ittai wh* yields ‘wh- the hell/wh- in the world’ readings, *ittai wh* phrases, according to Pesetsky (1987:111) are “good candidates for aggressively non-D-linked wh-phrases”. Simply put, they are focussed. If we accept such a line of reasoning, we would then expect *da* to actually pattern more like *ittai*, and that appearance of the patterning with *ka* to be an epiphenomenon of this. What we do find then, is that *wh da* phrases in Sinhala can scramble to the left periphery. Although not mentioned before this is also the case for *ittai wh* phrases in Japanese:

- (30) a. [mokak da]<sub>i</sub> amma [Siri t<sub>i</sub> kieuwa kiyəla] kalpənaa keruwe?  
what Q mother Siri read-A that thinking did-E  
‘What did mother think that Siri read?’

(Kishimoto 2005:2n1)

- b. [ittai nani-o]<sub>i</sub> John-ka Bill-ga t<sub>i</sub> nomimasita ka?  
ittai what-ACC John-or Bill-NOM drank Q  
‘What in the world did John or Bill drink?’

(Hagstrom 1998:56)

We can observe a very striking parallel if we take *da* to be equivalent of *ittai* and Qu, the verbal affix *-e* to be the equivalent of *ka*. In Japanese, *ittai* cannot appear inside islands, as is the case for Sinhala *da*. Japanese *ka* appears in a sentence final position, *da* does not, but *-e* does. We can account for the Sinhala facts in practically the same way as we did for Japanese. This is also some evidence against Hagstrom’s suggestion that *ittai* is base-generated in an intermediate landing site of *ka*. If that was the case, why would *ittai nani-o*, or *mokak da* scramble as a constituent? It seems more plausible to propose that *ittai* was base-generated as a constituent with *ka* and likewise for *mokak da*, after all *what the hell* is a constituent, only that it is completely

inseparable in the English case. Such an approach is not only more consistent, but avoids the thorny issues of stipulating complicated conditions on where *ittai* can be base-generated.

Following this, we would expect similar constraints to apply regarding Q-migration, Qu and QuP scrambling. Q-migration and QuP-scrambling are blocked by *da*; this clearly explains why *da* cannot appear within islands. Kishimoto also shows that *da* appears to block scrambling of indirect object DP:

- (31) a. Ranjit-te<sub>i</sub> oyaa [Chitra t<sub>i</sub> monəwa da dunne kiyəla]  
Ranjit-DAT you Chitra what Q gave-E that  
dannəwa.  
know-A  
'To Ranjit, you know what Chitra gave t<sub>i</sub>.
- b. ?? Ranjit-te<sub>i</sub> oyaa [Chitra t<sub>i</sub> monəwa dunna da kiyəla]  
Ranjit-DAT you Chitra what gave-A Q that  
dannəwa.  
know-A
- c. ?\* Ranjit-te<sub>i</sub> oyaa [Chitra t<sub>i</sub> monəwa dunna kiyəla] da danne.  
Ranjit-DAT you Chitra what gave-A that Q know-E

Kishimoto claims that in Sinhala, scrambling elements do not reconstruct at LF, and thus, following Mahajan (1990) who states that scrambling is Ā-movement movement, the scrambled phrase serves to function as an operator at LF. Since *da* c-commands the indirect object in all cases except (31a), scrambling is only possible there. It is not certain whether certain parallels can be drawn between *da* blocking the scrambling of DPs and *ittai* disallowing wh-scrambling, but given the few pieces of data presented here, it appears that there might be some connection.

Let us consider one last set of examples which further supports that *da* is not Qu. We know that when Qu and *da* undergo m-merger, they are allowed to move to a clause peripheral position, rendering Qu unable for affixation as -e on the verb. When Qu and *da* are not m-merged, Qu is free to move, affixing to the verb as -e. It must be noted that the m-merger of Qu and *da* is not an obligatory operation; it only surfaces when we observe optional particle movement. In fact, such m-merger should actually be dispreferred, reflected in cases where *da* moves to the island boundary in the same way *ittai* does and Qu moves on further to affix to a matrix verb. Recall that Kishimoto's account of -e marking on verbs was that it is a result of covert

movement of *da* whereas the *-a* marking is a result of overt movement. However, there appears to be cases when *i-e* appears in the absence of *da*:

- (32) [CP<sub>2</sub> [C' Ranjit t<sub>i</sub> kieuwe] [ee potə]<sub>i</sub>]  
          Ranjit   read-E   that book  
          ‘It was that book that Ranjit read.

There are also wh-words in Sinhala that cannot be co-occur with *da*. I cannot present the full facts here, but this should suffice:

- (33) [CP<sub>2</sub> [C' Chitra aei<sub>i</sub> potə kieuwe/\*kieuwa] Op<sub>i</sub>]  
          Chitra why book read-E/\*read-A  
          ‘Why did Chitra read the book.

Kishimoto accounts for (32) by stating that the right dislocation of *ee potə* ‘that book’ is triggered by a strong [+Q] feature, and is checked in overt syntax. Recall again that *-e* was supposed to appear on when [+Q] was checked *covertly*; [+Q] should delete under overt movement yielding *da*. To solve this contradiction, Kishimoto appeals to a PF crash if a “legitimate ‘scope’ marking” is not present on the verb. As such [+Q] must resist deletion in overt syntax.

A similar argument is presented for (33). Since no element is available for movement, Kishimoto posits that a null operator is merged in [Spec,CP] instead. Again, there is no scope marking and PF crashes. Oddly enough, *da* is also an operator, compare:

- (34) kiidenek potə kieuwa da?  
          how many book read-A Q  
          ‘How many (people) read the book?’

Even putting aside perhaps there could be some PF effects going on where (32) is concerned, such an argument is completely untenable for (33) and (34). Structurally they are identical, why should one construction have *-a* and the other *-e* when the only difference is the the type of operator? I think in light of these facts, the analysis that we have proposed for Sinhala, appears to be more on the right track. The verbal affix has nothing to do *da*; the *-e* affix is a reflex of Kishimoto’s [+Q] feature in [Spec,CP], that much is clear. Where this feature comes from then, is not *da* but Qu. The *-e* affix appears through Qu-movement, unless *da* occupies a position that Qu needs to move to, or if *da* is m-merged with Qu.

Having said this, I am by no means saying that the account presented here accounts for all of the data. There are many cases for which I am uncertain as to what the details are, and I cannot include these for reasons of

space. In particular, what is the nature of the operations that motivate *da* and *Qu* to move outside of islands. We know that Q-migration works for *Qu*. What about *da*? It was shown that DP scrambling is blocked by *da*; could it be perhaps that there is only one scrambling operation and either the DP or *da* can make use of it while some other independent constraint is present on the presence of *da* within islands, as there is for *ittai*? This is pure speculation, and while very interesting, we must leave this behind and move on to other things.

#### 5.1.4 Concluding remarks

In this section we basically put forth the claim that Q-migration as first proposed as a rather murky subject in Hagstrom (2006), can actually be developed into a generalised coherent theory of island evasion (or even adjunction). Of course this presupposes that one must accept the availability of m-merger and reprojection in syntax. If we do so, escaping from islands becomes a relatively simple issue; until we encounter interveners, that is. I have tried to make some sense of these facts based on a small amount of data from Japanese and Sinhala, hopefully opening up an avenue that will bear fruit in the future. Q-migration also has an added advantage. Where wh-movement languages are concerned, the issue of *Qu* movement in general becomes more trivial, unless we are talking about optional wh-movement. When we face islands in wh-movement languages however, wh-phrases have little (or no) recourse to overt movement. This is when Q-migration kicks in, becoming a powerful tool in our arsenal, allowing us to explain the necessity to leave wh-words in-situ within islands even in wh-movement languages. This is actually something that has not been questioned very much in the literature, as far as I know. We focus heavily on movement and their constraints, but seldom stop to wonder what actually happens when wh-phrases do not move when they are stuck inside islands, in which case leaving words in-situ actually *recovers* grammaticality. We should also be asking questions about whether we are able to provide a unified account of the interpretation of wh-in-situ in wh-movement languages, something that Q-migration addresses, and hopefully accounts for to some degree, at least where islands are concerned.

## 5.2 More optional wh-movement

In the previous sections, we have seen how in-situ wh-phrases in islands can still yield the correct matrix interpretation by allowing *Qu* to “escape” from

islands via Q-migration, subject to various language-specific constraints. We have also looked at how an theory of optional movement might work in SgE, where depending on which element raises to C, different surface orders emerge. To briefly recap, when QuP raises to [Spec,CP] we get the fronting of a wh-phrase and a particle, adjacent to each other. We observe this in languages<sup>11</sup> like SgE, Tlingit and possibly (see discussion in 4.3.1.1) Edo. When the wh-phrase raises to [Spec,CP] and the particle raises to sentence-final clause-peripheral position, we get a fronted wh-phrase and a final particle (Vata, see Koopman (1984, 2000)). Finally, wh-phrases can be left in-situ, as per our discussion of Japanese and Sinhala above.

### 5.2.1 Complex questions in SgE

In this section, we return to the rest of the optional movement data in SgE. We have already looked optional movement in simple matrix questions in SgE in 4.5.3.3 and now we will attempt to extend this analysis to optional movement in complex questions.

#### 5.2.1.1 Wh-arguments

Let us consider wh-arguments first. The data is repeated below as (35). Previously, the data was listed descriptively, but now for convenience, I will rearrange the data so that they group together by types of movement operations:

- (35) *Qu movement only*
  - a. You think I buy **what** ah?
- QuP movement*
  - b. **What** ah you think I buy?
  - c. ?? You think **what** ah I buy?
- Mixture of Qu and wh-movement*
  - d. You think **what** I buy ah?
  - e. **What** you think I buy ah?
  - f. **What** you think ah I buy?
- Ungrammatical examples*
  - g. \* You think ah I buy **what**?
  - h. \* Ah you think I buy **what**?

---

<sup>11</sup>Cable (2007) observes, citing Brandon and Seki (1984) that the Tupí languages also exhibit QuP fronting. Imbabura Quechua also appears to do this (Cole and Hermon 1994) although Ancash Quechua displays optional movement.

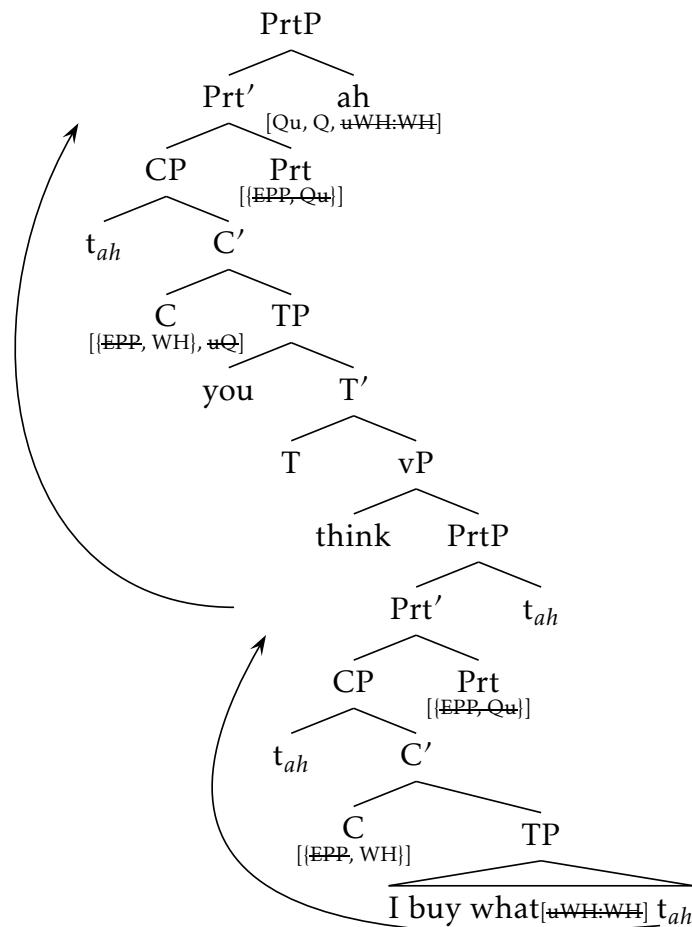
i. \* Ah you think what I buy?

'What do you think I bought?'

There are quite a few examples to go through here and I will begin with the less complicated ones. In all of the examples here, it is important to note that by our notion of Q-completeness, embedded C cannot be Q-complete, otherwise the features on Q will delete and, preventing it from raising to matrix C and crashing the derivation.

(35a) is straightforward. Qu raises cyclically through each CP and PrtP layer, and ends up in matrix [Spec,PrtP], marking matrix scope.

(36) *Structure of 'You think I buy what ah?'*



At this point we must take a rather important detour. The structure shown above seems like a relatively straightforward and reasonable one. However, in the course of my investigations, I was led to wonder (and doubt) whether embedded clauses also project PrtPs. The results were somewhat inconclusive. Consider the following Sinhala example:

- (37) a. Ranjit kau da aawa kiyøla danne?  
 Ranjit who Q came-A that know-E  
 'Who does Ranjit know came?'  
 b. Ranjit kau da aawe kiyøla dannøwa.  
 Ranjit who Q came-E that know-A  
 'Ranjit knows who came.'

(Kishimoto 2005:5)

Assuming that we are right in postulating that the instantiation of Qu in Sinhala is the verbal affix *-e*, what we find is that Sinhala is able to distinguish between indirect and matrix readings by its structural position. Japanese *ka* also employs such a strategy, although I omit the facts here. The point is, in SgE, a non-bridge verb<sup>12</sup> like *know* forces an embedded reading, especially with subject wh-phrases. In this case, we find that SgE can never allow a particle in such a case:

- (38) a. Ranjit knows who came.  
 b. \*Ranjit knows (that) who came ah?

What we notice is that the particle *ah* can never serve to mark scope of the wh-phrase in an indirect question. Interestingly, we can use the disjunctive marker *or not* to test this further. Recall that *or not* was the unmarked way of asking yes/no questions in SgE:

- (39) a. Ranjit knows who came or not./?  
 'Ranjit knows who came or didn't come.'  
 'Does Ranjit know who came?'  
 b. Ranjit knows who came or not ah?  
 '\*Ranjit knows who came or didn't come.'  
 'Does Ranjit know who came?'

Without the particle *ah*, both indirect and matrix readings are fine. But when the particle is present, only the matrix reading is possible. Similar facts are observed in MC:

- (40) a. ni renwei ta mai-le shenme ne?  
 you think he bought-ASP what Q  
 'What do you think he bought?'

---

<sup>12</sup>It is not certain what the full distribution of extraction constraints are. It does not appear to be a clear bridge vs. non-bridge or factive vs. non-factive split. Sentences like *John whispered/regretted that who came ah?* are fine. My suspicion is that SgE verbs pattern with MC verbs, although I have not tested this.

- b. \* ni zhidao ta mai-le shenme ne?  
           you know he bought-ASP what Q  
           'What do you know he bought?'
- c. ni zhidao ta mai-le shenme ma?  
           you know he bought-ASP what Q<sub>y/n</sub>  
           'Do you know what he bought?'

As is well known, in MC, the particle *ne* is used mostly in wh-questions and *ma* in yes/no questions. With the verb *zhidao* 'know', the use of *ne* with which only yields matrix readings, is impossible with the wh-word embedded under 'know'. This is in contrast to a sentence containing a verb like *renwei* 'think'. With 'know', only the yes/no particle *ma* can be used. My initial hypothesis was to posit that PrtP is only projected in matrix clauses, since it could never appear in embedded clauses. SgE does not allow multiple overt particles, interrogative or not. Doing so however, to preempt our later discussion somewhat, would entail that Prt has to undergo long-distance movement when embedded [Spec,CP] is filled by a wh-phrase as exemplified (35d-f) at some point in the derivation. This is not inherently bad in itself, but (35f) is evidence that the particle actually does actually cyclically move. Also, given that Hagstrom (1998) also shows *ka* does cyclically move in Japanese, it seems to be that adopting a cyclic-movement based approach is more theoretically and empirically consistent. However, the crucial point to note is that in (35f), *ah* is not in a sentence final position, which would be expected if the clause truly had the structure as shown in (36).

We test this further by using a parasitic gap construction, in which case, as expected by our discussion so far, all positions are possible for the wh-phrase:

- (41) a. John threw away without reading which book ah?  
       b. John threw away which book without reading ah?  
       c. Which book John threw away without reading ah?  
       d. Which book ah John threw away without reading?

If our analysis of Qu movement is correct so far, the above examples predict that Qu must move cyclically through each position of *which book*. Contrary to what Lin (2005) claims, wh-in-situ can license parasitic gaps in MC:

- (42) a. \* Laowang [zai du-guo pg<sub>i</sub> zhihou] jiu diudiao-le shenme  
           Laowang at read-ASP after then throw-ASP what  
           wenjian<sub>i</sub>?  
           document

- b. Shenme wenjian<sub>i</sub> Laowang [zai du-guo pg<sub>i</sub> zhihou] jiu  
 what document Laowang at read-ASP after then  
 jiudiao-le?  
 throw-ASP  
 'Which document did Laowang throw away right after  
 reading?' (Lin 2005:299)

- (43) a. Ta mei kan-guo jiu diudiao-le **nei-ben-shu** (ne)?  
 he didn't read-ASP then throw-ASP which-CL-book Q

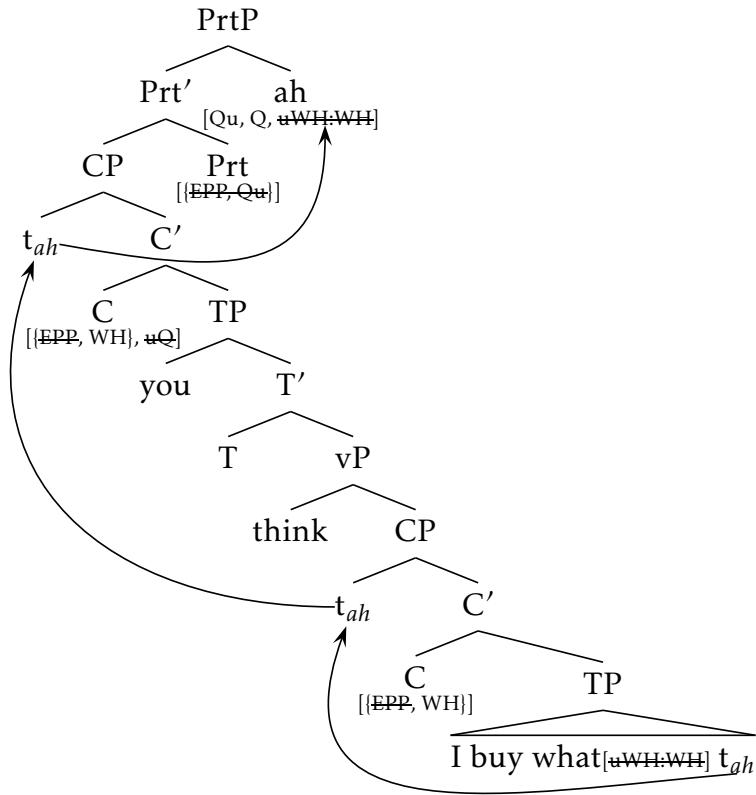
- b. Ta mei kan-guo **nei-ben-shu** jiu diudiao-le (ne)?  
 c. **Nei-ben-shu** ta mei kan-guo jiu diudiao-le (ne)?  
 d. **Nei-ben-shu ne** ta mei kan-guo jiu diudiao-le?

'Which book did he throw away without reading?'

All of Lin's examples involve either extraction of Qu from inside a *zai* 'at' PP island or from a complex nominal modified by *de*. If we remove the island boundaries, the wh-phrase is fine in any position. Whatever the facts for parasitic gaps turn out to be, the point here is that, we can show that even in a wh-in-situ language, Qu must move cyclically to its peripheral position, that is, it follows each landing where *which book* can appear.

We are thus faced with a problem. On one hand, there is evidence that shows that a PrtP should not be projected in embedded clauses. Yet on the other, we have antagonistic evidence in (35f) showing that *ah* actually does move cyclically to the clause periphery. In order to unify these approaches, recall that we have an important tool at our disposal for creating an escape hatch position for Qu: Q-migration. Q-migration generates a specifier position at the position of where we wish to allow Q to be available for further movement. This is not too unreasonable, considering that CPs are islands in certain cases (relative clauses, wh-islands etc.); as such the correct structure for (36) should be (44) below. In fact, given that the wh-phrase does not move in this case, no Q-migration is necessary, Qu can move freely into [Spec,CP]. We shall see below however, that Q-migration is necessary for (35d-f) since it builds two equidistant specifier positions for extraction.

(44) *Structure of 'You think I buy what ah?'*



Unfortunately, this is not the full picture. As we will see in the next section, wh-adjuncts like *why* license only embedded scope readings in intermediate positions, unlike wh-arguments which only allows a matrix scope reading.

- (45) a. You think why he didn't come ah?  
     '\*For a reason x, you think he didn't come for x.'  
     'What is the reason x such that you think he didn't come for x?'  
     '\*What is the reason x, such that you think for x that he didn't come?'  
 b. \* Do you think why he didn't come (ah)?  
 c. You know why he didn't come (\*ah)./\*?  
     'For a reason x, you think he didn't come for x.'  
     '\*What is the reason x such that you think he didn't come for x?'  
     '\*What is the reason x such that you think for x that he didn't come?'  
 d. Do you know why he didn't come (ah)?

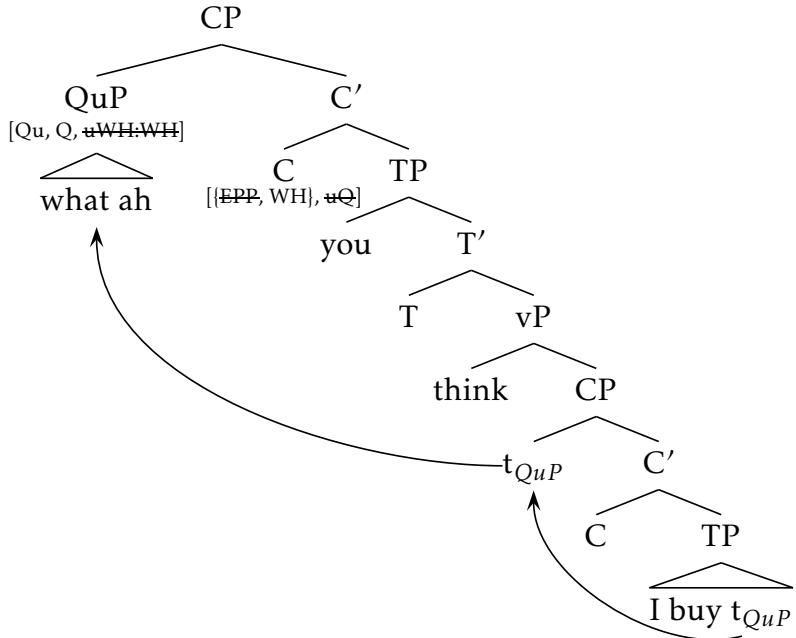
'What is the reason  $x$  such that you know he didn't come for  $x$ ?'

\*'What is the reason  $x$  such that you think for  $x$  that he didn't come?'

With a verb like *think*, the presence of the question particle is fine with *why*. Crucially, it cannot take an embedded question form. On the other hand, with *know* it is ungrammatical without being in an embedded question form with or without a particle. This means that the constraints on a PrtP projection are not just structural, but has to do with the interrogativity of the utterance. *Why* is a different kind of beast, as is usually the case in most languages. Nevertheless, let us continue to adopt the null hypothesis that PrtP is only projected in matrix clauses and reprojective m-merger is used at embedded clause boundaries. We continue with our derivations:

Next we consider what happens when QuP moves. In our discussions above, we noted that when QuP moves, subextraction is no longer possible and as a result, PrtP is not projected. In such a case, only one derivation is possible: QuP must move to matrix [Spec,CP] yielding (35b).

(46) *Structure of 'What ah you think I buy?'*



This also straightforwardly explains the strong deviance of (35c), where QuP only moves only to an intermediate [Spec,CP] and no further. Apart from the fact that the features on matrix C are not satisfied, supposing that matrix C was non-interrogative, as discussed above, the particle does not

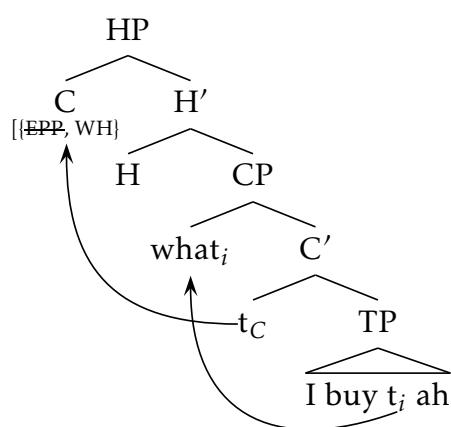
permit embedded readings; neither can they be used with wh-words as relative pronouns.

Now we turn to the more problematic cases of (35d-f). I will repeat these for convenience:

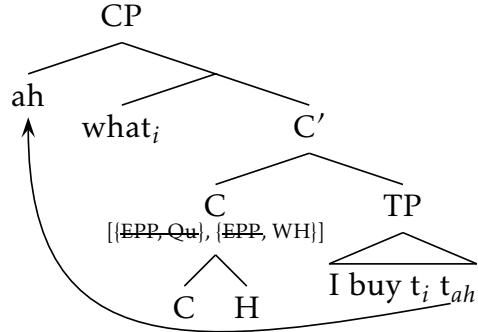
- (35) d. You think **what** I buy **ah**?
- e. **What** you think I buy **ah**?
- f. **What** you think **ah** I buy?

We will consider (35f) first, since both the other structures are derived from it. It was mentioned in 3.4.1.3 when we first encountered these data that (35f) was seen to be pragmatically marked. We stated that PrtP is always projected whenever possible. In most cases it is, in the cases of QuP movement, it cannot and does not need to be projected, since Qu is no longer extractable and scope is already marked by QuP in [Spec,CP]. (35f) seems to be an exception to the generalisation. We hypothesised that the suppression of this generalisation was due to discourse-pragmatic factors; I do not have a more convincing explanation, although it could be said that at least in the case of SgE, this reflects that PrtP is truly a peripheral position, used for marking scope and projecting only when necessary. In the case of (35f), the wh-phrase already serves to mark scope; there is no formal requirement for PrtP to project, only a preference.

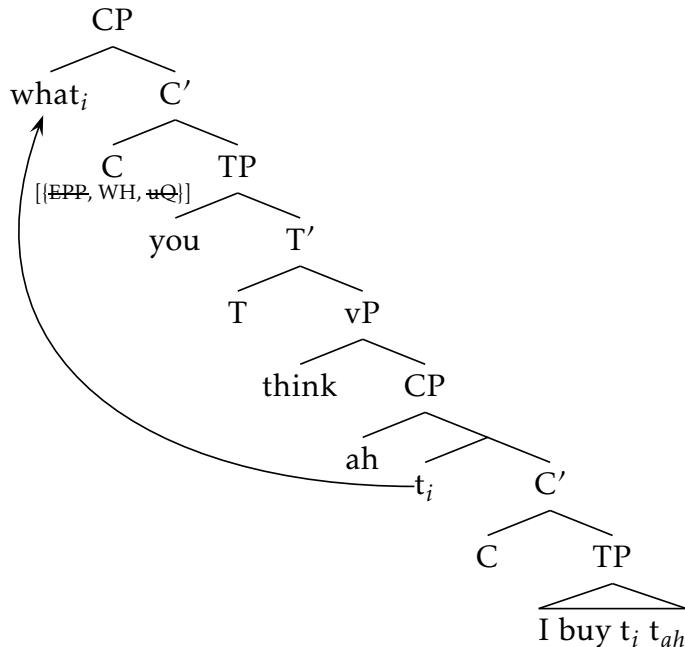
- (47) *Structure of 'What you think ah I buy?'*
- a. *Preparing for Q-migration*



b. *Reprojective m-merger and Q-migration*



c. *Equidistant CP specifiers: Moving on*

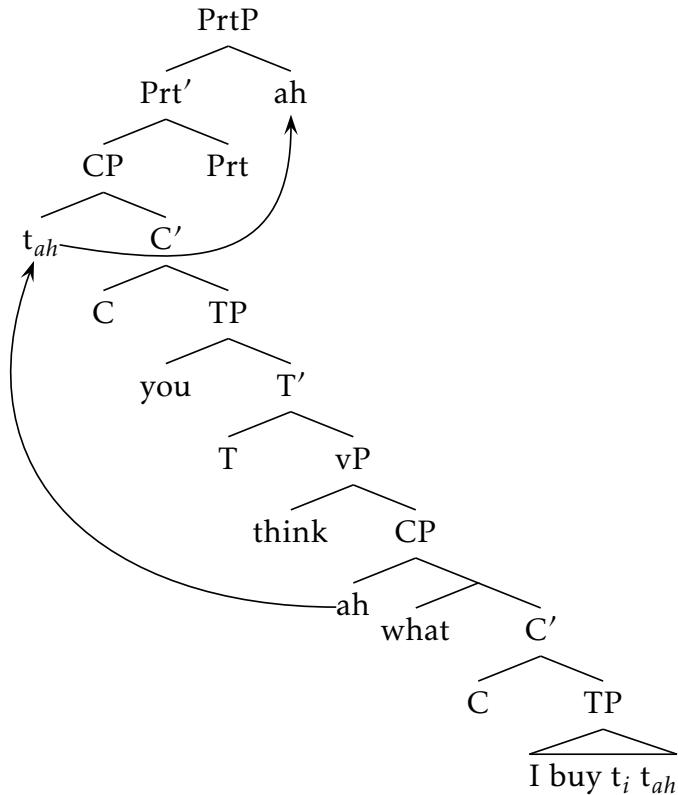


There is a reason why Q-migration should apply. Consider the CP in (47a). At that stage in the derivation, the CP is essentially a wh-island, in order for *ah* to move onwards, it needs some means to escape the island, otherwise, by Attract Closest, only the wh-phrase will be eligible for further movement. With the reprojective m-merger of Q-migration, a new specifier position is created for C, since H bears an EPP feature as well. The EPP feature on C has already been “used up” by the movement of the wh-phrase to C. Rather than postulate that the assignment of EPP features on C is optional, something that we do not want, it seems more ideal to propose that Q-migration actually applies, since we actually have a wh-island to escape from. One may of course argue that this is merely a technical roundabout, but I think at some conceptual level, it is quite different. In this case we do have some reason *why* an extra EPP feature should be postulated, plus we have the

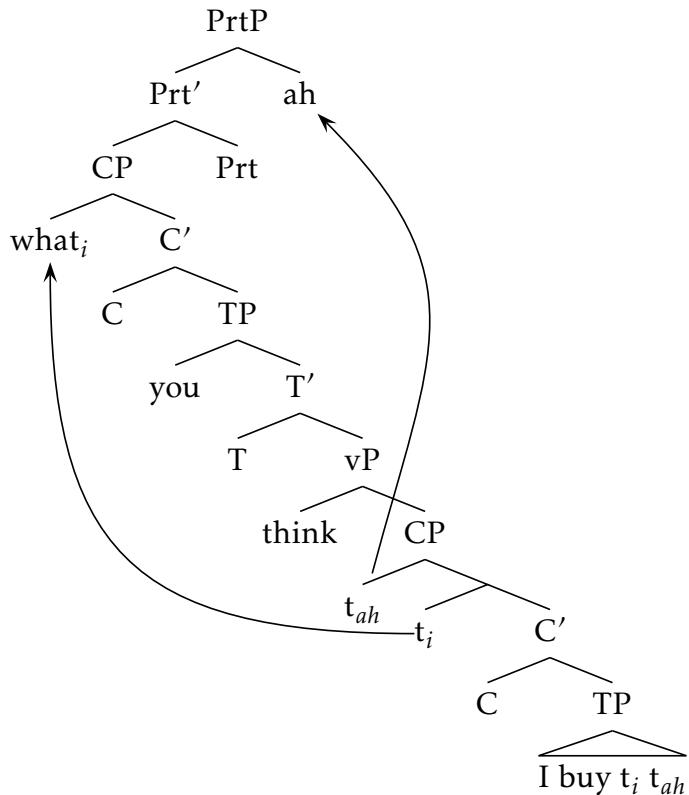
added bonus of the reprojected specifier being both a specifier and an adjunct, something we have shown to be quite useful elsewhere.

Once reprojective m-merger is complete and Q-migration takes place, by the equidistance principle, both specifier positions of CP are equidistant to any given probe, leading us to the desired result of the availability of equally economical optionality. From (47b), we have three options, the first option is shown in (47c) where *what* raises and *ah* is left in the embedded [Spec,CP]. We do know that particles strongly dislike being stranded, but in this case it is, for discourse-pragmatic reasons and more crucially, this is allowed because scope marking is already accomplished. In the other two options, PrtP is projected and *ah* is moved to the clause periphery; the only difference stems from the attraction of which element in which specifier.

- (48) a. *Structure of ‘You think what I buy ah?’*



b. *Structure of 'What you think I buy ah?'*



And so, we have all how all the possible permutations of SgE complex questions are accounted for. The ungrammatical examples can all be systematically ruled out. These are repeated below:

- (35) g. \*You think **ah** I buy **what**?
- h. \***Ah** you think I buy **what**?
- i. \***Ah** you think **what** I buy?

(35g) is ruled out because matrix C is not satisfied, (35h,i) are ruled out because we know that particles cannot precede wh-phrases and Prtp must be projected. If Prtp is projected, then sentence initial particles leave the EPP feature on Prt unsatisfied, crashing the derivation. The only exception to this is (35f), where Prtp is not projected, but even in that case, the particle does not precede the wh-phrase.

### 5.2.1.2 Wh-adjuncts

We kick off our discussion with the strange behaviour of *why* being able to appear under a verb *know* with a particle, unlike wh-arguments.

(49) *No scope ambiguity in embedded [Spec,CP]*

- a. \* You think he didn't come why (ah)?
- b. You think why he didn't come ah?
- c. You think why ah he didn't come?

'What is the reason x such that you think he didn't come for x?'

'\*What is the reason x, such that you think for x that he didn't come?'

*Scope ambiguity in matrix [Spec,CP]*

- d. Why you think he didn't come ah?
- e. Why ah you think he didn't come?
- f. ? Why you think ah he didn't come?

'What is the reason x such that you think he didn't come for x?'

'What is the reason x, such that you think for x that he didn't come?'

There are several parts to the analysis that I present. The first part of the analysis (discussed in 3.4.3.2) is that in SgE, *why* is base-generated in [Spec,CP]. This was proposed for several reasons. Consider first the fact that like MC, Japanese<sup>13</sup> and Sinhala, *why* can never appear within islands:

(50) a. \* John is happy [after he bought the car why (ah)]?

b. \* John is happy [after why he bought the car (ah)]?

c. \* John is happy why [after he bought the car (ah)]?

d. Why is John after he bought the car (ah)?

'Why is John happy after he bought the car?'

'\*For what reason x, John is happy after he bought the car for x?'

At the same time, if there are no island boundaries, like wh-arguments, *why* can embed to arbitrary depth. However as shown above in (49b,c), unlike wh-arguments, the overt position of *why* is the upper bound of its scope interpretation. A structurally high *why* can have all the scope readings of its lower positions, but the converse is not true. This suggests that Q-migration, although for reasons unknown, is not possible with *why*. This is further

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<sup>13</sup>See Saito (1994) for some exceptions in Japanese. Adding another wh-phrase can obviate island effects with *naze* 'why'.

exemplified by the fact that *why* displays intervention effects with negation and quantified subjects, unlike wh-arguments:

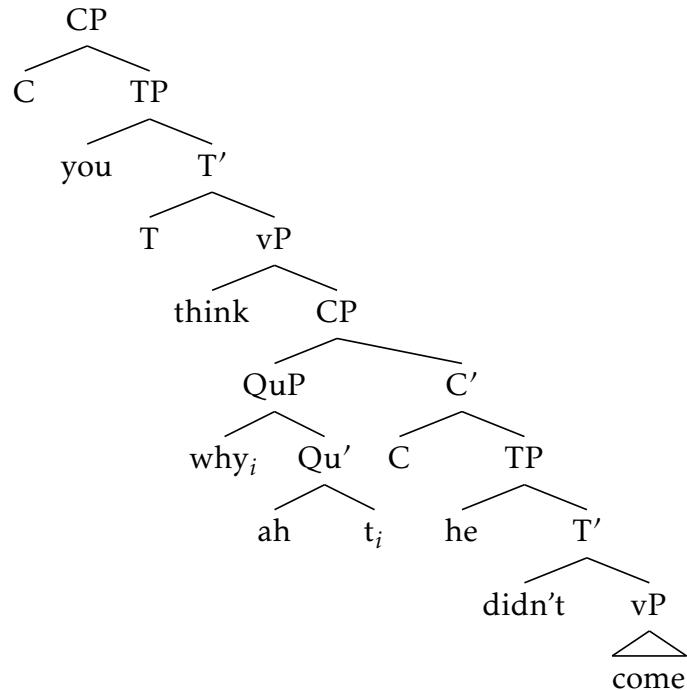
- (51) a. \* You don't think why he is happy (ah)?  
b. \* Everyone think why he is happy (ah)?

This, plus the fact that *why* can be embedded to an arbitrary depth and that *why* displays cyclic movement through [Spec,CP]s as shown in (49) is in opposition to the unavailability of *why*-in-situ constructions with no interveners. This strongly suggests that *why* is actually base-generated in [Spec,CP].

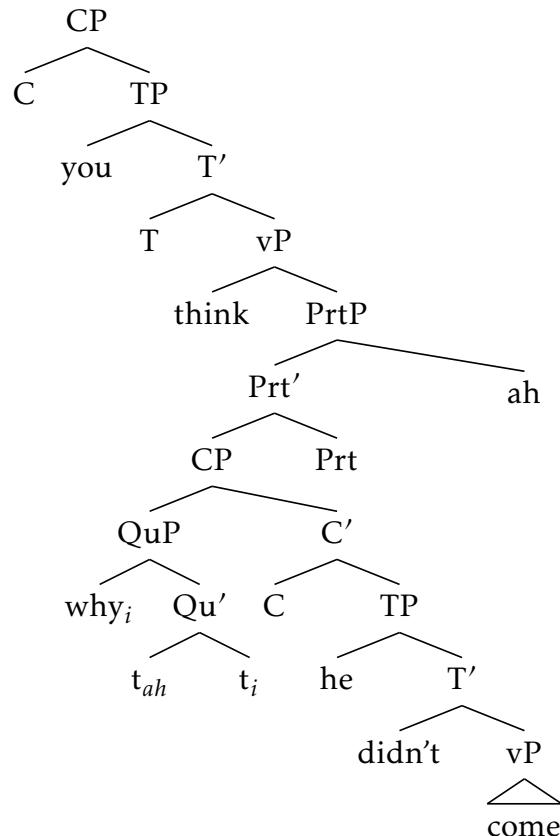
The second part of the analysis has to do with scope. With wh-arguments, we have shown that they can take only matrix scope, regardless of the position that they are in. The position of particles cannot be used to disambiguate between matrix and indirect readings. This is also the case for *why*. The difference, I argue, is that while the position of the particle cannot be used to disambiguate between direct and indirect readings, something we have already established, it *can* be used however to disambiguate between matrix and embedded scope. The upshot of this is that at least for the case of *why*, we need to reject the null hypothesis that PrtP is not projected in embedded clauses because *why* does not have recourse to reprojective m-merger and Q-migration. Since PrtP is a scope assigning position, the only way that *why* can yield embedded scope is to project an embedded PrtP. This is the reason why (49f) is degraded. There is a scope “clash” because embedded PrtP is not projected.

If the argumentation above is on the right track, then the base structure for (49) would be (49c):

- (52) a. *Structure of 'You think why ah he didn't come?'*

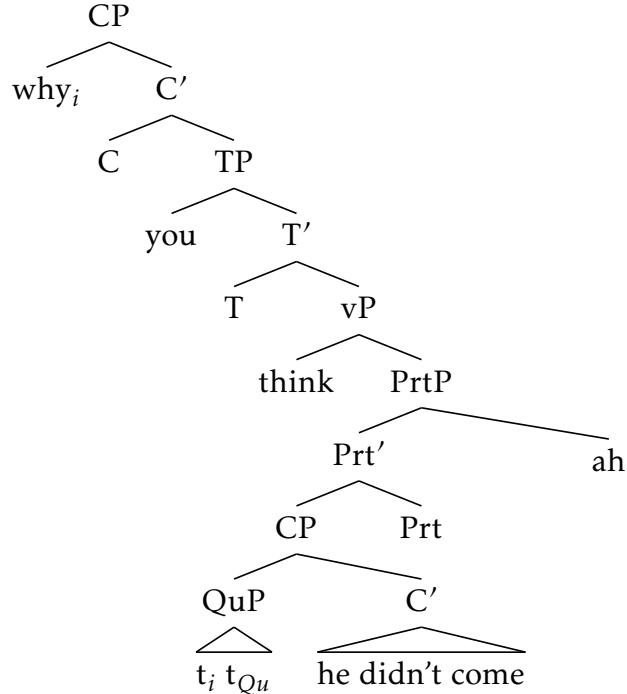


- b. *Structure of 'You think why he didn't come ah?'*

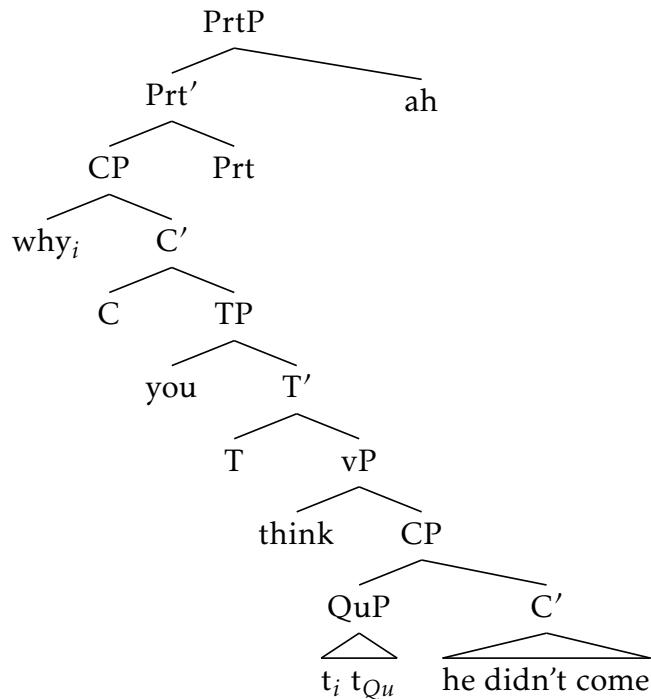


Under these two configurations, the only possible reading is an embedded scope one, as predicted. Crucially, the base generation of QuP in [Spec,CP] still allows subextraction, since QuP has not moved; if it did, subextraction will no longer be possible.

- (53) a. *Structure of embedded scope ‘Why you think he didn’t come ah?’*



- b. *Structure of matrix scope ‘Why you think he didn’t come ah?’*



Essentially, what this does is to fully make use of PrtP as a scope assigning position. According to our account so far, this is the only possible way to distinguish between a matrix and embedded scope reading for (49d) while yielding the same surface order. For convenience, I will repeat the data we are dealing with below.

- (49) d. Why you think he didn't come ah?
- e. Why ah you think he didn't come?
- f. ? Why you think ah he didn't come?  
 ‘What is the reason x such that you think he didn't come for x?’  
 ‘What is the reason x, such that you think for x that he didn't come?’

Now we turn to (49e). This example is problematic. The surface order of this sentence should predict that only a matrix reading be possible<sup>14</sup>. The only plausible explanation I can think of would be to say that in the matrix reading case, QuP is base generated in matrix [Spec,CP]. This is not problematic, since the embedded clause is not interrogative in this case, specifically, we are asking the reason for ‘thinking’ rather than for ‘not coming’. The problematic case is accounting for the embedded reading. The only other possible option to account for it is to say that QuP is base generated in embedded [Spec,CP] and raises to matrix [Spec,CP]. Since *why* is inherently an operator (we will turn to this shortly), it binds its trace allowing it to have the “in-situ” embedded scope reading.

The question that arises then is why should *why* behave in this way? A plausible reason would be think, following Tsai (1994) that *why* is in itself an operator, and as such are “not subject to binding construals”. Instead, the traces left by *why* serve as a variable to be bound. Where does this leave Qu? We have established that Qu is a choice function and combines with  $\langle e, t \rangle$  type wh-arguments to return an individual of type *e*. In the case of *why*, this is not the case. *Why* clearly does not represent a set of individuals; rather it should represent as a function from propositions (effects) to a set of propositions (causes).

Loosely adapting a Hamblin semantics<sup>15</sup>, *why* takes the TP as one of its arguments, it then represents the set of all true causes that satisfies the truth

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<sup>14</sup>This is the case for Babine-Witsuwit'en, as we shall see in the next section.

<sup>15</sup>This is a very informal way of putting this and is inaccurate at best, but it captures the idea sufficient. Suppose *Why did John come?* to be  $\lambda p \lambda q [q \rightarrow p \wedge q = T] (come'(j)) = \lambda q [q \rightarrow come'(j)]$ .

of the TP proposition. This is what Qu operates over as a choice function. This means that wherever Qu will take scope over whichever clause it is base generated in. This is why (52a,b) and (53a) have embedded scope and (53b) matrix scope. Likewise for (49e), if QuP is base generated in a matrix position, it will have matrix scope, when base-generated in an embedded position, it will have embedded scope, even if it moves. The account for the badness of (49f) is based on this. It was mentioned earlier that there was a scope clash: *what* is in a matrix position but *ah* is in an embedded position. Since in SgE, *ah* marks scope by being in PrtP unless there is QuP movement, in which case scope is unambiguous; the lack of a PrtP projection in (49f) is confusing for the grammar. This problem does not arise for wh-arguments because wh-arguments are not intrinsic operators or inherently quantificational. In the next section we shall see that in Babine-Witsuwit'en, this problem does not arise, because there is no PrtP projection.

Next, we turn to *how*. *How* constructions in SgE are rather interesting, and appears to display a strange asymmetry:

- (54) a. \* You fix the car how?
- b. How you fix the car?
- c. How you fix the car ah?
- d. How ah you fix the car?

'How did you fix the car?' [instrumental/manner, \*resultative]

- (55) a. The car (that) you fix how?
- b. The car (that) you fix how ah?
- c. How ah the car (that) you fix?
- d. ?? How the car (that) you fix ah?

'How is the car that you fixed?' [resultative]

Let us suppose, like *why*, *how* is base generated in [Spec,CP]. This straightforwardly explains the ungrammaticality of (54a). A similar case to *why* can be made for *how*. Loosely speaking, we might construe instrumental and manner *how* as a function from propositions to a set of modifiers. The proposition in question is as above, the TP that C takes as its complement. It returns a set of instrumental or manner modifiers as a result. Qu then operates as a choice function over this set. As such, the different structures in (54) are accounted for by whether Qu is phonologically overt (54a), whether PrtP is projected (54b). (54c) is the base structure. When embedded under a verb like *think*, (54) patterns in the same way as *why*:

- (56) a. \* You think he fix the car how (ah)?  
 b. You think how he fix the car ah?  
 c. You think how ah he fix the car?

'In what manner x/with what x such that you think he fixed the car x?'

\*'In what manner x/with what x such that you think x he fixed the car?'

- d. How you think he fix the car ah?  
 e. How ah you think he fix the car?  
 f. ?? How you think ah he fix the car?

'In what manner x/with what x such that you think he fixed the car x?'

'In what manner x/with what x such that you think x he fixed the car?'

*How* displays the same scope ambiguity in a matrix position and no ambiguity in an embedded position. The answer to (56b,c) can only make reference to the fixing of the car. (56d,e) on the hand, is ambiguous, although as informants noted, questioning the instrument or manner of thinking is somewhat strange. Nevertheless, one could answer 'with his special thinking hat' to (56d,e). The reason for the deviance of (56f) is likely to be the same as for the case of *why*, although I am uncertain why more speakers found (56f) bad compared to its *why* counterpart.

This leaves us with the problem of resultative *how* in (55). We noted that the pattern of distribution seems to be like this: fronted *how* is ambiguous between a manner/instrumental and resultative reading while an in-situ *how* can only be resultative. However, what I propose here is that resultative *how* is not in [Spec,CP] here. Clearly, resultative *how* is modifying a relative DP (see section 3.4.3.1) for discussion. The relative DP in SgE can take two forms: the standard *the car (that) you fix* or a relative DP with a topicalised CP yielding (\**that*) *you fix the car* and a obligatorily null complementiser. In this case, because *how* modifies the relative DP, there is no [Spec,CP] position for it to be base generated in. In this case, *how ah* is simply an adjunct and can adjoin either on the left or the right of the DP. Crucially in this case, while the particle can be phonologically null, it cannot move from QuP to PrtP, simply because there is no PrtP to begin with. QuP is simply adjoined to the DP. If we force a [Spec,CP] position to project by using an auxiliary, we find that only a fronted *how* is possible:

- (57) a. \* Is the car that you fix how ah?  
 b. How is the car that you fix ah?  
 c. How ah is the car that you fix?

'How is the car that you fixed?'

In this case, PrtP has the option of being projected, since there is a CP layer. Consequently, the split QuP construction becomes available as shown in (57b). Thus, the mystery of *how* is solved: it is not a case of optional movement. There is no "raising" vs "in-situ" to begin with, *how*, like *why* is always base generated in a [Spec,CP] position (or perhaps [Spec,TP] in the above case), unless there is no CP to begin, in which case it adjoins to a DP.

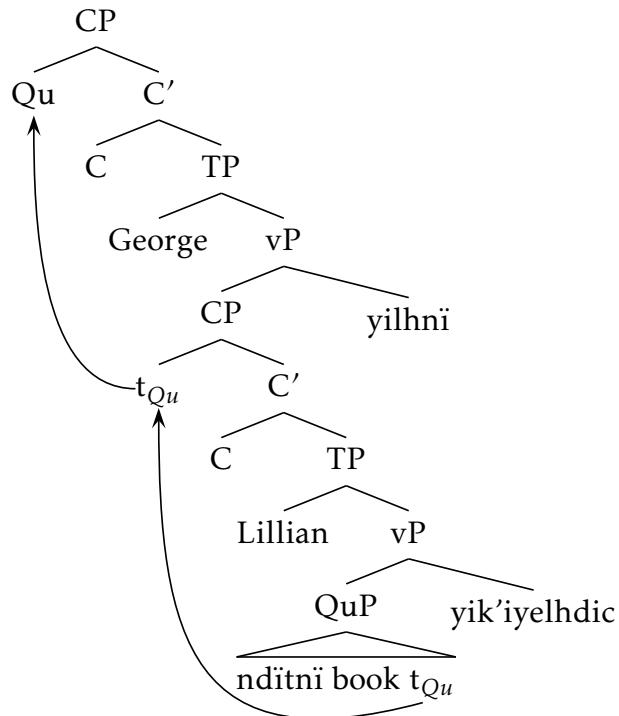
### 5.2.2 Babine-Witsuwit'en

The optional movement cases in SgE are somewhat reminiscent of the case of Babine-Witsuwit'en (BW) as described in Denham (1997). The analysis can be extended to account for all the data there. In fact, things are easier in BW. BW is extremely well-behaved in the distribution of its optional movement, also since there is no overt question particle, this gives us one less projection to deal with. BW wh-movement strictly obeys island conditions, meaning that Q-migration applies strictly only to Qu. All of this can be done without appealing to an extra Typing projecting or the optionality of the selection of C in a clause. The data is repeated below:

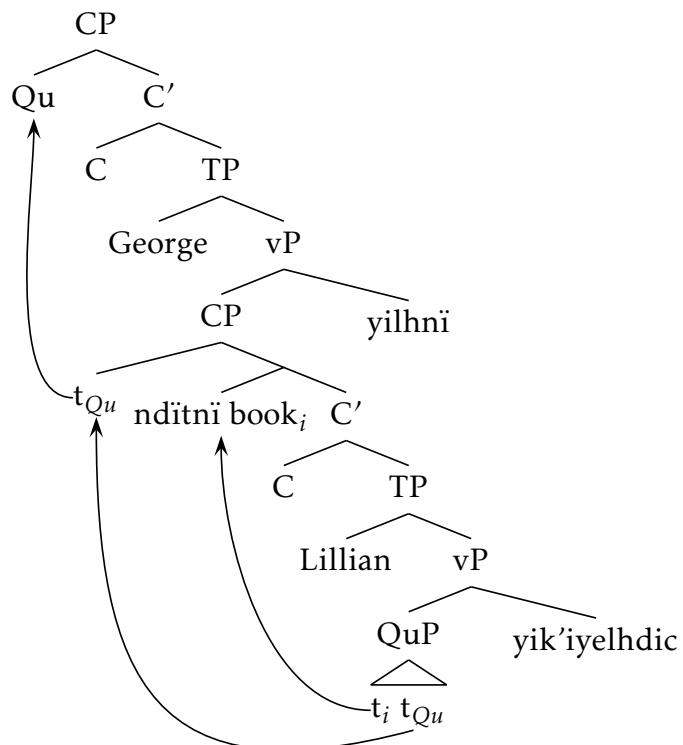
- (58) a. George [Lillian **nditnii** book yik'iyelhdic] yilhni?  
 George Lillian which book 3SG.read.OPT.3SG 3SG.told.3SG  
 b. George [**nditnii** book Lillian yik'iyelhdic] yilhni?  
 'Which book did George tell Lillian to read?'  
 'George told Lillian to read which book?'  
 c. **Nditnii** book George [Lillian yik'iyelhdic] yilhni?  
 'Which book did George tell Lillian to read?'  
 '\*George told Lillian to read which book?'

Derivations as follows:

(59) a. *Structure of (58a)*



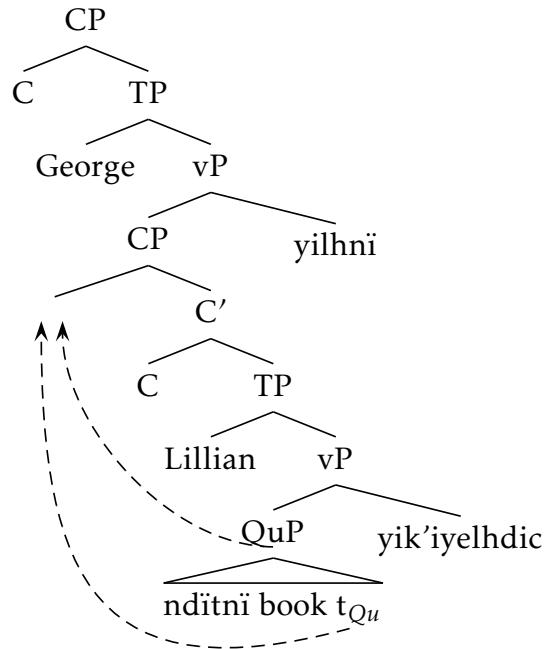
b. *Structure of (58b)*



The two derivations above yield the matrix scope reading. As in the case of SgE, reprojective m-merger and Q-migration is used to build a second edge position for Qu, allowing further movement. To yield embedded scope, matrix C is non-interrogative and so either Qu or QuP moves into embedded

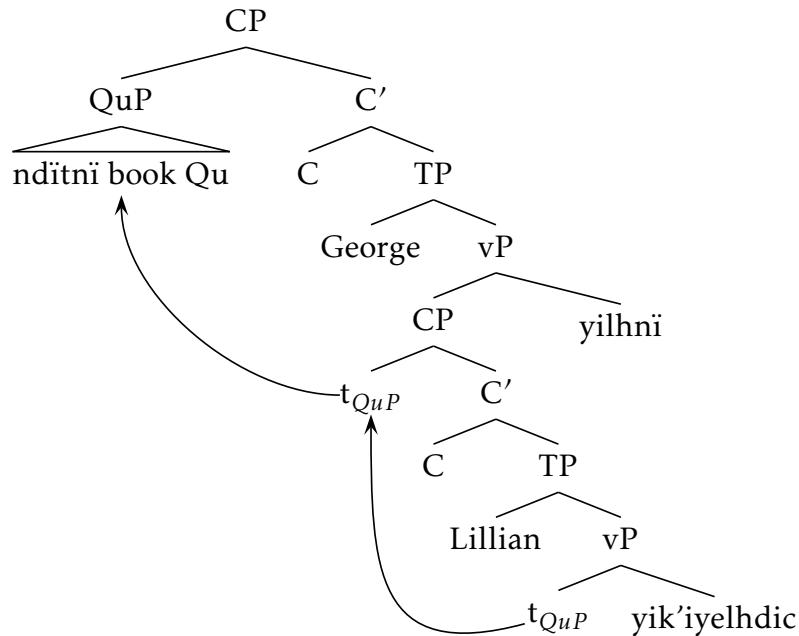
[Spec,CP].

(60) *Structure of embedded scope (58a,b)*



The dashed arrows represent possible movement operations, with the left arrow representing (58a) and the right arrow (58b). Turning to (58c) next, we note that it is impossible for the sentence to yield embedded scope readings. This is simply because our scope assignment rule assigns scope at the position of where Qu or a wh-phrase is. Matrix scope reading necessarily entails since QuP is in an overt matrix scope position. In this case, as in SgE, QuP moves phrasally, preventing reprojective m-merger and subsequent Q-migration:

(61) *Structure of (58c)*



The analysis presented here can be extended as is to account for all the wh-in-situ data in English and Brazilian Portuguese as described in Pires and Taylor (2007). I omit the derivations here, since they are more repetitions of the above although interested readers are welcome to confirm this.

### 5.2.3 Spanish and the SFR

Recall that in our discussion of Spanish in 2.3, we noted that Spanish also exhibits optional wh-movement. Let us review the facts:

- (62) a. Qué compró Juan?  
       what bought John  
     b. [Y] Juan compró qué?  
       and John bought what  
       ‘What did John buy?’

It appears that this sort of optional movement can easily be accounted for with the analysis we have for optional wh-movement presented so far. Unfortunately, the case of Spanish is more complicated. With three-place predicates, Uribe-Etxebarria (2002) observes that “wh-in-situ” elements do not remain in their canonical object position, rather they appear displaced to the right:

- (63) a. \*Y tú le diste (el) qué a María?  
       and you CL gave the what to Maria

- b. Y tú le diste a María (el) qué?

This property is what Uribe-Etxebarria (2002) called the Sentence Final Requirement (SFR). Based on this, her remnant movement analysis follows. However, we also reviewed the counterarguments in Reglero (2005, 2007), which pointed towards an opposite conclusion. Since wh-extraction from islands is not possible in Spanish, while in-situ elements are permitted within islands, remnant movement is not a viable way of explaining these facts. However, the constraints of the SFR can be obviated if there is a strong pause between the in-situ wh-phrase and the material on its right.

- (64) a. \* Y tú le diste a quién la guitarra?  
           and you CL gave to whom the guitar  
       b. Y tú le diste a quién, # la guitarra?

In these cases, Uribe-Etxebarria argues, remnant movement still applies, followed by right dislocation of the direct object. In order to unify the SFR constraints and the fact that island extractions are impossible, Reglero (2005:337ff) adopts the focus-prosodic stress assignment system in Stepanović (1999, 2003) and applies it to Spanish. I summarise<sup>16</sup> as follows: there are two rules that need apply. The first is called the C(onstituent)-Nuclear Stress Rule (C-NSR), which states that for two metrical sisters, the lower sister in an asymmetric c-command ordering is more prominent and the Focus Prominence Rule (FPR), which states that for two sister, the one that is focus marked [+F] is more prominent than the one marked [-F]. Wh-words are always [+F]. Now, assuming a Copy Theory of movement, we get the pre-spellout structure for (62a):

- (65) [AgrSP Juan compró [AgrOP qué compró [VP Juan compró qué ]]]  
           [-F] [-F]                    [+F] [-F]            [-F] [-F]    [+F]

If I understand correctly, the PF requirement of the SFR is brought about by the C-NSR and the FPR, for the two copies, the lower one is preferred, since they are both [+F]. Further, there are no PF requirements on the subject and verb, and the assumption is that the highest copies are instead pronounced. As such, after the relevant copy deletion at PF:

- (66) [AgrSP Juan compró [AgrOP qué compró [VP Juan compró qué ]]]  
           [-F] [-F]                    [+F] [-F]            [-F] [-F]    [+F]

A similar account is given for the non-canonical order of (63b):

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<sup>16</sup>I am shamefully oversimplifying the approach here, partly because I do not fully understand this framework but this will suffice for our purposes.

- (67) [AgrSP tú diste [AgrOP ~~qué~~ ~~diste~~ [AgrOP a María ~~diste~~ [VP ~~tu~~ ~~diste~~  
           [-F] [-F]            [+F] [-F]            [-F]      [-F]      [-F] [-F]  
           ~~qué a María~~ ]]]]  
           [+F] [-F]

Note however that the last pair of metrical sisters *qué* and *a María* clash in terms of the FPR and C-NSR. The C-NSR marks the lower sister as prominent, while the FPR marks the [+F] constituent as prominent. To resolve this, copy deletion applies deleting *a María* and the algorithm is performed again with *a María* now metrically invisible. This resolution seems to be a stipulation, rather than some general rule. I see two general problems with this approach. First, what determines wh-movement and wh-in-situ? Clearly, wh-moved constructions are possible in Spanish. If the copy deletion theory is to work, then wh-movement must not have taken place to begin with. Reglero assumes that in-situ wh-phrases either move at LF or are unselectively bound by C. Essentially then, we have two different types of complementizers, something which we explicitly want to avoid. This leads straight to the second issue, in a wh-moved construction, why is the in-situ phrase still unpronounced? There is probably an answer to this question and may be my misunderstanding of the theory proposed, but as far as I can tell, it is not addressed by Reglero in the references cited.

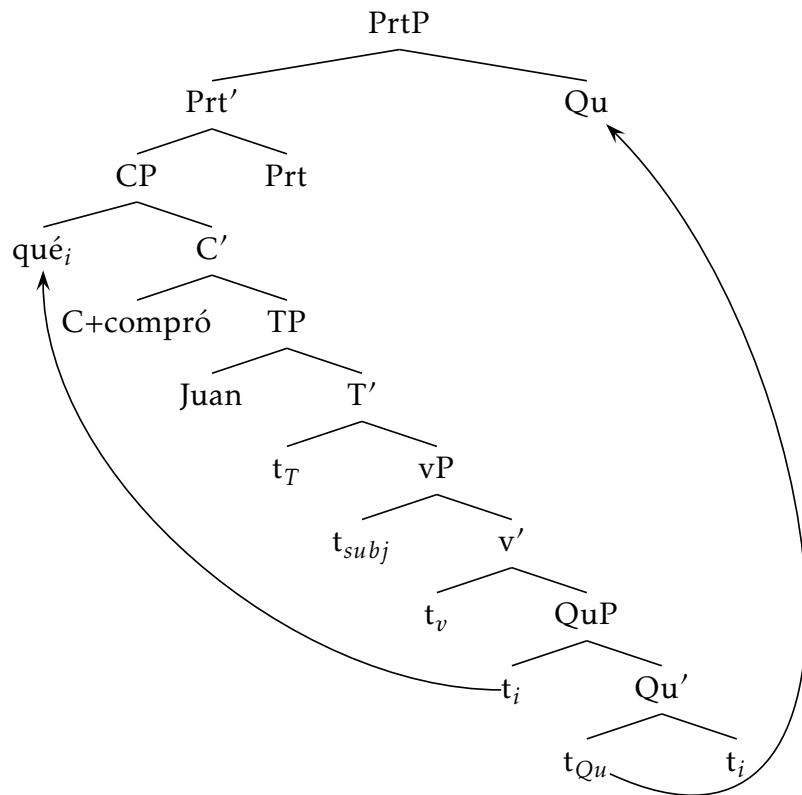
I would like to propose an alternative and hopefully simpler analysis. Suppose that optional wh-movement applies normally in Spanish. This should derive (62) with little trouble, scope marking as per usual. We however cannot explain non-canonical direct object positions. The SFR appears to be some sort of PF rule. Assuming this to be true, suppose further that rather than the system Reglero proposes, let us construct a position for sentence final elements to go to. As it turns out, we already have this in PrtP.

The idea to be developed here is that the projection of PrtP is a manifestation of the SFR in Spanish and PrtP is always projected. There are two prongs to the analysis. First, the optionality of movement is brought about by two now familiar movement options, spec-raising [Spec,QuP] to [Spec,CP] followed by Qu raising into [Spec,PrtP] or spec-piedpiping of QuP to [Spec,CP] followed by [Spec,PrtP]. Unlike the other languages discussed above, the Spanish PrtP allows for both a head or a phrase to fill its specifier position. As always, subextraction from a moved QuP is impossible. By this, spec-raising will yield wh-fronting constructions while the spec-piedpiping of QuP will always allow QuP to be in a sentence final position, satisfying the SFR.

The second prong of the proposed analysis has to do with Q-migration. Q-migration in Spanish, unlike the other languages works *only* on QuPs, not Qu heads. The reasoning for this is that wh-extraction from islands are not possible in Spanish and the only way that we can ensure that apparent wh-in-situ elements can exist within islands and always appear in a sentence-final position is to extract the QuP out of the island by Q-migration and place them sentence finally. This also explains the non-canonical word order of three-place predicates.

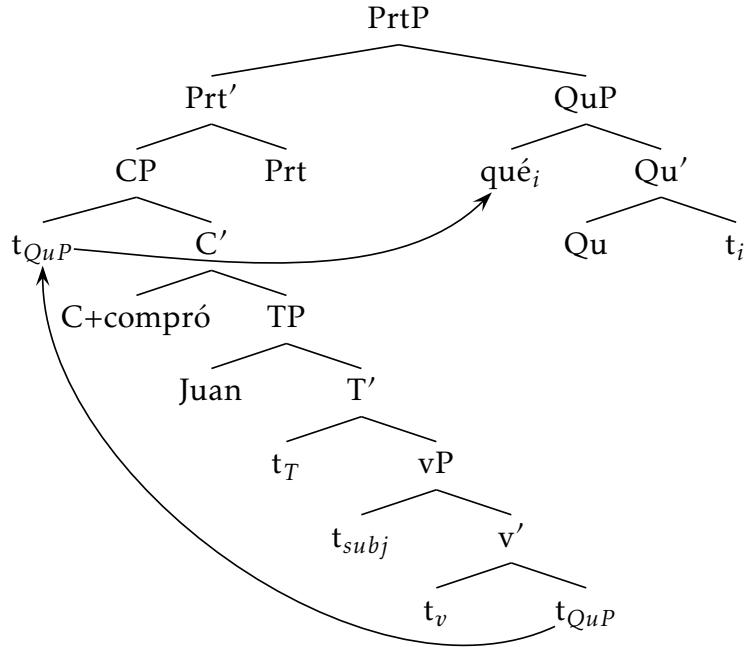
What this means is that in non-island cases, the optionality of movement happens in a way that we have discussed so far. The derivations<sup>17</sup> for (62) as follows:

- (68) a. *Spec-raising structure of 'Qué compró Juan?':*



<sup>17</sup>I put aside the issue of verb raising to C here. I will simply assume that verb raising occurs when [Spec,CP] is filled at spell-out and that a trace left by QuP does not count. See Suñer (1994) and Baauw (1998) for discussion.

b. *Spec-piedpiping structure of ‘Juan compró qué?’:*



In principle, nothing rules out Qu-movement (as opposed to [Spec,QuP] and QuP movement) in the case of Spanish. We could propose that Qu does not possess a [uWH] feature and instead only has a [Q] feature, but this would not work by our notion of Q-completeness. In this case neither the wh-phrase nor Qu would be Q-complete and features on C would not delete. Instead, in cases where no islands intervene, there seems to be no reason to disallow it, since ultimately, the same surface order is generated with the same interpretation at LF: recall that we do not burden the syntax with discourse-pragmatic effects or presuppositional information. We could of course modify our principle of Q-completeness and the mechanism for feature-deletion for Spanish, but given that the literature seems to agree that the SFR is a PF property, I will assume it to be the case as well. Qu-movement is never blocked unless the SFR is violated or when Q-migration is necessary. If Qu movement results in a linearised structure that does not conform to the SFR, the derivation crashes at PF and another derivation involving QuP movement is preferred over it, even though both derivations converge at LF. Of course, the ideal situation, at least from a syntactician’s viewpoint would be derive the SFR solely from syntactic constraints. I will leave the exact nature of the SFR open.

Non-canonical word orders of in-situ wh-phrases with three place predicates can be derived in the same way and for reasons of space I do not include the derivations here. Obviously in those cases, QuP movement is the only way to satisfy the SFR. The SFR is very strict and also applies to

relative clauses and DPs with multiple PP arguments.

- (69) a. [Y tú] te has enamorado del hombre que vive con  
[and you] CL have fallen in love with the man that lives  
quién?  
with whom
- b. \*?? [Y tú] te has enamorado del hombre que vive con  
[and you] CL have fallen in love with the man that lives  
quién desde hace años?  
with whom since three years ago

Even simply adding material to the right of sentence final wh-phrase renders the utterance ungrammatical. Regarding DPs, Ticio (2005) demonstrates that Spanish DPs<sup>18</sup> (see also Reglero and Ticio 2008) with multiple PP modifiers have strict extraction constraints. Details aside, generally speaking, the PP modifiers within a DP are free to be in any order. However, when a wh-PP is involved, there are numerous blocking effects<sup>19</sup>:

- (70) a. he leído [varios libros [de Cervantes]<sub>ag</sub> [de Juan]<sub>poss</sub>].  
(I) have read several books [of Cervantes]<sub>ag</sub> [of Juan]<sub>poss</sub>  
'I have read several of Juan's books by Cervantes.'
- b. \* [de quién] has leído [varios libros t<sub>ag</sub> [de Juan]<sub>poss</sub>?]  
of whom (you) have read several books [of Juan]<sub>poss</sub>
- c. \* has leído [varios libros [de quién]<sub>ag</sub> [de Juan]<sub>poss</sub>?]  
(you) have read several books [of whom]<sub>ag</sub> [of Juan]<sub>poss</sub>
- d. has leído [varios libros [de Juan]<sub>poss</sub> [de quién]<sub>ag</sub>?]  
(you) have read several books [of Juan]<sub>poss</sub> [of whom]<sub>ag</sub>  
'You have read several of Juan's books by whom?'

(Reglero and Ticio 2008:314ff)

Our analysis so far accounts for this by first applying reprojective m-merger to the DP, since the DP is an island for extraction. Following this, Q-migration takes place. Recall that Q-migration in Spanish involves QuPs, not Qu. Consequently, QuP is extracted to the edge of the island and raises to [Spec,CP] then [Spec,PrtP], putting it in a sentence final position, schematically:

<sup>18</sup> As Ticio notes, Spanish DPs often occur with the preposition *de* 'of', in which case are three way ambiguous between agent, theme/object and possessor. Thus, a PP like *cuadro de María* can mean 'picture by Maria/picture of Maria/Maria's picture'.

<sup>19</sup> The full blocking facts are as follows: possessors block extraction of agents and objects, although agents and objects do not block possessor extraction. An agent blocks object extraction, but not vice versa.

- (71) a. Select wh-PP  
 $[\text{CP} \dots [\text{DP}_{\text{island}} \text{D} [\text{NP} \text{wh-PP}_1 \text{PP}_2 \text{PP}_3]]]$
- b. Reprojection  
 $[\text{CP} \dots [\text{Spec} [\text{DP}_{\text{island}} \text{D+H} [\text{NP} \text{wh-PP}_1 \text{PP}_2 \text{PP}_3]]]]$
- c. Q-migration  
 $[\text{CP} \dots [\text{wh-PP}_1 [\text{DP}_{\text{island}} \text{D+H} [\text{NP} t_1 \text{PP}_2 \text{PP}_3]]]]$
- d. Raise to [Spec,CP]  
 $[\text{CP} \text{wh-PP}_1 \dots [t_1 [\text{DP}_{\text{island}} \text{D+H} [\text{NP} t_1 \text{PP}_2 \text{PP}_3]]]]$
- e. Raise to [Spec,PrtP]  
 $[\text{PrtP} [\text{CP} t_1 \dots [t_1 [\text{DP}_{\text{island}} \text{D+H} [\text{NP} t_1 \text{PP}_2 \text{PP}_3]]]] \text{wh-PP}_1]$

One final note, although this requires only minor modification to our proposal. There appears to be evidence that SFR does not necessarily apply to the entire CP, but rather to more local elements. In this case, it appears to apply only to the DP. Uribe-Etxebarria (2002) cites the following example from Ormazabal (1992):

- (72) a. [La estatua [en el jardin] [de qué diosa]]<sub>i</sub> te ha dicho  
the statue in the garden of what goddess you has told  
Juan que había reconocido  $t_i$   
Juan that he-had recognised  
‘You have told Juan that he had recognised the statue in the garden of what goddess?’

In the above example, we find that wh-PP whose canonical position is preceding *en el jardin* must be DP final. The entire DP is then topicalised. Uribe-Etxebarria (2002) claims that remnant movement is responsible for the reordering of the DP. However, since we have shown that DPs of this sort are islands, remnant movement is not tenable without Q-migration of the QuP first. We have two options, the first is that Q-migration projects a specifier to the right in Spanish and second that a PrtP is projected above the DP in Spanish. I think the latter option is more feasible, since having a right specifier by reprojection would mean that a given head would have both left and right specifiers, a rather unconventional thing to say. Thus, we go with the latter option, that DPs project PrtPs in Spanish. One might speculate and say that PrtPs are projected at each intonational phrase in Spanish, given that Reglero’s analysis involves a modular approach in that the C-NSR and FSR applies to intonational phrases. Any further investigation would take us too far afield and I must leave this as it is here. To sum up though, I think the approach that has been presented here is a simpler and

more unified one that addresses the issues of remnant movement (obviation of island constraints) and the complexity of the PF based approach.

#### 5.2.4 French

We ended our discussion of French in chapter 2 by noting that the wh-in-situ facts of French should be explained as a constraint on overt movement. To put it bluntly, French wh-in-situ seems to be blocked by every kind of possible intervener: quantifiers, negation, modals, quantificational adverbs and clause boundaries<sup>20</sup>. In absence of these offending elements, French displays optional movement, and interestingly, split DP constructions as well:

- (73) a. Qu' est-ce que Marie a acheté?  
what EST-CE QUE Marie has bought
- b. Marie a acheté quoi?  
Marie has bought what  
'What has Mary bought?'

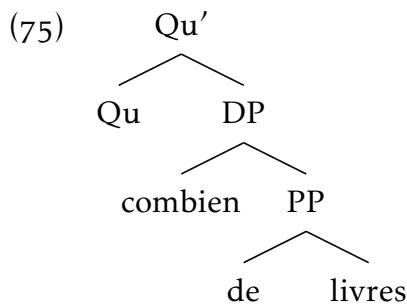
(Cheng and Rooryck 2000:4)

- (74) a. Combien<sub>i</sub> as-tu lu t<sub>i</sub> de livres?  
how-many have you read of books?
- b. Combien de livres<sub>i</sub> as-tu lus t<sub>u</sub>?  
how-many of books have you read  
'How many books have you read?'

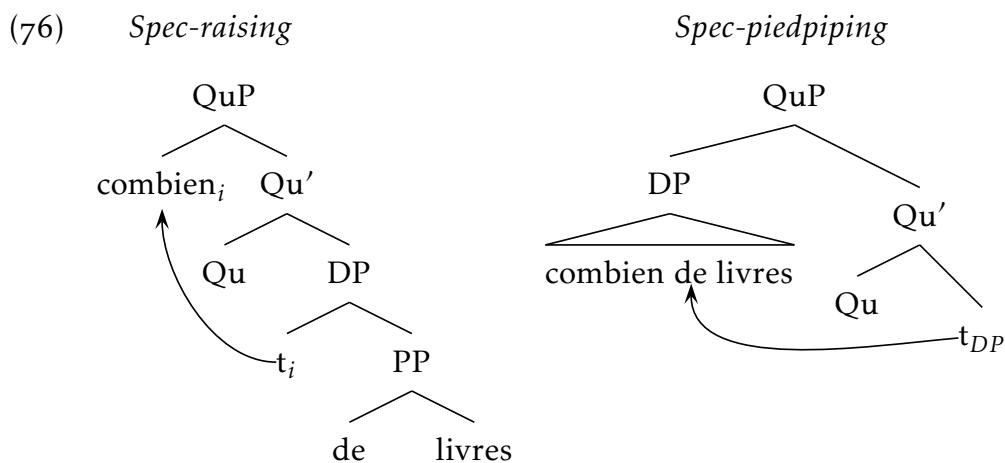
Let us adopt the simplest null hypothesis: optional wh-movement in French comes about in the exact same way that we have discussed so far, [Spec,QuP] vs. Qu vs. QuP movement. We will discuss the intervention effects later. First, let us see if we can derive how DP splitting works. Note that I am not proposing a in-depth syntax of French DPs here; what I am trying to do is to reduce split DPs as case of optional movement. The case I am trying to make is very simple although speculative; I have not examined split DP constructions in any depth. Let us proceed nevertheless. I propose that the mechanism that drives split DPs optional D-movement, akin to optional wh-movement. Consider the point when Qu takes DP as its complement:

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<sup>20</sup>See Baunaz (2005) for exceptions.



Recall that in our discussion of Afrikaans, a probe targeting a specifier position had the choice between spec-raising and spec-piedpiping. This is exactly what happens here in French and in other languages that allow Left Branch Extractions.



Since we have proposed that optional wh-movement in French works within the framework we have proposed, spec-raising or spec-piedpiping will yield (74a) and (74b) respectively. The examples below from Butler and Mathieu (2005) observe that split-DPs exhibit several unique qualities. First, in a split construction, the wh-phrase cannot take wide scope with respect to quantifiers:

- (77) a. Combien de livres ont-ils tous lus?  
how-many of books have-they all read-AGR  
b. Combien ont-ils tous lu de livres?  
how-many have-they all read of books  
'How many books have they all read?'

According to Butler and Mathieu (B&M), (77a) can have both pair-list reading ('John read 3; Mary, 5 etc.) and an individual reading (10 books). (77b) can only have the individual reading. We account for this by saying that

since (77b) involves spec-raising, Qu is left in-situ and is unable to take scope over the universal. In (77a), QR can allow the universal to take wide scope.

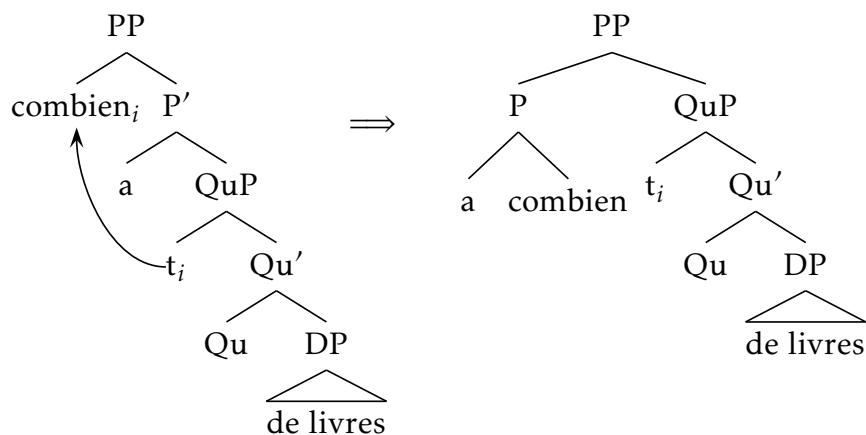
Second, B&M note that there is no agreement on the verb and suggests that the NP does not move out of the DP. This is consistent with our account, spec-raising only triggers movement of [Spec,QuP].

Third, B&M (crediting Sophie Heyd) note that not all PPs can split. Furthermore, the following split construction involves the splitting of P and D, not just D:

- (78) a. A combien de personnes as-tu écrit?  
to how-many of people have-you written  
  
b. A combien as-tu écrit de personnes?  
to how-many have-you written of people  
'To how many people have you written?'

(79) a. En combien d'années as-tu fini ta thèse?  
in how-many of-years have-you finished your thesis  
  
b. \*En combien as-tu fini ta thèse d'années?  
in how-many have-you finished you thesis of-years  
'How many years have you taken to finish your thesis?'

Mathieu (2004) accounts for (78) by suggesting that in split DPs, the stranded NP incorporates into the verb. We have something similar: merger. However, in our case, this happens between *combien* and the preposition. This somewhat makes sense, since most dialects of French do not allow P-stranding. Although I do not discuss this here, potentially this might be a way to capture the availability of P-stranding in languages.



B&R claim that the ungrammaticality of (79b) is because *en combien d'années* ‘in how many years’ is an adjunct while *a combien de personnes* ‘to how many people’ is an argument. Since subextraction from adjuncts is bad, this should predict that Qu cannot induce the DP to split. This is rather tenuous though, because this presupposes that at the point when Qu merges into the derivation, the DP is already an adjunct. Presumably, the QuP is constructed in a sort of “sub-workspace” before merging itself as a whole into the derivation, which should mean that Qu should not know whether it was an adjunct at this point. I cannot provide a good answer for this without knowing the exact mechanism of substructure building in syntax. Hypothetically speaking, it is possible that adjuncts are constructed separately from the main clausal spine, in which case, the DP is constructed in some adjunct workspace that precludes any subextraction.

Fourth, B&R note that while direct object DPs can split, indirect objects do not split as readily. Again, I do not have a catch-all argument for this. Perhaps given that French direct objects usually precede indirect objects, it may be the case that the direct object DP functions as an intervener for movement. This leads us directly back to the start of our discussion regarding interveners. Incidentally, this also serves as a conclusion for this section on optional wh-movement as a whole.

There are a few ways to approach the issue. One approach would be to suppose that all of the elements above, negation, modals etc. are universally interveners to (specifically) Qu-movement, not phrasal QuP movement<sup>21</sup>, in other words, some sort of overt syntax counterpart of Beck’s (1996) intervention effect, or Ko’s (2005) intervention effect constraint that bars movement of a wh-phrase across a scope-bearing element. It follows then that for any language that allows for Q-migration would also allow for the obviation of these intervention effects in wh-in-situ contexts. In languages that do not have Q-migration, there is no means by which Qu can cross interveners and intervention effects are predicted. French belongs to the latter kind, while English and any other language that permits wh-in-situ within islands belong to the former kind. At the opposite end of this approach, one could suppose that the intervention effects are French specific. This is empirically incorrect, since these intervention effects have been observed in a whole host of other languages. The answer to this question probably lies somewhere in between these two extremes: there may be languages that allow Q-migration and those that do not, or more likely, there could be lan-

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<sup>21</sup>We observed such an effect in Japanese where *ittai* blocks Q-migration but not QuP movement.

guages that allow Q-migration in certain contexts but not in others. On the other hand, scope bearing elements are mostly likely universal interveners. The languages that allow for Q-migration freely will display a lack of intervention effects within the contexts where Q-migration applies: islands. If we assume, following Honcoop (1997) that the range of interveners shown in French all constitute weak islands, we have a large playing field to work with. We should then be able to generate a language typology of types of weak islands against the availability Q-migration. As we further our understanding of islands as a whole, the role that Q-migration has to play will be brought to light. And so it appears then that all the languages discussed here, English, SgE, MC, Japanese, Sinhala, Tlingit, Babine-Witsuwit'en all possess Q-migration, except French.

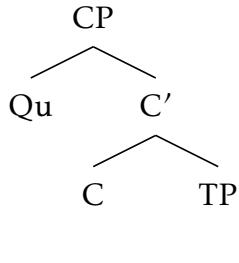
### 5.3 Yes/no questions

Before we close this chapter, we will take a brief look at how yes/no questions work in our proposed framework. The general claim will be that Qu is merged in [Spec,CP] and in languages that can project PrtP, Qu can raise further to the sentence final position of [Spec,PrtP]. This section will compose of two subsections; the first will address the typological variation of the position of yes/no particles and the second will apply this to the particles of SgE.

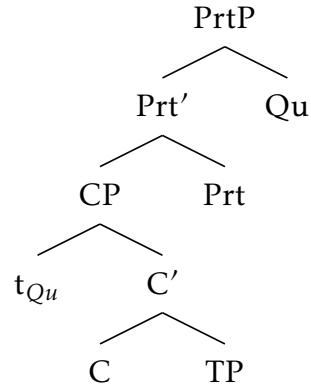
#### 5.3.1 Typological overview

Let us begin with a short typological overview. Since I have not done a broad cross-linguistic study of yes/no particles, especially involving the lesser studied languages, the discussion here will be based on the notes in WALS (Haspelmath et al. 2008:chapter 92). According to WALS, the overwhelming majority of yes/no particles occur either in an initial or final position. Our current model allows for this in a simple way, the particle is either in [Spec,CP] or starts in [Spec,CP] and moves to [Spec,PrtP]:

## (81) Initial particles



## Final particles



WALS notes that sentence final particles often cliticise onto the sentence final word, giving an example from Majang, a Nilo-Saharan language spoken in Ethiopia:

- (82) dən-ɛ daaki tolay-ŋ  
 see-3SG Daaki Tolay-Q  
 'Did Daaki see Tolay?'

(Majang, Unseth 1989:126)

I will assume that such cliticisation is a PF phenomenon, unless it can be shown that other constituents may right dislocate above the element that the particle is cliticised onto. WALS notes, citing Boelaars (1950), that in Aghu, a language spoken in the Indonesian western half of New Guinea, encodes tense onto its particles. This is very interesting, although a lack of data<sup>22</sup> precludes deeper analysis.

Yes-or-no questions show the interrogative words *dé* after present or preterit formations, *né* after future formations and (*j*)*ogho* after negated future formations, e.g. *wudi dé*, 'did I enter?', *a-wu-a né*, 'shall we enter?', *fa a-wu dé jogho* 'shall I not enter?'

(Boelaars 1950:152)

The point of immediate interest is the *jogho* formation, which is a direct counterexample to what was mentioned above, that Qu is located in [Spec,PrtP]. Perhaps in Aghu, there is an unvalued tense and possibly neg feature that when valued, is manifested as the forms of the particle; or they might be different particles altogether. Unfortunately, I can say nothing more.

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<sup>22</sup>I only had access to a Google Books preview.

After initial and final positions for particles, the next most common is the presence of the particle in a second position. Like final particles, these particles can sometimes cliticise on to the sentence initial element.

- (83) kic hes nesk<sup>w</sup>ec-ok<sup>w</sup> ku w*r?*yis  
 PST Q come-3SG DEF girl  
 'Has the girl come back yet?'

(Yurok, Robins 1958:139)

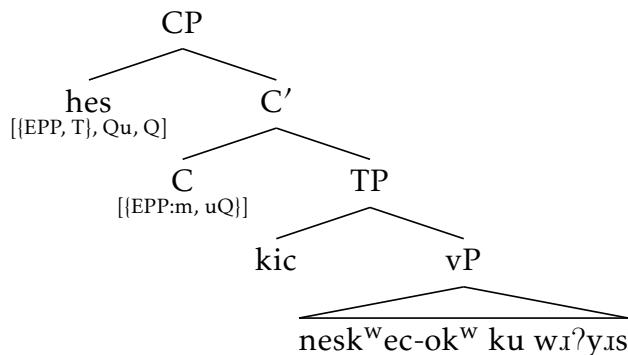
- (84) Charley-wa? mia-pi  
 Charley-Q go-PERF  
 'Has Charley left?'

(Mono, Norris 1986:44)

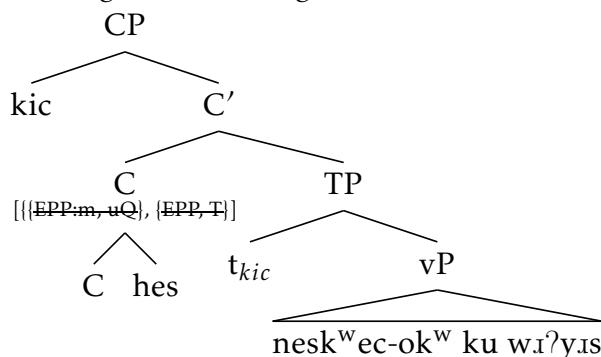
Norris (1986) does note however, that while the particles in Yurok generally appear in a second position, they are free to "occur anywhere except initially", although he only gives examples of the particle occurring in second and final position. A plausible way to analyse these type of languages would be to say that Qu is base generated in [Spec,CP], and undergoes merger with the C head. Qu has an EPP feature that triggers head raising of the appropriate element, in this case the auxiliary T to the newly projected specifier position:

(85) *Second position particles*

a. *Merge Qu in [Spec,CP]*



b. *M-merger  $\Rightarrow$  T-raising*



The fourth category that WALS provides is the “other position” category. The examples cited are from Hmong Njua (Blue Hmong, spoken in parts of Southern China, Vietnam, Thailand and Laos) and Niuean (a Polynesian language). In Hmong Njua, the particle precedes the verb and in Niuean, it follows the verb:

- (86) kuv cov nyaaj puas nyam hoop pee  
       1SG MEAS aunt Q like sing song  
       ‘Do my aunts like to sing?’

(*Hmong Njua*, Harriehausen 1990:205)

- (87) foaki age nakai e koe e fakamailoga ki a taha  
       give DIRL Q ERG you ABS prize to PERS someone  
       ‘Did you give the prize to someone?’

(*Niuean*, Seiter 1980:25)

Dej-amorn (2006) observes that in Green Hmong (a subgroup of Hmong Njua), there are three yes/no particles, *los*, *sub* and *puas*. The former two are sentence final and are more or less equivalent; it appears that *los* is the unmarked form and *sub* expresses doubt (negative presupposition, cf. *meh* in SgE). Hmong allows for multiple discourse particles in the right periphery and as such, although *los* and *sub* are in the right periphery, they are not necessarily sentence final. The particle *los* shares a fairly common trait of yes/no particles with Japanese *ka* and Sinhala *da* in that it can also be used as a disjunctive marker. In which case, although interrogative it is not sentence final.

- (88) a. Koj muaj nplej los?  
       2SG have rice Q  
       ‘Do you have any rice?’
- b. Koj mus los tsis mus?  
       2SG go or NEG go  
       ‘Are you going?’

(*Green Hmong*, Dej-amorn 2006:58)

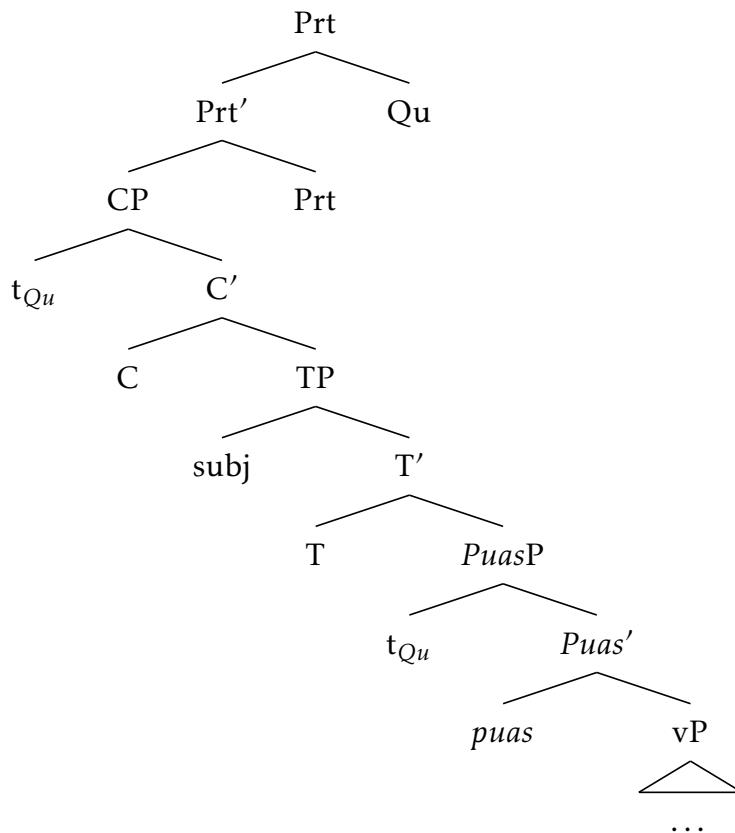
I propose that in this case, *los* is a Qu particle that can potentially take disjoined phrases, which may or may not be phonologically elided (cf. Bailey 2010) as its complement. The entire QuP is then merged in [Spec,CP] to clause type and further raises into [Spec,PrtP]. As for *puas*, its position is a little more difficult to discern, given the lack of data. Dej-amorn (2006) provides two examples:

- (89) a. nam nas tuag puas yog nam kawg moog tsi tau ib saab  
           voc CL die Q be CL walk         NEG can 1 CL  
           kua taw nas?  
           leg      PRT  
           ‘Mother, is the man who died the man whose leg cannot walk?’
- b. Iv ntsab puas laib  
       voc pick Q can  
       ‘Father, can I pick it?’

(Dej-amorn 2006:63)

It might be tempting to analyse *puas* as a question particle base generated in its scope taking position which triggers raising of the vP. However in (89b), the particle only precedes the modal, not the main verb. I think a more plausible explanation might be to say that *puas* in itself is not interrogative. Rather, it functions as a disjunctive marker, forming a binary set of two propositions which Qu as a choice function operates over. *Puas* heads a functional projection taking a verb phrase as its complement and Qu is base generated in its specifier, Qu then raises to [Spec,CP] and [Spec,PrtP] for clause-typing and scope taking.

- (90) *A possible structure for ‘puas’ in Hmong*



Turning now to Niuean, where the particle follows the verb, Massam and Starks (2008) note that there are three yes/no particles, *nakai*, *kia* and *ka*. The latter two can appear in post-predicate or sentence final positions. They have slightly different properties compared to *nakai* but we cannot discuss that here; we will focus only on *nakai*. Massam and Starks propose that *nakai* is a high left-peripheral position and the predicate complex; the verb along with its particles are moved into a specifier position. *Nakai* is very similar to the negation *nākai* and appear in complementary distribution. Massam and Starks propose that both are merged in the same base position, but one attracts the verbal complex while the other does not. Implementing this in our framework is not difficult. The idea is essentially the same as what was proposed for Yurok; the only different being that *nakai* in Niuean has a feature subset containing {EPP, V} that triggers raising of the verbal complex instead of T into a reprojected specifier position.

The last category in WALS is one where the position of the question particle is in either of the two positions above. The only examples that WALS gives are of languages that vary between an initial and a final particle (or both). Accounting for these languages should be relatively straightforward. If both particles are the same, then it is either in [Spec,CP] when initial or [Spec,PrtP] when final. If the particles are different, one of the particles, most probably the initial one could be analysed as the head of a functional projection within the C layer and Qu generated in its specifier which then moves into [Spec,PrtP].

Imbabura Quechua is another example, although WALS classifies it as having a final position. The particle *chu* can cliticise onto the constituent that is focussed or onto verb in a neutral question:

- (91) a. wasi-man-chu ri-ju-ngui  
house-to-Q go-PROG-2
- b. wasi-man ri-ju-ngui-chu  
house-to go-PROG-2-Q  
‘Are you going to the house?’

*(Imbabura Quechua, Cole 1982:15)*

We have already observed a similar situation in Sinhala. Likewise, in Imbabura Quechua, *chu* is not a question particle. What is different however, is that what happens here appears not to be a case of optional particle movement. Rather, *chu* takes the constituent to be focussed as its complement. Qu then takes the focus phrase as its complement and raises into [Spec,CP]. We have thus completed our typological overview with suggestions of how

the framework proposed can be used to account for cross-linguistic variation.

### 5.3.2 SgE

In the final section of this chapter, we will go over the case of yes/no questions in SgE. In light of all that has been presented so far, there is actually not that much more to say. All of the cases in SgE should be rather self-explanatory. Nevertheless, let us review the facts briefly.

We observed that SgE had several ways of asking yes/no questions, depending on the sort of pragmatic force that one wished to convey. There was rising *ah*, the sort discussed throughout most of this thesis, which occurs in wh-questions and declarative tag questions. There was falling *āh*, which presupposes the truth of the declarative it attaches to and conveys disappointment. Next we had *meh* which it presupposes that falsehood of the declarative it attaches to. There were the tags *or not* and *is it*: the former can be used in forming neutral yes/no questions from non-negated declaratives while the latter only in negated declaratives. Crucially, only *or not* can co-occur with *ah*. We also saw the particle *leh*, which conveys a ‘what about’ meaning and *hor*, which asserts a proposition and garners support for it. Apart from *or not* and *ah*, which constitute a special case, all the other particles are base generated in [Spec,CP] and move to [Spec,PrtP]. There is nothing much more to say about their syntax and I will discuss them no further.

#### 5.3.2.1 What is Qu, again?

However, an imorportant question to ask is what exactly do yes/no particles do? How do they turn declaratives into interrogatives? One approach would be to say that they are actually disjunctive elements with a phonologically elided disjoined phrase. While this is plausible, I think that there is a clear split between the languages that use these particles as a disjunctive marker and those that do not. In the languages that do like Japanese, such an approach might be plausible, but in the languages that do not, I think another analysis called for. It seems unnatural to me to force such an analysis on yes/no question particles when there are no observable cases of overt disjunction going on. Take *meh* for example, it is never possible for it to appear with an overt disjunct, regardless of whether the *or not* or *or not V* form is used, with or without inversion:

- (92) a. You going meh?

- b. \* You are going or not (going) meh?
- c. \* Are you going or not (going) meh?  
‘You’re going?’

By contrast, using *ah* in the sentence requires the obligatory presence of *or not*:

- (93) a. You going or not (ah)?
- b. \* You going ah?

Such a contrast can also be observed in MC. When there is overt disjunction in the A-not-A form, the wh-particle *ne* is used, and the yes/no particle *ma* is ungrammatical. With a simple declarative, the converse is true:

- (94) a. ni qu-bu-qu ne/\*ma?  
you go-NEG-go Q
- b. ni qu \*ne/ma?  
you go Q  
‘Are you going?’

Why should this be the case? This suggests that there is a split between yes/no particles, the ones that allow overt disjunction, and the ones that do not. I think the term yes/no particle is somewhat of a misnomer. Let me clarify: we proposed that question particles are variables over choice functions (CF). Putting aside the issue of when and where existential closure<sup>23</sup> over them applies, a CF needs to operate over a set. With wh-words, which are sets of type  $\langle e, t \rangle$ , the particle operates over them easily. However, in yes/no questions formed from declaratives, we only have a proposition to operate over. This does not work, the CF requires a set to work. This is where I propose the difference lies.

Particles that require overt disjunction like *ne* or *ah*, which incidentally double up as wh-particles, are simply CFs, no more. What *or not* and A-not-A constructions<sup>24</sup> do is merely to render the clause disjunctive<sup>25</sup>; that is, it is not a simple Boolean join operation. Loosely speaking, it does not simply append  $\vee \neg p$  to proposition *p* to form *p*  $\vee \neg p$ . In order for CFs to work with

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<sup>23</sup>See Hagstrom (2006) vs Cable (2007) for two different approaches. Hagstrom suggests the existential closure happens from the moved particle over its trace which is a variable over CFs, while Cable suggests that existential closure occurs at the IP level. This is not particularly relevant to our discussion here, although it would be of utmost importance if we wanted to develop a compositional semantics for the framework presented here.

<sup>24</sup>Or more precisely, the operators involved in A-not-A constructions.

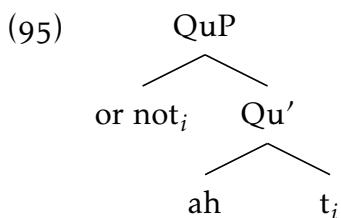
<sup>25</sup>See especially Alonso-Ovalle (2006), who argues independently for the implementation of such an idea.

this, disjunctive operators must be able to convert a proposition  $p$  into a binary set  $\{p, \neg p\}$ . This is exactly what *or not* does. *Ah* on the other hand is a CF that operates over this set and returns one of its elements.

The difference then, between a “real” yes/no particle and a simple CF like *ah* or *ne* is that a true yes/no particle will have two components to it, a disjunctive component and a CF component. This is also the reason why so many question particles can function as disjunctive operators as well. When C is declarative (no [uQ]), only the disjunctive component of the particles are able to work, allowing them to function as overt disjunctive markers. When C is interrogative (possessing [uQ]) on the other hand, its CF component and Q-feature comes to the fore, operating over wh-phrases and rendering the sentence interrogative through agreement with C; its disjunctive component becomes irrelevant for interpretation<sup>26</sup>. When C is non-interrogative and there is a wh-word, the disjunctive component and its Q-feature becomes useless, leaving only its CF component. In this situation, we get indefinites. Japanese *ka* is a prime example of this, being able to function as a disjunctive operator, yes/no question particle, wh-particle and an wh-indefinite marker.

### 5.3.2.2 The special case of *or not ah*

And so we return to the question of the status of *or not* and *ah*. I propose that since *ah* is devoid of a disjunctive component, the only way it can appear in yes/no questions is for it to add one to itself to form a QuP complex:



Obviously, since it is also possible to have yes/no questions with *or not* and no *ah*, there must be an option to merge a phonologically null Qu. The next question to answer is where this QuP is base generated. So far all the wh-adjuncts that we have talked about were not actually adjoined somewhere

<sup>26</sup>A question which arises is what happens to the disjunctive component. Presumably, since the disjunctive component can only work over propositions, its operation must delay till it reaches the C layer. Once there, a set of propositions is generated, each corresponding to one of the individuals picked out by the CF. An alternate set of these negated propositions are generated by the disjunctive component, which are then discarded, since if we follow a Karttunen (1977) semantics for questions, only true propositions survive to the end of the interpretation.

in the clause structure but base generated in [Spec,CP]. We would expect *or not ah* to be the same, but it turns out not to be the case. The facts are different for *or not ah* than they are for *why*. I repeat the data from 3.4.3.3:

- (96) You know (if/whether) John coming or not ah?

'Q: Do you know whether John's coming? A: He is.'

'Q: Do you know or not whether John's coming? A: I don't know.'

- (97) a. You know or not ah whether John is coming?

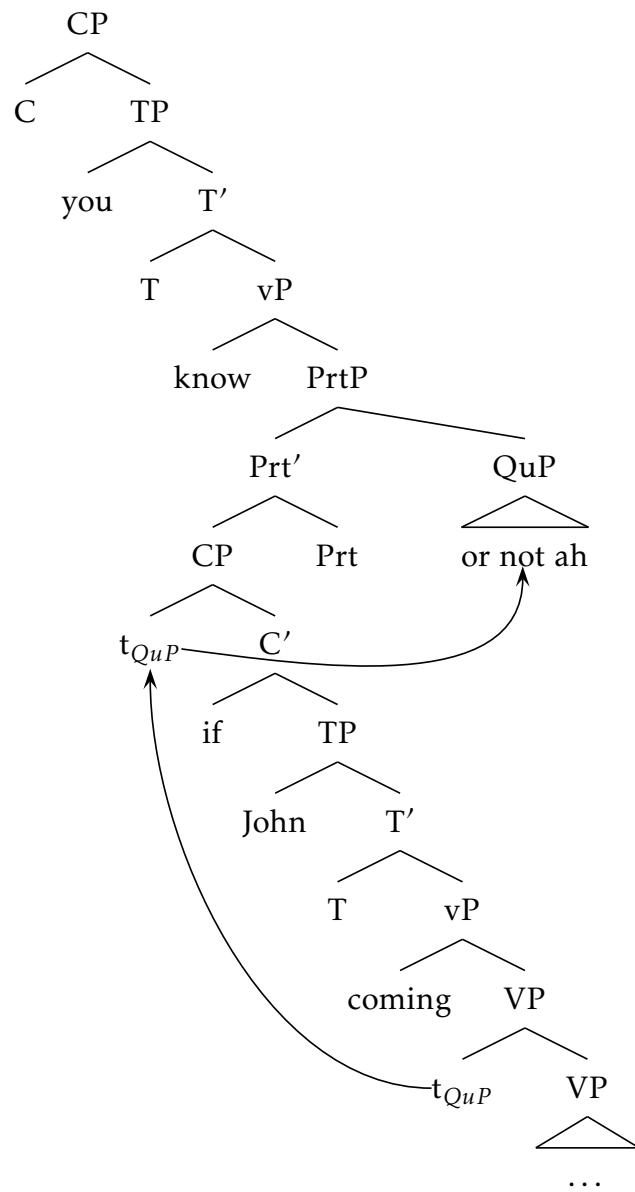
- b. ??/\* You know or not whether John is coming ah?

\*'Q: Do you know whether John's coming? A: He is.'

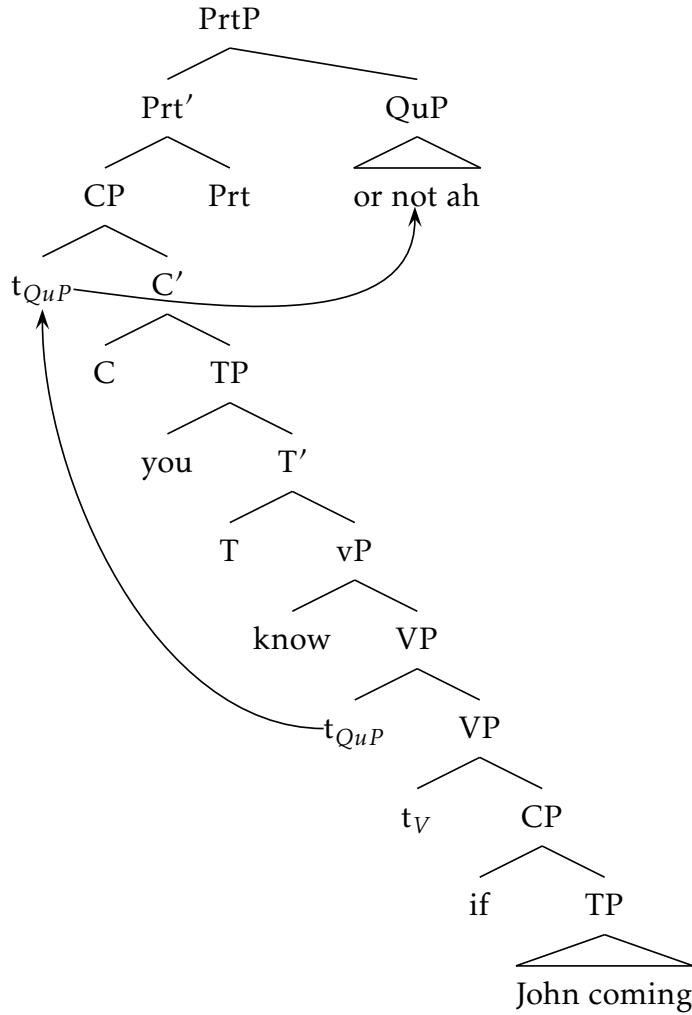
'Q: Do you know or not whether John's coming? A: I don't know.'

Compare the data above to (49). In (49), we had scope ambiguity with *why ah* in a matrix position and no scope ambiguity in an embedded position. In this case, it appears to be the opposite. In fact, what appears to be the embedded position in (97) can only receive a matrix reading, an unexpected result. This means that in (97a), *or not ah* is in a matrix position, not an embedded one. If so, if *or not* linearly follows the verb but is within the matrix clause, the only position it can be in is adjoined to the VP; after V raises to v, *or not ah* is matrix final. The ungrammaticality of (97b) is explained by the fact that QuP in this case is an adjunct and subextraction from adjuncts is bad, as per usual. The rest of the derivation is trivial:

- (98) a. *Structure of embedded scope 'You know if John coming or not ah?'*



b. *Structure of matrix scope 'You know if John coming or not ah?'*



To yield embedded scope, QuP adjoins to the embedded VP and raises to embedded [Spec,CP] and [Spec,PrtP]. The same thing happens in the matrix clause to yield matrix scope. If one has been following the discussion closely so far, one would notice that some trickery has been involved. We used (97a) as a diagnostic for the position of *or not ah* and determined that it was in the matrix clause. This is correct. What is incorrect however, is that (97a) reflects the *base position* of *or not ah*, and technically, the derivation should crash because the features on C are not satisfied. (97a) is already quite unnatural as it is for speakers, but we can test further the position of *or not ah* in the matrix clause by using the perfective marker *already*, which we know in SgE occurs sentence finally in matrix clauses without particles. Presumably it would be in some Perf or Asp projection that is head final, I am not fully certain. For the sake of argument then, let us adjoin to the right of the vP<sup>27</sup>:

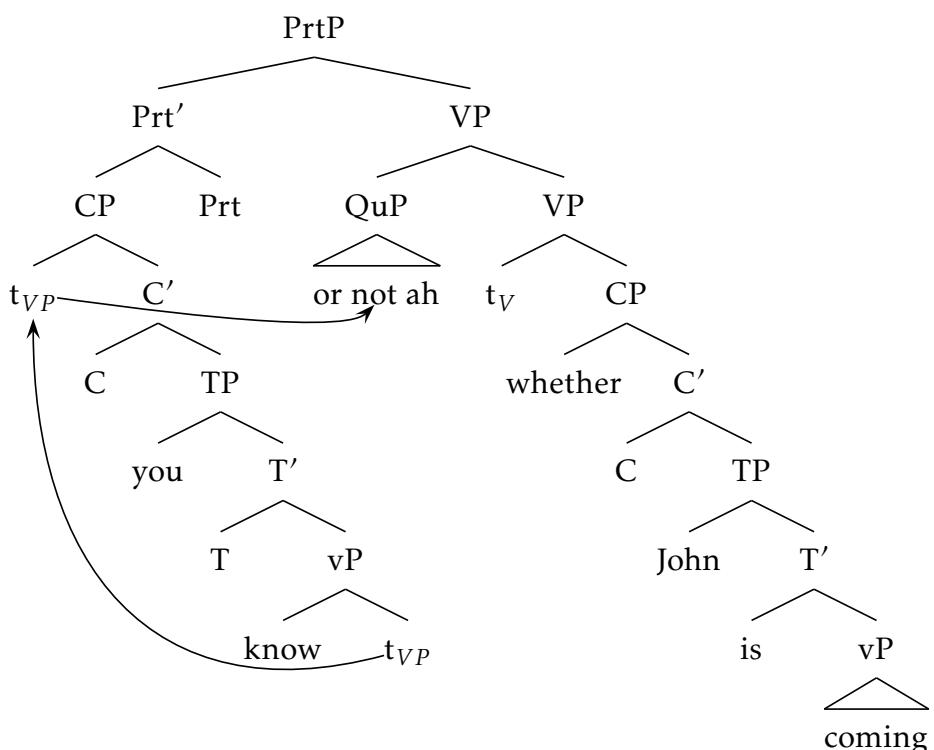
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<sup>27</sup>We could also follow Cinque (1999) in saying that *already* is one of the projections of the exploded T domain. It does not really matter here.

- (99) You know **already** or not ah whether John is coming?  
‘Have you known or not whether John is coming?’

What we find is that *or not ah* is in the matrix clause because it has a matrix reading. At the same time, it follows *already* meaning that it is high up in the clause. The only possible interpretation of these facts would be to assume that there is massive movement involved, the entire VP raises, along with the subordinate clause into [Spec,PrtP]:

- (100) *Structure of 'You know or not ah whether John is coming?*



I do not have a good answer as to why such massive movement can occur. For the moment, I am forced to concede that there is some kind of feature percolation from QuP to VP in order to account for this. It is somewhat unsatisfying to end a chapter with an inconclusive example, but facts are facts and due to space constraints, I shall have to leave this as it is here.

## 5.4 Chapter Summary

In this chapter we have strived to apply our theory with as far a reach as possible within the time and space constraints available. We refined our theory of Q-migration to a great degree, giving us a powerful tool of island escape which we applied to various languages. We differentiated between three kinds of movement, Qu vs. QuP vs. Q-migration and showed that different interveners affected each differently, although there were general

patterns to be observed. We then accounted for the remaining data in SgE and the data facts from other languages discussed in chapter 2, rounding off with a discussion on yes/no particles. The next (and last) chapter will serve to wrap up the discussion and point the way forward from amidst the seemingly unending stream of unanswered questions left behind.

# **Chapter 6**

## **The Way Forward...**

So many things were left unfinished in the course of this work; so many questions unanswered. I think the central question that arises from everything presented here is whether this is the way language actually works? The answer I fear, is probably not, although I think we have made a little step towards beginning to understand how it does.

### **6.1 Small steps forward**

In chapter 1, we undertook a broad discussion about why optional movement should exist in the first place. I argued that optimal language design should not and in fact, does not preclude the existence of formal optionality in grammars. This was especially true, given the construal of the wh-parameter; more specifically, where we are concerned, the construal of the EPP. The EPP, if it does exist, should be merely seen as a trigger for movement, no more. This in turn paved the way for the proposal and development of the Featural Subset Hypothesis. Given that the notions of language design as seen from a Minimalist perspective are couched deeply in the genetic endowment of a language faculty, it naturally follows that with so much redundancy in the human subsystems, the linguistic faculty should not be exempt. This redundancy should not be viewed as as suboptimality; rather, it should seen as a functional springboard for the expressive power of language.

Chapter 2 reviewed, with a critical eye, some of the main theoretical approaches to optional wh-movement. These were seen to be lacking (from my point of view at least) in one way or another: there was no way to capture adequately the fact that a single operation within a single derivation could yield two different but semantically equivalent outputs. We looked at the optionality of EPP assignment and sought to discard this quickly. We turned to the optional selection of C and concluded that assuming the phasehood

of CP, this was not a viable option, unlike the optionality of PrtP projections, which are peripheral. Even then, PrtP is not always optional as we have seen. We then considered the remnant movement approach and ran into serious problems with island violations. The facts of island evasion eventually led us to heavily reform Hagstrom's (1998) Q-migration theory, which technically, could be used to make remnant movement work. However, at the same time, the presence of Q-migration rendered remnant movement unnecessary since there were means to predict the sentence final requirement in Spanish. Finally, we evaluated the operator-variable approach and found it to be the closest to what we wanted to propose, although we wanted to explain the French intervention facts as constraints on overt Qu movement rather than LF movement or the constraints and deficiencies of binding relations.

Chapter 3 presented a fair bit of data from SgE, which was the key driving force behind the writing of this thesis. What was discovered was that SgE, being the resultant language of heavy contact between English and MC, was the perfect place to snoop around for optional wh-movement since there had to be some way that the grammar had to deal with conflicting wh-parametric input. Despite the subtleness of many of the SgE judgements and even though many of the data points are still unclear, a broad picture began to emerge. We began to develop a skeletal framework for the theory we would eventually put forward, realising that optional movement fell out as the result of the way the EPP was satisfied – spec vs. head vs. phrasal movement. We further proposed that there existed a possibly universal PrtP projection in languages that permit sentence final particles.

Chapter 4 was devoted to the development of the main bulk of the theory. But before that, we had to get the Clausal Typing Hypothesis out of the way. More precisely, we had to do away with the predictions that the CTH made, because they were shown to be empirically wrong. We kept the notion of clausal typing, which was important to us and moved on. We then sought to examine more closely the nature of Qu, and following many others who came before, especially Hagstrom (1998) and Cable (2007), we proposed that Qu was just what they said it was, a variable over choice functions. The conclusion was that Qu takes wh-phrases as its complements to form QuP. This, we argued was a language universal; there was no need to distinguish between whether Qu was an adjunct or the head of a complement. This fact would later be refined over the remainder of the thesis. The QuP hypothesis thus formed the first of the three pillars our theory.

We then looked at cases of formal optionality in grammars and found

that most of the cases in the literature made references to the multiple ways in which the EPP could be satisfied, something that we wanted to propose. This directly led to the proposal of the FSH, seeking to further divorce movement from agreement. The FSH turned out to be a very handy tool in predicting the optionality of movement as well as the fact that the EPP seemed to be strict in some ways (subjects in TP) and loose in others (stylistic fronting). The FSH allowed us a way of controlling the strictness of EPP satisfaction, with maximum strictness on one hand, movement being parasitic on Agree and maximum looseness on the other, where any category will do. The FSH thus formed the second crucial pillar of the theory.

The rest of chapter 4 dealt with scope assignment and Qu movement. The former was rather straightforward, scope is assigned simply where the relevant elements are in overt syntax. As for Qu movement, we argued at length that the theory of head adjunction should be abandoned, or at the very least supplemented with a head to specifier movement approach coupled with m-merger in the sense of Matushansky (2006) which we also adapted for our purposes.

Chapter 5 saw the heavy redevelopment, formalisation and refinement of Q-migration, where we described how, through a process of L(abel)-absorption, a specifier was able to essentially turn into an adjunct. This was accomplished through the use of reprojective m-merger, a child of Matushansky's m-merger and the reprojective movement of Donati (2006). Q-migration thus became the third crucial pillar of our theory. The rest of the chapter attempted to apply the now fully developed theory across the different languages discussed, ending with a discussion of yes/no particles and confident speculation about the nature of particles in general. They can be comprised of two components, a choice function component and a disjunctive component. Such an approach predicts directly the existence of very multifunctional particles such as *ka* in Japanese. Finally, we embarked on a discussion of the typological variation of yes/no particles across languages and how they would fit within the framework proposed and the results, though at times inconclusive, were generally encouraging. We then wrapped by accounting for the SgE yes/no question data and showed that it basically fits (apart from the massive VP movement at the end!) into the general picture of the QuP hypothesis.

## 6.2 Things to do

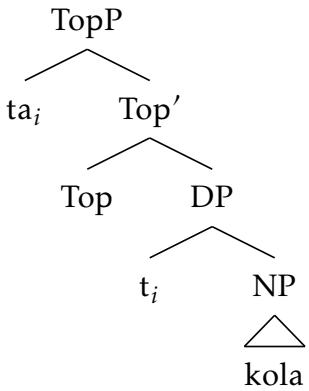
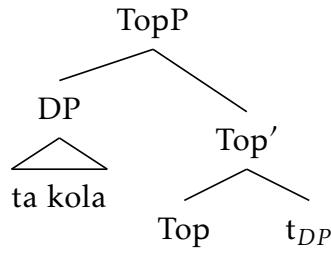
There are so many things left to do; the work done here has opened up many, many avenues for further research. Most of the thoughts here are either pure speculation or issues that did not make it into this thesis for some reason or another. I will go over these briefly below.

### 6.2.1 Split-DPs and optional movement

In our discussion of French in 5.2.4, we looked at split DP constructions and attempted very briefly to show how this might work. The general idea was to construe split DP constructions as an artifact of optional D vs DP movement. Consider the Serbo-Croatian constructions from Bošković (2005):

- (1) a. Čijeg<sub>i</sub> si video [t<sub>i</sub> oca]?  
whose are seen father  
'Whose father did you see?'
- b. Ta<sub>i</sub> je video [t<sub>i</sub> kola]?  
that is seen car  
'That car, he saw'
- c. Lijepe<sub>i</sub> je video [t<sub>i</sub> kuće].  
beautiful is seen houses  
'Beautiful houses, he saw.'

Bošković adopts a scrambling approach for LBEs; I cannot go into details. The optional movement framework that we have proposed here works well in this case. (1a) we can easily account for, at the point when Qu takes the wh-phrase as its complement, it should have the option of either spec-raising or spec-piedpiping to [Spec,QuP]. We have shown this in 5.2.4 with the split *combien... de livres* constructions in French. (1b) is a little more puzzling; are we to propose that there is some abstract head that does takes the place of Qu, taking a DP as its complement? This is possible, if the translations are accurate and these have have a kind of topicalised reading, we could posit an abstract Top head that does this job:

(2) *Spec-raising**Spec-piedpiping*

(1c) is even more problematic, what is being extracted is an adjective, not a D head. Perhaps this is time to invoke the FSH and implement a purely privative EPP feature that attracts any category. I do not know the full facts of the data, but given that these extractions only appear to be one level deep, it might be an option:

- (3) a. On je video [prijatelja [njegove majke]].  
     he is seen friend his mother  
     ‘He saw a friend of his mother.’
- b. \* Čije<sub>i</sub> je on video [prijatelja [t<sub>i</sub> majke]]?  
     whose is he seen friend mother  
     ‘Whose mother did he see a friend of?’

If we assume a privative EPP and that the complex nominal is a an island, this would allow only the highest item of the complex nominal to extract. It is reasonable then to propose a whole bunch of invisible heads to make this work? It is possible. Consider a simple topicalisation structure in English, *Apples, I like*. If we assume that Top attracts only DPs, then this would invoke a superiority violation. This may have already been proposed, I am not familiar with the topicalisation literature; but assuming that a Top head with a privative EPP feature takes *apples* as its complement in this case, we do not run into this problem.

The central question is really whether, regardless of optional movement and the spec-raising vs. spec-piedpiping divide, such an approach of using abstract heads as a driving force for all kinds of movement operations. Long distance scrambling in particular comes to mind: suppose an abstract head H<sub>1</sub> is used to mark a constituent for scrambling, while another head H<sub>2</sub> is used to mark the target of scrambling, followed by reprojective m-merger that essentially creates an Ā-position wherever necessary. Clause internal scrambling, potentially would involve a different process. Obviously this

makes light of the constraints and issues that exist regarding scrambling (Mahajan 1990; Saito 1992) but perhaps is still a worthy avenue to explore.

### 6.2.2 Multiple wh-questions

One thing that I was not able to explore in any detail in thesis was the nature of the QuP hypothesis with respect to multiple wh-questions. We did show that the difference between single and multiple Qus was that superiority violations were expected in wh-movement languages that possessed multiple Qus while single Qu languages were expected not to. This prediction seemed to have borne out, at least from preliminary data from English and German. Multiple Qu languages were again split into two types, the ones that overtly displayed them (Sinhala, Tlingit) and the ones that did not (English). What are the implications of these differences? What other predictions do they make?

The second issue that has to do with multiple wh-questions is the issue of scope. How do the scope issues pan out across these various languages? Hagstrom (1998) examines in some depth the facts in Japanese, and concluded that single pair readings occur when Q is launched (attracted) from a position outside the scope of both wh-words Q [ wh<sub>1</sub>...wh<sub>2</sub> ] while pair list readings are yielded when Q is launched from outside the scope of only one wh-word [ wh<sub>1</sub>...Q wh<sub>2</sub> ]. This seems to be borne out in SgE:

- (4) a. Who ah bought what?  
‘John bought books.’  
‘??John bought books, Mary bought clothes, …’
- b. Who bought what ah?  
‘John bought books.’  
‘John bought books, Mary bought clothes, …’

The question that arises is why, given the fact that SgE possesses multiple Qus (superiority effects), should still display such effects? One way to answer this question might be to say that depending on whether PrtP is projected, different scope readings result.

- (5) [ wh<sub>1</sub> Qu<sub>1</sub> ...wh<sub>2</sub> Qu<sub>2</sub> ] ⇒
- [<sub>PrtP</sub> Qu<sub>2</sub> [<sub>CP</sub> wh<sub>1</sub> Qu<sub>1</sub> [<sub>TP</sub> ...wh<sub>2</sub> t<sub>2</sub> ]]] (pair-list)
  - [<sub>CP</sub> Qu<sub>1</sub> wh<sub>1</sub> [<sub>TP</sub> t<sub>1</sub> ...Qu<sub>2</sub> wh<sub>2</sub> ]] (single-pair)
  - [<sub>PrtP</sub> Qu<sub>1</sub> [<sub>CP</sub> t<sub>1</sub> [<sub>TP</sub> wh<sub>1</sub> t<sub>1</sub> ...Qu<sub>2</sub> wh<sub>2</sub> ]]] (single-pair)

In order not to violate superiority, the subject Qu or QuP must always raise into [Spec,CP]. The scope differences thus rest solely on whether PrtP is projected. If the subject QuP<sub>1</sub> raises into [Spec,CP], there are two options. If PrtP is not projected, we get (5b) and a single-pair reading is obtained. If PrtP is projected, then we get (5a) and Qu<sub>2</sub> raises into [Spec,PrtP]. QuP<sub>1</sub> is not eligible for either subextraction (it has moved) or phrasal movement into [Spec,PrtP] because *Bought what who* is ungrammatical and will crash at PF. If instead Qu<sub>1</sub> raises into [Spec,CP], then when PrtP is projected, Qu<sub>1</sub> raises because it is closest yielding again a single-pair reading.

A more pressing question is then how the grammar decides which particle to make phonologically overt? One could posit that they are different lexical items, but it still does not answer the question of how the Qus decide which wh-phrase to take as its complement. Theoretically, each of the structures in (5) should be able to yield either (4a) or (4b). Having said, not every speaker agreed that (4a) could only have a single pair reading, although most did. This is definitely on the to-do list for future research.

### 6.2.3 What is Qu, yet again?

Recall that we mentioned that Qu could possibly have two components, a disjunctive component and a choice function component. Could there be yet another component to this? Consider our discussions on Sinhala. We argued that *da* in Sinhala was a focus particle rather than Qu. Wh-phrases in many languages are seen to be associated with focus in some way, some overtly, others less so. Could Qu potentially have a third component to this? Are there languages that have a split between all three or some combination of the three? If so, what are the implications? Barring a huge cross-linguistic study, it would be quite difficult to answer this question, although it does seem that there are languages (Nguni, see Sabel and Zeller (2006)) that exhibit optional wh-movement with its movement motivated by a focus particle. What about languages that do not possess overt focus marking, instead only using intonation to identify focussed constituents? Several optional wh-movement analyses (Cheng and Rooryck 2000; Pires and Taylor 2007) make some mention of intonation playing a role in yielding wh-in-situ constructions. How does Qu condition the intonation of the clause and do these intonation effects necessarily correspond to focus? We need to plumb the murky depths of the syntax-phonology interface to find out.

Another issue with the nature of Qu has to do with the features it possesses. So far, we have assumed that Qu has a [uWH] feature that gets val-

ued and deleted when it enters into Agree with C. One notion that I considered entertaining was whether the [uWH] feature on Qu could take various second order values by different Cs? Perhaps [uWH] could take values of [uWH:y/n] in yes/no questions, [uWH:WH] in wh-questions, [uWH:echo] in echo questions<sup>1</sup> and [uWH:decl] for indefinites.

Such a line of thinking was a direct response to the fact that Japanese sentences can contain *ka* indefinites and an interrogative *ka* at the same time. It would be easy to implement if we assumed that different forms of *ka* were lexically different. The challenge is whether it is possible to adopt a unified approach towards *ka* in saying that they are all the same. One solution might be to say that Japanese *ka* enters the derivation with a default [uWH:decl] value and that C changes the value of the one that it needs to be interrogative.

The greatest implication of this is that clause typing is now a function of two things: [uQ] on C triggering Agree and the appropriate valuation of [uWH] on Qu and the wh-phrase, not necessarily a bad thing to say. We could definitely solve the problem by saying that indefinite *ka* has no [uQ] and since its default value is [uWH:decl], it gets interpreted as an indefinite, although would not fulfil the challenge set. The next issue with this is that we will need to dispense with the uninterpretability of [uWH], and instead follow Pesetsky and Torrego (2007) in adopting a four way feature distinction or [ $\pm$ interpretable,  $\pm$ valued]. Again not necessarily a bad thing. Far reaching long term implications for the theory? Yet to be seen.

### 6.3 Conclusion

And so, we have come to the end of our journey. We are probably left with more questions than when we started out. There are still so many uncertain data points, so many understudied languages to discover. Nevertheless, I hope that what was presented here has managed to step out of the box somewhat and to make several steps forward in developing a theory of optional movement that is flexible and powerful yet well constrained. No doubt, the theory presented here might end up having too much generative power, making predictions of optionality when there are none and needs to be further constrained further in some way. All in all though, I think things look promising: some light has been shed and has opened up new paths for exploration to reveal the nature of questions, syntax and language.

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<sup>1</sup>Presuming that echo questions generate a singleton set of propositions as opposed to an arbitrary set of propositions.

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