

WH-IN-SITU PHENOMENA IN FRENCH

by

LISA CHANG

B.A., The University of British Columbia, 1995

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF

THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

in

THE FACULTY OF GRADUATE STUDIES

Department of Linguistics

We accept this thesis as conforming
to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA

May 1997

© Lisa Chang, 1997

In presenting this thesis in partial fulfilment of the requirements for an advanced degree at the University of British Columbia, I agree that the Library shall make it freely available for reference and study. I further agree that permission for extensive copying of this thesis for scholarly purposes may be granted by the head of my department or by his or her representatives. It is understood that copying or publication of this thesis for financial gain shall not be allowed without my written permission.

Department of Linguistics

The University of British Columbia
Vancouver, Canada

Date June 23/97

Abstract

The goal of this thesis is to provide an alternative theory of how *wh*-expressions are interpreted. I propose that French *wh*-words are interpreted through an A-bar binding relation subject to a modified *Generalized Binding Theory* (cf. Aoun, 1985; henceforth *GBT*) which is an LF module of the *Minimalist Framework* (Chomsky, 1995). Among the four interrogative strategies available in French, it will be demonstrated that *wh*-clefts and *wh*-in-situ pattern together as they can only be used in strongly presupposed contexts unlike *reinforced interrogatives* and *inversion+wh-fronting*.

French exhibits a puzzle in the domain of Wh/QP interaction. Standard analyses predict an ambiguity/non-ambiguity contrast depending on the c-command relation between the *wh*-word and the QP (May, 1985, etc.). Crucially, a *wh*-in-situ c-commanded by a universal QP (among other A'-elements) lacks a non-echo interpretation; only an echo reading is available. Furthermore, a *wh*-in-situ within an embedded clause only has an echo reading. Contrastively, an overtly moved *wh*-word can always be interpreted as non-echo regardless of an intervening A'-element or a clause boundary.

I argue that French in-situ facts can be captured by the *GBT*. I propose that *wh*-words are A'-anaphors that receive an interrogative interpretation by being bound to a null Q operator (C°). This binding relation is subject to locality conditions. First, the lack of a non-echo reading of a *wh*-in-situ c-commanded by a QP is a violation of a *Specified Antecedent Condition* which requires an A'-anaphor to be bound by the closest potential antecedent. Second, the matrix clause restriction is captured by a *Matrix Clause Condition* requiring an A'-anaphor to be bound within its minimal finite clause. Under minimalist views of movement, a strong [wh] feature of French null Q attracts a *wh*-word to raise overtly and adjoin to the root. Because overtly moved *wh*-words enter LF in the most local binding relation possible with the null Q (spec-head), they may always be interpreted as non-echo. Lastly, I adopt Chierchia's (1993) Weak Crossover (WCO) analysis of Wh/QP interaction to capture the ambiguity/non-ambiguity contrast in French overt syntax. The WCO approach further supports our proposals concerning the composition of French *wh*-words; they are made up of a [wh] feature and an A'-anaphoric pronominal element, *pro*.

Table of Contents

Abstract	ii
Table of Contents	iii
Acknowledgements	v
Abbreviations	vi

Chapter 1 Wh/QP Theories and the French Problem

1.0 Introduction	1
1.1 An Overview of Previous Analyses	4
1.1.1 May (1985)	4
1.1.2 Lasnik and Saito (1992)	6
1.1.3 Aoun and Li (1993b)	10
1.2 A Missing Non-Echo Interrogative Reading	14
1.2.1 Overt Syntax	14
1.2.2 LF Syntax	16
1.2.3 The Problem	18
1.3 Summary	21
1.4 Minimalist Framework	22

Chapter 2 The Elements, Structures and Contexts

2.0 Introduction	23
2.1 Elements	23
2.1.1 Universal Quantifiers	23
2.1.1.1 Determiner/Partitive Universal Quantifiers	24
2.1.1.2 Diagnostics	25
2.1.1.3 Summary	32
2.1.2 Wh-expressions in French	33
2.2 Structures of French Interrogatives	38
2.2.1 The Four Strategies and Predictions	38
2.2.2 Syntactic/Semantic Correspondence	40
2.3 Felicitous Discourse Contexts	42

Chapter 3 Generalized Binding

3.0 Introduction	47
3.1 The Anaphoric Nature of Wh-words	47
3.2 Generalized Binding	50
3.2.1 Local Domain	53
3.2.1.1 Tensed-S Condition vs. Matrix Restriction	53
3.2.1.2 A Finer Definition of Domain	57
3.2.2 Potential A'-antecedents	59

3.2.2.1 Specified Subject Condition vs. QP Blocking Effect	59
3.2.2.2 C-command Requirement	60
3.2.2.3 Other Potential A'-antecedents	63
Chapter 4 Overt Syntax	
4.0 Introduction	67
4.1 Minimalism	67
4.1.1 Strong/Weak Qs	69
4.1.2 Types of C°	72
4.1.3 French overt wh-movement	75
4.1.3.1 C-command Revisited	78
4.1.3.2 A Note on Relatives	79
4.2 Wh/QP Interaction	81
4.2.1 Functional Traces	81
4.2.2 Weak Crossover	86
4.3 Summary	88
4.4 Appendix: Complicating Factors	88
Chapter 5 Consequences and Predictions	
5.0 Introduction	92
5.1 Cross-Linguistic Evidence	93
5.1.1 Iraqi Arabic (Ouhalla, 1996)	93
5.1.2 German (Beck, 1993)	95
5.2 A Note on Chinese and English	99
5.2.1 Mandarin Chinese	99
5.2.2 English	101
5.3 Final Remarks	102
References	105

Acknowledgements

My greatest thanks go to the French speakers who so generously shared their knowledge of the language with me. This study would not have been possible without the help of **Elizabeth Lasserre, Rose-Marie Déchaine, Claude de Léséleuc, Christine Rouget** and **Darin Howe**. Je vous remercie de tout coeur! To the members of my thesis committee, I owe much gratitude for their guidance and constant encouragement. In addition to being a great teacher and lecturer, **Michael Rochemont** has kept my mind open to see the big picture with his invaluable insights. Thanks for letting me know that good research always ends with questions. **Hamida Demirdache**, je ne sais pas comment vous remercier! She has been there from the moment I stumbled onto the puzzle to the final product. Hamida, thanks for never settling for anything less from me and most of all, for showing so much interest in my work even when my frustration sometimes got the better of me. And to **Bill Winder**, thanks for providing an alternative view and for letting me see the value of my work in domains other than syntax.

Rose-Marie Déchaine has provided many valuable and inspirational comments. Of the many things I have learned from her, I will never forget that there is always an alternative solution to every problem, and that a "table" enhances any presentation. Thanks for being so critical and demanding, and for having the syntax workshop! To **Henry Davis**, thanks for all the thought-provoking questions and comments, and for attending all of my talks.

My fellow graduate students have given me their intellectual and moral support. I would like to thank **Cora Li, Darin Howe** and **Tomio Hirose** who were with me from the start of this linguistic adventure. Thank you all for listening and providing excellent feedback on my wild and crazy ideas, often at moment's notice. Thanks to **Elizabeth Currie, Leora Bar-El** and **Sandra Lai** for reminding me to come up for air every so often, and for sitting front row center with your warm smiles to cheer me on. All of you made linguistics so much more fun!

And how can I forget. I am grateful to **Carmen de Silva**, a most crucial member of the linguistics department. Thanks for everything, from my first campus job to our discussions about life. To the entire department of linguistics at the University of British Columbia, I thank you for developing my passion for linguistics.

Finally, a million thanks still does not seem enough for the love and support that **my family** has unconditionally given me.

Abbreviations

#	echo reading only
*	ungrammatical
?	possible but unnatural
A	theta-marked
A'	non-theta-marked (A-bar)
COND	conditional
FUT	future
INF	infinitive
MBR	Minimal Binding Requirement
MCC	Matrix Clause Condition
NE	negative scope marker
PL	pair list reading
QP	quantified phrase
QR	quantifier raising
SAC	Specified Antecedent Condition
SSC	Specified Subject Condition
SUBJ	subjunctive
TSC	Tensed-S Condition
WCO	Weak Crossover

Chapter 1 Wh/QP Theories and the French Problem

1.0 Introduction

Sounds + meanings = sentences, a simple enough equation that nevertheless remains a central concern for linguistic theory. Specifically, where in the grammar is the relation between form (syntax) and interpretation (semantics) set? In the earlier transformational models of grammar, the interpretation of a sentence is proposed to be established at the outset in Deep Structure; transformational operations had no effect on this encoding. Since then, there has been a gradual shift of the "locus of interpretation" - from transformational operations (Extended Standard Theory) to S-structure (Revised EST) and recently, Logical Form (Government and Binding, Minimalism).

Logical Form (LF) is considered the domain of "covert syntax" in that (movement) operations do not have any phonological consequences, unlike in overt syntax. Most closely associated with this component of the grammar is the interpretation of quantified phrases (QP) and wh-phrases, and their scope interaction. The interpretation of wh-phrases and QPs is achieved via an operator-variable binding relation like that found in logic: operators bind variables within the proposition to which they apply. Quantifiers undergo quantifier raising (QR) at LF to a non-theta marked position or A'-position to create an interpretational chain (first outlined in May, 1977). In English-type languages, this chain is already created at overt syntax by the operation Move α ; the overtly moved wh-word is then mapped into LF as an operator and its trace as a variable. For languages such as Mandarin Chinese and Japanese where the wh-words stay in-situ, *wh-raising* is assumed at LF. Wh-raising is parallel to QR in that it LF raises a wh-word to an A'-position ([Spec;CP]) to create an operator-variable chain necessary for interpretation. Under the standard analysis, the LF representation of a sentence containing a QP or wh-phrase may be schematically represented in (i) where α is an A'-position and β , IP/VP.

- (i) $[_\alpha \text{ Op}_i [_\beta \dots e_i \dots]]$

The scope of the quantificational operator is what it c-commands. When two (or more) QPs

occur in a given sentence, the scope of QP_1 with respect to that of QP_2 is determined by the c-command relation between their respective scope positions (A'-positions) at LF. For instance, the LF representation of *Who does every man love?* is given in (ii) where *every man* has undergone QR.

- (ii) $[_{CP} \text{ who}_i [_{IP} \text{ every man}_j [_{IP} t_j \text{ love } t_i]]]?$ @ LF

Who is said to have scope over *every man* since the former in [Spec,CP] c-commands the latter in IP-adjoined position. This relation gives rise to an individual reading as stated in (iii).

- (iii) For which x , x a person, every man loves x .

However, (iii) is not the only possible reading. The question in (ii) may also have a distributive or pair list reading as stated in (iv).

- (iv) For every x , x a man, x loves which y , y a person.

The availability of (iv) is a puzzle given the c-command definition of relative scope. In order to get the second reading, *every man* must c-command *who*; however, this is not the case. One possible solution is to include traces in determining scope relations. More precisely, *every man* seems to have scope over *who* because it actually does c-command a part of *who*, its trace.

However, a question such as (v) does not exhibit the same ambiguity. The only difference between (ii) and (v) is the position of the wh-phrase with respect to the universally quantified phrase. Namely, the former is in subject position while the latter in object position. (v) only has the individual reading (vi); (vii) is not a licit reading.

- (v) a. Who loves every man?
b. $[_{CP} \text{ who}_i [_{IP} \text{ every man}_j [_{IP} t_i \text{ love } t_j]]]?$ @ LF
- (vi) For which x , x a person, x loves every man.

- (vii) For every x , x a man, which y , y a person loves x .

The alternative solution incorporating traces over-generates the unattested reading (vii) in the case of (v). We would expect a distributive reading since *every* man c-commands the trace of *who* as shown in (v.b). But this is not the case. Moreover, this paradigm holds for in-situ languages.

Why does the wh-object/QP-subject configuration give rise to ambiguity whereas the reverse wh-subject/QP-object structure does not? This is the central question of studies on Wh/QP interaction. In this chapter, I will present data on the interaction of universally quantified phrases and wh-in-situ from French that will require a broadening of the concerns in this area of LF phenomena. Specifically, a non-echo interrogative interpretation of a French wh-in-situ is not available when it is c-commanded by a quantified phrase, as I will show. In French wh-in-situ/QP configurations, the contrast that arises is not one of ambiguity/non-ambiguity, rather it is one of acceptability/unacceptability as a non-echo question depending on the position of the wh-word and the QP. Here, I assume that there is no interaction between echo interrogatives and QPs (Comorovski, 1996).

The outline of this chapter is as follows. Section 1.1 reviews three LF theories of Wh/QP interaction: May (1985), Lasnik & Saito (1992) and Aoun & Li (1993b). In section 1.2, I will show that the general predictions given by any one of these theories hold in overt syntax (before Spell-Out) but do not at LF. In fact, the data comes as a surprise to all of these proposals.

In the chapters that follow, we will define semantics and structures of universal quantifiers and wh-expressions in French (Chapter 2), and present an alternative analysis to capture the in-situ phenomena (Chapter 3 & 4). Chapter 1 is intended as an overview of the Wh/QP literature and a presentation of the puzzle in French as well as a brief introduction of Minimalism, the framework I will be working in.

1.1 An Overview of Previous Analyses

1.1.1 May (1985)

By now, we are all familiar with the English interrogative sentences in (1) from May (1985):

- (1) a. What did everyone buy for Max?
- b. Who bought everything for Max?

The point here is that (1a) is ambiguous while (1b) is not in terms of the scope interaction of the moved wh-operator and the quantified phrase (QP). (1a) may have either the single question reading where the expected answer is one item, or the "distributed" question asking for what each individual bought. The scope ambiguity is captured under the *Scope Principle* (May, 1985).

(2) *Scope Principle*

Members of Σ -sequence are free to take on any type of relative scope relation.

(3) *Σ -sequence*

A class of occurrences of operators Ψ forms an Σ iff for any $O_i, O_j \in \Psi$, O_i governs O_j , where "operator means "phrases in A'-positions at LF".

Thus, in the LF representation of *What did everyone buy for Max?* (4), *what* and *everyone* are members of Σ -sequence since they are in a relation of mutual government.

- (4) [CP what_j did [IP everyone_i [IP x_i buy x_j]]]

Here, *government* is defined as in (5):

(5) *Government* (May, 1985)

A governs B iff A c-commands B, and there are no maximal projection boundaries between A and B.

When *what* has scope over the QP, we get the single question reading. With the reverse scope

relation, where *everyone* has the wider scope, the "distributed" question interpretation surfaces.

In contrast to (1a), (1b) lacks the wide scope reading of the QP; the only difference is that the QP is the object and the wh-word, the subject. This subject-object asymmetry is very much reminiscent of the familiar *ECP* violations in multiple interrogatives, namely a lack of proper government of the subject. This observation led May to propose a revised version of Pesetsky's (1982) *Path Containment Condition* as a means to account for the absence of ambiguity (6).

(6) *Path Containment Condition*

Intersecting A'-categorical paths must embed, not overlap.

Assuming the definition of paths as stated in May (1985), the LF-representation of (1b) in (7a) is ruled out because the path of the wh-operator and that of the QP overlap.

(7) a. $[_{CP} \text{ who}_i [_{IP} \text{ everything}_j [_{IP} x_i \text{ bought } x_j]]]$

b. $[_{CP} \text{ who}_i [_{IP} x_i [_{VP} \text{ everything}_j [_{VP} \text{ buy } x_j]]]]]$

Now, recall the *Scope Principle*. Since the wh-operator and the quantifier do not govern each other in the well-formed LF representation (7b) and thus, do not form an Σ -sequence, *who* and *everything* will be interpreted independently of each other. More precisely, the scope order will be determined as a function of the c-command relation (i.e. *who* gets wider scope than *everything*).

Next, we turn to an alternative analysis of the English cases. Aoun & Li (1993b, henceforth A&L) point out that inasmuch as May's PCC accounts for the scope interactions in English, it makes false predictions about languages such as Mandarin Chinese and Spanish. Specifically, they show that Chinese does not exhibit PCC effects in multiple wh-interrogatives; there is no subject/object asymmetry with respect to extraction out of wh-islands. If it is true that Chinese does not have PCC effects, (8b) should be just as ambiguous as (8a). In (8b), the

quantifier may scope out of the VP and adjoin to IP. From this position, *everything* forms an Σ -sequence with *who*; thus, (8b) should be ambiguous. This is not the case.

- (8) a. Meigeren dou (gei Zhangsan) maile shenme?
 everyone all (for Zhangsan) bought what
 'What did everyone buy (for Zhangsan)?'
- b. Shei (gei Zhangsan) maile meige dongxi?
 who (for Zhangsan) bought every thing
 'Who bought everything for Zhangsan?'

The same ambiguity/non-ambiguity contrast exhibited in English is also found in Chinese, (8a)/(8b) respectively.

It can be thus concluded that the PCC account is insufficient to capture such cross-linguistic data. Moreover, it is argued that May's *Scope Principle* as defined in (2) is inadequate; I refer the reader to A&L (1993b) for a detailed analysis and argument.

1.1.2 Lasnik and Saito (1992)

Lasnik and Saito (henceforth, L&S (1992)) also recognized problems with May's PCC account. They did not need to look far for problematic cases; there are counter-data from English questions that involve long-distance wh-movement out of an embedded clause containing a quantified subject. Neither May's theory nor the ECP can explain the ambiguity in (9) adequately.

- (9) Who_i do you think everyone saw t_i at the rally?

We can derive both a single question reading or a distributed question reading if QR raises *everyone* to a position of mutual government with *who* (i.e. adjunction to matrix IP). As Williams (1986) notes, such an analysis implies that QR is not clause-bound, contrary to standard assumptions.

- (10) I wonder who saw everyone.

The non-ambiguity in (10) can only be explained if we assume that QR is indeed clause-bound; otherwise, *everyone* could freely quantifier raise to adjoin to the matrix IP or VP position allowing an illicit wide scope reading.

The solution L&S (1992) proposes is twofold: 1) *everyone* has two different semantic functions, and 2) scope is determined at D-structure. The first component in their theory involves a distinction between a non-quantificational group interpretation versus a universal quantificational interpretation of *every NP*. Here, they allude to the series of remarks and replies between May (1985, 1988) and Williams (1986, 1988). It is argued that wide scope collective reading of *every* is rather a semantic property of the universal quantifier - group interpretation (Williams, 1986). May replies that such an analysis cannot account for the strong distributivity cases of the same quantifier. To settle this apparent paradox, L&S (1992) suggest and demonstrate that both May and Williams are in the right.

The following examples are provided in support of their claim of the dual nature of *every*. When *everyone* binds a singular pronoun, the quantificational interpretation surfaces (11a).

- | | | |
|------|--|--------------------------------|
| (11) | a. What did everyone _i buy for Max with his _i bonus money? | <i>distributive</i> |
| | b. What did everyone _i buy for Max with their _i bonus money? | <i>collective</i> ¹ |

On the other hand, when the bound pronoun is plural, the group interpretation of *everyone* is obtained (11b). Moreover, only this latter reading is possible in the case where structural requirements on variable binding are not met (12).

- (12) After I spoke to everyone_i, *he_i/they_i left.

Given this distinction, it appears then that Wh/QP scope relations are set at D-structure.

¹A distributive reading is available for some speakers.

When *every* in subject position asymmetrically c-commands the wh-word at D-structure, we can get an ambiguity depending on how we interpret *every*.

(13) What did everyone buy for Max?

- | | | |
|-----|---|--|
| a. | [for every x: x a person][there is a y][x bought Max y] | <i>distributive</i> |
| a'. | Mary bought Max a tie; Sally a sweater and Harry a piano. | <i>quantificational</i> |
| b. | [for all x: x a person][there is a y: y a book][x bought Max y] | <i>distributive</i> |
| b'. | Everyone bought a book for Max. | <i>quantificational</i> |
| c. | Everyone bought a Bosendorfer piano for Max. | <i>collective</i>
<i>non-quantificational</i> |

(13 a-b) illustrate the quantificational distributive readings: the (a) case is the standard situation where different type pairs are discussed while the (b) case involves token pairs (same type of gift, perhaps even copies of the same book). In contrast, the collective reading of *everyone* in (13c) is claimed to be "non-quantificational".

To formalize this generalization, L&S (1992) propose a revised *Rigidity Condition* on quantifier scope which consists of two clauses²:

(14) *Rigidity Condition*

- a. Suppose that Q_1 and Q_2 are operators (quantified NP or Wh).
Then, Q_1 cannot take wide scope over Q_2 if t_2 c-commands t_1 .
- b. QR adjoins a quantified NP to a minimal node to satisfy [a].

Although the *Rigidity Condition* refers to LF representations, the reference to the c-command relation between the traces captures the D-structure generalization. It is assumed that this condition is irrelevant on the single question reading of (13c) since *everyone* on the group

²The *Rigidity Condition* was originally proposed by Huang (1982) and later adapted for Japanese by Hoji (1985). Note also that Huang (1982) claims that Chinese Wh/QP interaction give rise to no ambiguity, which forms the basis of the *Rigidity Condition*. Aoun & Li (1993) argue that Chinese does have ambiguous questions. We will see later on that disagreement in judgements is due to the pseudo-distributive nature of the universal quantifier *dou* 'all'.

interpretation does not qualify as a quantifier.

How then does the *Rigidity Condition* restrict the scope interaction in the unambiguous (15)? Consider its LF representation (16).

(15) Who bought everything for Max?

(16) [_{CP} who₁ [_{IP} t₁ [_{VP} everything₂ [_{VP} bought t₂...]]]]

The condition is observed in (16). The order of the wh-word and *everything* is the same as that of the traces. *Everything* correctly does not have scope over *who*; the only available reading of the quantified object is thus the collective interpretation.

In brief, L&S's (1992) proposal is crucially dependent on syntactic structure and base positions (traces). Whether particular readings are available is determined at the outset in deep structure. Furthermore, the collective reading of *every* in subject position is not an effect of "narrow" scope but rather of the alternative semantic interpretation of the lexical item. It should be noted that when *every* cannot get wide scope, it is ambiguous whether its interpretation is stemming from the "narrow scope" or from the default non-quantificational reading. Moreover, Williams' generalization only extends to the QP in subject position; so, perhaps the question just raised concerning the object QP is an irrelevant one.

One reservation I have about this particular analysis is the notion of a non-quantificational interpretation of *everyone*. What does it mean to be "non-quantificational"? This idea runs into problems in a language such as Chinese where the indefinite expressions get their interpretation by virtue of being bound to a quantificational element (e.g. universal operator *dou*). Under L&S's analysis, ambiguity is conveniently attributed to a non-quantificational reading. Nevertheless, the question to ask here is whether Chinese ever allows an indefinite to be bound by an element other than a quantificational operator and what interpretation surfaces as a result.

1.1.3 Aoun and Li (1993b)

To capture the parallel scope behaviour in English and Chinese, a modified *Scope Principle* and the *Minimal Binding Requirement* (MBR) are proposed in A&L (1993b). These principles are defined in (17) and (18) respectively³:

(17) *Scope Principle (revised)*

A quantifier A may have scope over a quantifier B iff A c-commands a member of the chain containing B.

(18) *The Minimal Binding Requirement*

Variables must be bound by the most local potential A'-binder.

Before we demonstrate how the MBR and *Scope Principle* work, it is necessary to distinguish two variable types. QP variables and wh-variables (ones created by wh-raising) do not behave in the same way with respect to the MBR. First of all, MBR predicts that the LF-representations (19a) and (19b) are ruled out. The most local A'-binder, QP_2 , binds both variables x_1 and x_2 . Consequently, QP_1 will have no variable to bind; vacuous quantification is prohibited (A&L, 1993b).

- (19) a. $*[QP_1 \dots QP_2 \dots x_1 \dots x_2 \dots]$
 b. $*[QP_1 \dots QP_2 \dots x_2 \dots x_1 \dots]$
 c. $[QP_1 \dots x_1 \dots QP_2 \dots x_2 \dots]$

If it were the case that the possible wh-operator/variable configurations were evaluated in the same fashion, we would expect (20) to be ungrammatical and not simply marginal (marginality is due to a Subjacency violation).

- (20) ?What_j did you wonder who_i x_i bought x_j?
 [Wh_j.....Wh_i..x_i.....x_j] cf. 11b

³The Scope Principle and MBR also are proposed to account for the QP/QP scope ambiguities found in Chinese passive sentences, and the lack of ambiguity in active sentences in Chinese and in English double object structures (A&L, 1993b).

Since *who* is apparently the most local A'-binder, it should bind both variables $x_{i/j}$. The *what* operator in the matrix COMP thus vacuously binds.

A&L (1993b) recognized this problem. To resolve it, they refined the notion of "potential A'-binder". Appealing to the Binding Theory and the idea that wh-variables are non-overt R-expressions, an A'-binder is crucially one that does not trigger a violation of Principle C of the Binding Theory (*an R-expression must be A-free*).

(21) *Potential A'-binders*

A qualifies as a potential A'-binder for B iff A c-commands B,
A is in an A'-position, and the assignment of the index of A to B
would not violate Principle C of the Binding Theory.

Moreover, "...it suffices to assume that variables bound by QPs [...] are not subject to Principle C..." (p. 57, A&L, 1993b). As defined then, a subject QP operator intervening between an object wh-operator and its variable will never be a potential A'-binder for that variable since such a binding relation would violate Principle C.

Let's see how the theory works to capture the data in English and Chinese. The LF representation (4) is repeated again in (22):

(22) [_{CP} what_j did [_{IP} everyone_i [_{IP} x_i buy x_j]]]

(22) is well-formed according to the MBR. The QR-raised subject *everyone* is the most local potential A'-binder of the variable x_j ; however, *everyone* cannot be the A'-binder of the object variable since it would trigger a Principle C violation. If the wh-variable, an R-expression, is assigned an i-index by *everyone*, it will be bound by the co-clausal and c-commanding variable in subject position bearing the same i-index. Therefore, *everyone* is not an intervening potential binder for x_j , and *what* is the next and correct candidate.

The ambiguity in (22) is predicted by the *Scope Principle* as outlined in (17). *What* receives wide scope because it c-commands the chain comprised of *everyone* and its variable. In turn, *everyone* c-commands a member of the chain headed by *what* (namely the wh-variable in object position), yielding the wide scope reading of the quantifier.

The Chinese counterpart of the English example can be explained in the same way. The relevant LF representation of (8a) is (23).

- (23) $[_{CP} \text{ shenme}_j [_{IP} \text{ meigeren}_i [_{IP} x_i [_{VP} \text{ maile } x_j]]]]$
 what everyone bought

The most local potential A'-binder of x_j is *meigeren*. And for the same reasons as in the English case, only *shenme* can bind x_j ; if *meigeren* also bound x_j , we will violate Principle C and create vacuous quantification. Again, (23) yields two possible readings: a wide scope interpretation of *shenme* (c-command of *meigeren* and its variable) or the wide scope of *meigeren* (c-command of the wh-variable).

Now let's examine the unambiguous cases where the subject is questioned and the object quantified. The relevant LF configurations are illustrated below in (24) and (25).

- (24) a. $[_{CP} \text{ who}_i [_{IP} x_i [_{VP} \text{ everything}_j [_{VP} \text{ bought } x_j]]]]$
 b. $*[_{CP} \text{ who}_i [_{IP} \text{ everything}_j [_{IP} x_i \text{ bought } x_j]]]$

- (25) a. $[_{CP} \text{ shei}_i [_{IP} x_i [_{VP} \text{ meige dongxi}_j [_{VP} \text{ maile } x_j]]]]$
 b. $*[_{CP} \text{ shei}_i [_{IP} \text{ meige dongxi}_j [_{IP} x_i \text{ maile } x_j]]]$

In both the English and Chinese sentences, the object QP may adjoin either to VP (a-examples) or to IP (b-examples). The first option correctly yields the one reading where *who/shei* has wide scope relative to *everything/meige dongxi*. The variables are bound by their proper local A'-binders to which they are co-indexed. The second option, adjunction to IP, is ruled out by the

MBR since *everything/meige dongxi* is the most local binder of both variables. Recall that QP traces are not subject to Principle C.

To summarize, the new *Scope Principle* (26) and the *MBR* (27) together account for the English and Chinese ambiguity/non-ambiguity contrast in Wh/QP interaction.

(26) *Scope Principle (revised)*

A quantifier A may have scope over a quantifier B iff A c-commands a member of the chain containing B.

(27) *The Minimal Binding Requirement*

Variables must be bound by the most local potential A'-binder.

Moreover, these principles make predictions about such scope behaviour in languages with and without syntactic wh-movement. These are represented schematically in (28) and (29) below; for the present purposes, it suffices to present predictions made about subject/object relations.

(28) *Language with overt wh-movement*

- | | |
|---|--------------------|
| a. [wh _{subj} ...[x _{subj} ...QP _{obj} ...]] | <i>unambiguous</i> |
| b. [wh _{obj} ...[QP _{subj} ...x _{obj}]] | <i>ambiguous</i> |

(29) *Language without overt wh-movement*

- | | |
|---|--------------------|
| a. [wh _{subj} ...[x _{subj} ...QP _{obj} ...]] | <i>unambiguous</i> |
| b. [wh _{obj} ...[QP _{subj} ...x _{obj}]] | <i>ambiguous</i> |

A&L's analysis also successfully accounts for the Wh/QP interaction cases in Spanish (for a detailed discussion see A&L, 1993b).

The analysis proposed here is very much in the spirit of the *Generalized Binding Theory* of Aoun (1985). One concern that arises is their assumption about variable types. Their MBR analysis crucially depends on the distinction between wh-traces and QP traces. They must assume that the trace of a QP is not an R-expression in the sense that it obeys Principle C; otherwise, IP-

adjunction of a QP-object cannot be ruled out and ambiguity should arise in a question such as *Who bought everything?*, contrary to fact. A&L offer no independent evidence as to how these variables differ other than to ensure that their analysis accounts for the Wh/QP data.

In the next section, I will present some Wh/QP facts in French. As neat and tidy as the *MBR* approach is, it still falls short in explaining the contrast we find between overt syntax and LF within the same language as will be shown.

1.2 A Missing Non-Echo Interrogative Reading

According to any one of the analyses discussed in the previous section, the prediction is that ambiguity should arise only when the configuration has the subject as the quantified expression while the object is the questioned element. Otherwise, a wh-subject/QP-object configuration should yield an unambiguous interrogative sentence. Furthermore, these predictions should hold regardless of the level at which the wh-word is moved.

Given that French has both wh-fronting and wh-in-situ interrogatives, we will need to test the predictions at both levels (overt syntax and LF). Section 2.1 is devoted to a discussion of the overt syntax while section 2.2 presents the in-situ facts on Wh/QP interaction. We will analyze the data under A&L's (1993) proposal.⁴

1.2.1 Overt Syntax

Consider the cases of the interaction of overt wh-movement and quantified expressions in (30)⁵:

- (30) a. Qui est-ce qui a rencontré tous les linguistes à la conférence?
 who is-it that have met all the linguists at the conference
 'Who did all the students meet at the conference?'

⁴French data for this thesis was elicited with the generous help of five speaker-consultants. The dialects include Franco-Albertain, Franco-Ontarian, Québécois, Marseille and Atlantic-Pyrenees.

⁵The change in NPs has no effect on the availability of readings.

- (30) b. Qui est-ce que tous les étudiants ont rencontré à la conférence?
 who is-it that all the students have met at the conference
 'Who did all the students meet at the conference?'

Let's first look at (30a) which is judged to be strictly unambiguous. A pair list answer is not possible; it must be the case that one particular person met all of the linguists at the conference. The data again supports the predictions made by the *Scope Principle* and the *MBR*. The LF-representation is given below in (31):

- (31) a. $[_{CP} \text{ Qui}_i \dots [_{IP} x_i [_{VP} \text{ tous les linguistes}_j \dots [_{VP} \dots x_j]]]]$
 who all the linguists
- b. $*[_{CP} \text{ Qui}_i \dots [_{IP} \text{ tous les linguistes}_j [_{IP} x_i \dots [_{VP} \dots x_j]]]]$
 who all the linguists

(31b) is ruled out by the *MBR*. In (31a), only *qui* may have wide scope since *tous les linguistes* does not c-command any member of the chain headed by the wh-operator; *qui* c-commands all of the members of the QP-variable chain.

Let's now look at (30b). At LF, (30b) is proposed to have the configuration in (32)⁶:

- (32) $[_{CP} \text{ Qui}_j \dots [_{IP} \text{ tous les étudiants}_i \dots [_{IP} x_i [_{VP} \dots x_j]]]]$
 who all the students

The most local A'-binder for x_i is the universal quantifier adjoined to IP. Moreover, *tous les étudiants* does not intervene in the binding relation between *qui* and its variable x_j since *tous* is not a potential binder according to the *MBR*. The *Scope Principle* dictates that *qui* may receive wide scope; the wh-operator c-commands the QP. Conversely, *tous* may get wide scope since it c-commands a member of the chain headed by the wh-operator, namely x_j variable.

This prediction does not seem to be borne out in the French cases, at least for some

⁶Irrelevant items have been omitted for clarity. We will come back to the status of the *...est-ce que/qui...* '...is-it that...' in Chapter 2.

speakers. Unlike English, the QP-subject/Wh-object configuration in (30b) does not give rise naturally to any ambiguity. The students as a collective group, may have met one particular person at the conference, such as Reinhart, in which case the wh-element has wide scope over the QP. The reading where each student or subsets of students met someone different (i.e. a pair-list answer, in which case the universal quantifier scopes over the wh-word) is not available for some speakers.

Does this necessarily mean that the A&L's two principles are inadequate in capturing this data? Under L&S's analysis, the absence of a distributive reading can be explained if we assume that *tous les étudiants* 'all the children' is non-quantificational and never quantificational at least for these speakers. I will not adopt this view for reasons discussed earlier (section 1.1.2).

Moreover, the lack of ambiguity is not absolute as in wh-subject/QP-object structure of (30b). It is possible to get a distributive reading if given a good context. The collective reading is rather the strongly preferred one. Cheng (1991) notes this same discrepancy in Mandarin Chinese. Huang (1982) reports that Chinese Wh-object/QP-subject and Wh-subject/QP-object configurations are both unambiguous in contrast to A&L (1993a,b) who claim there is the same ambiguity/non-ambiguity distinction as in English. For the moment, we will assume that the contrast does exist in French as predicted by A&L's (1993) principles. An account for this disagreement in judgements will be given in Chapter 2.

We have seen that the *Scope Principle* and the *MBR* does adequately account for the scope interaction of wh-words that have undergone overt wh-movement and quantifiers.

1.2.2 LF syntax

Assuming that wh-in situ undergoes wh-raising at LF (Aoun et al., 1981; Huang, 1982), we would again expect the ambiguity/non-ambiguity paradigm to hold. Whether a language performs wh-movement overtly or covertly should not affect the Wh/QP scope interaction as demonstrated in section 1.3 with the data from Chinese, a wh-in-situ language.

Whether wh-movement has or has not taken place in French matrix questions with a subject wh-word is an open question. That is, (33) could be a case of vacuous movement or an

in-situ subject. Either way, the only reading possible is where the wh-word has the wider scope.

- (33) a. Qui a rencontré tous les linguistes?
 who has met all the linguists
- b. [CP Qui_i...[IP x_i [VP tous les linguistes_j...[VPx_j]]]]
 who all the linguists

Regardless, the important point is that the *Scope Principle* and the *MBR* correctly predict the allowable reading(s). Unless counter-evidence surfaces, we will assume the analysis accounts for the wh-in-situ subject/QP-object case.

Now let's turn our attention to a clearer case of wh-in-situ. Given the appropriate context to satisfy the discourse restrictions on wh-in-situ in French, we expect the question in (34) to be ambiguous. But, it isn't.

- (34) a. #Tous les étudiants ont rencontré qui?
 All the students have met who
 'Who did all the students met?'
- b. [CP Qui_i...[IP tous les étudiants_j...[IP x_j [VPx_i]]]]
 who all the students

- (35) [CP shenme_i [IP meigeren_j [IP x_j [VP maile x_i]]]]
 what everyone bought

The proposed LF representation of (34a), (34b) parallels the Chinese example (23) repeated as (35). The most local A'-binder of x_j is *tous les étudiants* 'all the children' in the IP adjoined position. Yet, the universal QP is not a possible A'-binder to the wh-variable according to the MBR. The remaining candidate is the wh-operator *qui*. According to the *Scope Principle*, *qui* and *tous les étudiants* should be able to take on any relative scope relation.

However, not only is there no ambiguity, speakers unanimously reject (34) as a good question even given the appropriate discourse context. (34) is only interpretable as an echo question. Here, we define "echo questions" as wh-questions with a high rising intonation on the wh-word whose purpose is to solicit the repetition of a previous statement. If we assume the

analysis that echo wh-words do not interact at all with non-echo wh-words (Comorovski, 1996) and extend this further to interaction with quantifiers, then there is no scope relation between *tous les étudiants* and *qui*.

We must acknowledge the scope judgement on the same QP-subject/Wh-object structure discussed in Aoun et al. (1981).

- (36) Tous les enfants ont vu qui?
All the students have seen who

They claim that question (36) (their 18) illustrates only a wide scope reading of the wh-in-situ. If we assume though the standard analysis that echo wh-words gets the widest scope possible, then perhaps there is where lies the apparent conflict in data. It may be that the wide scope reading Aoun et al. (1981) reported is rather a property of echo questions.

1.2.3 The Problem

In the previous section, we have shown that a wh-object/*tous*-subject configuration disallows a non-echo reading of the interrogative. Before we can come to any generalizations, it is necessary to first answer the immediate questions in (37):

- (37) a. Is it the QP that is responsible for the lack of a non-echo reading?
b. If so, is this blocking effect proper to the quantifier *tous*? Or do the other universal quantifiers exhibit the same effect on in-situ interrogatives?
c. What is the structural relation between the QP and the wh-in-situ under which this effect surfaces?

As we have assumed thus far, wh-in-situ interrogatives are possible in French as shown in (38).

- (38) a. Ils ont rencontré qui?
They have met who
'Who did they meet?'

- (38) b. Chris et Marie ont rencontré qui?
 Chris and Marie have met who
 'Who did Chris and Marie meet?'

Note that (38a) forms a minimal pair with (34) which can only have an echo reading. The only difference is that the latter has a quantified subject. Thus, the answer to (37a) is "yes". It is *tous* that is responsible for the lack of a non-echo reading.

Next, consider (39) in answering (37b). The examples in (39) minimally differ from (34) on the quantifier used. The fact that both (39a) and (39b) can only be read as echo questions shows that the blocking effect is not specific to the particular quantifier but is a general effect of QPs.

- (39) a. #Chaque étudiant a rencontré qui?
 each student has met who
 'Who did each student meet?'
 b. #Chacun des étudiants a rencontré qui?
 Each one-of-the students has met who
 'Who did each of the students meet?'

Moreover, quantificational elements (operators inclusive) other than universals appear to exhibit the same effect on the in-situ interrogatives, including negation (40a), modals (40b), quantificational adverbs (40c) and negative quantifiers (40d).

- (40) a. #Il n' a pas rencontré qui?
 He NE has not met who
 'Who didn't he meet?'
 b. #Il peut rencontrer qui?
 He can meet-INF who
 'Who can he meet?'
 c. #Il admire toujours qui?
 He admires always who
 'Who does he always admire?'

- (40) d. **#Personnen**'admire qui?
 Nobody NE admires who
 'Who does nobody admire?'

Finally, we argue that the relevant structural relation between the quantificational element/operator and the wh-in-situ is one of c-command.

- (41) a. Qui n' a pas rencontré Lise?
 who NE has not met Lise
 'Who didn't meet Lise?'
- b. Qui peut rencontrer Chris?
 who can meet-INF Chris
 'Who can meet Chris?'
- c. Qui admire toujours Marie?
 who admires always Marie
 'Who always admires Marie?'
- d. Qui n'admire personne?
 who NE admires nobody
 'Who admires nobody?'

If we assume that the cases in (41) in-situ are wh-subjects, then the fact that they are possible as non-echo questions supports the c-command relation hypothesis. Otherwise, there is a gap in the data. Another piece of evidence of the c-command relation that holds is given in (42), dative constructions. (42a) is acceptable as a non-echo question where the object is a wh-word and the dative quantified. The reverse case where the dative is questioned and the object quantified has an obligatory echo reading.

- (42) a. Il a promis **quoi** à **tous** les étudiants?
 he has promised what to all the students
 'What did he promise to all the students?'
- b. **#Il** a promis **tous** les fonds à **qui**?
 he has promised all the funds to who?
 'Who did he promise all the funds to?'

In assuming Larson's VP-Shell Hypothesis where direct objects c-command indirect objects, the contrast in (42) is expected under the proposed c-command condition.

One final piece of evidence of the c-command condition is shown in the right dislocation examples in (43).

- (43) a. Ils ont rencontré **qui**, **tous** les étudiants?
 they have met who, all the students
- b. Ils ont rencontré **qui**, **chacun** des étudiants?
 they have met who, each one of-the students

Once the QP has been *right* dislocated as in (43), the questions are interpretable as a non-echo questions. Under an analysis of right dislocation a la Kayne, the IP *ils ont rencontré qui* is leftward moved so that the IP contained wh-in-situ is out of the c-command domain of the universal quantifier.⁷

The generalization to be made in the case of in-situ Wh/QP interaction is the following: a c-commanding quantificational element/operator prevents an in-situ wh-word from receiving a non-echo interrogative interpretation. Thus far, we have been referring to this phenomenon as a "blocking effect". The immediate question is what QPs are blocking. This question directly bears on the assumptions that LF movement, specifically Wh-raising, exists. If it is the case that a wh-word cannot cross over a QP in French, we would expect even the overt cases of Wh/QP interaction to be unacceptable under the assumption that movement prior to and in LF should be governed by the same principles.

1.3 Summary

The general concern of studies on Wh/QP interaction is the ambiguity/non-ambiguity contrast depending on the c-command relation of the wh-word with respect to the universally

⁷Two issues arise from the dislocation examples in (43). First, there is the problem of how the pronoun *ils* 'they' is bound if the dislocated QP does not c-command it (a la Kayne). Second, *chacun* 'each one' is grammatically singular and normally binds a singular pronoun (see Chapter 2); however, the pronoun *ils* 'they' in (43b) is plural. We will not address these issues in this thesis.

quantified phrase. This contrast holds of languages with or without overt wh-movement. We have seen that there is still another facet to be accounted for given the data from French: the echo/non-echo distinction. That is, a wh-in-situ c-commanded by a universal QP lacks a non-echo reading; the utterance is at best an echo question. What is most interesting is that within the same language we find both contrasts. French in-situ interrogative constructions exhibit the QP blocking effect giving us the echo/non-echo contrast while constructions with overtly moved wh-words are clearly non-echo and exhibit the ambiguity/non-ambiguity contrast. The aim of this thesis is to account for this sharp distinction between the two levels.

In the final section of this chapter, I will briefly introduce the general framework our analysis is set within: Minimalism.

1.4 Minimalist Framework

The Minimalist Framework differs from previous models of grammar such as the *LGB* framework in that there are only two interface levels rather than a four level representation including D-structure, S-structure, Logical Form (LF) and Phonetic Form (PF). The standard assumption is that language faculty consists of two components: the lexicon and the computational system (C_{HL}). Moreover, the C_{HL} is based on two operations: *Merge* and *Move* which work together to form a linguistic expression that enters the phonological (PF) interface level and the logical form (LF) interface level. The operation *Select* takes a lexical item from the numeration (set of lexical choices) and introduces it into the derivation as a syntactic object (SO). *Merge* then combines two of these objects and forms a single one (SO_k). This newly formed SO_k itself can merge with another SO_j selected or built from the same numeration. The alternation between *Select* and *Merge* continues until the numeration has been exhausted and we are left with a single syntactic object to enter the interface levels.

Chapter 2 The Elements, Structures and Contexts

2.0 Introduction

The aim of this chapter is to introduce the core elements involved in Wh/QP interaction, the interrogative structures available in French and the discourse restrictions on wh-in-situ questions. Section 2.1 is devoted to French universal quantifiers and wh-expressions; in the latter case, I will be detailing their internal structure. In section 2.2, the focus will be on the four strategies French has in forming interrogatives: wh-in-situ, overt wh-movement + inversion, *est-ce que*, and wh-clefts. Finally, it will be shown in section 2.3 that wh-in-situ questions are subject to discourse restrictions unlike the overtly moved wh-questions.

2.1 Elements

2.1.1 Universal Quantifiers

Before anything can be said about Wh/QP interaction, we must first establish that French indeed has the necessary tools for testing, namely the universal quantifiers. Studies have revealed that the interaction of quantificational phrases may vary from language to language. This variation is evidenced in comparing QP/QP interaction of universal and existential quantifiers in English, Mandarin Chinese and Japanese. The aim of this section is to see what type of system French has. Our main focus will be on the nature and behaviour of universal quantifiers. Section 2.1.1.1 introduces us to the two types of quantifiers in terms of their grammatical position: determiner versus partitive. Section 2.1.1.2 establishes the quantificational force of *tout/tous* and *chaque/chacun* with a special note on the interpretation of singular *tout*. Also, I will adopt diagnostics from Beghelli & Stowell (to appear, henceforth B&S) to differentiate the four universal quantifiers. Finally, section 2.1.1.3 reviews the findings for French in light of an analysis provided in Beghelli (1995).

2.1.1.1 Determiner/Partitive Universal Quantifiers

Quantifiers may occupy a number of positions in the syntax: determiner, partitive, pronominal, floating and binominal. For the present research, our focus will be on the first two types. Descriptively speaking, determiner quantifiers are immediately followed by a bare NP while partitive quantifiers take DPs.⁸ Consider the examples in (1) between the determiner *chaque* 'each' and the partitive *chacun*.

- (1) a. Chaque enfant recevra un ballon.
Each child receive-3SG-FUT a ball.
'Each child will receive a ball.'
- b. Chacun des enfants recevra un ballon.
Each one of-the children receive-3SG-FUT a ball.
'Each of the children will receive a ball.'

The reported difference between (1a) and (1b) is the type of referent: the first has a "contextual referent" while the latter has a "discourse referent" (Junker, 1995). More precisely, (1a) is true if each/every person fitting a description of a child (context referent) will receive a ball; thus, it is up to the hearer to construct this set from which individuals are chosen. On the other hand, *chacun des enfants* (1b) is true only if each child of an identified set of children (discourse referent) will receive a ball; the set of children is already part of the discourse.

The same contrast is found between determiner *tout* and partitive *tous* 'all'.

- (2) a. Tout enfant participant à la fête recevra un ballon.
Any child attend-ing at the party receive-3SG-FUT a ball.
'Any child attending the party will receive a ball.'
- b. Tous les enfants participant à la fête recevront un ballon.
All the children attend-ing at the party receive-3PL-FUT a ball.
'All the children attending the party will receive a ball.'

⁸We should note however that partitive constructions such as *each of the children* require the preposition *of*. On the other hand, *of* is optional in *all (of) the children*. I will not attempt to answer the question of whether partitive quantifiers are followed by a PP or a DP.

(2a) is true if any person matching the contextual description of a child attending the party receives a ball; the group has not yet been constructed in previous discourse. Contrastively, the group of children in (2b) is already under discussion.

2.1.1.2 Diagnostics

Thus far, we have referred to *tout/tous/chaque/chacun* as universal quantifiers and have not made any distinctions between them. What are their individual properties? I will adopt the diagnostics used in B&S (@) to answer this question.

Let's first examine the universal force conveyed by English universal quantifiers. (3a-c) are from B&S (@).

- (3)
- a. All (of) the boys visited Mary at 6 o'clock.⁹
 - b. Every boy visited Mary at 6 o'clock.
 - c. Each boy visited Mary at 6 o'clock.
 - d. Each of the boys visited Mary at 6 o'clock.

Suppose that Paul, Chris and David form the set of boys being quantified over, the sentences in (3) are true only if Paul, Chris and David all visited Mary at the time stated. If any one of them fail to do so, the sentences would all be false. The French cases exhibit the same truth conditions as shown in (4).

- (4)
- a. Tous les garçons ont rendu visite à Marie à 6h.
All the boys have render-PAST visit to Mary at 6 o'clock.
'All the boys visited Mary at 6 o'clock.'
 - b. ?*Tout garçon a rendu visite à Marie à 6h.
Every boy has render-PAST visit to Mary at 6 o'clock.
'Every boy visited Mary at 6 o'clock.'
 - c. Chaque garçon a rendu visite à Marie à 6h.
Each boy has render-PAST visit to Mary at 6 o'clock.
'Each boy visited Mary at 6 o'clock.'

⁹It is assumed that *all the boys* is a partitive construction - a reduced form of *all of the boys*.

- (4) d. Chacun des garçons a rendu visite à Marie à 6h.
 Each of-the boys has render-PAST visit to Mary at 6 o'clock.
 'Each of the boys visited Mary at 6 o'clock.'

The sentences in (4) are true only in the case where all the members of the set of boys visited Marie at 6 o'clock.

Of note, however, is the construal of the determiner quantifier in (4b). *Tout* 'every' can only be understood in the generic sense of 'every'. In the English system, 'every' has two interpretations: one that ranges over a familiar set (5a) and the other a generic construal (5b).

- | | | |
|-----|---|-------------------------|
| (5) | a. Every painter contributed a painting to the exhibition. | <i>specific reading</i> |
| | b. Every painter loves art. | <i>generic reading</i> |
| (6) | a. All the painters love art. | <i>specific reading</i> |
| | b. All painters love art. | <i>generic reading</i> |

English also has another way of getting the same generic reading. (5b) and (6b) are semantically identical. Moreover, neither co-occur with a(nother) determiner under this reading. Note that the addition of 'the' to (6b) as in (6a) forces a specific reading. I have assumed thus far that *tout* corresponds to generic 'every' rather than generic 'all' simply based on the grammatical number of the NP complement. *Tout* like 'every' only precedes a singular NP.

- | | | |
|-----|--------------------------|---|
| (7) | a. * <i>Tout</i> enfants | c. ?? <i>Tout</i> l'enfant |
| | b. * <i>Tous</i> enfants | d. <i>Tous</i> les enfants (<i>specific reading only</i>) |

Although *tout* has a plural variant *tous*, the latter can never take a bare plural NP (7b). Furthermore, the generic reading is lost with the addition of the plural determiner *les*. (7c) is pragmatically odd; one can only interpret it as referring to the different (body) parts of a child.¹⁰

Now that we have shown the type of quantificational force these French quantifiers have, we need to look into the properties which distinguish *tout*, *tous*, *chaque* and *chacun*. Here, I will

¹⁰I refer you to Junker (1995) for a detailed discussion of [*tout DP-singular*] construction. *Tout l'enfant* is to be read as 'all of the child'.

adopt the diagnostics discussed in B&S (@) to tease apart these four quantificational elements. Although all of the QP objects in (8) allow a distributive reading where the object is distributed over looking events, only 'all' can have a collective construal. It must be the case that there are as many looking events as there are members with the use of 'every' (8b) and 'each' (8c).

- (8)
- a. The Pope looked at all the members of his flock.
 - b. The Pope looked at every member of his flock.
 - c. The Pope looked at each member of his flock.

In order to see this distributive/collective distinction more clearly, we should turn to the case in (9).

- (9)
- a. All the boys surrounded the dog.
 - b. ??Every boy surrounded the dog.
 - c. ??Each boy surrounded the dog.

Collective predicates like 'surround' require semantically plural agents. Only 'all' in (9a) is semantically compatible with 'surround'. The event cannot be distributed individually over each member of the set of boys.

To a certain extent, we can say that the semantic plurality of 'all' is reflected in its selectional properties. That is, 'all' combines with plural DPs and binds plural pronouns (10a). 'Every' and 'each', on the other hand, select morphologically singular NPs and bind singular pronouns (10b/c). Furthermore, partitive 'each (of)' has a somewhat split personality. Although it requires a plural DP, it binds a singular pronoun (10d).

- (10)
- a. All the girls_i said they_i were happy.
 - b. Every girl_i said she_i was happy.
 - c. Each girl_i said she_i was happy.
 - d. Each of the girls_i said she_i was happy.

To summarize the diagnostics used to distinguish universal quantifiers in English, we have

employed collective predicates, morphological number of the complement NP and number of the QP bound pronoun. I have applied these tests to French quantifiers and found the following results. Only *tous* is compatible with the collective predicate *se rassembler* 'to gather'.¹¹

(11) *Collective Predicates*

- a. Tous les étudiants se sont rassemblés dans le hall.
All the students RECIP are gather-ed in the hall.
'All the students gathered in the hall.'
- b. *Tout étudiant s'est rassemblé dans le hall.
Every student RECIP is gather-ed in the hall.
'Every student gathered in the hall.'
- c. *Chacun des étudiants s'est rassemblé dans le hall.
Each of-the students RECIP is gather-ed in the hall.
'Each of the students gathered in the hall.'
- d. *Chaque étudiant s'est rassemblé dans le hall.
Each student RECIP is gather-ed in the hall.
'Each student gathered in the hall.'

Although singular *tout* is not possible with a collective predicate, this does not necessarily mean that *tout* has the same distributive property as *chaque*. In (12), *tout pain* is only compatible with a list of different kinds of bread rather than the number of loafs. (12c) shows that *chaque* is awkward with a generic interpretation.

¹¹Inasmuch as *tous* takes a collective predicate, it is not compatible with all collective predicates (Junker, 1995). This was first discussed in Dowty (1986) who noticed the examples in (i):

- | | |
|--|---|
| (i) a. *Tous les électeurs ont élu Mulroney.
All the voters have elect-ed Mulroney.
'All the voters elected Mulroney.' | b. *Tous les étudiants sont nombreux.
All the students are numerous.
'All the students are numerous.' |
|--|---|

These predicates do not have "distributive entailments". In other words, *élire* 'to elect' and *être nombreux* 'to be numerous' do not entail parts (Junker, 1995). In Junker's analysis of these predicates, the incompatibility stems from the fact that distributive quantifiers like *tous* 'all' require access to parts with a collective predicate. Since this is not available with *élire* and *être nombreux*, the sentences in (i) are uninterpretable.

- (12) a. Tout pain sera vendu: le pain blanc, le pain de seigle, le pain paysan, la baguette...¹²
'Any bread will be sold: the white, the rye, the dark, the baguette...'
- b. *Tout pain sera vendu: les 3 pains blancs, les 10 pains de seigle, les 2 pains paysan...
'Any bread will be sold: the 3 white ones, the 10 rye ones, the 2 dark ones...'
- c. ?Chaque pain sera vendu: le pain blanc, le pain de seigle, le pain paysan, la baguette...
'Each bread will be sold: the white, the rye, the dark, the baguette...'

The diagnostics in (13) and (14) reveal that *tous* is the only truly plural universal quantifier, combining with plural NPs and binding plural pronouns while *tout* and *chaque* are grammatically singular. Moreover, *chacun* has the same split properties as the equivalent English partitive construction *each one of*: it is only compatible with a plural NP but binds a singular pronoun.

(13) *Grammatical Number*

- | | |
|------------------------------------|---|
| a. *Tout enfants
every children | b. *Tous le garçon
All the boy |
| c. *Chaque garçons
Each boys | d. *Chacun du garçon
Each of-the boy |

(14) *QP bound pronouns*

- a. Tous les enfants admirent *son/leur prof.
All the children admire-3PL-PRES *his/their teacher.
'All the children admire *his/their teacher.'
- b. Tout enfant admire son/*leur prof. (generic)
Every child admire-3SG-PRES his/*their teacher.
'Every child admires his/*their teacher.'
- c. Chacun des enfants admire son/*leur prof.
Each of-the children admire-3SG-PRES his/*their teacher.
'Each of the children admires his/*their teacher.'
- d. Chaque enfant admire son/*leur prof.
Each child admire-3SG-PRES his/*their teacher.
'Each child admires his/*their teacher.'

¹²This data is from Junker (1994).

Table 1.0 summarizes these comparative findings:

	collective predicate	singular NP	singular anaphora
tout	x	✓	✓
every (generic)	x	✓	✓
tous	✓	x	x
all	✓	x	x
chaque	x	✓	✓
each	x	✓	✓
chacun	x	x	✓
each of	x	x	✓

Table 1.0 Comparative Universal Quantifiers in English and French

So far, the diagnostics have shown that French does not have an equivalent to a non-generic distributive universal such as English *every*. Let's now look at one final test to see if the distinctions are consistent. In (15), the number of books read ranges from a maximum of 10 -if the set contains only 5 boys- to a minimum of 2 (same books).

- (15) a. All the boys read two books.
 b. Every boy read two books.
 c. Each boy read two books.
 d. Each of the boys read two books.

Although it is tempting to say at this point that force of distributivity is uniform for all these QPs, a look at (16) suggests otherwise. Only the QPs headed by *every/each* allow the inverse scope construals: if the set is comprised of 5 books, there may be either one boy or 5 boys.

- (16) a. ??A different boy read all the books.
 b. A different boy read every book.
 c. A different boy read each book.
 d. A different boy read each of the books.

In (16a), it is necessarily the case that there is one boy, which explains the odd reading with the distributive adjective *different* modifying the subject NP. Thus, it is predicted that inverse scope

construals are only possible with *chaque/chacun* 'each/each of'; that is, they can act as distributee from both subject position and object position. Contrastively, *tous* 'all' can distribute from subject position only.

French universal quantifiers exhibit the same scopal behaviour as their English counterparts. The QP headed by *tous* in subject position may have a distributive reading or a collective reading (17a). In other words, the number of books read may range from a maximum of 10 to a minimum of 2.

- (17)
- a. Tous les enfants ont lu deux livres.
All the children have read two books.
 - b. Chaque enfant a lu deux livres.
Each child has read two books.
 - c. Chacun des enfants a lu deux livres.
Each of-the children has read two books.

The inverse scope construal of *tous* is not possible as shown in (18a) where the set of children contains only one member.

- (18)
- a. ??Un enfant différent a lu tous les livres.
A child different has read all the books.
 - b. Un enfant différent a lu chaque livre.
A child different has read each book.
 - c. Un enfant différent a lu chacun des livres.
A children different has read each of-the books.

The use of 'different' forces a distributed reading on *tous* which gives us the very awkward reading. (18b) and (c), on the other hand, are interpretable; there is a different child that corresponds to each book in the set.

2.1.1.3 Summary

I have shown in the previous sections that the French inventory of universal quantifiers appears to have a gap when compared to the English system. French does not have a correspondent to the non-generic distributive 'every'. The results of the diagnostics are summarized in Table 1.1 below.

	Distributive Reading	
	subject	object
tout	?*	?*
every (generic)	?*	?*
tous	✓	✗
all	✓	✗
chaque	✓	✓
each	✓	✓
chacun	✓	✓
each of	✓	✓

Table 1.1 Availability of Distributivity of Universals

Although singular *tout* exists in French, it may only be construed generically. Its scope properties are irrelevant to the present research. Moreover, the availability of distributivity with partitive *tous* 'all' suggests that it is like 'every'; however, this generalization falls short under the inverse scope test. The distributive reading is only supported under the configuration where *tous* is in subject position. Unlike *chaque/chacun* which are strong distributives, the partitive *tous* exhibits what Beghelli (1995) terms "pseudo-distributivity". In Beghelli's extensive investigation of the scopal behaviour of different QP-types, it is shown that the availability of a distributive reading for Group Denoting QPs or GQPs (of which *tous/all* is an example) depends on their syntactic position. If particular syntactic conditions are not met, the default group interpretation of GQPs is always available.¹³ This property of *tous* will play a role later in our discussion of overt wh/QP interaction (Chapter 4).

In the next section, we will examine the second element in Wh/QP interaction - namely, wh-expressions.

¹³I refer the reader to Beghelli (1995) for a more thorough discussion.

2.1.2 *Wh-expressions in French*

The interpretation of *wh*-expressions is standardly analysed as involving an operator-variable binding relation regardless of whether a *wh*-word undergoes overt movement or remains in-situ. It is argued that English *wh*-words move to create such a relation with the moved *wh*-word in [Spec; CP] as the operator and its trace in the base position as the bound variable. Contrastively, Chinese need not move its *wh*-words given the assumption that there is an external question operator merged into the CP projection. The general observation here is that the interrogative operator is inherent to the English type *wh*-expressions (i.e. it is part of their lexical make up) while Chinese operators are realized externally (i.e. in the syntax). This cross-linguistic asymmetry is the core of the proposal by Tsai (1994) who works towards a minimalist design of *wh*-dependencies. With regards to French, we need to address the following questions: *Is the question operator inherent to the lexical item? Or is it introduced into the syntax?*

Given that French allows both overtly moved *wh*-words and *wh*-in-situ, the answer is not obvious. The fact that French has both options forces a reanalysis of the apparent internal/external operator contrast. In this section, I will argue that what we traditionally consider as the "variable" in an operator-variable binding relation is the *wh*-word itself and the "*wh*-operator" is a null Q operator of the functional category C°. Specifically, I will introduce *wh*-words as A'-anaphors that must be bound by an A'-antecedent within a local domain. I will return to the "*wh*-operator" component later in Chapter 4. We will leave aside the issue of complex *wh*-phrases such as *quel NP* 'which NPs' and *lequel* 'which one'.¹⁴

Let's first explore Tsai's (1994) proposal. In his consideration of the two basic operations

¹⁴*Lequel (de DP)* 'which one (of DP)' does exhibit D-linking effects in the sense of Pesetsky (1987). Recall that a non-echo reading is not available for *tous*-subject/*wh*-object configuration. However, with the use of *lequel* the in-situ interrogative is perfectly acceptable as a non-echo question.

- i. #Tous les enfants ont vu *qui*?
all the children have seen who
'Who have all the children seen?'
- ii. Tous les enfants ont vu *lequel de ces hommes*?
all the children have seen which-one of these men
'Which of the men did all the children see?'

This issue is beyond the scope of this thesis.

of the computational system *Merge* and *Move*, he asks the question why English does not seem to employ the *Merge* operation to satisfy feature checking. The intuitive idea is that it is far better to introduce an operator by *Merge* which is costless than by *Move* which is costly under minimalist assumptions. This is spelled out in (19):

(19) *Lexical Courtesy Hypothesis* (Tsai, 1994)

If a language may introduce an operator by binary substitution (i.e. Generalized Transformation), it will not resort to singulary substitution (i.e. Move- α).

The answer to his question is that English actually does implement the *Merge* option but at the lexical level. To illustrate this concept, Tsai gives the following paradigms (all English paradigms are from Tsai, 1994):

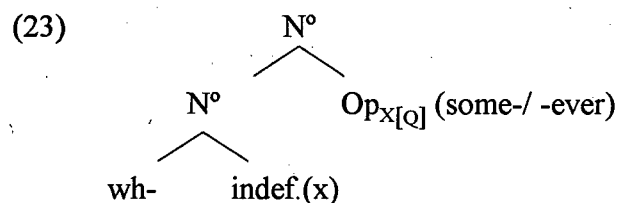
- | | | |
|------|--------------------|-----------------------|
| (20) | a. <i>wh-words</i> | b. <i>pronominals</i> |
| | wh-o wh-en | th-ey th-en |
| | wh-om wh-ere | th-em th-ere |
| | wh-at | th-at |

The reduced form of the definite article *the*, the prefix *th-*, contributes quantificational force. The *wh*-morpheme does not block binding from operators such as the free-relative universal *-ever* suffix or the existential prefix *some-*.

- | | | |
|------|--------------------------|-----------------------|
| (21) | a. <i>free-relatives</i> | b. <i>pronominals</i> |
| | wh-o-ever | *th-ey-ever |
| | wh-om-ever | *th-em-ever |
| | wh-at-ever | *th-at-ever |

- | | | |
|------|-------------------------|-----------------------|
| (22) | a. <i>wh-adverbials</i> | b. <i>pronominals</i> |
| | some-wh-at | *some-th-at |
| | some-wh-ere | *some-th-ere |

Based on such contrasts, Tsai suggests that the interrogative wh-words have a question operator as a relevant binder, albeit a null one. The proposed merge is illustrated in (23).



Since an operator is already merged at the lexical level which binds the indefinite morpheme, introduction of a clausal Q-operator would lead to vacuous quantification. Furthermore, Tsai applies his theory to the Chinese and Japanese systems. He concludes, based on evidence from island effects and conditionals, that the binding construal of operator-variable pairs for Chinese is at the sentential level (CP) while at the phrasal level (DP/PP) for Japanese (I refer the reader to Tsai, 1994 for a detailed discussion).

Under Tsai's analysis, simple French wh-words would also be represented by (23); French wh-words cannot be bound by non-interrogative operators such as Negation or Universals, unlike Chinese. One particular reservation I have about his analysis is that Tsai allows LF movement of the Formal Features (FF) of wh-expressions. This is crucial to his analysis of Hindi, an in-situ language that appears to display Subjacency effects like English and unlike Chinese. He argues that Hindi is simply an LF counterpart of English overt wh-movement where the former contains a weak Q while the latter a strong Q. However, I will show that the examples he refers to are not supportive of his claim. Specifically, there is another factor that may be contributing to the movement-like effects. Consider (24) and (25). According to Mahajan (1991), a finite clausal complement is always extraposed in Hindi (24a); moreover, a wh-in-situ is not permitted in this environment. The structure is "saved" if the wh-word is overtly moved (24b). Contrastively, infinitival complements do not extrapose and do allow an in-situ wh-word (25).

- (24) a. *raam-ne t_i socaa [_{CP} ki mohan-ne kis-ko dekhaa]_i
 Ram-erg thought that mohan-erg who saw
 'Who did Ram think Mohan saw?'
 b. kis-ko_j raam-ne t_i socaa [_{CP} ki mohan-ne t_j dekhaa]_i
 who Ram-erg thought that mohan-erg saw
 'Who did Ram think Mohan saw?'
 (25) raam-ne [PRO kis-ko dekhaa] caahaa
 Ram-erg who to see want
 'Who did Ram want to see?'

Note that there are two factors in play in the above Hindi examples: 1) extraposed/non-extraposed and 2) finite/non-finite contrast. If our A'-anaphor analysis is correct, it may be the case that wh-in-situ in (24a) is a violation of the matrix clause restriction (as seen in Chapter 1). (25) is grammatical for the same reason as French; briefly, an infinitival clause does not count as a local domain in which the in-situ wh-word must be bound. Here, I will not further develop this argument. What is crucial to retain is the finite/non-finite distinction involved.

Nevertheless, Tsai's hypothesis does shed some light on the matter at hand, namely the internal structure of wh-words in French. I will adopt his ideas about the morphological breakdown of wh-expressions and his concerns about *Merge/Move*. Specifically, I assume that wh-expressions in French have at least the following internal structure shown in (26): a nominal composed of an indefinite pronominal element (*pro*), and a wh-feature [wh].

- (26)
- $$\begin{array}{c}
 N^0 \\
 \swarrow \quad \searrow \\
 [wh] \quad \quad pro \\
 \quad \quad | \\
 \quad \quad [+a']
 \end{array}$$

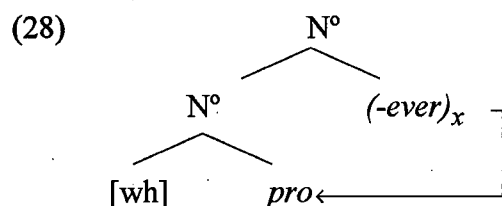
(26) diverges from Tsai's representation in that the pronominal element is A'-anaphoric (or

specified [+a']).

Another difference that surfaces in the present analysis is that the interrogative operator is not merged at the lexical level. For the moment, we will concentrate on French *wh*-expressions.¹⁵ The fact that they have the *wh*-feature does not necessarily mean that they are interrogative as also noted by Tsai. Recall the free-relative cases in English where the quantificational force of the suffix *-ever* is not blocked by [*wh*]. A similar paradigm is found in French.

- (27) a. Quoi qu'elle dise, je ne partirai pas.
 what(*ever*) that'she say-SUBJ., I NE leave-FUT. NOT
 'Whatever she says, I will not leave.'
- b. Qui que vous rencontriez, ne tardez pas à rentrer
 who(*ever*) that you meet-SUBJ., NE late NOT to return-INF.
 'Whoever you meet, don't be late in returning home.'
- c. Qui a fait cette faute ne va pas le dire.
 who(*ever*) has done this error NE go NOT it say-INF
 'Whoever made a mistake is not going to tell it.'
- d. Où que tu ailles, j'irai
 where(*ever*) that you go-SUBJ., I'go-FUT.
 'Wherever you go, I will go.'

If we assume Tsai's proposal, French has a null version of the free-relative universal affix that attaches to the *wh*-word in (26); moreover, the *wh*-feature does not block the binding between the affix and the pronominal (28).



¹⁵I will ultimately extend the claim to English *wh*-expressions as well. So, English *wh*-words are not inherently interrogative as Tsai suggests; they also depend on the interrogative C° for interpretation like Chinese.

The proposal that *wh*-expressions are not inherently interrogatives allows us to also explain the identical form of the interrogative *qui* 'who' and the relative *qui* 'who'. Given the present hypothesis, they are the same lexical entry. Again we differ from Tsai (1994) in that he stipulates a predicative operator merged at the lexical level which determines at the outset the interpretational nature of the expression. Instead, I propose that the interpretation of *qui* is determined in the syntax. That is, *qui* is a relative pronoun when it is bound by Pred of the category C^0 .¹⁶ Similarly, *qui* is a question word when it is bound by a null Q of the category C^0 .

In summary, the standard operator-variable relation can be represented as a null Q-*wh*-anaphor binding relation. I have proposed that French *wh*-words are A'-anaphoric pronominals (*wh*-anaphors) that are subject to locality conditions. Ultimately, I will extend this analysis to *wh*-in-situ in English and Chinese. At LF, the representation of *wh*-in-situ in these languages are the same -- Q-operator/binder in C^0 --, contrary to Tsai's lexical/clausal distinction.

2.2 Structures of French Interrogatives

2.2.1 Four Strategies and Predictions

One of the first studies to recognize the fact that French allows *wh*-in-situ questions is Aoun et al. (1981). Since then, many studies have referred to the "optional" *wh*-movement in French (Aoun et al., 1987; Cheng, 1991; Rizzi, 1996 and so on). The general question being raised here is why a language should have two ways of achieving the same goal. Cheng (1991) addresses this global issue in her dissertation on the typology of *wh*-movement. She demonstrates that languages which appear to allow "optional" fronting of *wh*-words are actually true *wh*-in-situ languages.¹⁷ The fronting of *wh*-elements are rather instances of cleft formation in the case of *wh*-arguments and topicalization in the case of *wh*-adjuncts (Cheng, 1991). This section examines

¹⁶Whether an actual Pred operator exists is open to debate. The interpretation of a relative pronoun in essence is determined by the head NP of the relative clause. The intervening C^0 could simply be a strong [wh] feature that attracts the relative pronoun to the position from which it can be bound by the antecedent NP. We will return to relative clauses in Chapter 4.

¹⁷Egyptian Arabic, Bahasa Indonesian and Palauan were the languages discussed.

the conditions under which overt wh-movement and wh-in-situ may be employed in French.

French has four interrogative constructions from which to choose for the purpose of seeking information. These four strategies are illustrated in (29) - (32) with their proposed structure: 29) wh-in-situ, 30) inversion + wh-fronting, 31) wh-clefts and 32) reinforced interrogative.^{18,19} At first glance, it appears that the predictions are borne out.

- (29) a. Tu as vu *qui*? *wh-in-situ*
 You have seen who
 'Who did you see?'
 b. [_{IP} Tu as vu **qui**]
- (30) a. *Qui* as-tu vu? *inversion + wh-fronting*
 Who has-you seen
 'Who did you see?'
 b. [_{CP} **Qui**_i [_C^o as_j [_{IP} tu e_j vu **t**_i]]]
- (31) a. C'est *qui* que tu as vu? *wh-cleft*
 It is who that you have seen
 'Who did you see?'
 b. [_{TP} C'est **qui**_i [_{CP}Op_i que [_{IP} tu as vu **t**_i]]]]]
- (32) a. *Qui* est-ce que tu as vu? *reinforced interrogative*
 Who is-it that you have seen
 'Who did you see?'
 b. [_{CP} **Qui**_i [_C^o est_j [_{IP} ce e_j **t**_i [_{CP}Op_i que [_{IP} tu as vu **t**_i]]]]]]]

Under Cheng's analysis, (30) should be a derivation of (29) by a process of topicalization operating on the wh-word *qui* 'who'. Moreover, (32) may be derived from (31) in more or less

¹⁸"Reinforced interrogatives" is a traditional grammar term referring to the ...*est-ce que/qui*... strategy.

¹⁹There is also *stylistic inversion* and *complex inversion* which I will assume under strategy (1a) since in all three cases, overt wh-movement and inversion are involved.

Let's consider (34) below. (34a) presupposes the existence of a set which must contain at least one member that satisfies the proposition (x left).

- (34) a. It is John that left.
 b. $\exists x$ such that x left. ($\exists x (x \text{ left})$)

For example, the oddness of (35) is due to a contradiction in information; (35) presupposes that the someone left but the clefted element denies this claim.

- (35) ??It was *nobody* that left.

An alternative analysis is presented in Rochemont (1986). He argues that the presupposition-like property of clefts stems from the requirement that "...non-focused material be 'presupposed' by virtue of prior discourse..." (132, Rochemont, 1986). The oddness of (35) given this analysis may be attributed to the general awkwardness of quantified phrases in cleft focus position (36) instead of a contradiction to the logical presupposition.

- (36) a. ??It is *every professor* that Marie admires.
 b. ??It is *few guests* that arrived on time.

Regardless of the analysis we opt for, one fact remains the same: a negated NP cannot occur in a clefted position. I propose that we extend the general analysis to question-answer pairs. That is, an answer denoting an empty set to a wh-cleft is not felicitous since it is "presupposed" that there is at least one member in the answer set that satisfies the proposition. Or alternatively, a quantified phrase cannot be focused. Here, I am assuming that a negative QP answer is focused by virtue of it being the answer to a wh-cleft question. Now consider the reinforced interrogative in (37) versus the wh-cleft in (38).

- (37) Q: *Qu'est-ce que Marie a acheté?*
What is-it that Marie has bought
'What did Marie buy?' A: Rien.
Nothing
- (38) Q: *C'est quoi que Marie a acheté?*
It is what that Marie has bought
'What is it that Marie bought?' A: ??Rien.
Nothing

If (37) is truly a wh-cleft that has undergone syntactic operations, we would expect the same odd reading with respect to the answer *rien* 'nothing' as in (38). However, *rien* is a perfectly good answer to the reinforced interrogative.

Interestingly, we find the same oddness of a negative answer to an *in-situ* interrogative. Compare (39) and (40):

- (39) Q: *Que Marie a-t-elle acheté?*
What Marie has-t-she bought A: Rien.
Nothing
- (40) Q: *Marie a acheté quoi?*
Marie has bought what A: ??Rien.
Nothing

What we can conclude at this point is that reinforced interrogatives do not have the same discourse properties of cleft constructions. On the other hand, *in-situ* interrogatives pattern like the latter in their presuppositional nature. In fact, speakers can use (38) and (40) interchangeably. The results of this *Negated NP Diagnostic* support our earlier observations about the semantics of *in-situ* constructions.

2.3 Felicitous Discourse Contexts

Some pragmatic constraints on interrogatives in spoken French were proposed in a 1989 study by Aidan Coveney on yes-no questions and wh-questions. For the present purposes, we will only be concerned with proposals for the latter. First, the interrogatives are grouped into one

of three communicative functions (41).

- (41) a. Speaker expects addressee/hearer to respond: eg. request for information, 'biased' request for information, request for action, offer, greeting.²⁰
- b. Speaker expects him/herself to respond: eg. self-addressed request for information.
- c. No response expected: eg. quoted question, rhetorical question, echo filler, 'sub-topic introducing question', pre-announcement, post-announcement.

Here, we are mainly interested in the interrogatives whose function is of type (41a). Some of the "strongest discourse constraints operating" involve in situ constructions²¹; recall that French subject *wh-in-situ* and simple subject interrogatives are indistinguishable at overt syntax. Descriptively speaking, such constructions have a tendency to be short with very few adverbials or complements.

The main observation is that these interrogatives are all "textually/situationally evoked". Furthermore, Coveney appeals to the notion of strong versus weak "presupposition":

It should be mentioned however, that the potential alternative utterances to [the *wh-in situ* interrogatives] with the *wh*-element in clause-initial position would not be unacceptable, even in the same context: the difference would seem to be that, the speaker would be presupposing the given information less strongly than the [in situ] utterances. (96, Coveney, 1989)

Coveney provides the following paradigm to illustrate the contrast. The speaker asks her friend, who is looking in through a shop window, what she wants:

- | | |
|---|--|
| (42) a. Qu'est-ce que tu veux?
What is-it that you want
'What do you want?' | b. Tu veux quoi?
You want what
'What do you want?' |
|---|--|

(42a) would be a standard accepted formulation of the question. On the other hand, the

²⁰Coveney does not define the term "biased". I will assume that whatever this type of request may be, it is crucially different from "echo questions".

²¹*Wh-in-situ* are referred to as [SVQ] in Coveney (1989).

alternative (42b) is somewhat anomalous given the context. The speaker, in using the latter, would be "...strongly presupposing that [her friend] wanted something, whereas [her friend] had not given any indication of this..." (96, Coveney, 1989). Although Coveney does not define his use of "presupposition", it seems from this example and others discussed in his work that all information other than the questioned element is *taken for granted*.²² This implication is in line with the definition of presupposition found in semantics where the truth of a presupposed proposition is uncontroversial and part of the *common ground* between hearer and speaker (Chierchia and McConnell-Ginet, 1993).

Comments gathered from the speakers I consulted are very similar to, if not the same as, the ones reported in Coveney (1989). One speaker pointed out that she would use wh-in-situ interrogatives if the information expressed by everything, except the wh-word is already a salient part of the previous discourse. Another speaker commented that this "shared" information is just background to frame the "focused" element (i.e. the one being questioned). To illustrate these judgements, consider the following scenarios:

- (43) Both Cynthia and Paul know that Marianne has two guys who want to marry her. Cynthia and Paul discuss this situation. Then Paul wonders, hoping Cynthia may know the answer to: *Marianne épousera qui?* 'Who will Marianne marry?'
- (44) David and Jan are talking about a recent conference which they and a fellow student, Sam, attended. They both know that Sam really wanted to meet two of the speakers there but only had time to meet one of them. Jan asks David: *Sam y a rencontré qui?* 'Who did Sam meet there?'

Recall that in-situ interrogatives and wh-clefts are interchangeable; in clefts, all information other than the clefted element is presupposed or taken for granted.

The examples of felicitous contexts given in (43) and (44) are reminiscent of Pesetsky's D-linking analysis of which-NPs. He observes that the range of felicitous answers to a which-NP

²²Coveney, in his conclusion, cautions his readers that his proposals are not based on absolute findings but rather tendencies. Nevertheless, there is a strong correlation.

question is restricted to the set of entities common to both the speaker and hearer. In (43), the possible answers are limited by the set of two guys who fit the description of having the desire to marry Marianne. Similarly, the answer to question (44) is limited to the two speakers Sam wanted to meet. If the hearer is not aware of "the context" assumed by the speaker, a which-NP question sounds odd (Pesetsky, 1987). Pesetsky is not explicit in his use of the term "context". Does "context" refer to the set of entities from which an answer is chosen or rather the event? From my understanding, which-NPs are odd in the case where there is no presupposed set of entities. If my interpretation is not mistaken, then French in-situ wh-phrases are *not necessarily* D-linked in the sense of Pesetsky as I will show shortly.

Instead, we must make a distinction between a strongly presupposed context (i.e. event) and a presupposed answer set. The range of felicitous answers to (45) and (46) is not limited to a particular set that both speaker and hearer have in mind. On the contrary, the speaker has no idea what the specifics are of this set.

(45) A: Je téléphonerai à Marie avant de partir.
I phone-FUT to Marie before of leave-INF.
'I will phone Marie before leaving.'

B: Vous partez quand?
you leave when
'When are you leaving?'

(46) A: C'est l'anniversaire de Paul lundi prochain.
It-is the-birthday of Paul Monday next
'It's Paul's birthday next Monday.'

B: Tu achèteras quoi pour lui?
you buy-FUT what for him
'What will you buy for him?'

I further discovered a three way distinction among the types of questions. That is, there are *questions neutres* (information seeking questions), *questions de précision* (detail seeking questions), and *questions de reprise* (echo questions). This classification was actually

volunteered by one of the speaker-consultants. *Question de précision* was used to describe the in-situ interrogatives. Although in-situ questions are generally information seeking, the interpretation is more of seeking details on an already established (or presupposed) situation. Again, the speaker is appealing to the "presuppositional" nature of the information expressed by everything other than the wh-word. Other speakers agreed with this particular classification to capture their intuition. I will not pursue an analysis of these discourse facts, putting these issues aside for the remainder of this investigation.

In the next chapter, we will see how the anaphoric conception of wh-words account for the restrictions on French in-situ wh-interrogatives presented in Chapter 1.

Chapter 3 Generalized Binding

3.0 Introduction

Recall that a wh-in-situ c-commanded by a universal QP or another scope taking A'-element or one that occurs in an embedded finite clause can only be interpreted as an echo question. Contrastively, an overtly moved wh-word can always be interpreted as non-echo regardless of an intervening A'-element or a clause boundary. Thus, one of the criteria for any analysis of the Wh/QP interaction facts in French is that the mechanism responsible crucially does not apply prior to Spell-Out. Under the minimalist framework, there are two components after the point of Spell-Out, putting aside the phonological interface: covert syntax and the LF interface. The covert component is essentially the place to finish unfinished business such as checking [-interpretable] features like Case. LF, on the other hand, is the place for interpretation.

I propose that scope is captured strictly at LF. In fact, this is nothing new; all standard analyses in the LGB framework appeal to the LF interface in one way or another for interpretational phenomena. One of the modules which has been suggested to apply only at LF under the minimalist view is Binding Theory (Chomsky, 1995). Given this, I argue that the Wh/QP scope interaction can be accounted for by appealing to binding relations of the type governing anaphors and pronouns. Moreover, our analysis implies and assumes that wh-expressions in French are A'-anaphors in spirit with Aoun's (1985) *Generalized Binding Theory*.

This chapter is organized as follows. Section 3.1 draws a link between A-anaphora and wh-in-situ based on insights from Sloan (1991) on domain restrictions. Having established the parallelism between the A/A' phenomena, we will demonstrate in Section 3.2 how the analysis proposed captures the in-situ Wh/QP interaction in French.

3.1 The Anaphoric Nature of Wh-expressions

Cross-linguistically, wh-words fall into one of two categories: either as indefinite expressions which lack any inherent quantificational force and thus require an external operator for interpretation, or as operators themselves which move to create their own variable to bind.

Chinese is argued to have the first type of wh-expressions whereas English has the second type. The obvious question then is under which category French wh-words fall. Certainly, they are not indefinite expressions like those in Chinese since they can only be construed as wh-interrogatives and never as universals or polarity items (I will return to relative *qui/que* towards the end of this chapter).

Is it necessarily the case then that the wh-words are genuine operators? In other words, must wh-words move to create their own variable to bind for the purpose of interpretation at overt syntax and at LF? The tentative answer is *no*.

The principle generalization to be made about the two types of wh-words is that both involve some notion of binding (i.e. operator-variable). Now, binding is most commonly associated with pronouns and anaphors. Aoun (1985) pioneered the consideration of A'-phenomena in light of a binding analysis; specifically, he considered wh-traces as the A' version of reflexive anaphors. However, the first to draw the link between the wh-expressions and pronominals within the domain of quantifier-wh interaction is Sloan (1991). She demonstrates that scope ambiguity arises in the exact same environment in which A-anaphors are licensed. In contrast, the unambiguous scope constructions are parallel to the ones that do not license A-anaphors. This is illustrated in (9) and (10) below. The two elements to pay particular attention to are the QP/antecedent and the wh-trace/anaphor respectively in the wh-questions/sentences containing a reflexive. Note that when *everyone* occurs within the same clause as the wh-trace and c-commands it, the question is ambiguous (9a/b); otherwise, it is unambiguous (10a/b). The same clause restriction operates on reflexives with the result of a binding violation as shown in (10a'/b').

- | | |
|---|-------------------|
| (9) a. Who _i did everyone see t _i ? | <i>ambiguous</i> |
| a'. John _i saw himself _i . | <i>binding OK</i> |
| b. Who _i do you think everyone saw t _i ? | <i>ambiguous</i> |
| b'. Bill thinks John _i saw himself _i . | <i>binding OK</i> |

- (10) a. Who_i does **everyone** think you saw t_i? *unambiguous*
 a'. *John_i thinks Bill saw himself. **binding*
- b. Who_i does **everyone** think t_i saw you? *unambiguous*
 b'. *John_i thinks himself_i saw Bill. **binding*

Based on these observations, Sloan proposes the following analysis. First, *who* and *what* are composed of a question operator and a null "anaphoric pronoun". Second, this null anaphoric pronoun is licensed rather than bound. And third, scope is determined at overt syntax by the c-command relation between the QP and this pronoun. Moreover, she defines the pronoun as "anaphoric" based on the locality conditions on scopal ambiguity; thus, the term cannot be taken to mean that the wh-trace is a pronoun governed by Principle B of any version of the binding theory under her analysis. The generalization is that wh-traces left by overt wh-movement behave anaphorically in the sense that they must be bound within a local domain.

Although the aim of Sloan's analysis is to capture the ambiguity/non-ambiguity contrast of English Wh/QP interaction, the general idea of reflexives and wh-expressions being governed by the same conditions provide a valuable insight into the in-situ phenomena in French. A preliminary examination of the A-anaphor situation in comparison to the in-situ wh-words reveals similar findings on domain restrictions. It is well known that French in-situ interrogatives are restricted to matrix clauses.²³ Given this fact, it appears that the in-situ wh-words in French exhibit a strong correlation with reflexives. Consider (11) and (12):

- (11) a. Q_i [Tu as vu qui_i]?
 Q [youhave seen who]
 'Who did you see?'
- b. Marie_i s_i'est vue.
 Marie REFL'is seen-FEM.
 'Marie saw herself.'

²³There are, however, certain dialects in French that do allow wh-in-situ in an embedded clause. One of the speakers I consulted speaks one such dialect (Marseille dialect). Aoun et al. (1981) and Torrego (1992) report other such dialects.

They both must be bound within the same clause assuming an interrogative C° (null Q-operator) as the antecedent of *qui* 'who' just as *Paul* is the antecedent of *se*.

- (12) a. # Q_i [Les enfants croient que tu as vu **qui_i**]?
 Q [the children believe that you have seen who]
 'Who do the children believe that you saw?'
 b. ***Paul_i** croit que Marie s_i'est vu.
 Paul believes that Marie REFL_i is seen
 'Paul believes that Marie saw himself.'

In fact, the wh-in-situ is only licensed in contexts in which the anaphor *se* is licensed (12).

At this point, the data seems promising enough to propose that wh-expressions in French are anaphoric in nature. This correlation is ultimately the first step in the analysis I will outline in the next section.

3.2 Generalized Binding

Let's now develop the idea that wh-expressions are a type of anaphor. Just as pronouns can exhibit bound variable anaphora as noted in May (1985), wh-words can be construed as bound under the assumption they are pronominal. I argue however that unlike pronouns, a wh-words must be bound within their local domain. And unlike reflexive anaphors, they must be bound by an A'-antecedent instead of an A-antecedent. What then could serve as the binder? The null Q_{wh} in matrix C° is the most likely candidate.²⁴ In (13), the interrogative C° can serve as a binder for the pronoun *he*.

- (13) Who_i t_i thought he_{i/j} had met Mona?

The subject of the matrix verb can be coindexed with and thus bind the pronominal subject of the embedded clause. Moreover, the element responsible for the difference between the binding

²⁴This conclusion was also independently reached in Ouhalla's (1996) analysis of Iraqi Arabic.

requirement of a pronoun and a wh-word is simply the [+wh] feature present in the latter.

According to Ouhalla (1996), it is the [anaphoric] feature which is responsible for the two types of antecedents: the wh-word is marked by the anaphoric feature [wh] while the reflexives by [refl]. The crucial difference is that the first requires an A'-binder while the latter an A-binder.

A concern that arises given such a characterization of wh-words is why the binder of a wh-word must also be marked for [wh]. Since a reflexive anaphor only has the requirement that its binder be in an argument position, we would expect a similar requirement where the binder is simply any item occupying an A'-position.²⁵

The answer to this question surfaces once we consider the purpose of any theory of binding: interpretation. Let's first consider the interpretational requirements on the binding relation between an A-anaphor and its binder. Although there is no [refl] feature on the binder itself, the two elements involved must agree in other respects. Namely, they must agree in number and gender.

- (14) a. Chris saw himself/*herself.
b. Paul and Chris saw themselves/*himself.

In (14a), the binder and the anaphor must be the same gender. (14b) illustrates obligatory number agreement. Both gender and number fall under the category of phi (ϕ)-features which are interpretable elements.

Within Minimalism, ϕ -features on a nominal element are categorized under a more general category of features, namely Interpretable features. Such features on a lexical item enter into interpretation at LF. Moreover, it is assumed that the feature [wh] is "plainly interpretable" under any language system. Since wh-words are argued to be nominals, I suggest [wh] is a " ϕ -feature" of nominals (henceforth, ϕ' -feature). Thus, the A'-binder and the wh-element must agree on the feature [wh] in order for the binding relation to be licit just as the A-binder and reflexive agree on standard nominal ϕ -features. This characterization will play a crucial role in explaining the in-situ Wh/QP facts to be discussed in section 3.2.2.2.

²⁵I would like to thank Rose-Marie Déchaine for pointing out this contrast.

Returning to A/A'-anaphor distinction, we can capture this parallelism within the theory of Generalized Binding (Aoun, 1985).

(15) *Generalized Binding* (where $X = A$ or A')

- A. An X-anaphor must be X-bound in its domain.
- B. An X-pronoun must be X-free in its domain.
- C. R-expressions must be A'-free.

Our proposal differs from Aoun (1985) and a similar analysis in A&L (1993b) on the notion that wh-elements themselves and not just their traces are also anaphors since we do not assume LF wh-movement; previous analyses were based on the assumption that LF wh-movement exists. Moreover, I argue that wh-words are only subject to Principle A of the Generalized Binding Theory. A&L (1993b) appeal also to Principle C and a distinction between wh-variables and QP variables to explain the data. I will demonstrate that there is no need for both principles to explain the French data.

To summarize, I have proposed that wh-expressions in French are A'-anaphors. Their anaphoric nature is contributed by the [wh] feature inherent to these elements. Given their strong correlation with the behaviour of A-anaphors, wh-words should obey Principle A of the Generalized Binding Theory. Furthermore, the binder of an A'-anaphor is crucially a null Q with the feature [wh].

In appealing to generalized binding, our theory entails a number of predictions, two of which will be discussed in the following sections. I will demonstrate that the Tensed-S Condition and the Specified Subject Condition on A-anaphors are A'-translatable into the matrix clause restriction and QP blocking effect respectively. Although I will be drawing on certain domain restriction correlations between A-anaphors and wh-in-situ, I do not claim that the parallelism is absolute; that is, it would not be surprising to find binding differences given the A/A'-distinction.

3.2.1 Local Domain

3.2.1.1 Tensed-S Condition and Matrix Restriction

Principle A requires that anaphors have an antecedent within a local domain. Based on the contrastive binding properties of an anaphor within an infinitival clause and a tensed clause, Chomsky (1973) proposed the Tensed-S Condition (TSC). In essence, the TSC disallows the binding of A-anaphors across the boundary of a tensed clause. This is illustrated in (16) for English reflexives:

- (16) a. *They_i expected themselves_i would win.
 b. They_i expected themselves_i to win.

(16a) exemplifies a violation of the TSC: the tensed embedded clause is an opaque domain preventing the matrix subject from binding the reflexive anaphor *themselves*. Moreover, there is no A-binder within the embedded clause. The reflexive remains thus unbound in violation of Principle A. On the other hand, (16b) is acceptable. Although there is no A-binder within the lower clause, the anaphor may be bound by the matrix subject across the boundary of the infinitival clause.

Let's now see if this condition holds in French reflexive constructions. The clitic reflexive anaphor *se* occurring in a tensed embedded clause (17a) cannot be bound by the matrix subject.²⁶

- (17) a. *Marie_j espère qu'il_i se_j voit à la télé.
 Marie hopes that he REFL see at the television
 'Marie hopes that he sees herself on television.'

In contrast, *se* can be bound across the infinitival clause as in (17b).²⁷

²⁶This example can also be ruled out by SSC with *il* 'he' being the closer antecedent.

²⁷Note that the French reflexive *se* is neither phonologically nor morphologically revealing in terms of agreement marking unlike the transparent anaphors in English. A clearer paradigm is shown in (i) and (ii) with the "strong" reflexive.

- (17) b. Marie espère se voir à la télé.
 Marie hopes REFL see-INF at the television
 'Marie hopes to see herself on television.'

Having seen that French A-anaphors obey the Tensed-S Condition, we can now turn to the wh-words. If the Generalized Binding analysis is correct, we expect that wh-words too must be bound within this given domain. Here, I argue that the TSC translates into the often referred to matrix clause restriction on in-situ interrogatives in French. That is, French wh-in-situ can only occur in a matrix clause (Obenauer, 1976; Cheng, 1991; Rizzi, 1996, etc.).

Consider (18) and (19). In the simple in-situ interrogative (18), the wh-word *qui* obeys the TSC by virtue of the construction being a single clause. Recall that the domain which an A'-anaphor must be bound includes the CP projection. Thus, the null Q binds *qui*, satisfying Principle A. Assuming that echo questions are treated by some other independent mechanism, we can explain (18) as a violation of the TSC. The wh-word *qui* in (18) is located within an embedded tensed clause that does not contain an (appropriate) A'-binder. The complementizer *que* 'that' is not an appropriate potential A'-binder for the reason that it lacks the feature [wh]. The next closest binder is the matrix C° operator; however, creating a binding relation between the wh-word and the Q_{wh} violates the *matrix restriction*.

- (18) [Q_{wh_i} [tu as vu qui_i]]
 [Q_{wh} [you have met who]]

(19a) on the other hand only allows an echo reading of *qui*.

-
- i) *Elle espère que Jean parle d'elle-même.
 she hopes that Jean speaks of herself.
 'She hopes that Jean talks about herself.'
- ii) Elle espère parler d'elle-même.
 she hopes speak-INF of herself
 'She hopes to talk about herself.'

In these cases, the transparent agreement on the reflexive allows no alternative relation. Again the Tensed-S Condition correctly predicts that (i) is ruled out while (ii) is an interpretable binding relation. Nevertheless, we should take caution in this paradigm since [-même] anaphors are distributionally distinct from the clitic reflexive *se*.

- (19) a. $\#[Q_{wh_i} [\text{Jean a dit } [que \text{ Marie épouserait } qui_i]]]$
 $[Q_{wh} [\text{Jean has said } [that \text{ Marie marry-COND who}]]]$
- b. $[Q_{wh_i} [\text{Marie a vu } [Paul rencontrer qui_i]]]$
 $[Q_{wh} [\text{Marie has seen } [Paul meet-INF who]]]$

Now, (19a) is not absolutely uninterpretable as is the case with the reflexives, since in-situ interrogatives have the option of being interpreted as echo questions by some independent mechanism. In the A-binding cases, there is no alternative.

Contrastively, (19b) is felicitous as a non-echo interrogative. The crucial difference between (19a) and (19b) is that the wh-word in (19b) occurs in an infinitival clause. *Qui* may be bound across the boundary of the lower clause by the matrix Q_{wh} . In fact, it must be bound to satisfy Principle A.

Our analysis implies that there is crucially no LF movement of the wh-words. If wh-words (or their FF) were to undergo raising, there is no explanation for the non-echo interpretability in the overt wh-movement correspondent to (19a) shown in (20) below. The examples in (20) do not have a forced echo reading.

- (20) a. Qui est-ce que Jean a dit que Marie épouserait?
 who is-it that Jean has said that Marie marry-COND
 'Who did Jean say that Marie would marry?'
- b. Qui a-t-il dit que Marie épouserait?
 who has-t-he said that Marie marry-COND
 'Who did he say that Marie would marry?'

One possibility is to stipulate simply that this matrix restriction only applies at LF. Such an analysis seems ad hoc: conditions on movement should be uniform across all levels.

Further evidence in support of the overt syntax/LF distinction comes from questioning out of an adjunct island. Overt wh-movement of a wh-object from an adjunct island is illicit due to a subadjacency violation or Huang's *Conditions on Extraction Domain* (CED). French is no exception to the CED in overt cases as illustrated in (21). Regardless of whether the adjunct

island headed by *après/sans* is tensed or infinitival, the judgements are invariable. The cases in (21) are ungrammatical.

- (21) a. ***Qu_i**'est-ce qu'il est parti après qu'elle a bu **t_i**?
 what is-it that he is left after that she has drunk t
 'What did he leave after she drank?'
 b. ***Qu_i**'est-ce qu'il est parti après avoir bu **t_i**?
 what is-it that he is left after have-INF drunk t
 'What did he leave after having drunk?'
 c. ***Qui_i** est-ce qu'il est parti sans que Marie lui présente **t_i**?
 who is-it that he is left without that Marie him-DAT introduce t
 'Who did he leave without Marie introducing to him?'
 d. ***Qui_i** est-ce qu'il est parti sans lui avoir présenté **t_i**?
 who is-it that he is left without him-DAT have-INF introduced t
 'Who did he leave without having introduced to him?'

Nevertheless, I argue that the telling cases are the ones shown in (22), the in-situ correspondents to (21). An in-situ language such as Chinese does not exhibit CED violations of argument wh-in-situ embedded within an adjunct island (Huang, 1982). If it is true that the CED does not apply at LF to arguments, we would expect the questions in (22) to be grammatical unlike (21). (22a/c) are at best echo questions whereas (22b/d) are licit as non-echo questions.

- (22) a. #[**Q_{wh_i}** [Il est parti après qu'elle a bu **quoi_i**]]?
 [Q_{wh} [he is left after that she has drunk what]]
 b. [**Q_{wh_i}** [Il est parti après avoir bu **quoi_i**]]?
 [Q_{wh} [he is left after have-INF drunk what]]
 c. #[**Q_{wh_i}** [Il est parti sans que Marie lui présente **qui_i**]]?
 [Q_{wh} [he is left without that Marie him-DAT introduce-SUBJ. who]]
 d. [**Q_{wh_i}** [Il est parti sans avoir présenté **qui_i**]]?
 [Q_{wh} [he is left without have-INF introduced who]]

However, this is what we would expect given our *Generalized Binding* analysis. Specifically, the wh-word *quoi* may be interpreted as a non-echo question when occurring within an infinitive adjunct island. The lack of tense in the lower clause "extends" the domain in which the A'-anaphor must be bound to the matrix Q-operator. And as predicted, (22a/c) is restricted to an echo reading since it does not have an appropriate binder within the tensed adjunct island.²⁸

3.2.1.2 Finer Definition of Local Domain

Here, we will be re-examining the exact nature of this minimal domain. Namely, the question addressed is whether [tense] is the appropriate feature to define the local domain. Other than tense, indicatives and infinitives differ on the feature of finiteness. Table 2.0 shows the featural breakdown of embedded clause types. The defining case are the subjunctive clauses.

	infinitive	indicative	subjunctive
tense	-	+	-
finite	-	+	+

Table 2.0 Tense/Finite Distinctions

Infinitives are tenseless and non-finite while on the other extreme are the tensed finite indicatives. The tense/finite distinction is not so much a concern for English as it is for the Romance languages of which French is one. English subjunctives are rare. However, the choice of [tense] as the defining feature may run into problems when considering French.

²⁸A paradigm which I have not addressed here is multiple interrogatives with one wh-word in [Spec;CP] and the other(s) in-situ. Given our present analysis, it is predicted that the wh-in-situ in (i) can only be interpreted as an echo question. The matrix Q cannot be the local binder of the lower *qui* 'who' since the latter is situated within a tensed embedded (indicative) clause. Contrastively, a non-echo interpretation of a wh-in-situ in a multiple interrogative within a simple clause (ii) should be allowable.

- i. Qui a dit que Marie épouserait qui? (cf. 20)
 who has said that Marie marry-COND. who
 'Who said that Marie would marry who?'
- ii. Qui épouse qui?
 who marries who
 'Who is marrying who?'

A complete set of judgements for this paradigm is unfortunately not available at this time. Preliminary investigation has confirmed that (ii) is acceptable as a non-echo question. (i) is marginally non-echo.

Given the characterization of subjunctives in Table 2.0, we have two possible scenarios. First, if the local domain is defined by [tense], we predict the *wh*-in-situ occurring in a subjunctive clause to be acceptable as a non-echo question just like the infinitive case. Alternatively, if the local domain is a finite clause, we predict the *wh*-in-situ in the same environment to pattern like the indicative in only allowing an echo reading.

- (23) a. Elle veut lire quoi?
 she wants read-INF what
 'What does she want to read?'
 b. #Elle espère que tu lis quoi?
 she hopes that you read what
 'What does she hope that you read?'
 c. #Elle veut que tu lises quoi?
 she wants that you read-SUBJ. want
 'What does she want you to read?'

The paradigm in (23) shows that finiteness determines the minimal domain in which a *wh*-word must be bound. The subjunctive example (23c) can only be read as an echo question just like the indicative (23b).

To summarize, we have seen that for both the A-anaphors and the A'-anaphors, the local domain in which they must be bound is the minimal finite clause. The A'-binding fact above is formalized as the *Matrix Clause Condition* (24).

- (24) *Matrix Clause Condition*
 An A'-anaphor must be bound within its minimal finite clause.

We will discuss a second condition on anaphor binding in the following section.

3.2.2 Potential A'-Antecedents

3.2.2.1 Specified Subject Condition and QP Blocking Effect

The *Specified Subject Condition* (SSC), first proposed by Chomsky (1973), dictates that an A-anaphor cannot be bound across an intervening subject. Consider (25):

- (25) a. They_i read books about themselves_i.
 b. *They_i read Elizabeth's books about themselves_i.
 c. They read Elizabeth_j's books about herself_j.

Although the anaphors in both cases occur within an object NP of a root clause, (25b) is "uninterpretable". The crucial difference is the presence of an overt possessor in (25b). The possessor *Elizabeth* is considered the subject of the noun phrase; thus, it is a closer binder for the A-anaphor than the matrix subject. In essence, the closer subject helps to define the domain for A-anaphor binding. Contrastively, the NP in (25a) does not have a subject.

The obvious question now is how the SSC translates into A'-terms. Upon re-examining the SSC, it can be said that A-anaphors must be bound by the nearest potential A'-antecedent. When the reflexive occurs within a DP containing a possessor, the reflexive must be bound by it. If there is no possessor, the matrix subject serves as the A'-antecedent. Under this perspective, I propose that the A'-version of SSC is (26):

(26) *Specified Antecedent Condition*

An A'-anaphor must be bound by the nearest potential A'-antecedent.

A potential A'-antecedent is intuitively a (quantificational) operator that occupies a non-theta marked (A') position. "Nearest" is defined as the most immediately c-commanding potential A'-antecedent. Given (26) and the ϕ' -feature ([wh]), the QP blocking effect can now be straightforwardly accounted for.

To refresh our memory, a non-echo interpretation is not possible for an in-situ wh-object when the subject is quantified. In contrast, a wh-in-situ subject is allowed a non-echo

interpretation regardless of the quantified object. These configurations are illustrated respectively in (27a) and (27b) below.

- (27) a. $\#[Q_{wh_i} [\text{Tous les étudiants ont rencontré } qui_i]]?$
 $[Q_{wh} [\text{All the students have met } who]]$
 'Who did all the students met?'
 b. $[Q_{wh_i} [Qui_i \text{ a rencontré tous les linguistes}]]?$
 $[Q_{wh} [who \text{ has met all the linguists}]]$
 'Who met all the linguists?'

The QP blocking effect can be seen as an A'-violation of the SSC. That is, the intervening quantifier *tous* in (27a) is a closer potential A'-antecedent than the wh-feature of Q_{wh} and binds the wh-word. This binding relation is therefore ruled out on an ill match of ϕ -features; the quantifier does not house a [wh] feature. In (27b), the closer binder is appropriately the Q_{wh} . The quantifier modifying the object does not intervene and thus does not interfere with the binding relation between the wh-word and the matrix C° .

Such an analysis is based on the assumption that the quantifier occupies a non-theta marked position at LF. In spirit with standard analyses of quantificational elements, quantifiers undergo quantifier raising (QR) at LF to an adjoined position. Since the overall proposal is presented under a minimalist framework, QR translates as the adjunction of Formal Features (FF) to either IP or νP depending respectively on subject or object.

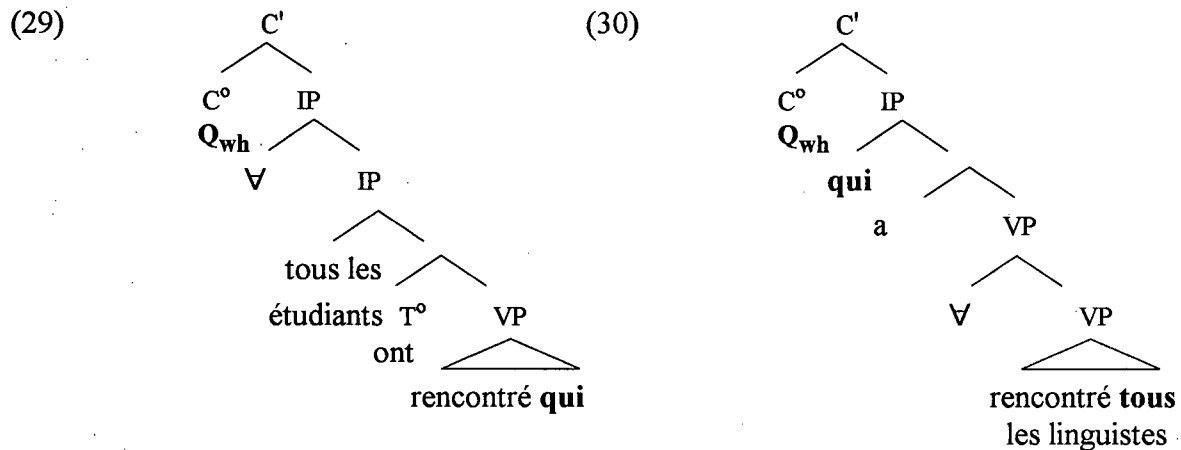
3.2.2.2 C-command Requirement

Thus far, we have been referring to the position of an A'-binder relative to the wh-word as being linearly to the left or as being "closest". This section sets out to define the relation between the binder and bindee in structural terms.

The in-situ barrierhood is crucially induced by a c-commanding quantifier that intervenes between the wh-word and its appropriate interrogative binder in matrix C° . C-command is defined in (28):

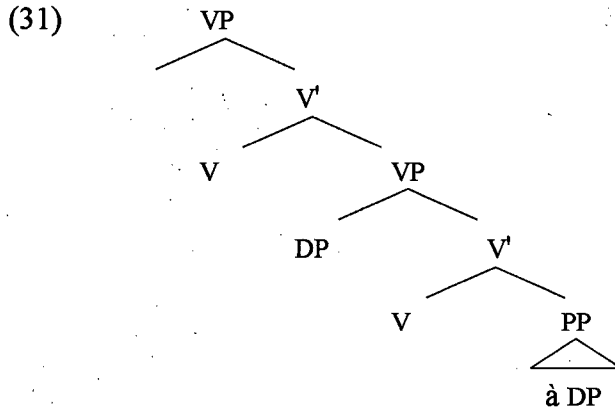
- (28) A node α c-commands a node β if every maximal projection dominating α also dominates β , and α does not itself dominate β .

Let's now examine the structures in (29) and (30) respectively for (27a) and (27b).



In (29), the FF of the quantifier \forall is the nearest c-commanding antecedent which must bind the wh-word; however, this relation is ruled out as already discussed. Contrastively, what makes (30) acceptable is that there is no other A'-element intervening between Q_{wh} and wh-word *qui*; the universal is in a lower position than the wh-word.

The c-command requirement predicts that the same type of blocking effect should be found between object/dative Wh/QP interaction. Here, I am adopting Larson's (1988) proposal on the c-command relation between a dative and a direct object. Based on the behaviour of quantifier-pronoun binding and weak crossover effects, Larson concludes that an object occupies a higher position than and thus c-commands a dative PP. The VP-shell construction just described is illustrated in (31).



Consequently, we expect a quantified object to block the binding relation between the dative *wh*-word and the matrix C° , disallowing a non-echo reading of the *wh*-word. And indeed, this is borne out in the French in-situ cases.²⁹ The contrast is shown in (32), understood in the context where the president of the university has made several promises regarding funds and student issues during a press conference.

- (32) a. Il a promis quoi à tous les étudiants?
 he has promised what to all the students
 'What did he promise to all the students?'
 b. #Il a promis tous les fonds à qui?
 he has promised all the funds to who?
 'Who did he promise all the funds to?'

(32a) is acceptable as a non-echo question where the object is a *wh*-word and the dative quantified. The reverse case, where the dative is questioned and the object quantified, has an obligatory echo reading.

In addition, we predict a QP embedded in a DP should not block the binding relation between the null *Q* and the *wh*-in-situ. Here, I am assuming that QR adjoins the QP to the first maximal projection. In the case in (33b), *tous* adjoins to DP and not PP. Both (33a) and (33b) are acceptable as non-echo questions.³⁰

²⁹The judgements, however, are subtle.

³⁰The questions in (33) are considered awkward for some speakers. Recall that in-situ interrogatives tend to be short and simple. (33) are described as unnatural in the sense that they are very "heavy" with presupposed

- (33) a. Les questions de tous les intervenants ont surpris qui?
 the questions of all the contributors have surprised who
 'Who did the questions of all the contributors surprise?'
 b. Il a donné les photos de tous les enfants à qui?
 he has given the photos of all the children to who
 'Who did he give the photos of all the children to?'

The QPs at LF do not c-command the wh-in-situ and thus do not qualify as the closer potential A'-antecedent.

3.2.2.3 Other Potential A'-antecedents

Thus far, we have only considered the effects of universally quantified phrases as "blockers". Given the two criteria for potential A'-antecedents in section 3.2.2.1, we would expect quantificational adverbs and negation to disallow a non-echo reading of wh-words in-situ. If either of these two types of A'-elements intervene between the wh-word and the matrix Q, the in-situ wh-word automatically has an echo reading.

- (34) a. #Il n' a pas rencontré qui?
 He NE has not met who
 'Who didn't he met?'
 b. #Il peut rencontrer qui?
 He can meet-INF who
 'Who can he meet?'
 c. #Il admire toujours qui?
 He admires always who
 'Who does he always admire?'
 d. #Personne n'admire qui?
 Nobody NE admires who
 'Who does nobody admire?'

Thus, the blocking effect is not limited to universal quantifiers but is true of other A'-elements

information but are nonetheless interpretable as non-echo.

(quantificational operators) as we have been assuming thus far.

Another question that arises is the case of an intervening wh-element. That is, what happens when the closer antecedent is an overtly moved wh-phrase whose landing site is an embedded C°. Consider (35):

- (35) a. Il sait qui part quand.
 he knows who leaves when
 'He knows who leaves when.'
 NOT 'When does he know who leaves?'
- b. Il se demande où mettre quoi.
 he REFL asks where put-INF what
 'He wonders where to put what.'
 NOT 'What does he wonder where to put?'
- c. Il se demande comment réparer quoi.
 he REFL asks how repair-INF what
 'He wonders how to repair what.'
 NOT 'What does he wonder how to repair?'

One of the reasons for a forced echo reading of the wh-word when a QP intervenes is that the binding QP does not contain the matching wh-feature. In the case of (35b/c), we have controlled for this problem; however, a matrix non-echo reading of the wh-in-situ is still not possible. Nevertheless, the fact that the closer potential A'-binder is a wh-word (hence having matching ϕ -features with the wh-in-situ) the examples in (35) has an option other than an echo interpretation. Namely, the utterances may have a multiple indirect question reading.

Certainly, the blocking effect is reminiscent of Rizzi's (1990) theory of *Relativized Minimality*. Although his approach appears to capture the in-situ phenomena, it also predicts incorrectly that overtly moved wh-words are blocked by an intervening A'-antecedent. But all of the overtly wh-moved counterparts of (26), (32b) and (34) are acceptable as non-echo interrogatives shown respectively in (36) - (38).

- (36) Qui_i est-ce que tous les étudiants ont rencontré t_i?
 who is-it that all the students have met t
 'Who did all the students meet?'
- (37) A qui_i est-ce qu'il a promis tous les fonds t_i?
 to who is-it that he has promised all the funds t
 'Who did he promise all the funds to?'
- (38) a. Qui_i est-ce qu'il n'a pas rencontré t_i?
 who is-it that he NE has not met t
 'Who didn't he meet?'
- b. Qui_i est-ce qu'il peut rencontrer t_i?
 who is-it that he can meet-INF t
 'Who can he meet?'
- c. Qui_i est-ce qu'il admire toujours t_i?
 who is-it that he admires always
 'Who does he always admire?'
- d. Qui_i est-ce que personne n'admire t_i?
 who is-it that nobody NE admires t
 'Who does nobody admire?'

To summarize, the interpretation of a wh-in-situ is achieved via A'-binding by the interrogative Q (operator) of the functional category C°. Local binding of a wh-word is obligatory under the proposal that wh-words are A'-anaphors obeying Principle A of the Generalized Binding Theory. This locality condition is evidenced by the matrix clause restriction and the QP blocking effect on French wh-in-situ. In the former case, a wh-word cannot remain in-situ in an embedded finite clause. This is a violation of the *Matrix Clause Condition* which requires an A'-anaphor to be bound within its minimal finite clause. The latter case is an instance of the *Specified Antecedent Condition*. Moreover, "QP blocking effect" may ultimately be a misleading label as there are other A'-antecedents that exhibit this effect, namely NegP, quantificational adverbials, NegQP and modals.

Crucially, any proposed theory must be able to account for these two facts in French: 1) transparency effect of infinitive clauses vs. finite clauses (i.e. matrix clause restriction) and 2)

opacity effect of potential A'-antecedents.

In Chapter 4, we will see how an overtly moved wh-word escapes the binding restrictions operating at LF. I will demonstrate that overt wh-movement is independent of the two LF conditions stated above. Moreover, I will account for the ambiguity/non-ambiguity contrast depending on the function of the wh-word with respect to the QP by adopting a proposal in Chierchia (1993).

Chapter 4 Overt Syntax

4.0 Introduction

This chapter is devoted to a discussion of the interaction between an overtly moved wh-expression and a quantified phrase. Before we can approach this issue, I will first lay out the assumptions about overt wh-movement. The Generalized Binding analysis proposed in the previous chapter is to be understood within the Minimalist Program, a model of grammar I am adopting here. The minimalist view on overt wh-movement is one of morphological necessity; elements move for the sole purpose of checking a strong feature on the target. Having motivated wh-movement, we can then concentrate on the availability of the pair list reading. In particular, we must account for two facts. First, a pair list reading is unavailable in a configuration where the wh-phrase is in subject position and the quantifier phrase is in object position. Second, a pair list reading is available in a configuration where the quantifier phrase is in subject position and the wh-phrase is in object position. We will further explore an alternative account based on work by Chierchia (1993) and Hornstein (1995). Not only does this alternative analysis accurately capture the overt facts, it ultimately bears on our analysis of the internal structure of wh-expressions and the wh-in-situ phenomena. As an appendix, I discuss the judgements on Wh/QP interaction which are not as straightforward as it seems. We will discuss some of the complicating issues involved in the appended section.

4.1 Minimalism

There are certain notions crucial to the minimalist model, namely economy conditions which give rise to optimal derivations. One such notion is the economy principle of *Procrastinate* on the operation *Move*. *Procrastinate* dictates that LF movement is "cheaper" than overt movement. Covert operations are "...a kind of wired-in reflex operating mechanically..." (198, Chomsky, 1995). Overt movement must be morphologically driven for it to be realized. The motivation for such movement is proposed to be strong features on the target element which need to be checked off by Spell-Out for convergence. Formally speaking, overt movement is an

instance of *Attract/Move* as stated in (1).

(1) *Attract/Move*

K attracts F if F is the closest feature that can enter into a checking relation with a sublabel of K. (sublabel = relevant feature)

Moreover, an element specified for a weak feature will not trigger overt movement of a c-commanded lexical item. For instance, it is proposed that interrogative C° in Chinese, a wh-in-situ language, has a weak Q feature (Chomsky, 1995).

Under the Minimalist Program, the notion of optionality of movement is impossible. How then can we account for the fact that French allows both overtly moved wh-questions and wh-in-situ. Section 4.1.1 will briefly address this issue. In the sections following, the contents of interrogative C° will be specified in detail allowing for a more comprehensive view of overt wh-movement in French.

4.1.1 *Strong and Weak Qs*

Since French has fronted wh-questions, it must be the case that the interrogative C° has a strong Q (possibly [wh] a variant of D). Yet, the possibility of wh-in-situ suggests contradictorily a weak feature in C°. How can we decide between the two features? Perhaps we need not. Let's entertain for a moment the idea that French has both a strong and a weak Q available in its lexicon. In building the derivation, the speaker will pick from the lexicon a strong Q if s/he wishes to form a fronted wh-question or a weak Q if the desired form is a wh-in-situ interrogative.

- (2) a. [Q_{strong} [tu as vu qui]]³¹
 you have seen who
- b. [Qui_i Q_{strong} [tu as vu t_i]]
 who you have seen
 'Who did you see?'

³¹Note that *what* in French has two forms *que/quoi* which are in complimentary distribution. I refer the reader to Koopman (1981) for a detailed discussion. I leave this alternation for future investigation.

- (3) a. [Q_{weak} [tu as vu qui]]
 you have seen who
- b. #[Q_{weak} [tu as vu qui]]
 you have seen who
 'Who did you see?'

The strong Q in (2) attracts the wh-phrase in object position inviting the latter to overtly raise to [Spec;CP]. In contrast, the weak Q in (3) does not trigger wh-movement for convergence.

In both (2) and (3), the interrogative interpretation is guaranteed at the outset, unlike previous analyses such as Aoun et al. (1981) and Rizzi (1996) where an interrogative interpretation is dependent on arbitrary movement and dynamic agreement mechanisms respectively. In fact, our proposal is reminiscent of the Clausal Typing Hypothesis in Cheng (1991) which states that clauses are typed at D-structure; under the minimalist framework, clause typing ultimately depends on what enters the numeration. Furthermore, attributing this special property of French to the lexicon is not all that anomalous under the current approach. According to Chomsky (1995), the lexicon is the most likely place where language variation resides.

Before leaving this discussion, let's examine an alternative analysis of the optionality of wh-movement in French proposed by Boškovic (1996). First, it is assumed that the [wh] feature is universally strong and second, that LF wh-movement takes place. Moreover, the principle of *Procrastinate* should be eliminated based on the argument that LF movement is cheaper than overt movement; the former type of operation only affects features while the latter affects whole categories. The removal of *Procrastinate* would then allow merger of lexical items to apply either overtly or covertly.

His proposal is as follows: wh-in-situ in a matrix clause is an instance of covert merger of a null interrogative C° in French. That is, there is no overt wh-movement simply because there is no interrogative complementizer at the point of Spell-Out. LF wh-movement must take place immediately after covert lexical insertion to check off strong [wh] (contra Chomsky, 1995). Boškovic points out that Chomsky's arguments against LF insertion of elements with strong features are problematic in that (1) strength must be considered an independent lexical item so as

to prevent strength from being in the numeration and (2) speakers need to know PF and LF outputs in order to determine the effects.

Covert merger does not apply freely. The conditions on LF insertion are the following: 1) it must expand the tree (i.e. occur at the root of the tree) and 2) the inserted item must be phonologically null. The first condition captures the fact that in-situ indirect questions are not attested in French (4).

- (4) *Paul se demande tu as vu qui.
 Paul REFL asks you have seen who
 'Paul wonders who you saw'

Covert insertion of interrogative C° into the embedded clause does not expand the tree. Merging this C° overtly requires overt wh-movement to check the strong [wh] feature so that the derivation will not (PF) crash.

In support of the second condition, Boškovic points to the paradigm in (5). If the interrogative C° is phonologically filled and thus is a case of overt C° merger, wh-in-situ questions are ungrammatical.

- (5) a. Qui as-tu vu?
 who have-you seen
 'Who did you see?'
 b. Qui que tu as vu?
 who that you have seen
 'Who did you see?'
 c. *Que tu as vu qui?
 that you have seen who
 d. *as-tu vu qui?
 have-you seen who
 e. Tu as vu qui?
 you have seen who

Since the universally strong [wh] feature is not checked in (1c) and (1d), the derivation crashes. Contrastively, (1e) exhibits no phonological (overt) evidence of the presence of a complementizer. According to Boškovic (1996), this is sufficient to say that (1e) is an instance of LF C° insertion.

Furthermore, covert movement involves the adjunction of features to X°-elements or head-to-head movement (Chomsky, 1995; Boškovic, 1996). Movement to a head position is well-known for its strict locality conditions. Boškovic argues that the lack of a non-echo reading in the examples in (6) exemplifies a violation of Robert's (1992) relativized minimality version of the *Head Movement Constraint* (HMC).

- (6) a. #Jean et Pierre croient **que** Marie a vu qui?
 Jean and Peter believe that Marie has seen who
 'Who do Jean and Peter believe that Marie saw?'
 b. #Jean **ne** mange pas quoi?
 Jean NE eat not what
 'What did Jean not eat?'

LF movement of *qui/quoi* respectively in (6a) and (6b) crosses over another A'-head, the embedded C° (*que*)/NegP head.

Both Boškovic's head movement analysis and our Generalized Binding approach share the general insight that the French facts exhibit a type of *relativized minimality* effect. That is, like elements block the binding relations of like elements (note that binding is between the moved item and its trace). Where our analysis crucially differs from Boškovic's is in our assumptions about covert movement. More precisely, we argue that there is no LF raising of the wh-in-situ, an even more economical approach than feature movement.

Although the feature movement analysis captures the blocking effect of negation and the matrix clause restriction (i.e. transparency effect), it falls short in the case of universal QPs and quantificational adverbs. The fact that the intervening element is an A'-head is crucial to his analysis. The universal QP in [Spec; IP] position and the adverb, however, are not A'-heads. Under the HMC account, QPs and (quantificational) adverbs are predicted not to block the (LF)

movement of a wh-in-situ, contrary to fact.

Recall that any analysis of French wh-in-situ questions must meet two criteria - that it account for the transparency effects and the opacity effects. In sum, Boškovic's analysis can explain the transparency effects/matrix clause restriction, as a head-to-head movement constraint; however, the opacity effect cannot be captured by his theory.

Here, I will incorporate Boškovic's insights on covert merger into our current analysis. Let's assume again that French has both $Q_{\text{weak}} [\text{wh}]$ and $Q_{\text{strong}} [\text{wh}]$. As in Boškovic (1996), phonological material in C° gives evidence of overt merger of $Q_{\text{strong}} [\text{wh}]$. Merger of $Q_{\text{weak}} [\text{wh}]$, on the other hand, has no phonological consequences; thus, insertion of this Q would be costly as it has no effect prior to Spell-Out. By adopting the notion of covert merger, we can capture the fact that in-situ indirect questions are unattested in French.

The next obvious question is what motivates a speaker to choose one feature over the other when constructing an interrogative sentence. As discussed in chapter 2, wh-in-situ are highly discourse restricted. Perhaps we can interpret this special discourse property, a type of "focus" reading, as a feature co-occurring with the $Q_{\text{weak}} [\text{wh}]$. This may explain for a speaker's choice - it depends on the effect s/he wishes to achieve. This particular issue is beyond the scope of this thesis; I will leave this open for future research.

4.1.2 *Types of C°*

Before we can proceed any further, we must first clarify the content of the functional category C° . Clause type (declarative, interrogative, exclamative, etc.) is determined by the Formal Features of C° according to Chomsky (1995) and earlier in Cheng (1991). Thus, the C° of an interrogative clause must contain the "feature Q", as we have been assuming thus far. According to Chomsky (1995), if Q is strong, it must be checked by a relevant feature F_Q .

There are essentially three types of questions: yes-no questions, indirect wh-questions and direct wh-questions. In English, all three types involve movement of some element: verbal, nominal or both. In yes-no questions, F_Q is verbal originating in I° . This verbal F_Q is pied-piped and adjoined to C° and corresponds to I-to-C raising (7).

- (7) $[_{C^0} \text{have}_i\text{-Q}_{\text{strong}} [_{\text{IP}} \text{you } t_i \text{ seen Marie}]]$

Indirect or embedded wh-questions involve the F_Q [wh] which is considered a variant of a nominal (D) feature. Overt wh-movement is realized via substitution (i.e. moves to specifier position of embedded CP). This is illustrated in (8).

- (8) $[_{\text{IP}} \text{I wonder } [_{\text{CP}} \text{what}_i [_{C^0} \text{Q}_{\text{strong}} [_{\text{IP}} \text{you have seen } t_i]]]]$

- (9) a. $*[_{\text{IP}} \text{I wonder } [_{\text{CP}} \text{what}_i [_{C^0} \text{have}_j\text{-Q}_{\text{strong}} [_{\text{TP}} \text{you } t_j \text{ seen } t_i]]]]$
 b. $*[_{\text{IP}} \text{I wonder } [_{\text{CP}} [_{C^0} \text{have}_j\text{-Q}_{\text{strong}} [_{\text{TP}} \text{you } t_j \text{ seen what}]]]]$

However, embedded strong Q cannot be checked by a verbal F_Q as shown in (9) above.

Finally, direct or matrix wh-questions require the movement of both a verbal F_Q (or insertion of *do*) and a nominal F_Q in order for the derivation to converge (12). It is not sufficient to simply raise [wh] (11) nor to raise [V] as shown in (12).

- (10) $[_{\text{CP}} \text{what}_i [_{C^0} \text{have}_j\text{-Q}_{\text{strong}} [_{\text{TP}} \text{you } t_j \text{ seen } t_i]]]$

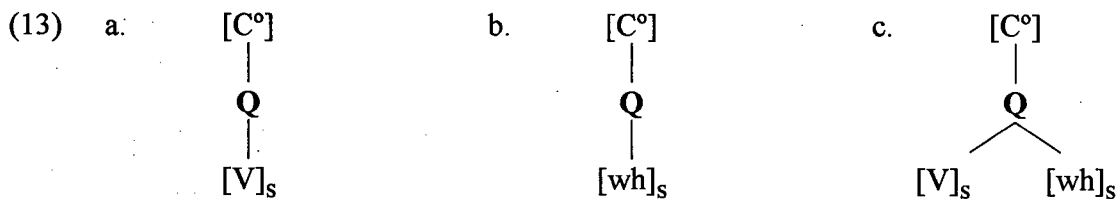
- (11) $*[_{\text{CP}} \text{what}_i [_{C^0} \text{Q}_{\text{strong}} [_{\text{IP}} \text{you have seen } t_i]]]$

- (12) $*[_{C^0} \text{have}_i\text{-Q}_{\text{strong}} [_{\text{TP}} \text{you } t_i \text{ seen who}]]$

Putting aside the matrix/embedded clause restrictions, it appears that the "unique" strong Q feature in C^0 proposed by Chomsky is not uniform in that either a verbal feature or a nominal

feature can check it (and in some cases necessarily both). The constant in all three types of questions, however, is the interrogative interpretation. The difference between yes-no questions and wh-questions depends on the elements present in the numeration; that is, the latter contains a wh-word while the former does not.

To capture these generalizations, I propose that the interrogative C° is not simply a strong "Q feature". Rather, Q is a (lexical) *null sentential operator* in the sense that it contributes interrogative force. Furthermore, Q may be specified for a strong affixal [V] feature, a strong [D] feature (wh) or a combination of both, each of which requires checking by the relevant F_Q .³² The possible interrogative operators are illustrated in (13) below (s=strong). [C°] is a formal feature of Q indicating its functional category. In Chomsky (1995), categorial labels are eliminated in favor of the "bare essentials" (i.e. the lexical item itself).



For the sake of ease of referring to syntactic positions, I will continue to use categorial labels as descriptive terms. Returning to the formulation of the principle of *Attract/Move*, it states that a feature is attracted to check a "sublabel" of K. If we reinterpret K as Q rather than the maximal projection CP, we arrive at the present proposal. Table 3.0 below is a summary of what we have discussed thus far.

	strong [V]	strong [wh]	strong [wh];strong [V]
embedded clause	*	✓	*
matrix clause	✓	*	✓

Table 3.0 Types of interrogative C° in English

³²The strong [V] feature is an affixal feature which assures that the attracted element affixes to C° and does not land in [Spec,CP].

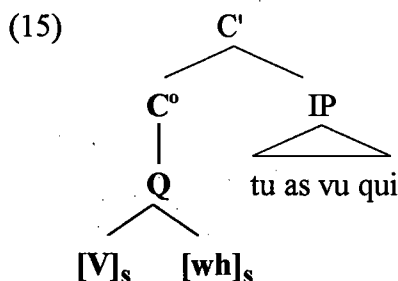
The difference between the type of Q that can occur in embedded and matrix C° has always been a mystery. Working within the *LGB* framework, Rizzi and Roberts (1996) suggest that the answer may be based on the Projection Principle. That is, the Projection Principle requires that the selectional properties of an element (in this case, the matrix verb) be satisfied at all levels of syntactic representation. A verb such as *to wonder* selects a C° with a Q specified for a strong [wh], in minimalist terms. If we take overt movement of an element to the embedded [Spec;CP] position as evidence for a particular type of Q, then I-to-C raising of a verb and overt wh-movement in an embedded clause suggests that the embedded C° contains a Q specified for both strong [V] and strong [wh]. Such a construction clearly violates the selectional restrictions imposed by *wonder* in that I° occurs in C°. At this point, I will not pursue this analysis any further. It is sufficient to note that there are different types of null Qs.

4.1.3 French Overt Wh-movement

Given the model of grammar just outlined, I will demonstrate how a question such as (6) is derived.³³ As shown, (14) involves the fronting of both a wh-word and a verbal element.

- (14) Qui_i as_j-tu e_j vu t_i?
 who_i have_j-you e_j seen t_i
 'Who did you see?'

Thus, it must be the case that Q is specified for a strong [wh] and a strong [V]. (15) illustrates the point at which Q {strong [wh], strong [V]} has merged with the root IP.



³³We will only be concerned with the derivation of wh-questions given the scope of the present thesis.

By the operation Attract/Move, Q will attract the closest features that can enter into a checking relation with its strong features. In the case of strong [V], the auxiliary *as* 'has' raises to check off this feature via head-to-head movement (16a). Next, the strong [wh] attracts the closest [wh] feature, raising *qui* to adjoin to the root clause for convergence (16b).

- (16) a. $[C^{\circ} \text{ as}_j - Q\{\text{strong [wh]}; \text{strong [V]}\}]_{IP} \text{ tu e}_j \text{ vu qui}]$
 └──┘
 b. $[_{CP} \text{ qui}_i [_{C^{\circ}} \text{ as}_j - Q\{\text{strong [wh]}; \text{strong [V]}\}]_{IP} \text{ tu e}_j \text{ vu t}_i]$
 └──┘

Is there any evidence in French for a matrix interrogative C° that only has $Q\{\text{strong [wh]}\}$? The answer is *yes* with the condition that C° is phonologically overt. This conclusion is based on the questions shown in (17) where no I-to-C raising occurs. Recall the assumption made in chapter 2 that *est-ce que/qui* is a complex C° based on semantic evidence. Moreover, the structure in (17b) is found in the Quebec dialect of French (Roberge, 1982; Rizzi & Roberts, 1996, etc); here again, C° is phonologically filled by the element *que*.

- (17) a. Qui_i [est-ce que] tu as vu t_i?
 who_i [is-it that] you have seen t_i
 b. Qui_i [que] tu as vu t_i?
 who_i [that] you have seen t_i

The derivation of (17b) proceed as follows. The point at which the overt interrogative C° enters the derivation is shown in (18). C° merges with the root IP:

- (18) $[C^{\circ} [_{C^{\circ}} \text{ que}_Q\{\text{strong [wh]}\}]_{IP} \text{ tu as vu qui}]$

The strong [wh] feature of *que* in C° attracts the [wh] feature of the object wh-word *qui* causing it to raise and attach to C' via substitution (see 19). The strong [wh] in C° is then checked off.

- (19) $[_{CP} \text{ qui}_i [_{C^\circ} \text{ que}_Q \{ \text{strong [wh]} \}] [_{IP} \text{ tu as vu } t_i]]$

The auxiliary *as* 'has' need not move and must not for economy reasons; there is no morphological (strong [V]) motivation.

Let's now consider the overt movement of a wh-word out of an embedded declarative clause. Recall that wh-in-situ in a non-matrix clause cannot be interpreted as a non-echo question. The reason for this phenomenon is that the in-situ wh-word must be bound within its minimal finite clause if our A'-anaphor analysis is correct. Since the appropriate binder is outside of this local domain, the wh-word cannot be locally bound. Why then is a non-echo reading possible for the wh-word *qui* 'who' in (20) below? The answer is that *qui* has been extracted out of the minimal domain of binding.

- (20) $\text{Qui}_i \text{ est-ce qu'il a dit } [_{CP} \text{ que Marie épouserait } t_i]?$

who_i is-it that he has said [_{CP} that Marie marry-COND. t_i]
'Who did he say that Marie would marry?'

Crucially, movement is motivated by morphological reasons prior to Spell-Out. Interpretational mechanisms such as binding has no effect on the C_{HL} prior to LF. The placement of *qui* in matrix [Spec;CP] puts it into the binding domain of the Q operator, the appropriate A'-binder contributing to a non-echo reading.

We have just briefly seen how the binding conception of wh-words is compatible with the minimalist theory of movement. Table 3.1 below summarizes the possible C° French has. I will address this issue in detail in the next section.

	strong [V]	strong [wh]	strong [wh];strong [V]
matrix	✓	✓	✓
embedded	*	✓	*

Table 3.1 Types of interrogative C° in French

4.1.3.1 C-command revisited

How is the interpretational relation between the interrogative C° and the anaphoric wh-expression satisfied when the wh-expression has been moved? I propose that Principle A of the Generalized Binding Theory is satisfied by the Spec-head relation holding between the interrogative C° and the overtly moved wh-word. This is not unusual. Many phenomena such as case assignment and agreement have been argued to take place under such a configuration. In fact, the *Wh-Criterion* (21) within the LGB framework is based on the spec-head configuration. Specifically, this principle expresses the fact that an interrogative operator must be in the specifier position of a CP which is interpreted as a question, and reciprocally, a CP interpreted as a wh-question must have an interrogative operator as its specifier.

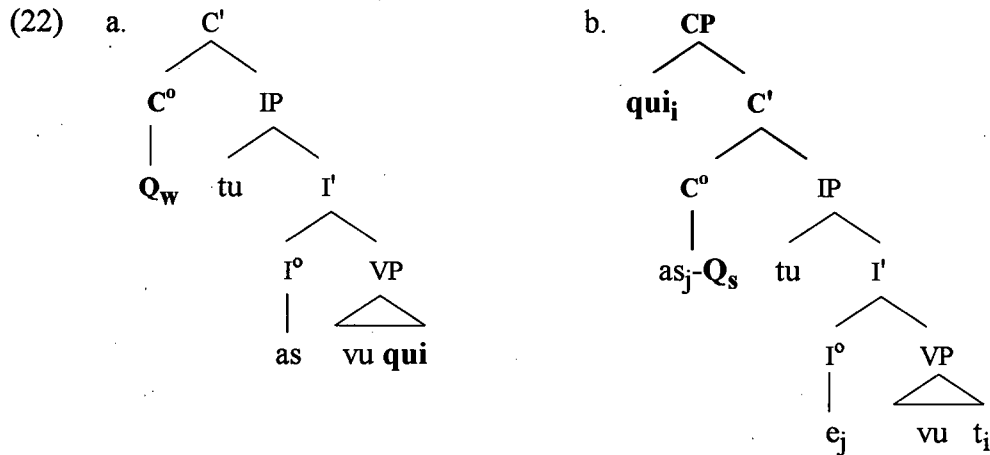
(21) Wh-Criterion (revised, Rizzi, 1996)

- A. A wh-operator must be in a spec-head configuration with X° [+wh].
- B. An X° [+wh] must be in a spec-head configuration with a wh-operator.

In other words, the effect of the *Wh-Criterion* requires wh-movement whenever the C° is marked [+wh] both at S-structure and LF in LGB. This parallels the minimalist analysis of overt wh-movement where a strong feature, namely strong [wh], forces overt movement of an argument containing the relevant [wh] feature for checking purposes. Where the latter analysis differs is that movement is only obligatory if the feature is strong; otherwise, no movement takes place for economy reasons. Thus, the LF structures of English-type (overt wh-movement) languages and Chinese-type (in-situ) languages are different, an idea against earlier assumptions that in-situ wh-words also undergo LF movement to [Spec;CP].

We now seem to have two independent structures by which Principle A of the

Generalized Binding Theory can be satisfied: 1) c-command within a strict local domain and 2) spec-head relation, both illustrated in (22).



Upon re-examination of the above two structures, we can collapse the two relations under an m-command definition of c-command as stated in (23).

(23) *C-command alternative (m-command)*

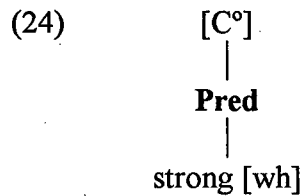
A m-commands B iff A does not dominate B and every X, where X is a maximal projection, dominates A also dominates B.

Given (23), the m-command domain of the interrogative C° includes its specifier position. Thus, there is no longer a need to stipulate that overtly moved wh-words are bound under a separate special configuration. The revised c-command requirement does not affect dative constructions since datives are always lower in the structure than C°; dative wh-in-situ are always c-commanded by the C°.

4.1.3.2 A Note on Relatives

How do we derive relative clauses given our system and the assumption that relative wh-words and interrogative wh-words are the same elements? Whether a wh-word is interpreted as a relative pronoun or an interrogative depends on its binder, namely C°. This description is reminiscent of "strong binding", a property that variables are subject to. Strong binding states the

following: "...a variable must have a range determined by its restricted quantifier [...] or a value fixed by an antecedent that meets certain structural properties..." (153, Chomsky, 1995). I have shown earlier that an interrogative wh-word is bound by a Q that contributes interrogative force. I propose a null *Pred* operator that does not contribute any interpretational force itself rather it depends on an antecedent, the head NP.³⁴ Relative wh-words are overtly moved from their base position because the wh-feature of the *Pred* must be strong (24).



In the case of interrogatives, it is sufficient for the wh-word to be bound by Q to get its question interpretation. Since Q is quantificational, it has the ability to identify the range of possible referents for the wh-expression. *Pred*, however, does not have this ability assuming it is non-quantificational. It requires co-indexation with an NP antecedent (essentially the head of the relative clause) in order to define the possible referents for the wh-expression (25).



To summarize the essentials, overt movement is morphologically driven by strong features on the target within the Minimalist Framework. The operation *Attract/Move* raises the relevant element containing the appropriate feature to check off the strong feature on the target. In the case of wh-interrogatives, it is the strong [wh] of a null Q operator that forces the wh-word to move and adjoin to the root at that point of the derivation (C'). At LF, the moved wh-word is interpreted as interrogative given that it is within the m-command domain of the null Q, thus satisfying Principle A of the *Generalized Binding Theory*.

³⁴I refer the reader to Rizzi (1990) for a similar proposal.

4.2 Wh/QP Interaction

4.2.1 Functional Traces

In an earlier section, we have shown how overt movement removes a wh-expression from the strict local domain of an embedded finite clause to one which satisfies its binding requirement. The same is true of Wh/QP configurations. Remember that an m-commanding quantifier blocks the binding relation between a wh-in-situ and the matrix C° . In the case of an overtly moved wh-word, the quantifier does not interfere with the wh-word receiving a non-echo interrogative interpretation (26).

- (26) a. #Q [Tous les enfants ont vu qui]?
 all the children have seen who
- b. Qui_i est-ce que [tous les enfants ont vu t_j]?
 who is-it that all the children have seen t

The overt extraction appears to remove the wh-expression from the binding domain of the quantifier, allowing the interrogative C° to bind and give a non-echo reading to the wh-word.

Now that the wh-word is free from the QP domain (i.e no longer in the QP c-command domain), the question of availability of a list reading can be addressed. As discussed in Chapter 1, a question such as (27) admits two kinds of answers while (29) does not.

- (27) Qu' est-ce que tous les étudiants ont acheté t?
 what is-it that all the students have bought t
 'What did all the students buy?'

(27) allows an individual answer as in (28a) where there is one thing such that all the students as a group bought it. Alternatively, we can answer (27) with (28b), a list answer where each member of the group of students bought a different item.

- (28) a. une radio
 a radio

- (28) b. Marie a acheté un roman; Paul, une cravate; Chris, une bouteille de vin...
 Marie has bought a novel; Paul, a necktie; Chris, a bottle of wine...

Contrastively, (29) only admits the individual answer as in (30a). (30b) is not a possible response to (30b).

- (29) Qui est-ce qui t a acheté tous les livres?
 who is-it that t has bought all the books

- (30) a. Marie.
 Marie
- b. Marie a acheté *Albertine disparue*; Paul, *Moderato cantabile*; Chris, *Les Choses*...
 Marie has bought *Albertine disparue*; Paul, *Moderato cantabile*; Chris, *Les Choses*...

Chierchia observes that whenever the trace of the quantified NP c-commands the trace of the wh-word, the list answer is possible.³⁵ Assuming QPs undergo quantifier raising, QP cannot "cross over" the wh-trace. Chierchia capitalizes on this descriptive generalization by drawing a link between Weak Crossover (WCO) and the Wh/QP asymmetry. To capture this asymmetry, I will adopt the proposal in Chierchia (1993).

The WCO phenomenon is described as the impossibility of construing a wh-word across a co-indexed pronoun (Chierchia, 1993). The paradigmatic examples are given in (31).

- (31) a. *Who_i does his_i mother love t_i? *wh-questions*
 a'. For which x, x's mother loves x
- b. *His_i mother loves everybody_i. *quantifier raising*
 b'. For every x, x's mother loves x.

The question in (31a) and the statement in (31b) cannot have the interpretation given respectively in (31a') and (31b'). In these cases, the generalization is that a quantified element (wh-word or

³⁵An individual answer is always possible.

QP) crosses over its bindee (i.e the pronominal element *his*).

Returning to the case in (31): if the quantified NP were to be construed as having wider scope over the wh-element, it must cross over the subject wh-trace. If the lack of a list reading is prohibited by a WCO effect, we must assume that the wh-trace has some pronominal component. Here, Chierchia refers to Engdahl's (1986) insights on functional answers and pair list answers. Essentially, pair list answers are argued to be a subcase of functional answers. The argument is as follows: lists which are pairs of individuals can be viewed as functions which are sets of ordered pairs when taken extensionally. The logical representation of a functional interpretation of (32) is as in (33) where a function f is applied to an argument x .

- (31) a. Who does everyone like?
 b. His mother.
 c. Paul likes Mary; Chris likes Jane; George likes Linda, etc.

- (32) For which f : everyone _{x} likes $f(x)$.

The variable x is bound by the subject QP while the functional variable f is bound by the interrogative operator in COMP in Chierchia's terms. Furthermore, the question in (33) has the logical form in (34).

- (33) a. Who loves everyone?

- (34) For which f : everyone _{x} [$f(x)$ loves x]

Based on this parallelism, Chierchia proposes that a wh-trace has a complex structure consisting of a functional index (f-index) bound by Q and an argument index (a-index) which corresponds to the bound pronoun. Such a functional trace gives rise to functional/list interpretation.

In light of this proposal, we can now account for the asymmetry in French. The trace that *qui/que* 'who/what' leaves after having moved is a functional one having both the f-index and a-index. This is illustrated in (35) and (36) for the questions in (27) and (29) respectively. The

conceptual-intentional system, all but one copy must delete. Depending on which copy is left over we get one of two possible readings. An individual reading surfaces if the copy in [Spec;CP] is left over so that the copy of the wh-word has scope over (c-commands) the QP. On the other hand, if the copy in object position remains at LF, a list reading surfaces; the QP has scope over the copy of the wh-word. This is illustrated in (37a) and (37b) respectively (brackets indicate deletion).

- (37) a. [**Que** [_{IP} tous les étudiants_i [_{IP} t_i ont acheté (que)]]] *individual reading*
 b. [(Que) [_{IP} tous les étudiants_i [_{IP} t_i ont acheté **que**]]] *list reading*

With respect to the wh-subject/QP-object configuration, Hornstein's analysis still predicts the correct lack of list reading.

- (38) a. [**Qui** [_{IP} (qui) a [_{VP} tous les livres_i [_{VP} acheté t_i]]]] *individual reading*
 b. [(Qui) [_{IP} **qui** a [_{VP} tous les livres_i [_{IP} acheté t_i]]]] *individual reading*
 c. [(Qui) [_{IP} tous les livres_i [_{IP} **qui** a [_{VP} acheté t_i]]]] **list reading*
- |

In order for the quantifier to have scope over the wh-element, it must bind across the copy -- an implicit bindable pronominal -- thus violating WCO.

Inasmuch as Hornstein's analysis is in line with minimalist mechanisms, it poses a problem for the French facts. Specifically, deleting the copy in [Spec;CP] at LF essentially reconstructs the wh-word in the base position. When the wh-word is an object and the subject a QP, we put the wh-word back into the opaque binding domain of the subject QP. Within Hornstein's analysis, the LF structure of a wh-in-situ/QP (30a) and that of a functionally interpreted overt Wh/QP (36b) are predicted to be identical.³⁷

³⁷I am putting aside the *que/quoi* distinction as it is not crucial to the present argument.

- (41) **Sa_i mère a vu qui_i?*
 his/her mother has seen who
 'Who has his/her mother seen?'

However, the possessive *sa* 'his/her' cannot be construed as being bound by the wh-word *qui* 'who'. Does this necessarily mean that covert wh-movement is taking place? That is, the ungrammaticality stems from the binding relation between the wh-trace left by covert movement and the possessive pronoun. The answer is *no*. Let's examine the two representations in (42a) and (42b) for the wh-in-situ and the overtly moved wh-word respectively.

- (42) a. * $[C' Q_i [IP Sa_i mère a vu qui_j]]?$ *wh-in-situ*
 Q his/her mother has seen who
- b. * $[CP Qui_j [C' Q_i [IP sa_i mère a vu t_j]]]$ *overtly moved wh*
 who Q his/her mother has seen t

Descriptively, the question is unacceptable if any part of the *wh-chain* is co-indexed with a pronoun it does not c-command. The *wh-chain* of an overtly moved wh-word is comprised of the Q-operator in C' , the wh-word, and its trace (anchor or tail). In the case of in-situ interrogatives, the *wh-chain* is headed by the Q-operator and anchored by the wh-in-situ. The generalization is that the anchor of a *wh-chain* cannot be co-indexed with a pronoun to its left. Given this, I propose that (40) be revised as follows:

- (43) Quantified NPs and *wh-chains* can have anaphoric relations only with pronouns in their c-command syntactic domain.

This revision allows us to account for the WCO in the in-situ interrogatives without assuming LF wh-movement. Moreover, it does not affect the analysis of the standard cases of WCO (42b) and (44). Since the QP does not c-command the possessive pronoun *sa*, it cannot be co-referential with the latter.

- (44) *Sa_j mère a vu tout le monde_j.
 his mother has seen everyone
 'His/her mother saw everyone.'

By redefining the impermissible antecedent of a pronoun, we include not only chains created via movement, but also interpretational LF chains such as the one between a null Q-operator and an in-situ wh-word.

4.3 Summary

In adopting Chierchia's (1993) analysis of Wh/QP interaction, the possibility of having both an individual reading and a pair list reading is accounted for by the presence of a functional trace. A functional trace is defined as having both a functional variable and an argument variable or a *pro*. This is in line with our proposals about the composition of wh-words. The pair list reading in a QP-subject/Wh-object configuration is achieved through the binding of the *pro* (argument variable) by the raised QP. Contrastively, the absence of a list reading in a Wh-subject/QP-object configuration is due to a violation of Weak Crossover. Given the revision to the WCO constraint, the A'-chain headed by the QP cannot be co-indexed with the wh-word which has a pronominal variable, *pro*. The WCO analysis gives further support to our earlier proposals about the composition of wh-words in French.

Although the data as presented in this section appears to be straightforward, it is not. That is, the distributive/list readings are in fact not as easily derived by speakers. What is important though is that they are possible. The next section discusses some of the compounding factors of Wh/QP interaction in French.

4.4 Appendix: Complicating Factors

We need to be aware of several complicating factors. First, we should be cautious given that the predictions in the literature are based on the interaction of an *every*-like universal quantifier. Let's consider (45):

- (45) What did all (of) his friends buy him for his birthday?
- a. All (of) his friends bought him a new stereo system.
 - b. Paul bought him a CD; Mary, a shirt; Sue, a pen; Chris, a pen set...

The preferred reading is the collective one in (45a) where each of his friends contributed to the same gift. But (45b) is a possible answer.

This brings us to the second factor: the predicate. In order to see if *tous* can truly have a distributive reading, we need a strictly distributive predicate. The verb *épouser* 'to marry' is one such case.³⁸ (PL = pair list reading)

- (46) *?PLWho will all his friends marry?
- (47) *?PLQui est-ce que tous tes amis fiancés épouseront?
Who is-it that all your friends engaged marry-FUT
'Who will all your engaged friends marry?'

In both the English (46) and French (47) cases, a list answer is marginally possible. Their first interpretation is that the friends as a group will marry one person. The "unnatural" pair list reading may be due to a forced one-to-one correspondence between the members of the wh-quantificational set and those of the universally quantified set. Recall in Chapter 2 *tous* 'all' is considered a GQP introducing a group variable; moreover, GQPs exhibit pseudo-distributivity (vague pairings of members of two sets) rather than strong distributivity as in *chaque/chacun* 'each/each one'

The third factor involves the form of the French interrogative. When compared to (47), the list reading comes much more naturally in (49), indirect question.

- (48) PLTell me who **all** (of) his friends will marry.
- (49) PLDis-moi qui **tous** tes amis fiancés épouseront.
Tell-me who all your friends engaged marry-FUT
'Tell me who all your engaged friends will marry.'

³⁸Here, I am assuming the concept of marriage as a one-to-one relationship.

For our purposes, it is sufficient to simply note the difference in judgement and the possibility of a pair list reading.

One final issue concerning the possibility of scope ambiguity is the plurality of the question term. Wh-words such as *qui* and *quoi* are morphologically singular as evidenced in verbal agreement but semantically unmarked for number; thus, it is not clear whether distributivity is contributed by the quantifier or the plurality of the wh-word. This issue is raised in Deprez's (1994) study of the floated quantifier *chacun* in French. She demonstrates that only semantically plural question terms allow pair list readings in such cases (50-51).

- (50) - PLJe veux savoir **quel livre chacun** de ces enfants a lu.
I want know-INF which book each of these children have read
- (51) a. *PLJe veux savoir **quel livre** ces enfants ont **chacun** lu.
I want know-INF which book these children have each read
- b. PLJe veux savoir **quels livres** ces enfants ont **chacun** lu.
I want know-INF which books these children have each read

The claim is that the quantificational subject in (50) is a strict distributor which ranges over individual variables. In contrast, the plural subject in (50) is a weak distributor ranging over plural or group variables.

Let's now consider the interaction of *tous* and *quelle(s) femme(s)*:

- (52) a. *PLDis-moi **quelle femme tous** tes amis fiancés épouseront.
Tell-me which woman all your friends engaged marry-FUT
- b. *PL**Quelle femme** est-ce que **tous** tes amis fiancés épouseront?
Which woman is-it that all your friends engaged marry-FUT
- (53) a. PLDis-moi **quelles femmes tous** tes amis fiancés épouseront.
Tell-me which women all your friends engaged marry-FUT
- b. PL**Quelles femmes** est-ce que **tous** tes amis fiancés épouseront?
Which women is-it that all your friends engaged marry-FUT

When the morphologically/semantically singular *quelle femme* 'which woman' is used in place of *qui* 'who', the list reading is not available. In fact, the sentence is considered "strange". Once we use a plural *which* phrase as in (53), the list reading surfaces. The overt Wh/QP scope facts provide further evidence that *tous* is not a true distributive quantifier like *chaque/chacun* 'each/each one' as discussed in Chapter 2.

Chapter 5 Consequences and Predictions

5.0 Introduction

I have summarized in (1) the core ideas of the approach proposed in this thesis to account for the restricted behaviour of French in-situ wh-interrogatives in comparison to overtly moved wh-questions. The crucial point is that LF wh-movement can be eliminated under these proposals.

- (1)
 - a. Wh-words are A'-anaphors subject to Principle A of the Generalized Binding Theory.
 - b. Principle A states that an X-anaphor ($X = A/A'$) must be bound
 - i. within the minimal finite clause, or
 - ii. by the first potential X-antecedent.
 - c. Interpretation of the wh-words in French is based on the binding relation between the wh-word and the null Q operator of the functional category C^0 .
 - d. Generalized Binding is an interpretational module of the LF interface only. That is, interpretation of wh-words does not take place until LF.
 - e. Wh-words in French cannot be bound by a non-interrogative operator such as Neg or a universal quantifier due to a mismatch of the [wh] feature - French wh-words are [+wh] while non-interrogative operators are [-wh].
 - f. Overt wh-movement is morphologically driven by the strong [wh] feature of the null Q, not semantically driven. Overtly moved wh-words enter LF occupying a position outside of the opaque domain of an A'-blocker or a finite clause.

The obvious question at this point is whether cross-linguistic evidence exists to support our current analysis. Specifically, are there other languages which exhibit the same local binding restrictions as French? In this chapter, I will present some preliminary data from Iraqi Arabic and German in support of the analysis proposed here. In addition, I discuss the implications of these proposals for wh-phenomena in Chinese and English. In section 5.3, I will briefly discuss data from these two languages in light of our A'-anaphor hypothesis. Finally, there remain a number of unanswered questions and issues which I will raise in the final section.

5.1 Cross-linguistic Evidence

5.1.1 Iraqi Arabic (Ouhalla, 1996)

Like French, Iraqi Arabic has both overtly moved *wh*-phrases and *wh*-in-situ as illustrated in (2a) and (2b) respectively.⁴⁰

- (2) a. Šeno hawlat Mona tištiri?
 what tried Mona to-buy
 'What did Mona try to buy?'
 b. Hawlat Mona tištiri šeno?
 tried Mona to-buy what
 'What did Mona try to buy?'

Note that in (2b) the *wh*-in-situ is located in an embedded infinitival clause, and the question is acceptable. Contrastively, a *wh*-in-situ within a tensed embedded clause is unacceptable. The question in (3a) may be saved by overtly moving the *wh*-word into the matrix [Spec;CP] position as shown in (3b).

- (3) a. *Mona tsawwarit Ali ištara šeno?
 Mona thought Ali bought what
 'What did Mona think Ali bought?'
 b. Šeno tsawwarit Mona Ali ištara?
 what thought Mona Ali bought
 'What did Mona think Ali bought?'

These cases are exactly parallel to the French data illustrating the matrix clause restriction as discussed in Chapter 3. I have provided comparative examples from French in (4).

- (4) a. #Il a dit que Marie épouserait qui?
 he has said that Marie marry-COND who
 'Who did he say that Marie would marry?'

*wh-in-situ in
 finite clause*

⁴⁰All data is drawn from Ouhalla (1996) unless otherwise specified.

- (4) b. Qui est-ce qu'il a dit que Marie épouserait? *overt mov't*
 who is-it that'he has said that Marie marry-COND
 'Who did he say that Marie would marry?'
 c. Il lui a dit d'épouser qui? *wh-in-situ in*
 he her-DAT has said ofmarry-INF who *infinitival clause*
 'Who did he tell her to marry?'

The Iraqi Arabic paradigm may be accounted for under the current proposal that wh-words are A'-anaphors in general. The unacceptability of (3a) is due to a violation of Principle A of the *Generalized Binding Theory*. Specifically, the wh-word is not bound within the minimal finite clause.⁴¹

Ouhalla (1996) presents data that illustrate the A'-version of the *Specified Subject Condition* or as I have termed it, the *Specified Antecedent Condition*. Consider (5). The question in (5) is "ungrammatical" given that the closer potential antecedent is *li-meno* 'to whom' not the matrix interrogative C°.⁴²

- (5) *Nasat Mona li-meno tinti šeno?
 forgot Mona to-whom to-give what
 'What did Mona forget to whom to give?'

Overt movement of the wh-word out of the wh-island (6) exhibits only a "milder Subjacency-type violation" instead of the "strong ungrammaticality" of the in-situ case (Ouhalla, 1996). Ouhalla is not explicit about what is meant by "strong ungrammaticality", except that it arises when a wh-word is not properly bound under his analysis. I will assume that this labelling refers to the lack of non-echo interpretation for the wh-word.⁴³

- (6) ??Šeno nasat Mona li-meno tinti?
 what forgot Mona to-whom to-give?
 'What did Mona forget to whom to give?'

⁴¹Ouhalla (1996) independently proposes a similar analysis.

⁴²Whether (5) can be a multiple indirect question is not discussed in Ouhalla (1996).

⁴³The possibility of an echo question interpretation is not discussed.

As a final note, our current analysis predicts that quantificational operators should block the (non-echo) interrogative reading of *wh*-words in Iraqi Arabic. Unfortunately, data is unavailable at this time. It would be interesting for future studies to examine the interaction of in-situ *wh*-phrases and quantified phrases in Iraqi Arabic.

5.1.2 German (Beck, 1993)

Although German is an overt *wh*-movement language, it does allow multiple questions where at least one *wh*-word has overtly raised and the other(s) remain in-situ (7).⁴⁴

- (7) **Wen** hat Luise **wo** gesehen
 whom has Luise where seen
 'Where did Luise see whom?'

The German data I am about to present is particularly interesting to the A'-anaphor analysis of *wh*-words in that German also appears to have a blocking effect at LF only. When the subject Luise is replaced with a quantified expression such as *fast jeder* 'almost everyone' or *wenige* 'few people', the in-situ *wh*-phrase is uninterpretable (Beck, 1993).

- (8) a. ??**Wen** hat *fast jeder* **wo** getroffen?
 whom has almost everyone where met
 'Where did almost everyone meet whom?'
 b. ??**Wen** haben *wenige* **wo** getroffen?
 whom have few people where met
 'Who did few people meet where?'

In addition, an intervening negative, and quantificational adverbial also blocks interpretation of an in-situ *wh*-phrase as illustrated in (9).

- (9) a. ??**Wen** hat *niemand* **wo** gesehen?
 whom has nobody where seen
 'Who did nobody see where?'

⁴⁴All data is from Beck (1993) unless otherwise specified.

- (9) b. ??**Wen** hat *mindestens zweimal* **welche Preise** gewonnen?
 who has at least twice which prizes won
 'Who has won which prizes at least twice?

To account for the German data presented here, Beck proposes an LF restriction, the *Minimal Quantified Structure Constraint* as formalized in (10). Moreover, Beck assumes that wh-movement takes place at LF.

- (10) a. *Quantifier-Induced Barrier (QUIB)*
 The first node that dominates a quantifier, its restriction, and its nuclear scope is a Quantifier-Induced Barrier.
- b. *Minimal Quantified Structure Constraint*
 If an LF trace β is dominated by a QUIB α , then the binder of β must also be dominated by α .

How may our current A'-anaphor analysis capture the German in-situ facts? Specifically, how can the data presented above be accounted for if no LF wh-movement is assumed? Upon re-examination of the uninterpretable examples, the situation is analogous to the *Specified Antecedent Condition* violation exhibited in French. Let's assume that *wo* 'where' is an A'-anaphor that must be bound by the closest potential A'-binder. In (8) and (9), the closest potential binder is the intervening QP and not the matrix Q. Feature mismatch rules out such a binding relation; assuming QP is [-wh], it is an inappropriate binder for the [+wh] wh-in-situ. Note that these examples cannot be ruled out on vacuous quantification since the matrix Q operator already has a wh-word occupying the [Spec;CP] position to quantify over; recall that a spec-head relation is the most direct binding possible.

The elements affected by the QP "intervener" are not limited to in-situ wh-words. The same blocking effect is found in questions containing *w-alles-construction* and partitive which-NPs as illustrated respectively in (11) and (12). If the subject is not quantified, the utterance is acceptable (a-examples). Once the subject is quantified, the question is uninterpretable (b-d examples).

- (11) a. **Wen** hat Luise **alles** gesehen?
 whom has Luise all seen
 'Who-all did Luise see?'
 b. ??**Wen** hat *niemand* **alles** gesehen?
 whom has nobody all seen
 'Who-all did nobody seen?'
 c. ??**Wen** hat *fast* *jeder* **alles** gesehen
 whom has almost everyone all seen
 'Whom-all has almost everyone seen?'
 d. ??**Wen** hat Karl *zweimal/meistens/oft* **alles** getroffen
 whom has Karl twice/mostly/often all met
 'Wo-all did Karl meet twice/mostly/often?'
- (12) a. **Wen** hat Luise **von den Musikern** getroffen?
 whom has Luise of the musicians met
 'Which of the musicians did Luise meet?'
 b. ??**Wen** hat *keine* studentin **von den Musikern** getroffen?
 whom has no student of the musicians met
 'Which of the musicians did no student meet?'
 c. ??**Wen** hat *fast* *jeder* student **von den Musikern** getroffen?
 whom has almost every student of the musicians met
 'Which of the musicians did almost every student meet?'

Moreover, the (11b-c) and (12b-c) can be "saved" if the entire wh-expression is overtly moved to [Spec;CP] as illustrated in (13) and (14).

- (13) a. **Wen alles** hat niemand gesehen?
 whom all has nobody seen
 b. **Wen alles** hat fast jeder gesehen?
 whom all has almost everyone seen
- (14) a. **Wen von den Musikern** hat keine studentin getroffen
 whom of the musicians has no student met
 b. **Wen von den Musikern** hat fast jeder student getroffen
 whom of the musicians has almost every student met

Beck suggests that the blocking effect of QP extends to "wh-related" constructions such as the ones in (11) and (12).⁴⁵ I leave the question of whether this particular phenomena occurs in French open for future studies.

Inasmuch as German appears to exhibit blocking effects at LF similar to French, there are a number of differences. First, *jeder* 'everyone' does not block the interpretation of a wh-in-situ as shown in (15). Rather (15) lacks a single answer reading.

(15) a. Wen hat jeder wo gesehen
whom has everyone where seen
'Where did everyone see whom?'

b. For each person x: who did x see where?

A felicitous answer to (15) is (16) below.

(16) Karl saw Luise at the library, Detmar saw Kordula in Arthur's suite,
Luise saw Otto at the hairdresser's.

⁴⁵Note that the German cases given in (11) and (12) may be explained under Rizzi's (1990) *Relativized Minimality* approach. Similarly in French, there is a quantificational wh-expression *combien de NP* 'how many NP' that may be split up like the German *w-alles* constructions and partitive which-NPs as illustrated in (ib). When an adverbial such as *beaucoup* intervenes between *combien* in [Spec;CP] and *de NP* in base position, the question is unacceptable (ii).

- i. a. Combien de livres a-t-il consulté t?
how many of books has-t-he consulted t
'How many books did he consult?'
 - b. Combien a-t-il consulté t de livres?
how many has-t-he consulted t of books
'How many books did he consult?'
- ii. * Combien a-t-il beaucoup consulté t de livres?
how many has-t-he a lot consulted t of books
'How many books did he consult?'

Rizzi (1990) views (ii) as a violation of the ECP under his *Relativized Minimality* approach where *beaucoup* is considered a closer A'-binder or "governor" in Rizzi's terms. This then leaves the wh-quantifier to vacuously quantify. Earlier, Obenauer (1976, 1984) proposed a similar account where empty categories (i.e. traces) must be bound by the closest potential antecedent which in (ii) is *beaucoup*. I refer you to their works for a more detailed discussion. We should keep in mind, however, that *combien* wh-expressions are partitive constructions unlike simple wh-words *qui* 'who', *quoi* 'what', *quand* 'when', etc.

Our analysis predicts that *jeder* should block the non-echo reading of wh-in-situ.

Second, a wh-in-situ in an embedded clause is interpretable in German (17).

- (17) Was glaubt Luise wen Karl gesehen hat?
 what believes Luise whom Karl seen has
 'Who does Luise believe that Karl saw?'

If we follow our binding analysis strictly, the interpretability of the wh-in-situ is unexpected. That is, the in-situ wh-word is not bound within its minimal finite clause. However, the German data may not be such a surprise when we consider that these are all multiple wh-questions which is the third and crucial factor.

5.2 A Note on Chinese and English

5.2.1 Mandarin Chinese

At first glance, the Chinese examples in (15) appears to be counter-evidence to our current proposal about the anaphoric nature of wh-words. The fact that the embedded wh-in-situ in (15) can be construed as a matrix wh-question seems to ignore the strict locality condition on being bound within the minimal finite clause.

- (15) Ta renwei ni maile shenme?
 he think you bought what
 'What does he think you bought?'

Moreover, (16) does not observe the *Specified Antecedent Condition* as defined in Chapter 3. The closer potential A'-antecedent *shei* 'who' should block the matrix construal of the object wh-word *shenme* 'what'. However, this is not the case as indicated by the interpretative translation in (16).

- (16) Ta xiang-zhidao shei maile shenme?
 he wonder who bought what
 'What does he wonder who bought?'

The less restricted behaviour of Chinese wh-words does not necessarily lead us to abandon our earlier proposals about wh-anaphora. Rather the Chinese data can be neatly incorporated if we adopt the analysis in Ouhalla (1996). Just as A-anaphors (eg. reflexives) can be divided into bare type and compound type, so can A'-anaphors (i.e. wh-words). His proposal draws on the following description about the behaviour of Chinese wh-words (based on A&L, 1993b):

- (17) A wh-in-situ occurring in argument position need not have a local antecedent within the minimal finite clause nor does it need to be bound by the nearest potential antecedent.

Such freedom in binding relations is reminiscent of the behaviour of bare reflexive anaphors in Chinese. The bare reflexive *ziji* 'self' is free to be construed with the subject of the embedded clause or the subject of the matrix clause as shown in (18).

- (18) Zhangsan_i shuo Lisi_j chang piping ziji_{i/j}.
 Zhangsan say Lisi often criticize self.
 'Zhangsan said Lisi often criticized him/herself.'

In contrast, a compound reflexive such as *ta-ziji* in (19) must be bound by the subject of the minimal finite clause; *ta-ziji* cannot be construed with the matrix subject *Zhangsan*.

- (19) Zhangsan_i shuo Lisi_j chang piping ta-ziji_{*i/j}.
 Zhangsan say Lisi often criticize himself.
 'Zhangsan said Lisi often criticized himself.'

Given this parallelism, we can say that the Chinese wh-words are bare A'-anaphors while more restricted French wh-words are of the compound type. Further evidence of this conception of Chinese wh-words is illustrated in (20) and (21). In both cases, two construals are possible depending on which antecedent binds the c-commanded wh-word *shenme* 'what'. If it is bound by the closest potential antecedent, the negative *mei* 'not', we get a polarity reading of *shenme* (a-translations). On the other hand, binding by the matrix Q gives us an interrogative

reading (b-translations).

- (20) Guojing mei-you mai shenme
 Guojing not-have buy what

- a. 'Guojing didn't buy anything.'
- b. 'What didn't Guojing buy?'

- (21) Shei mei-you mai shenme
 who not-have buy what

- a. 'Who didn't buy anything?'
- b. 'Who didn't buy what?'

Before we leave this discussion, there is one remaining question. How can we account for the fact that wh-words in Chinese can have an interpretation other than an interrogative one? In other words, why can a Chinese wh-word be bound by a non-interrogative operator such as *mei* 'not' (20-21) while French wh-word cannot? Recall that operators other than a null interrogative Q are inappropriate binders due to a mismatch of the [wh] feature - the first being [-wh] while the latter [+wh]. One possible answer to the Chinese cases is to say that wh-words in Chinese are underspecified for [wh]. Note that this view is in line with the standard characterization of these wh-expressions as *indeterminate (indefinite) expressions*. At this point, I will not pursue this analysis leaving it for another time.

5.2.2 English

As a final note, we will briefly examine how the English wh-in-situ facts can be accounted for under our A'-anaphor analysis.⁴⁶ Let's consider the question-answer pairs in (22) and (23) below. *What* can be construed either with the embedded Q (22a) or the matrix Q (22b). In (23), the in-situ can be construed as a matrix question (pair list answer). Moreover, an echo reading of the wh-in-situ is available for both examples.

⁴⁶As in German, at least one wh-word must overtly raise to [Spec;CP]; thus, multiple wh-questions are always good at least for the overtly raised wh-word in CP.

- (22) Who wonders who bought what?
 a. *Paul* (wonders who bought what). *indirect question*
 b. *Paul* wonders who bought *the new book*. *matrix question*
 c. Who wonders who bought A NEW BOOK? *echo reading*
- (23) Who thinks Max bought what?
 a. *Paul* thinks Max bought *a car*. *matrix question*
 b. Who thinks Max bought A CAR? *echo reading*

This relatively free behaviour of English *wh*-in-situ is reminiscent of the Chinese examples discussed in section 5.2.1. That is, *wh*-words in English may be categorized as a bare A'-anaphor. The *wh*-in-situ does not necessarily have to be bound by the closer A'-antecedent *who* in the embedded C°. Nor does it need to be bound within its minimal finite clause as in (23).

5.3 Final Remarks

Our examination of the *wh*-in-situ phenomena in French has led us to a view of *wh*-words that departs from standard analyses. Under our model, *wh*-words no longer move to create an operator-variable chain required for interpretation whether prior to or at LF. We have argued that a null interrogative operator from the numeration is merged with the root clause during the derivation. And it is via a strict local binding relation established only at LF that *wh*-words receive their interpretation. This approach has allowed us to capture the matrix clause restriction and the QP blocking effect in Wh/QP interaction exhibited by French *wh*-in-situ.

Inasmuch as our model accounts for the French in-situ facts, a number of issues immediately surface as a result of this treatment of *wh*-phenomena. I will briefly discuss three.

First, recall the *Matrix Clause Restriction* analysis of *wh*-in-situs. Although we argued that this is an A'-instance of the TSC, we have not yet answered the core question of why *wh*-words cannot appear in-situ in embedded clauses. Rather, the question was postponed to the following: *why must a null Q licensing a wh-in-situ (i.e. a Q with a weak [wh]) head a matrix clause and never an embedded clause in French?* That is, why are there no in-situ indirect *wh*-questions in French? The answer to these questions may be found in the selectional properties of

matrix verbs. Whereas Chinese *xiang-zhidao* 'to wonder' selects a weak Q, French *se demander* 'to wonder' selects a strong Q only (cf. Rizzi, 1996).

Second, it does not appear that all in-situ wh-expressions are subject to the locality conditions. *Lequel (de DP)* 'which one (of DP)' exhibits D-linking effects in the sense of Pesetsky (1987). The *tous*-subject/wh-object configuration is markedly better with the use of *lequel de DP*; recall that a non-echo reading is not available when the subject is quantified with *tous* 'all' and the object is a simple wh-word such as *qui* 'who'. With the use of *lequel* the in-situ interrogative is perfectly acceptable as non-echo (25).

- (24) #Tous les enfants ont vu *qui*?
 all the children have seen who
 'Who have all the children seen?'

- (25) Tous les enfants ont vu *lequel de ces hommes*?
 all the children have seen which-one of these men
 'Which of the men did all the children see?'

This contrast in acceptability as a non-echo question may be due to a difference in the internal structure of each of the wh-expressions in (24) - (25) and/or their discourse effects. Note that the non-echo question in this paradigm involves a partitive construction *lequel de ces hommes* 'which one of these men', which is also the most discourse-linked of the wh-expressions. Moreover, only an individual reading is licit such that there is only one man who fits the description of being seen by all the children as a group; a pair-list reading is strange, if at all possible. Future research of these puzzles should approach it from a discourse perspective and/or a morphosyntactic perspective.

Third, the QP blocking effect is intuitively very similar to the notion of relativized minimality in that only elements of the same nature can block each other's binding relation. Where our proposal diverges from Rizzi's (1990) *Relativized Minimality* model is the overt syntax/LF distinction. We have captured the QP blocking effect as a *Specified Antecedent Condition* (SAC): the universal quantifier, being an A'-element at LF (adjoined to IP via QR) will block the

A'-binding relation between the null Q operator and the wh-in-situ. SAC is applicable at LF only, while Rizzi accounts for blocking effects on overt movement.

A fourth and closely related issue concerns the properties of potential A'-antecedents. We have seen in Chapter 3 that not only universal quantifiers interfere in the LF interrogative binding relation but wh-words, negative quantifiers, modals quantificational adverbials and negative operators do as well. The question being raised here is to what extent these elements form a natural class. On the one hand, universal quantifiers and negative quantifiers may be grouped together as elements that undergo QR at LF; these elements do not occupy an A'-position until LF. On the other, negation and adverbial operators are A'-elements by virtue of occupying a non-theta-marked position prior to LF; they do not undergo QR. And lastly, modals seem to be on a class of their own, neither items subject to QR nor heads. Nevertheless, there is one common characteristic among all of these potential A'-antecedents - that is, they are all *scope taking* elements. Perhaps they form a natural "semantic" class, a notion that certainly seems compatible with our general view that LF is the place for interpretation. This is where syntax meets semantics.

References

- Aoun, Joseph and Audrey Li. 1993a. "Wh-Elements in Situ: Syntax or LF?" *Linguistic Inquiry*, 24, 2, 199-238.
- Aoun, Joseph and Audrey Li. 1993b. *Syntax of Scope*. MIT Press: Cambridge, Massachusetts.
- Aoun, J., N. Hornstein and D. Sportiche. 1981. "Some Aspects of Wide Scope Quantification," *Journal of Linguistic Research*, 1, 3, 69-95.
- Aoun, J., N. Hornstein, D. Lightfoot, and A. Weinberg. 1987. "Two types of Locality," *Linguistic Inquiry*, 18, 537-78.
- Beck, Sigrid. 1996. "Quantified Structures as Barriers for LF movement," *Natural Language Semantics*, 4, 1, 1-56.
- Beghelli, Filippo. 1995. *The Phrase Structure of Quantifier Scope*. doctoral dissertation. UCLA.
- Beghelli, Filippo and Tim Stowell. 1995. "Distributivity and Negation," *Ways of Scope Taking*. ms. UCLA.
- Boškovic, Zeljko. 1996. *Sometimes in SpecCP, sometimes in-situ*. ms. University of Connecticut.
- Cheng, Lisa. 1991. *On the Typology of Wh-questions*. doctoral dissertation. MIT.
- Cheng, Lisa Lai-Shen and Demirdache, Hamida. 1990. "Superiority Violations", *MIT-Working-Papers-in-Linguistics*, 13, 27-46.
- Chierchia, Gennaro. 1993. "Questions with Quantifiers," *Natural Language Semantics*, 1, 181-234.
- Chierchia, G. and S. McConnell-Ginet. 1993. *Meaning and Grammar: an introduction to Semantics*. MIT Press: Cambridge, Massachusetts.
- Chomsky, Noam. 1980. "On Binding," *Linguistic Inquiry*, 11, 1-46.
- Chomsky, Noam. 1995. *The Minimalist Program*. MIT Press: Cambridge, Massachusetts.
- Cinque, Guglielmo. 1990. *Types of A-Dependencies*. Cambridge, MA: The MIT Press.
- Cole, Peter. 1985. "Quantifier Scope and the ECP", *Linguistics-and-Philosophy*, 8, 2, 283-289.
- Cole, Peter and Hermon, Gabriella. 1994. "Is There LF Wh-Movement?", *Linguistic Inquiry*, 25, 2, 239-262.
- Cole, Peter and Hermon, Gabriella. 1994. "Is Wh-in-Situ Really in-situ? Evidence from Malay and Chinese," in *Proceedings of the 13th West Coast Conference on Formal Linguistics*. 189-203.

- Comorovski, Ileana. 1990. "Verb Movement and Object Extraction in French," *NELS*, 20, 91-105.
- Comorovski, Ileana. 1996. *Interrogative Phrases and the Syntax-Semantics Interface*. Kluwer Academic Publishers: Dordrecht.
- Coveney, Aidan. 1989. "Pragmatic Constraints on Interrogatives in Spoken French," *York Papers in Linguistics*, 13, 89-99.
- Déprez, Viviane. 1994a. "The Weak Island Effect of Floating Quantifiers," *University of Massachusetts Occasional Papers*, 63-84.
- Déprez, Viviane. 1994b. "Pair list answers with floated quantifiers," in *Proceedings from the thirteenth West Coast Conference of Formal Linguistics*, ??.
- Fiengo, R. C.-T. James Huang, H. Lasnik and T. Reinhart. 1988. "The Syntax of Wh-in-situ," in *Proceedings of the 7th West Coast Conference of Formal Linguistics*, 7, 81-98.
- Fox, Danny. 1995. "Economy and Scope," *Natural Language Semantics*.
- Friedemann, Marc-Ariel. 1990. "Le Pronom interrogatif *que* et la montée du verbe en C°," Université de Genève.
- Garrett, Edward. 1996. "Wh-in-situ and the syntax of distributivity," *Syntax at Sunset: UCLA Working Papers in Linguistics*, 129-145.
- Gil, David. 1995. "Universal Quantifiers and Distributivity," *Quantification in Natural Language*. E. Bach, E. Jelinek, A. Kratzer and B. Partee eds. Dordrecht: Kluwer Academic Publishers. 321-382.
- Haik, I. 1984. "Indirect Binding," *Linguistic Inquiry*, 15, 185-223.
- Heim, I., H. Lasnik and R. May. 1991. "Reciprocity and Plurality," *Linguistics Inquiry*, 22, 1, 63-101.
- Higginbotham, James and Robert May. 1981. "Questions, quantifiers and crossing," *The Linguistic Review*, 1, 1, 41-80.
- Hoji, Hajime. 1985. *Logical Form Constraints and Configurational Structures in Japanese*. doctoral dissertation. University of Washington.
- Hornstein, Norbert. 1995. *Logical Form*. Blackwell Publishers Inc.: Cambridge, Massachusetts.
- Huang, C.-T. James. 1982. "Move WH in a language without WH-movement," *The Linguistic Review*, 1, 4, 369-416.
- Huang, C. T. James and Robert May (eds.) 1991. *Logical Structure and Linguistic Structure*. Kluwer Academic Press: Dordrecht.

- Hulk, Aafke. 1993. Some Questions about Questions. ms. University of Amsterdam.
- Jackendoff, Ray S. 1972. "Chapter 6: Focus and Presupposition," *Semantic Interpretation in Generative Grammar*. Cambridge, Massachusetts: MIT Press.
- Janda, Richard D. 1985. "Echo-Questions Are Evidence for What?", *Papers-from-the-Regional-Meetings,-Chicago-Linguistic-Society*, 21(1), 171-188.
- Jones, Michael A. 1996. *Foundations of French Syntax*. Cambridge, England: Cambridge University Press.
- Junker, Marie-Odile. 1995. *Syntaxe et sémantique des quantifieurs flottants tous et chacun*. Librairie Droz: Genève.
- Junker, Marie-Odile. 1994. "French Universal Quantifiers in Conceptual Semantics," *Linguistics*, 32, 2, 213-239.
- Kayne, Richard S. 1994. *Antisymmetry*. MIT Press: Cambridge, Massachusetts.
- Kayne, Richard S. 1981. "ECP Extensions", *Linguistic Inquiry*, 12, 1, 93-133.
- Kayne, Richard S. 1975. *French Syntax: The Transformational Cycle*. MIT Press: Cambridge, Massachusetts.
- Kayne, Richard S. and Pollock, -Jean-Yves. 1978. "Stylistic Inversion, Successive Cyclicity, and Move NP in French", *Linguistic Inquiry*, 9, 4, 595-621.
- Kayne, Richard S. 1979. "Subject Inversion in French Interrogatives," *Generative Studies in Romance Languages*. J. Casagrande and B. Saciuk, eds. Rowley, Massachusetts: Newbury House.
- Kim, Soo Won. 1989 "Wh-Phrases in Korean and Japanese Are QPs" *MIT-Working-Papers-in-Linguistics*, 11, 119-138.
- Kitahara, Hisatsugu. (1997). *Elementary Operations and Optimal Derivations*. MIT Press: Cambridge.
- Koopman, Hilda. 1982. "Control from COMP and Comparative Syntax", *Linguistic Review*, 2, 4, 365-391.
- Koopman, Hilda. 1982. "Quelques problèmes concernant *que/quoi, ce que et qu'est-ce que*," *La Syntaxe comparée du français standard et populaire: approches formelle et fonctionnelle. Tome I*. edited by C. Lefebvre. Gouvernement du Québec; Québec.
- Koopman, Hilda. 1981. "Theoretical implications of the distribution of *quoi*," *NELS*.
- Lasnik, Howard and Mamoru Saito. 1992. *Move α* . MIT Press: Cambridge, Massachusetts.
- Mahajan, Anoop. 1990. "Chapter 1: Scrambling," *A/A-bar Distinction and Movement Theory*. doctoral dissertation. MIT.

- May, Robert. 1985. "Syntactic Rules and Semantic Rules: Their Relation in Wh-constructions," *Grammatical Representations*. edited by J. Guéron, H-G. Obenauer and J-Y. Pollock. Foris Publications: Dordrecht.
- May, Robert. 1988. "Ambiguities of Quantification and Wh," *Linguistic Inquiry*, 19, 1, 118-135.
- May, Robert and C.-T. James Huang (eds). 1991. *Logical Structure and Linguistic Structure: cross-linguistic perspectives*. Dordrecht: Kluwer Academic Publishers.
- Nishigauchi, Taisuke. 1990. *Quantification in the Theory of Grammar*. Dordrecht: Kluwer Academic Publishers.
- Obenauer, Hans-Georg. 1976. *Etudes de syntaxe interrogative du français*. Tübingen: Max Niemeyer Verlag.
- Ouhalla, Jamal. 1996. "Remarks on the Binding Properties of Wh-pronouns," *Linguistic Inquiry*, 27, 4, 676-707.
- Partee, Barbara. 1995. "Quantificational Structures and Compositionality," *Quantification in Natural Language*. E. Bach, E. Jelinek, A. Kratzer and B. Partee eds. Dordrecht: Kluwer Academic Publishers. 541-601.
- Pesetsky, David. 1987. "Wh-in-situ: Movement and Unselective Binding," *The Representation of (In)definiteness*. Eric J. Reuland and Alice G. B. ter Meulen eds. Cambridge, Massachusetts: MIT Press. 98-129.
- Pollock, Jean-Yves. 1989. "Opacity, Genitive Subjects, and Extraction from NP in English and French", *Probus*, 1, 2, 151-162.
- Quicoli, A. Carlos. 1976. "Conditions on Quantifier Movement in French", *Linguistic Inquiry*, 7, 4, 583-607.
- Reinhart, Tanya. 1995. *Interface Strategies*. ms. Utrecht University.
- Reinhart, Tanya. 1983. *Anaphora and Semantic Interpretation*. London: Croom Helm.
- Reinhart, Tanya and Eric Reuland. 1991. "Anaphors and logophors: an argument structure perspective," *Long-distance anaphora*. Jan Koster and Eric Reuland eds. Cambridge, England: Cambridge University Press. 283-322.
- Riegel, Martin, J-C. Pellat et R. Rioul. 1994. *Grammaire méthodique du français*. Presses Universitaires de France: France.
- Rizzi, Luigi. 1996. "Residual Verb Second and the WH-Criterion," in *Parameters and Functional Heads: Essays in Comparative Syntax*. A. Belletti and Luigi Rizzi eds. Oxford University Press: New York, 63-90.
- Rizzi, Luigi. 1990. *Relativized Minimality*. Cambridge, Massachusetts: MIT Press.

- Rizzi, Luigi and Ian Roberts. 1996. "Complex Inversion in French," in *Parameters and Functional Heads: Essays in Comparative Syntax*. Adriana Belletti and Luigi Rizzi eds. New York: Oxford University Press.
- Roberge, Yves. 1982. "IGT et les interrogatives sans inversion du sujet," *Revue de l'Association Québécoise de linguistique*. 2, 2, 145-50.
- Roberge, Yves. 1983. "Interrogatives sans inversion: gouvernement du noeud INFL et hypothèse d'identité structurale," *Revue de l'Association Québécoise de linguistique*. 3, 2, 119-131.
- Rochemont, Michael. 1986. *Focus in Generative Grammar*. John Benjamins Publishing Co.: Amsterdam.
- Rowley, Irenie. 1995. "On the pronominal nature of wh-pronouns," *Newcastle and Durham Working Papers in Linguistics*, 223-247.
- Santin-Guettier, Anne-Marie. 1994. "Inversion et statut des opérations constitutives des énoncés interrogatifs," *Travaux linguistiques du Cerlico: Interrogation*. Presses universitaires Rennes; France.
- Sloan, Kelly. 1991. "Quantifier-Wh Interaction," *MIT Working Papers in Linguistics*, 15, 219-237.
- Sportiche, Dominique. 1981. "Bounding Nodes in French", *Linguistic Review*, 1, 2, 219-246.
- Sportiche, Dominique. 1992. *Clitic Constructions*. ms. UCLA.
- Stroik, Thomas, 1992. "English wh-in-situ Constructions," *Linguistic Analysis*, 22, 3-4, 133-53.
- Szabolcsi, Anna. 1995. "Quantifiers in Pair-list Readings," *Ways of Scope Taking*. ms. UCLA.
- Tellier, Christine. 1995. *Éléments de syntaxe du français: méthodes d'analyse en grammaire générative*. Montréal: Les Presses de l'Université de Montréal.
- Torrego, Esther. 1992. "Wh-in-situ Phrase in Simple Interrogatives: Spanish vs. French," ms. University of Massachusetts, Boston.
- Tsai, Wei-Tien. 1994. *On Economizing the Theory of A-bar Dependencies*. doctoral dissertation. MIT.
- Ward, G. L. and E. F. Prince. 1991. "Topicalization of Indefinite NPs," *Journal of Pragmatics*, 16, 2, 167-177.
- Watanabe, Akira. 1992. *Wh-in-situ: Subjacency and Chain Formation*. ms. MIT.
- Williams, Edwin. 1986. "A Reassignment of the Functions of LF", *Linguistic-Inquiry*, 17, 2, 265-299.