

The Syntax of Wh-Questions in Syrian Arabic

Mais Sulaiman

Submitted to the department of English Literature, Language and
Linguistics for the degree of

Doctor of Philosophy

at

Newcastle University

January 2016

Abstract

This thesis discusses some different types of *wh*-questions available in the dialect of Syrian Arabic. It demonstrates that this variety of Arabic has a very rich and varied system of *wh*-questions. As a prelude to this, it will first be shown that, as far as basic word order in the clause is concerned, two possible orders are allowed in SA, VSO and SVO. It will be argued that in the past tense, the unmarked order is VSO and SVO as a commonly occurring alternative. In the VSO order, the verb raises to a higher functional head F, a lower head in the complementizer system following Rizzi (2001). The subject raises to SpecTP due to the rich agreement system in SA. In the SVO order, the NP is either definite or specific indefinite. Assuming that F can be marked with a definite/specific feature, it can attract a subject to its specifier. Alternatively F can be marked with a [Focus] feature so it can attract a *wh*-phrase when a higher interrogative head INT is merged with F. It will be shown that in *wh*-questions, the V-S order is obligatory; however, this is not a consequence of a V2 constraint. Following Holmberg (2014), it will be argued that this order follows from a constraint on movement across the head F where the verb lands. Only one XP can precede the finite verb in F.

After this, the strategies for *wh*-question formation in SA will be discussed, demonstrating that the in-situ strategy is marginal, being employed only in discourse linked contexts. It will be argued that Merchant's (2001, 2005) analysis of multiple *wh*-questions does not account for the facts of SA. Instead, it will be proposed that they should be accounted for in terms of the *clause structure folding* approach discussed in Moro (2011).

A further topic covered will be pied-piping in SA. Facts from this domain will be used to argue against Heck's (2009) *edge generalization*, according to which a *wh*-pied-piper has to move to the edge of the pied-piped phrase. However, it will be shown that there is no such movement in the possessive structure in SA, as illustrated in (1):

- (1) a. hada beit bassel.
 this house Bassel
 'This is Bassel's house.'

b. *beit miin hada?*
 house who this
 ‘Whose house is this?’

In (1a), the possessor appears in post-nominal position. In the case of a wh-possessor, as in (1b), it still appears in that position. Specifically, it does not undergo movement to the edge of the pied-piped phrase. In order to account for the pied-piping facts in this construction, I investigate the Q/wh-agreement system in SA, following Cable (2007), trying to determine whether the facts in (1) might follow from SA being a non-Q/wh-agreement language. However, I show that SA is an agreement language and propose that the behaviour of Wh-possessive phrases can be accounted for in terms of a combination of Cinque’s (2000, 2005) roll up movement and Cable’s (2007) Q-theory. As I will show, this analysis also accounts elegantly for the fact that wh-possessive phrases cannot contain adjectives.

Along with the long extraction strategy, SA also employs the partial wh-movement (wh-scope marking) strategy for questioning out of embedded questions, as in (2):

(2) *šw fakkar-ty maš miin knt řam iħki?*
 what thought-2SG.F with who was.1SG PROG speaking
 ‘What did you think? Who was I talking to?’

It will be argued that there is no direct dependency between the wh-scope marker and the embedded wh-phrase. The wh-scope marker is not an expletive. It is base generated in the complement of a copula clause. It will be argued that the wh-scope marker and the embedded wh-clause form a small clause embedded in the complement of the main verb. This clause takes the embedded wh-clause as its subject and the wh-scope marker as its predicate assimilating the embedded wh-clause to a free relative clause headed by a null head.

Another strategy for questioning out of embedded questions in SA involves what looks like clausal pied piping:

(3) addesh ʃmr-a al-et-l-ak?

how.much age-her said-3SG.F.SU-to-2SG.M.OBJ

‘How old is she, did she say?’

It will be argued that sentences like (3) are instances not of pied piping but of interrogative slifting, an operation that is different from both scope marking and long distance movement. Following Haddican et al (2014), it will be proposed that the slifted clause does not originate in the complement of the main clause. Rather, it is coindexed with a null operator merged in that position.

Declaration and Statement of copyright

Declaration

No part of the material within this thesis has previously been submitted for a degree at Newcastle University or any other university.

Statement of Copyright

The copyright of this thesis rests with the author. No quotation should be published from it without his prior written consent and information derived from it should be acknowledged.

Acknowledgements

First and foremost, I would like to express my deep gratitude to my supervisors Professor Anders Holmberg and Dr William van der Wurff for their constructive suggestions, useful critiques, and most of all for being so patient with me enabling the syntactic tree to give its fruits. I would like to, in particular, express my special thanks to Professor Holmberg for giving me his time so generously all the way through. Your consideration and sensitivity to the situation in my home country has always been very valuable.

Thanks also go to my lovely friends and colleagues Malgorzata, Basel, Azad, Hofa, Helen, Kadri. You were all very helpful and supportive each in their own way.

I would also like to extend my thanks to my sponsor Al-Baath University whose support made this work possible.

Finally, I wish to thank my loving family: Mum, dad, my beloved sister and friend Deema, Iyad and Bassem. You were always by my side despite of being so far away.

I would like to dedicate this work to my country Syria, hoping that this can be one of the corner stones that can help in reconstructing what has been destructed...

Abbreviations

1PL 1ST PERSON PLURAL

2SG 2 ND	PERSON SINGULAR
2PL 2 ND	PERSON PLURAL
3SG 3 ND	PERSON SINGULAR
3PL 3 ND	PERSON SINGULAR
A1/2/3	1 ST /2 ND / 3 RD
B1/ 2	1 ST /2 ND
ACC	ACCUSATIVE
ADV	ADVERB(IAL)
AGR	AGREEMENT
AUX	AUXILIARY
C	COMPLETIVE
CP	COMPLETIVE ASPECT
CSN	CONSTRUCT STATE NOMINAL
DAT	DATIVE
DEM	DEMONSTRATIVE
DEF	DEFINITE
DO	DIRECT OBJECT
ENC	ENCLITIC
F	FEMININE
IF	INTERPRETABLE FEATUE
IN	DEF INDEFINITE
INF	INFINITIVE
FOC	FOCUS
FUT	FUTURE
GEN	GENITIVE
ICP	INCOMPLETIVE ASPECT
IMP	IMPERATIVE
INF	INFINITIVE
M	MASCULINE
NEG	NEGATIVE
NOM	NOMINATIVE
NONPST	NON---PAST
NUM	NUMBER
OBJ	OBJECT
PERF	PERFECTIVE

POSS	POSSESSIVE
PRES	PRESENT
PRN	PRONOUN
PROG	PROGRESSIVE
PRT	PARTICLE
PTCPL	PARTICIPLE
Q	QUESTION PARTICLE
QPIC	QUESTION PHRASE INTERVENTION CONDITION
QUOT	QUOTATIVE
REFL	REFLEXIVE
REL	RELATIVE
SG	SINGULAR
SUBJUNC	SUBJUNCTIVE
TOP	TOPIC
WH	WH ELEMENT
YNQ	YES/NO QUESTION MARKER

Table of Contents

Chapter 1.	Introduction	1
1.1.	Theoretical background	6
1.2.	Outline of the thesis.....	8
Chapter 2.	Description of Syrian Arabic.....	11
2.1.	Introduction	11
2.2.	Overview of the chapter	12
2.3.	The development of the dialects of Arabic.....	12
2.4.	Word order in Standard Arabic.....	14
2.5.	Word order in Syrian Arabic.....	18
2.5.1.	Word order facts	18
2.5.2.	What does the agreement system in SA suggest?	19
2.5.3.	The position of preverbal NPs and the distribution of V	21
2.6.	Subject-verb inversion in wh-questions.....	26
2.6.1.	Introduction	26
2.6.2.	Wh-questions in SA	26
2.6.3.	The obligatory WH-V-X order.....	34
2.6.4.	Is SA a V2 language?.....	34
2.7.	Conclusion	40
Chapter 3.	Strategies of Wh-question Formation in Syrian Arabic.....	41
3.1.	Introduction.....	41
3.2.	Overview of the chapter.....	43
3.3.	The gap strategy	43
3.4.	Long distance wh-movement.....	45
3.5.	Class II strategy.....	46
3.6.	The Resumptive Strategy	52
3.7.	Wh in-situ	56
3.8.	Multiple wh-questions in SA	60
3.9.	Conclusion	68
Chapter 4.	Pied-Piping in Syrian Arabic	70
4.1.	Introduction	70
4.2.	Overview of the chapter	71
4.3.	The feature percolation hypothesis.....	72
4.4.	Secondary wh-movement and the Edge Generalization	74

4.5	Possible exceptions to the Edge Generalization	78
4.6.	Summary: pros and cons of Heck's (2008) theory	80
4.7.	Q-theory: an alternative to pied-piping	81
4.7.1	The problem of rightwards movement	81
4.7.2.	Pied-piping in the Q-theory.....	83
4.7.3.	Limited vs. non-limited pied-piping languages	89
4.8.	Pied Piping in SA.....	95
4.8.1.	The Construct State Nominal	96
4.8.2.	The Agreement system in Syrian Arabic	102
4.8.3.	The solution.....	106
4.9.	Conclusion.....	109
Chapter 5.	Wh-scope marking in Syrian Arabic: an indirect dependency	111
5.1.	Introduction	111
5.2.	Overview of the chapter	113
5.3.	Properties of Scope Marking.....	113
5.4.	The direct dependency analysis.....	118
5.5.	The Indirect Dependency Approach	120
5.5.1.	Negation in the indirect dependency approach	123
5.6.	Wh-scope marking cross-linguistically.....	125
5.6.1.	The Indirect wh-dependency in Hungarian.....	127
5.6.2.	Island sensitivity.....	129
5.7.	The Indirect dependency a common analysis across languages	132
5.8.	The predication analysis.....	136
5.9.	Syrian Arabic has wh-scope marking	141
5.9.1.	Properties of wh-scope marking in Syrian Arabic	144
5.9.2.	Approaches to wh-scope marking in Syrian Arabic.....	150
5.9.3	Not a direct dependency.....	150
5.9.4.	CP as expletive associate.....	150
5.9.5.	Split constituents	152
5.9.6.	The small clause analysis.....	155
5.9.7.	The wh-scope marker as an argument	155
5.9.8.	The Analysis.....	157
5.10.	Conclusion.....	161
Chapter 6.	Interrogative Slifting or Clausal Pied-Piping.....	163
6.1.	Introduction	163

6.2.	Overview of the chapter	165
6.3.	Clausal pied-piping	165
6.3.1.	Clausal pied-piping and wh-scope marking	165
6.3.2.	Presupposition	166
6.3.3.	Amount wh-phrases	168
6.4.	Snowball domains and adjunction in Finnish.....	171
6.5.	Wh-slifing in English.....	172
6.6.	Wh-slifing in Syrian Arabic.....	178
6.6.1.	Presupposition	179
6.6.2.	Sensitivity to negation.....	180
6.6.3.	Person restrictions	181
6.6.4.	Declarative slifing and wh-slifing.....	182
6.6.5.	Where is the slift from the parenthetical clause?	187
6.7.	Conclusion	190
Chapter 7.	Conclusions	191
References	194

Chapter 1. Introduction

This thesis presents and discusses a number of types of wh-questions employed in Syrian Arabic (SA). The aim is to contribute to the understanding of the syntax of wh-movement by finding out what the various wh-constructions in SA have in common with related constructions in other languages, and what they differ in, and consider the implications this has for the theory of grammar. On the descriptive side, this is probably the most comprehensive account to date of various forms of wh-movement in any variety of Arabic. One of the wh-constructions described in detail, so called wh-slifiting, has never even been observed before in Arabic. Another form of wh-movement discussed here, so called wh-scope marking, has been observed (in Iraqi Arabic, by Wahba (1992)), but has never been described in detail. The research reported here has uncovered a very rich system of wh-questions in this variety of Arabic.

Like many other varieties of Arabic, SA has two possible unmarked sentential orders, SVO and VSO (see (1)):

- (1) a. khals-et haneen wazaʔf-a.
finished-3SG.F Haneen homework-her
'Haneen finished her homework.'
- b. haneen khals-et wazaʔf-a.
Haneen finished-3SG.F homework-her
'Haneen finished her homework.'

The position of the subject in the SVO order in Arabic has been a main point of interest for many studies, as in Fassi Fehri (1993) for Standard Arabic, and Aoun et al (2010) for Lebanese Arabic. There are good arguments that the preverbal subject can be either a subject or a topic. However, this is still a controversial issue. The question arises here with regards to the position of the subject and the verb in the SVO and VSO orders, and whether the SVO order is a variation from VSO derived by subject topicalization. Another question that arises from the fact that the two orders are possible is whether wh-questions trigger an obligatory subject-verb inversion (see (2)):

(2) a. šw khals-et ħaneen?
what finished-3SG. F Haneen
'What did Haneen finish?'

b. *šw ħaneen khals-et?
what Haneen finished-3SG. F

It is well known that verb second (V2) languages require subject-verb inversion in questions, as in the Germanic languages. The verb has to be the second constituent in the sentence. More precisely, the generally accepted analysis is that the V2 order is the result of verb movement to C (via T) (Holmberg 2014). The question arises here with regards to languages that are not V2 languages like SA. Is the obligatory Wh-V-S order a result of verb movement to C? If not, why is this order obligatory then?

A main area of interest in wh-questions is the phenomenon of pied-piping, as illustrated in (3):

(3) a. *Whose did you read [t book]?
b. [Whose book] did you read?
c. *[Books by who] did you read?

(3a) shows that the possessor wh-phrase cannot be extracted from the dominating DP. Instead, the wh-movement has to pied-pipe the entire dominating DP. (3c) shows that pied-piping does not work when the wh-phrase is in post-nominal position. This is discussed in Heck (2008, 2009) in terms of an Agree-based checking theory. Following from this theory, Heck argues that a wh-phrase universally has to be at the edge of the phrase it pied-pipes. If it is not externally merged (base-generated) in this position, it undergoes an obligatory secondary movement to an edge position. This explains the contrast between (3b) and (3c).

Pied-piping is approached differently in Cable (2007). He argues that wh-phrases are always dominated by a QP headed by a category Q, which may be abstract or spelled out as a question particle. The category which is probed by C in questions, and undergoes wh-movement is the QP. It is argued that pied-piping is triggered by features on the Q-particle which c-commands the wh-phrase. Cable's Q-theory provides an

explanation for the exceptional cases of secondary wh-movement among languages. Following Kratzer & Shimoyama's (2002) Q/Wh-Agreement theory, Cable classifies languages into two types: limited-piping languages and non-limited pied-piping languages. The former involves an agreement relation between the Q-particle and the wh-word. These are called Q/Wh-agreement languages. In this type of languages, the wh-word cannot be dominated by islands or lexical categories in a pied-piped clause. Thus lexical intervention between the Q-particle and the wh-phrase leads to ungrammaticality. In the other type of languages, Q/Wh-agreement is not required, therefore, lexical intervention does not cause any violation, and there is no need for secondary wh-movement.

In this thesis, I will discuss pied-piping in the possessive structure in SA; see (4). As can be seen, the possessor appears in a post-nominal position. Contrary to Heck's (2008, 2009) generalization, a wh-possessor appears not to undergo secondary wh-movement to the edge of the DP, but appears to pied-pipe the DP nonetheless:

- (4) a. akhadt ktab bassel.
took.1SG book Basel
'I took Basel's book'
- b. ktab miin akhdt?
book who took.2SG
'Whose book did you take?'
- c. *miin ktab akhadt?
who book took.2SG

The question arises here with regards to whether Cable's (2007) Q-theory can explain the exceptional behaviour of the wh-possessor in SA. This leads to the question whether SA is a non-agreement language allowing pied-piping with a post-nominal wh-phrase.

The derivation of the possessive DP, the so called Construct State Nominal (of which (4) is an example), is a highly controversial issue in Semitic syntax. It will be argued here that a modified version of the derivation proposed by Cinque (2000, 2005) provides the best explanation for the pied-piping facts. It will be shown that when

Cable's Q-theory is combined with Cinque's (modified) theory, the facts from SA fall into place, within a restrictive theory of grammar, allowing only leftward movement.

One type of wh-questions is the wh-scope marking (or partial wh-movement) question, illustrated in (5a). This strategy is employed as an alternative to long extraction questions; compare (5a) and (5b):

- (5) a. *šu fkkart-i maʃ miin knt ʃam iħk-i?*
what thought-2SG.F with who was.1SG PROG speaking
'What did you think? Who was I speaking to?'
- b. *maʃ miin fkkarty inn-i knt ʃam iħk-i?*
with who thought-2SG.F that-1SG was-1SG PROG speaking-1SG
'Who did you think I was speaking to?'

In the long extraction question in (5a), the wh-phrase *maʃ miin* 'with who' undergoes long movement to Spec of the matrix clause. In the scope marking question in (5b), the wh-phrase *maʃ miin* 'with who' moves partially to Spec of the embedded clause providing the semantic content of the question. The scope of the question is marked by the wh-phrase *šu* 'what'.

This structure is employed in a number of languages for questioning out of embedded questions. Languages vary in terms of the approaches to wh-scope marking. The main approaches are *the direct dependency* (Riemsdijk 1983; McDaniel 1989), and *the indirect dependency* (Dayal 1994, 2000; Horvath 1997; Felser 2001). Dayal (2000) argues that the cross linguistic variation can be reconciled under the indirect approach, taking into account the structural variation among languages.

Wh-scope marking will be investigated in SA. The question is whether the structure is a real instance of wh-scope marking or simply a sequence of two questions. If it is a wh-scope marking construction, does the structure support Dayal's (2000) proposal that cross-linguistically the dependency is indirect? If it does, does the wh-scope marker and the embedded clause form one constituent either in the underlying structure (Herburger 1994; Bruening 2004), or at LF (Horvath 1997)?

It will be argued that SA employs the wh-scope marking strategy for questioning out of an embedded clause. However, the dependency between the wh-scope marker and the embedded clause is indirect. The wh-scope marker and the embedded CP question do not start as a noun phrase headed by the wh-phrase in the complement of the main verb. It will be argued that the wh-scope marker and the embedded wh-clause originate in the complement of a copula clause embedded in the complement of the matrix verb.

Another strategy that can be employed for questioning out of an embedded clause is clausal pied-piping. A wh-phrase can pied-pipe the embedded clause to Spec of the matrix clause, as in Basque (6):

- (6) [Se idatzi rabela Jonek] pentzate su
 what written has Jon.E you-think
 ‘What do you think Jon wrote?’

It is argued that clausal pied-piping is semantically equivalent of wh-scope marking in languages like Hindi and German (Lahiri 2002), while it is more akin to long wh-movement rather than to wh-scope marking in languages like Basque (Arregi 2003). In English, the structure is distinct from either scope marking or clausal pied-piping constructions. It is an instance of interrogative slifting, a cousin of declarative slifting sentences (Haddican et al 2014); see (7):

- (7) Where did John go, did you say?

The question is whether the structure in SA (8) is an instance of clausal pied-piping akin to long distance movement or to wh-scope marking questions, or whether it is an instance of interrogative slifting:

- (8) ?addesh ʃmr-a ʃal-et-l-ek?
 how.much age-her said-3SG.F.SU-to-2SG.F.OBJ
 ‘How old is she, did she say?’

It will be demonstrated that the construction in SA has all the syntactic and semantic properties characteristic of interrogative slifting, different from clausal pied-piping.

1.1. Theoretical background

The theoretical assumptions made and the analyses proposed in this research are for the most part consistent with the Minimalist Program for Linguistic Theory, following Chomsky (1995, 2000, 2001).

The research in this thesis feeds into the principles & parameters approach to Universal Grammar, which is based on the assumption that humans are genetically endowed with a language faculty which incorporates a set of principles that govern the kinds of grammatical operations which are permitted in any natural human language. These are principles of Universal Grammar (UG).

Although UG specifies certain general syntactic properties of language, it leaves a number of properties open, allowing syntactic variation among languages along certain parameters. In languages like SA and English, the *wh*-phrase moves from an argument position within TP to an initial position in the sentence, traditionally defined as Specifier of CP (Spec-CP), leaving behind a null copy of itself (or a trace, as in works prior to Chomsky 1993), in the position out of which it moves, as illustrated in (9b)¹:

(9) a. hufei štareť ktab [Syrian Arabic]

hufei bought book

‘Hufei bought a book.’

b. šu štareť hufei?

what bought Hufei

‘What did Hufei buy?’

However, in languages like Chinese, the *wh*-phrase does not move. It stays in situ, i.e. in the position where its counterpart non-interrogative phrase would occupy, as illustrated in (10):

(10) a. hufei mai-le yi-ben-shu [Chinese]

Hufei buy-ASP one-cl-book

‘Hufei bought a book.’

¹ In this thesis, I use the term trace to refer to the null copies of *wh*-expressions for the ease of use.

b. hufei mai-le sheme

Hufei buy-ASP what

(Cheng 1997: 5)

As can be seen in (9b), the wh-phrase *shu* ‘what’ in SA appears at the left-periphery of the clause. In (10b), *sheme* ‘what’ appears after the verb where the complement appears in Chinese. It does not undergo any movement to the left periphery of the clause. This has been proposed to be one of the parameters of UG which affects the derivation of wh-questions (see Huang 1998). This parameter will not be crucial in this thesis, although wh-in-situ does figure as a marginal phenomenon in SA. It will also play some role in the discussion of wh-scope marking in Chapter 5. Another point of variation which will play a role in this thesis shows in the form of wh-phrases. In English, wh-phrases are marked by a wh-prefix. According to Cable (2007) this is a mark of obligatory agreement between Q and wh-phrase. Certain other languages lack any morphological mark of a wh-feature, and correspondingly lack Q-wh agreement. It will be argued here that SA has Q-wh agreement, reflected in partial congruence in the paradigm.

Following (Chomsky 1995), it is assumed that phrases and sentences are formed by merging pairs of categories. The operation by which two words are combined together is called *merger* (or *merge*). A phrase like *help you* is formed by merging the verb *help* with the pronoun *you*. This is an instance of *external merge*, which involves taking an item out of the lexical array (or numeration; see Chomsky 1995; chapter 4), i.e. the set of lexical items selected from the lexicon to be the basis of the expression to be derived, and merging it with another constituent, which may be a partially constructed tree. Movement is another form of merger (Chomsky 2001). An existing item in the structure is merged again in a new position, as an instance of *internal merge*. It should be noted that I will nevertheless mostly use more traditional theoretical vocabulary in this thesis, with constituents ‘moving to Spec of XP’ rather than ‘internally merging with XP’, in cases where this distinction does not matter.

Following a suggestion by Chomsky (2000, 2001) we may assume that, in a wh-clause, C has an unvalued feature [uWH] which needs a matching but valued feature, i.e. a wh-expression, and therefore probes its c-command domain seeking a wh-expression. In

languages with wh-movement, [uWH] is coupled with an [EPP] feature, which drives movement of the wh-expression to SpecCP.

1.2. Outline of the thesis

Chapter two explores the origin of the dialects of Arabic and its importance for linguistic studies. It discusses the position of the verb and subject in the two possible orders, SVO and VSO, showing that a definite specific subject is preferred in the SVO order, which can be significant with regards to the question concerning the nature of the subject in a preverbal position. Based on facts from the agreement system in SA, it will be argued that in the VSO order, the subject raises to SpecTP while the verb raises to a higher functional position (see Aoun et al 2010). In the SVO order, the subject raises to SpecFP which can be marked with a specific/definite feature. It will be argued that the V-S order is obligatory in wh-questions in SA. However, this order does not follow from the V2 nature of SA. It follows from a constraint on movement past F which allows movement of only one XP (Holmberg 2014). The verb lands in F allowing movement of only one phrase, which is the wh-phrase in this case.

Chapter three introduces the strategies of wh-question formation in SA. It will be argued that wh-movement involves three strategies, the gap, the resumption, and the class II strategy. Wh-in situ is also an option but only in discourse-linked contexts. In multiple wh-questions, wh-words appear to make use of both strategies, movement and in situ. It will be argued that SA is a non-multiple wh-movement language. It will be shown that the ellipsis analysis cannot account for the restrictive order of certain conjoined wh-adverbials and for the obligatory insertion of the conjunction. These facts can be accounted for under Moro's (2011) *clause structure folding* approach.

Chapter four discusses pied-piping in SA, mainly in the possessive structure, the Construct State Nominal (CSN), in terms of two theories, Heck's (2008-2009) *edge generalization and secondary wh-movement*, and Cable's (2007) *Q-theory*. It will be shown that the wh-possessor does not undergo secondary wh-movement to an edge position. It will be argued that a rightward movement or a right edge based account of the exceptional cases in which a wh-pied-piper does not undergo secondary wh-movement to an edge position cannot predict the possible and impossible word orders

within NP (see Kayne 1994; Cinque 2000, 2005; Abels & Neeleman 2006). The upshot is that a theory disallowing rightward movement will be adopted. Pied-piping involving the CSN will also be discussed in relation to the Q-theory. The theory eventually argued to be the best one combines elements of Cinque's (2000, 2005) theory with Cable's (2007) Q-theory.

Chapter five presents wh-scope marking in SA. It will be argued that there is no direct dependency between the wh-scope marker and the embedded wh-phrase. The wh-scope marker and the embedded CP do not form a DP constituent headed by the wh-scope marker taking CP as its complement in the predicate of the main verb neither in the underlying structure (see Herburger 1994; Bruening 2004), nor at LF (see Horvath 1997). The wh-scope marker is not an expletive. It will be argued that the wh-scope marker and the embedded wh-clause form a small clause in the complement of the main verb taking the embedded wh-clause as its subject and the wh-scope marker as its complement. This analysis assimilates the embedded wh-clause to a free relative clause with a null head.

In chapter six, it will be argued that SA employs the interrogative slifting strategy for questioning out of an embedded clause. It is argued in Lahiri (2002) that clausal pied-piping is semantically equivalent to wh-scope marking in languages like Hindi and German, whereas Arregi (2003) argues that clausal pied-piping in Basque is more akin to long wh-movement rather than to wh-scope marking. In this chapter, it will be argued that the structure in SA is distinct from either scope marking or long wh-movement. It is pertinent to declarative slifting sentences. It will be suggested following Haddican et al (2014) that the main clause and the slift are merged in a small clause headed by an evidential morpheme, which takes the main clause as its specifier, and the slift as its complement.

Chapter 2. Description of Syrian Arabic

2.1. Introduction

This chapter presents some facts about the dialect of Syrian Arabic (SA). It begins with discussing some hypotheses about the origin and development of the dialects of Arabic and their importance for linguistic studies.

It will be shown that the unmarked word order in SA is V(erb)-S(ubject)-O(bject) (in the past tense, which is what will be focused on in this chapter), with SVO as a commonly occurring alternative (see (1a, b)):

(1) a. *khals-w l-wlad drws-on.*
finished-3PL.M the-children study-their
'The children finished studying.'

b. *l-wlad ʕam ydrs-w.*
the-children PROG study-3PL.M
'The children are studying.'

It will be shown that the subject always moves to spec of TP to check full agreement. As can be seen in (1), the verb *khalsw* 'finished' agrees in person, number and gender with the subject *l-wlad* 'the children' in both SVO and VSO orders. Following from the agreement facts, it will be argued that in the VSO order, the verb raises to a head F above T.

It will be proposed that the subject in the SVO order is definite/specific, as in (1b), except when F hosts a null copula and Spec of FP hosts an expletive (which can be null), as illustrated in (2)):

(2) a. *hada ʕam yʕayyeT.*
some.one PROG shouting
'Someone is shouting.'

b. fi ħada ʕam yʕayyeT.
there some.one PROG shouting

In (2a), the preverbal subject is an indefinite quantificational noun. As can be seen in (2b), an optional expletive can be added, which suggests that there is a null copula preceding the subject.

It will be argued that in wh-questions, the Wh-V-S order is obligatory with most wh-phrases, except with certain adjuncts. However, Syrian is not a verb second language. Following Holmberg (2014), it will be argued that what looks like verb second behaviour in SA is a consequence of a property on the functional head F, the lowest C-head in the left periphery, that is in common with C in V2 languages which attracts a verb. This head allows movement of only one constituent past its specifier. More than one constituent can appear before the verb if one of the constituents is externally merged as will be discussed in section 2.6.4.²

2.2. Overview of the chapter

Section 2.3 introduces the origin of Syrian Arabic and the different beliefs about the development of the dialects of Arabic, and their importance for linguistics studies. Section 2.4 presents the word order in Standard Arabic. Section 2.5 discusses the word order in Syrian Arabic, the subject-verb agreement system and its implications on subject and verb positions in the SVO and VSO orders. Section 2.6 discusses subject-verb inversion in wh-questions and the reason for the obligatory inversion in SA.

2.3. The development of the dialects of Arabic

Standard Arabic is the official language in Syria. Most Syrians speak dialects of Levantine Arabic, the spoken dialects along the Eastern Mediterranean Coast of Syria, Lebanon, Jordan and Palestine. There are some other languages that are also spoken in Syria such as Mesopotamian in the northeast, Kurdish in the Kurdish regions, Armenian and Turkish among the Armenian and Turkmen minorities. Aramaic is still spoken

² This chapter focuses on the word order in wh-questions, with specific attention given to the order of fronted wh-phrases, the subject, and the verb in SA. Detailed discussion of the fine structure of the left periphery is outside the scope of this dissertation. I leave it for future research.

among Assyrians and in the village of Ma'loula. Syriac, an Aramaic dialect, is still used as the liturgical language of Syriac Christians. Syrian Arabic has got some borrowed words from a number of languages, Turkish, Kurdish, Armenian, Syriac, French, English, and Persian, as a result of the different cultures that inhabited the region, and the foreign occupation. Standard Arabic is used in education, media, and for written communication. It is written in Arabic alphabet from right to left. The dialect analysed in this dissertation is much like the dialects of the Western part of Syria, Lebanon and Palestine.

It is widely held among Arabists that the dialects have descended and developed out of Classical Arabic (see Blau (1965); (1966-67); Blanc (1970); Harning (1980)). It is widely believed that Standard Arabic is identical with the spoken language of Bedouin, and that the vernaculars have emerged from the contact between the Arabs dwelling in towns and the indigenous people, which led to language deterioration. Studies of the dialects were always frowned upon. They have been considered as a violation of the classical style.

Several studies postulate that the SVO order which appears in the dialects has developed from the VSO order of the Old formal Arabic. This proposal was suggested to be evidence for the development of the spoken dialects from the written formal language. However, Brustad (2000) argues that both orders VSO and SVO should be classified as basic orders. There is not enough research to prove or challenge the hypothesis that the SVO order has developed from the VSO order of formal Arabic.

Recent studies show that Modern dialects instead have descended from older dialects and that considerable differences have separated the tribal languages from one another (see Fischer (1995), Brustad (2000)). Different dialects arose in every province according to the tribe which settled in that region. Thus Standard Arabic for the speakers of the dialects is 'a foreign idiom which has to be acquired' (see Blau 1965).

Cowell (1964) argues that although the spoken dialects differ from Standard Arabic in certain respects, they have an influence on each other. It has been believed that the Standard language is the one that influences the spoken; however, the dialects also have a significant influence on the standard language. Ryding (2005) points out the influence

of the spoken dialects of Levantine Arabic on the simplification of the grammar of classical Arabic, as for example, the loss of cases and mood.

All in all, many linguists agree that the study of the dialects is crucial to the study of linguistics in general and Arabic in particular. Brustad (2000) suggests that the study of all syntactic aspects should ideally be done by native speakers of their mother-tongue, which in the case of Arabic speakers is their dialect.

2.4. Word order in Standard Arabic

Standard Arabic allows two main word orders, Subject Verb Object (SVO), and Verb Subject Object (VSO), as illustrated in (3):

- (3) a. ta-drusu T-Taalib-at-u
3-study the-students-PL.F-NOM
'The students study.'
- b. T-Taalib-at-u ya-drus-na
the-students- PL.F-NOM 3-study-PL.F
'The students study.'

Mohammad (2000) argues that VSO is the basic order that occurs in discourse neutral position. Any other order is the result of either preposing or extraposing of the subject, verb, or object.

Fassi Fehri (1993) argues that the unmarked order in Standard Arabic is VSO. It is found in neutral contexts which do not require further interpretation or derivation (see examples (4) and (5):

- (4) kataba r-rajul-u r-risaalat-a haadaa S-Sabaḥ-a
wrote the-man-NOM the-letter-ACC this the-morning-ACC
'The man wrote the letter this morning.'

(5) ?arad-tu ?an y-uqaabil-a r-rajul-u l-mudiiir-a
 wanted-1SG that 3-meet-SU the-man-NOM the-director-ACC
 ‘I wanted the man to meet the director.’

(Fassi Fehri 1993: 19-20)

Although Standard Arabic is a VSO language, it allows the SVO order, as in (6) and (7). The preverbal position of the subject in such instances has been analysed as an instance of left dislocation or topicalization. However, Fassi Fehri (1993) argues that this is not the case, for Standard Arabic.

(6) al-?awlaad-u jaa?-uu
 the-children-NOM came-3PL.M
 ‘The children came.’

(7) baqarat-un takallam-at
 cow-NOM spoke-3SG.F
 ‘A cow has spoken.’

(Fassi Fehri 1993: 27-28)

The preverbal NP in the SVO order can be a topic adjoined to CP, or a subject in Spec of IP. Fassi Fehri notes that topics in Standard Arabic are necessarily definite or strongly referential, as is the case in (6); whereas preverbal subjects can be indefinite, as in (7).

The referential properties of preverbal subjects and topics are a main point of distinction between the two. (7) Shows that a preverbal subject can be indefinite, provided that it is specific. (8a, b) are examples of quantificational indefinites. The examples in (9) show that such indefinite expressions cannot be constructed as a topic binding a resumptive pronoun. Only definite, strongly referential DPs, can do.

(8) a. laa jund-a y-astaTi?uu-na duxuul-a l-ma?rakat-i
 no soldiers-ACC 3-can-PL.M-IND entering-ACC the-battle-GEN
 ‘No soldier can enter the battle.’

b. kull-u rajul-in y-ahtarim-u haadaa
 every-NOM man-GEN 3-respect-IND this
 ‘Every man respects this.’

(9) a. *ʔbaqarat-un dabaḥ-tu-haa
 cow-NOM cut.throat-1SG-her
 ‘A cow, I cut its throat.’

b. *laa ʔahad-a ntaqad-tu-hu
 no one-ACC criticized-1SG-him
 ‘No one, I criticized him.’

c. *ʔkull-u rajul-in ʔa-htarim-u-hu
 every-NOM man-GEN 1SG-respect-IND-him
 ‘Every man, I respect him.’

A number of proposals have been suggested to account for the distribution of subjects in Standard Arabic. Fassi Fehri (1993) argues that subjects are base generated in Spec of VP and raise to Spec of IP. This is taken to be supported by facts from the agreement system. When the subject is in a postverbal position, agreement is limited to GEN(der) as in (10a). When it is in a preverbal position, agreement involves NUM(ber) and PERS(on) as well, as in (10b):

(10) a. daxal-at n-nisaaʔ-u makaatib-a-hunna
 entered-F the-women-NOM offices-ACC-3PL.F
 ‘The women have entered their offices.’

b. n-nisaaʔ-u daxal-na makatib-a-hunna
 the-women-NOM entered-PL.F offices -ACC-3PL.F
 ‘The women have entered their offices.’

Fassi Fehri argues that when the verb agrees with the subject in GEN only, as in (10a), AGR is poor and the subject cannot raise to Spec of AGR. It only raises when AGR is rich, as in (10b).

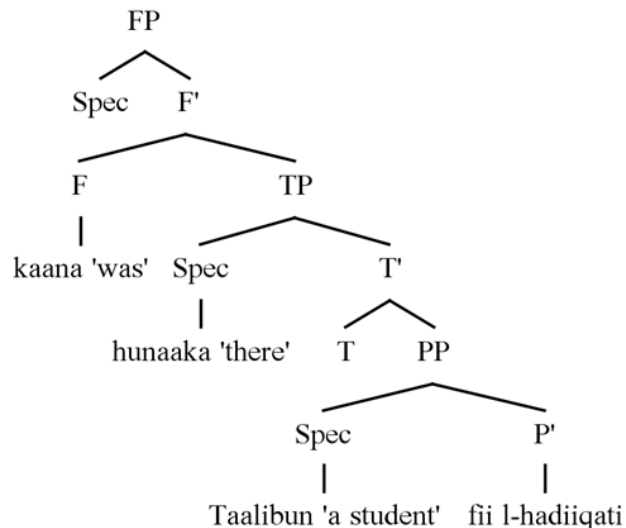
Aoun et al (2010) argue that the subject in the VSO order is not necessarily in Spec of VP. This can be supported by some facts from the existential construction. Existential constructions in Standard Arabic involve the pro-form *hunaaka* ‘there’ and an indefinite NP, as illustrated in (11). It can be assumed that the indefinite NP is in the specifier of the lexical projection, which in this example is PP, and the expletive is in Spec of TP.

- (11) *hunaaka Taalib-un fi-l-ħadiiqati*
 there student-NOM in-the-garden
 ‘There is a student in the garden.’

A similar example with an overt auxiliary, as in (12), shows that the expletive can follow the auxiliary verb. The expletive is in Spec of TP and the lexical NP is in Spec of PP. Therefore, in the VSO order, the verb is in a position higher than TP, in a functional projection FP (see the representation of sentence (12)):

- (12) a. *kaana hunaaka Taalib-un fi l-ħadiiqati*
 was.3SG.M there student-NOM in the-garden
 ‘There was a student in the garden.’

b.



Aoun et al argue that the FP projection is distinct from CP since sentences like (12) can be embedded under a complementizer, as in (13):

(13) samiṣ-tu ʔanna-hu kaana hunaaka Taalib-un fi l-hadiiqati
 heard-1SG that-it was.3SG.M there student-NOM in the-garden
 ‘I heard that there was a student in the garden.’

The word order in the existential construction leads to the conclusion that the postverbal subject is not in the specifier of the projection of the thematic predicate. The fact that the expletive can occur in a postverbal position indicates that the position of postverbal subjects must be within a functional projection above the lexical thematic projection of the main predicate, that is Spec of TP.

However, this leaves the question where the subject is in the SV order open. There is no agreement about the position of preverbal subjects, whether they should be treated as subjects or topics. The fact that they are restricted to definite and modified indefinite NPs supports the assumption that they are left dislocated or topicalized elements. Yet some exceptions of non-specific indefinite NPs can still appear in a preverbal position, contrary to expectations, requiring further investigation.

2.5. Word order in Syrian Arabic

2.5.1. Word order facts

Syrian allows the orders VSO, in which the subject follows the verb but precedes the object (14a), SVO, in which the subject precedes the verb and object (14b), and VOS, where the subject follows both the verb and the object (14c):

(14)a. akhad basem d-dawa.
 took Basem the-medicine
 ‘Basem took the medicine.’

b. basem akhad d-dawa.
 Basem took the-medicine
 ‘Basem took the medicine.’

c. khallas dars-w basem.
finished study-his Basem
'Basem finished studying.'

VSO is the unmarked order. It appears in pragmatically neutral contexts. It occurs in both root and embedded sentences, in transitive and intransitive structures:

(15) ija baba
came dad
'Dad has come.'

(16) akl-et hanin
ate-3SG.F Hanin
'Hanin has eaten.'

(17) kab basem š-šay řa-l-ard.
dropped Basem the-tea on-the-floor
'Dropped Basem the tea on the floor.'

(18) aal wSl-et T-Tayyara
said[3PL] arrived-3SG.F the-plane
'They said the plane has arrived.'

2.5.2. What does the agreement system in SA suggest?

It has been argued in Fassi Fehri (1993), based on facts from the agreement system in Standard Arabic, that in the SVO order, the subject raises from its base position in Spec of VP to Spec of IP or (Spec of AGR) since AGR is rich. In the VSO order, AGR is poor, thus the subject does not raise to Spec of AGR.

In contrast, in Syrian, AGR is rich in both cases, SVO and VSO. The verb agrees with the subject in GEN, NUM and PERS in the case of singular subjects, and in NUM and PERS in the case of plural subjects taking *masculine* as the default gender, as the following examples illustrate:

(19)a. dakhil-et l-bnt ʕala Saff-a
entered-3SG.F the-girl on class-her
'The girl entered her class.'

b. l-bnt dakhil-et ʕala Saff-a
the-girl entered-3SG.F on class-her

(20)a. dakhil-w r-rjal ʕala makatb-on
entered-3PL.M the-men on offices-their
'The men entered their offices.'

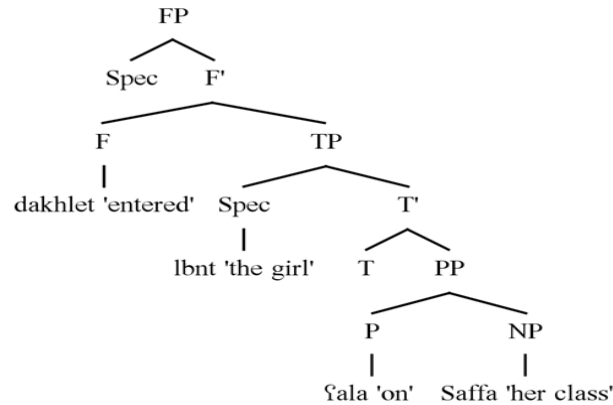
b. r-rjal dakhil-w ʕala makatb-on
the-men entered-3PL.M on offices-their
'The men entered their offices.'

(21)a. dakhil-w n-nswan ʕala makatb-on
entered-3PL.M the-women on offices-their
'The women entered their offices.'

b. n-nswan dakhil-w ʕala makatb-on
the-women entered-3PL.M on offices-their
'The women entered their offices.'

The fact that AGR is rich in both orders SVO and VSO suggests that in the VSO order, the subject is in a position higher than where it is externally merged in Spec of VP. Assume it is in Spec of TP. Thus the verb should be in a position higher than TP, which can be a functional head F, as is suggested in Aoun et al (2010). (22) Is a representation of (19a):

(22)



Another piece of evidence that the verb is in a functional head higher than T comes from the position of the verb and the subject with respect to adverbial phrases. The adverb *bakkeer* ‘early’ in (24) modifies the VP, and is therefore merged quite low adjoined to the maximal VP projection. This means that the subject is higher than VP, in spec of TP, in which case the verb is in a position higher than T.

- (23)a. khals-et Haneen bakkeer l-yom.
finished-3sg.f Haneen early the-day
Haneen finished early today.’

2.5.3. *The position of preverbal NPs and the distribution of V*

The same question about whether preverbal NPs in Standard Arabic and Lebanese Arabic should be treated as subjects or topics applies to SA. A closer look at preverbal NPs shows that there is more restriction on NPs occurring in a preverbal position than on those occurring in a postverbal position. A definite subject is preferred in the former case, which suggests that the NP in the SVO order is most likely in a topic position, (see examples (24a, b)):

- (24)a. *walad ija.
boy came
‘A boy came.’

- b. l-walad ija
 the-boy came
 ‘The boy came.’

However, indefinite NPs can occur in a preverbal position if they are specific, or quantificational, as in (25):

- (25) a. ħrami dakhāl ʕa-l-beit
 thief entered on-the-house
 ‘A thief entered the house.’
- b. ħada darab-ni
 some.one hit-me
 ‘Someone hit me.’
- c. ktir wlad ma byħbb-w s-sabanekh
 many children not like-3PL.M the-spinach
 ‘Many children do not like spinach.’
- d. kl ħada ija ʕa-l-ħafleh tlf-l-w hdieh.
 every one came on-the-party got-to-3SG.M gift
 ‘Everyone who came to the party got a gift.’
- e. ma ħada ija.
 no one came
 ‘No one did come.’

In (25a), the subject *ħarami* ‘thief’ is indefinite but specific (compare with (26a) below). Similarly, example (25b) contains the quantified noun *ħada* ‘one’, and (25c) contains the quantified NP, *ktir wlad* ‘many children’. However, these examples are preferred with an expletive, as illustrated in (26a, b, and c):

- (26) a. fi ħrami dakhāl ʕa-l-beit
 there thief entered on-the-house
 ‘A thief entered the house.’

- b. fi hada darab-ni
 there some.one hit-me
 ‘Someone hit me.’
- c. fi ktir wlad ma byħbb-w ssabanekh
 there many children not like-3PL.M. the.spinach
 ‘Many children do not like spinach.’

The optionality of the expletive in sentences (25a, b, and c) and (26a, b, and c) indicates that there is a null expletive and probably a null copula in the examples in (25a, b, and c), as illustrated in (27):

- (27) can fi hada ġa-l-bab
 was there someone on-the-door
 ‘There might be someone at the door.’

If so, the quantificational preverbal subjects in (25a, b, and c) are in Spec of VP. The structure would be basically as in (28):

- (28) [_{FP} COP+F [_{TP} EXPL [_{VP} SUBJ V ...]]

The (null) copula raises from T to F to satisfy F’s need for a verb. The expletive in SpecTP requires an indefinite associate, as familiar from existential and presentational constructions in other languages.³

We can now maintain that the position in the Spec of FP is reserved for definite and specific subjects (and also moved wh-phrases, to be discussed in (2.6)). In (25a), the subject, being specific, can be in Spec of FP. When indefinite non-specific, it remains in a lower position in Spec of VP, with a null expletive in Spec of TP and a null copula in F. The expletive inserted here is an existential quantifier that takes the NP as its argument. The sentence is an existential sentence of the form *There+be+NP(+locative phrase)* as in *There are lions in Africa* (Allan 1971).

³ There is no consensus about the presence of a null copula in Arabic. For further discussion on this topic see Fassi Fehri (1993), Al-Horais (2006), Aoun, Benmamoun, and Choueiri (2010). I take the facts discussed here as evidence in support of the claim that SA does make use of a null copula.

Exceptional cases like (25d), in which the subject is a preverbal quantified NP, *kl ĥada* ‘every one’, but does not have a counterpart example with an expletive are still consistent with this analysis. The subject here refers to a specific group of people; out of the invited ones, those who came to the party have got a gift. Example (25e) includes an indefinite quantificational subject preceded by the negative particle *ma* ‘not’. The subject is still in a lower position than where the negative particle is. This indicates that the negative particle is in F and the subject is in SpecTP.

It is argued that in Standard Arabic and some dialects, the distribution of the verb and the subject is sensitive to tense. The past tense forces verb movement because the past tense head requires lexical support, while the present tense does not (see Banmamoun 2000; Aoun et al 2010). One piece of evidence is from idiomatic expressions or so called *God wishes* (see (29) from Aoun et al 2010: 29):

(29)a. raĥm-u llah [Moroccan Arabic]

blessed-him God

‘May God bless him.’

b. llah y-rāĥhm-u

God 3-bless-him

‘May God bless him.’

In (29a), the past tense verb precedes the subject in the VS order, whereas in (29b), the present tense verb follows the subject giving the SV order. Aoun et al argue that this follows from the assumption that the verb in the past tense raises to T to a position higher than the subject, whereas in the present tense it does not.

These assumptions explain the fact that sentences in the present tense can have verbless predicates, while a copula must be inserted in the counterpart past examples (see examples (30a, b).

(30)a. ōmar muſallim-un

[Standard Arabic]

Omar teacher-NOM

‘Omar is a teacher.’

b. ʕomar kana muʕallim-an
Omar was.3SG.M teacher-ACC

(Aoun, Benmamoun, and Choueiri 2010: 35-36)

The perfective carries tense feature, thus in the past tense, tense attracts the verb. If there is no verb in the sentence, one must be inserted, hence, a null copula must be inserted. The imperfective does not carry any tense feature, thus in the default reading of the imperfective verb, tense does not attract the verb, so there is no need for a verbal copula.

In SA, the distribution of the subject and the verb is also sensitive to tense. As can be seen in (31), the preferred order is VS in (31a), and SV in (31b):

(31)a. leʕeb bassem.
 played Bassem
 ‘Bassem is playing.’

b. bassem ʕam ylʕab.
 Bassem PROG play
 ‘Bassem is playing.’

We can therefore adopt Benmamoun’s hypothesis regarding verb movement also for SA assuming that the verb raises to F in the past tense, but stays in T in the present tense. From now on, I will only consider past tense, where the situation is relatively clear: V+T always moves to F, except where F is occupied by a null copula.

From what has been discussed, it can be concluded that the two orders SVO and VSO are derived by a combination of verb movement and NP movement. The NP in a preverbal position is definite or specific indefinite. It can be non-specific indefinite or quantificational if preceded by a null copula in F and an optionally null expletive in spec of FP.

In the next section we will see how wh-movement interacts with the SVO and VSO structures which we have now established.

2.6. Subject-verb inversion in wh-questions

2.6.1. Introduction

The word order in which the finite verb or auxiliary precedes the subject in wh-questions is traditionally called ‘subject-verb inversion’. I will use this traditional name here, even though we take the word order to be a consequence of verb movement over a subject ((not ‘inversion’) see Shlonsky 1997). In SA, ‘inversion’ in the sense of VS order can be the result of the movements deriving unmarked sentential word order or it may involve some special triggers. In English, S-V inversion appears only because of a trigger in the C-domain. For example, in (32a), S-V inversion is triggered by a feature which is activated in direct questions in connection with wh-movement.

- (32) a. What did John buy?
b. *What John bought?

The fact that there is no inversion in (32b) renders the sentence ungrammatical. It is characteristic of English that the inversion only happens in direct questions. According to Haddican et al. (2014) inversion, i.e. T-to-C movement, is triggered by a Question Force feature in the C-domain, a property of direct questions (which have the illocutionary force of questions). This accounts for why only direct questions have inversion. In English, because main verbs do not move to T, the only verbal heads which can undergo inversion, i.e. T-to-C, are auxiliaries.

Before moving to subject-verb inversion in interrogative sentences in SA, I will briefly present the main properties of wh-questions in SA. A more detailed discussion will have to wait until Chapter 3.

2.6.2. Wh-questions in SA

SA is a wh-movement language. In wh-questions the wh-phrase raises to Spec of C. The in situ strategy is excluded except for echo questions (see the contrast between sentences (33a) and (33b))⁴:

⁴ Further discussion on the strategies employed for forming wh-questions in SA is presented in chapter three.

(33) a. šw jab john?
 what brought John
 ‘What did John bring?’

b. *jab john šw
 brought John what

The wh-pronouns employed in English are the same as the counterpart relative pronouns (see 34a, b). In SA, relative clauses employ the complementizer *illi* ‘that’, which is distinct from wh-phrases (see (35a, b)):

(34) a. Who cut the pie?

b. The man who came yesterday cut the pie.

(35) a. miin darab-ek?

who hit.3SG.M.SU-2SG.F.OBJ
 ‘Who hit you?’

b. hada l-walad illi darab-ni

this the-boy that hit-me
 ‘This is the boy who hit me.’

Wh-movement shows sensitivity to islands. This sensitivity varies with argument/adjunct extraction across strong/weak islands (see examples (36)-(41)); ungrammatical and marginal examples from SA are represented with corresponding English sentences. Most of these sentences are also ungrammatical or marginal. The source position of the fronted wh-phrases is marked by a trace.

Strong Islands

(36) Complex NP island

a. *maʕ miin lʔet š-šakhs lli raħ yħk-i t?

with whom found.2SG.M the.person that will talk-2SG.M?

Intended meaning: ‘*Who did you find the person that he will talk to?’

b. *kif lʔet š-šakhs lli raḥ yḥk-i maʕ faten t?
 how found.2SG.M the-person that will talk-2SG.M with Faten
 Intended meaning: ‘*How would the person that you found talk to Faten?’

c. *lesh lʔe-ti š-šakhs lli raḥ yknoʕ faten t?
 why found-2SG.F the-person that will convince Faten
 Intended meaning: ‘*Why did you find the person who will convince Faten?’

(37) Subject island

a. *ayya mawduʕ [l-ḥaki ʕan t] Sar Saʕb?
 which topic the-speaking about became difficult
 Intended meaning: ‘Which topic has it become difficult to talk about?’

b. *kif [l-ḥaki t] yuʕtabar gher laʔek?
 how the-speaking considered not appropriate
 Intended meaning: ‘*What way of speaking is considered inappropriate?’

(38) Adjunct island

a. *ʕa-miin rḥt-i bala ma tsalm-i t?
 on-whom left-2SG.F without not greeting-2SG.F
 Intended meaning: ‘*Who did you leave without greeting?’

b. *kif trad-ti-i laʔann-w tsarraʕ t?
 how fired-2SG.F.SU-3SG.M.OBJ because-3SG.M behaved.3SG.M
 Intended meaning: ‘How did he behave that made you fire him?’

c. *lesh raḥ abl ma y-ʕasseb john t?
 why left.3SG.M before that 3SG.M-get.angry John
 Intended meaning: ‘*Why did he leave before John got angry?’

Sentences (36)-(38) are examples of wh-phrase extraction from strong islands.

Extraction of both arguments and adjuncts out of a complex noun phrase, subject island, and adjunct island seems ungrammatical.

It is known that adjuncts behave differently from arguments with respect to extraction out of weak islands. While arguments can be extracted out of weak islands, such as *wh*-islands and factive complements, adverbial *wh*-phrases cannot (see Kiparsky and Kiparsky (1970), Cattell (1976), Cinque (1990)). The following examples illustrate the adjunct/argument asymmetry of *wh*-extraction out of weak islands in SA:

Weak Islands

(39) *Wh*-island

- a. ??miin_i ma ʕrf-ti aymat_j jayeh t_i t_j?
 who not knew-2SG.F when coming
 Intended meaning: ‘??Who did you not know when he is coming?’
- b. *šw_i saʔl-u-ki la-min_j tʕti t_i t_j S-Sbħ?
 what asked-3PL-2SG.F to-whom give-2SG.F the-morning
 Intended meaning: *‘What did they ask you to whom to give in the morning?’
- c. *kif_i saʔl-u-k miin tSarraḥ t_i?
 how asked.3PL.-2SG.M who behaved
 Intended meaning: *‘How did they ask you who behaved?’
- d. *lesh_j fkkar-ti la-min_i tʕt-i hdieh t_i t_j?
 why thought-2SG.F to-whom give-2SG.F gift
 Intended meaning: ‘why did you think about giving a gift to whom?’

(40) Negative island

- a. ?maʕ miin_i ma hke-ti t_i?
 with whom not talked-2SG.F
 Intended meaning: ‘To whom didn’t you speak?’
- b. *šw_i ma ʕml-ti t_i?
 what not did-2SG.F
 Intended meaning: ‘What didn’t you do?’

c. *kif_i ma tsrraf-ti t_i?
 how not behaved-2SG.F
 Intended meaning: ‘What is the behavior that you didn’t do?’

d. *lesh_i ma ħkk-eti-ni t_i
 why not call-2SG.F.SU-1SG.OBJ
 ‘What is the reason for which you did not call me?’

(41) Factive island

a. ??maʕ miin_i ndm-ti laʔann-ek ħke-ti t_i
 with whom regretted-2SG.F because-2SG.F talked-2SG.F
 Intended meaning: ‘To whom did you regret talking?’

b. *kif_i ndm-ti laan-ek ħke-ti t_i?
 how regretted-2SG.F because-2SG.F.ACC talked-2SG.F
 Intended meaning ‘In what way did you regret that you talked?’

c. *lesh ndm-ti laan-ek ħk-eti?
 why regretted-2SG.F because-2SG.F.ACC talked-2SG.F
 Intended meaning: ‘What is the reason for which you talked that you regret?’

Sentences (39) show that extraction of *min* ‘who’ out of wh-islands is degraded, while extraction of *šw* ‘what’ is blocked, as is the case with the adjuncts *kif* ‘how’ and *lesh* ‘why’. These wh-phrases behave similarly when extracted out of other weak islands such as negative islands, as in (40), and factive islands, as in (41). The contrast between the two argumental wh-phrases *miin* and *šw* can be related to the referential nature of *miin* vs. the non-d-linked nature of *šw*.

Huang (1982) made the influential observation that the island effect is particularly strong with adverbial Wh elements, while it tends to be weaker (and in certain circumstances seems to disappear completely) when the extracted Wh element is an argument, typically a direct object. Rizzi (2001) argues that only A’ chains involving DP’s can cross weak island boundaries.

DP-wh-phrases have a quality, which according to Rizzi (2001) and Cinque (1999) is the referential index that they share with their trace which makes possible linking them with their traces even if another wh-element intervenes, as long as the intervening element does not have a referential index, as will be the case with APs, QPs and AdvPs. This is the case for example with wh-islands. In (39a), *aymat* ‘when’ intervenes between *miin* ‘who’ and its trace. The question is at least marginally acceptable. However, this is not possible with chain links involving other categories (AP’s, QP’s, AdvP’s, etc.). They must meet the locality requirements, as is the case in (39c, d).

Argumental DP’s are extractable only when they have a special interpretive property, D-linking. Some wh-phrases have a referential interpretation in the sense that they refer to entities that occur in the discourse. They relate the current information to the intended referent. According to Cinque (1989), referential wh-phrases are those that can be D-linked. They can be a member of a set that has been evoked earlier in the discourse (see Prince 1981), like *miin* ‘who’. Amount wh-phrases, as for example, ‘how much’ and adjuncts like *kiif* ‘how’ and *lees/lašu* ‘why’, cannot make such a reference. They cannot be D-linked. With D-linked Wh phrases, the lexical restriction is contextually given, as with topics, and as such the wh-phrase can remain in the left periphery, licensed there as topics generally are (Rizzi 2001).

According to Rizzi (2001), non-referential wh-phrases are not coindexed with their traces. Thus they need to be locally bound by their antecedent. Following from this, movement across islands is not possible with non-referential wh-phrases since it blocks antecedent-government, while movement of referential wh-phrases is relatively more acceptable. Island effects therefore tend to be stronger with adverbial wh-phrases while they are weaker with arguments.

However, some adverbial phrases like *aymat* ‘when’ and *wein* ‘where’ are more extractable from islands than others like *kiif* ‘how’ and *lesh* ‘why’. This can be related to their argumental nature. They can involve DP dependencies.

Assuming that the subject is base generated in Spec of VP and raises to Spec of TP, it can be inferred that subject-verb inversion is triggered by certain wh-phrases (in descriptive terms). See the following examples:

(42) a. shw ħaka bassel?
what said Bassel
'What did Bassel say?'

b. *shw bassel ħaka?
what Bassel said

(43) a. miin shaf-et hala?
who saw-3SG.F Hala
'Who did Hala see?'

b. *min hala shaf-et?
who Hala saw-3SG.F

(44) a. wen raħ tamer?
where went Tamer
'Where did Tamer go?'

b. *wen tamer raħ?
where Tamer went

(45) a. kif ija john?
how came John
'How did John come.'

b. *kif john ija?
how John came

(46) a. aymat faʔ-et sarah?
when woke-3SG.F Sarah
'When did Sarah wake up?'

b. ??aymat sarah faʔ-et?
when Sarah woke-3SG.F

However, this is not the case with all types of wh-phrases. Inversion is not obligatory with some non-argumental wh-phrases, as illustrated in (47):

(47)a. lesh mary tdday?-et?
why Mary upsetted-3SG.F
'What did upset Mary?'

b. lesh tdday?-et mary?
why upsetted-3SG.F Mary
'What did upset Mary?'

These examples show that inversion is obligatory in interrogative sentences introduced by all argumental wh-phrases and some non-argumentals, whereas it is optional with some adjuncts. The inversion involved in wh-questions occurs in embedded clauses as well; see (48):

(48)a. ma baʕref šw ħaka basem
not know.1SG what said Basem
'I don't know what Bassem said.'

b. *ma baʕref šw basem ħaka
not know.1SG what Basem said

Inversion in embedded clauses occurs whether the matrix verb selects a [+Wh] or [-Wh] complement (compare (49a) and (49b, c)):

(49)a. ʕam isaʔal šw tabkh-a mama?
PROG ask.1SG what cooking-2SG.F mom
'I am asking what mom has cooked?'

b. *ʕam isaʔal šw mama tabkh-a?
PROG ask.1SG what mom cooking-2SG.F

In these examples, English has V2. The first constituent is a wh-phrase in (51a), and a negated phrase in (51b).⁵ SA shows some resemblance to V2 languages in certain cases like SVO sentences when the preverbal NP is a subject, or in wh-questions where S-V inversion is obligatory. However, further investigation of SA suggests that this is not the case.

First, S-V inversion, which is obligatory with most wh-phrases, is optional with some adjunct wh-phrases, as has been discussed in examples (47). Second, SA differs from V2 languages in that it does not manifest main vs. embedded distinction with respect to V movement (analogically with Spanish and various other Romance languages; see Suñer (1994)). Alongside with Wh-VSO in main clauses, S-V inversion exists in subordinate clauses (see example (48a) repeated here as (52b)).

- (52)a. šw ħaka basem?
 what said Basem
 ‘What did Basem say?’
- b. ma baʕref šw ħaka basem
 not know.1SG what said Basem
 ‘I don’t know what Basem said.’

It is also possible to have a topic phrase preceding the wh-phrase in questions, as in (53):

- (53)a. bassel šw ħaka?
 Bassel what said
 ‘What did Bassel say?’
- b. mama lesh ʕam tʕayeT?
 mom why PROG shouting
 ‘Why is mom shouting?’

Another piece of evidence comes from the positioning of preverbal adverbials. Adverbials can appear before the verb in the S-Adv-V order, as in (54a), or Adv-V-S, as in (54b):

⁵ For further discussion on V2 and residual V2 languages see Holmberg (2014) and Rizzi (1990b).

(54)a. baba halla? msh-i.
 dad now walked-2SG.M
 ‘Dad has just left.’

b. halla? msh-i baba.
 now walked-2SG.M dad
 ‘Dad has just left.’

Given that in the VSO order in SA, V raises to F, in a sentence like (54b), the adverbial phrase is in a position higher than F. In wh-questions, an adverbial phrase can still precede the verb, as in (55a, b), contrary to the case in English, which requires movement of either an auxiliary or the support *do* to C, leaving the adverb behind, as in (56a, b):

(55)a. min la-halla? ma ija?
 who to-now not come
 ‘Who has not come up till now?’

b. shw issa sam tsm-l-i?
 what still PROG doing-2SG.F
 ‘What are you still doing?’

- (56)a. Who would you never offend with your actions?
 b. Which language does Pepita still study in her free time?

From what has been discussed, it can be concluded that SA is not a V2 language, in the sense of a language where finite V always moves to C, being preceded by one constituent. It does not show any difference with respect to the position of V in main and embedded sentences; V can be preceded by more than one constituent, including adverbial phrases, indicating that V is in a lower position than C.

Following from what has been discussed, and the fact that SA is not a V2 language, the question why S-V inversion is obligatory in most wh-questions in SA arises. Although inversion seems optional with some adjunct wh-phrases, it cannot be related to the

argument vs. adjunct nature of the *wh*-phrases as such. Inversion is still obligatory with some questions introduced by certain adjunct-*wh*-phrases.

It is well known, ever since Rizzi (1991) that there is something special about *why* questions. Rizzi noted that while other *wh*-questions require inversion in Italian, this is not the case with *perché* ‘why’.

(57) a. Dove è andato Gianni?

where went Gianni

‘Where did Gianni go?’

b. *Dove Gianni è andato?

where Gianni went

c. Perché Gianni è venuto?

why Gianni came

‘Why did Gianni come?’

This has since then been confirmed to be the case in a variety of other languages (Stepanov and Tsai 2008). Rizzi (1991) proposed that this is because *perché* ‘why’ is base-generated (i.e. externally merged) in the C-domain. In Rizzi (2001), he suggests that *perché*, due to being a ‘pure operator’ is externally merged in specINT, a position higher than the landing site of other, moved, *wh*-phrases. I propose that this is also the case for *lesh* ‘why’.

Holmberg (2014) argues that V2 languages are characterised by two properties: There is a functional head in the left periphery, call it C1, which (a) attracts the finite verb, and (b) has an EPP feature that requires movement of a constituent to the Spec of C1. C1 has a third property as well: It prevents movement of any other constituent across it, than the one attracted by its EPP feature. The rationale for this property, in Holmberg (2014), who follows Roberts (2004), is the following: the EPP feature can attract any constituent (argument or adjunct or *wh*-phrase, with almost any features). Because of this property, it blocks movement of any other category to a higher position than Spec of C1. This allows for the possibility, however, that categories are externally merged in the C-domain higher than Spec of C1. The two properties are independent, so in some

languages C1 may have property (a) but not property (b), as is the case in certain VSO languages. It is also possible that a language may have a finiteness particle or a null C as C1 with the EPP with no verb movement to C1.

Following from these assumptions, I propose that the functional head F in SA has the property in common with C1 in V2 languages that attracts a verb, or more precisely, attracts T incorporating a verb. Unlike some V2 languages (the so called asymmetric V2 languages), it attracts a verb in all finite clauses, main or embedded. It also has the property in common with C1 in V2 languages that it allows movement of one and only one constituent past it. Unlike C1, it does not have to attract a constituent to its spec, so declarative clauses may have VS(O) order.

More than one XP can appear before the verb only if the first XP is externally merged in that position. This will explain (53), on the assumption that the initial topic is externally merged in the C-domain, so that only the wh-phrase has moved across F. It will also explain (55), where the adverb is externally merged as an adjunct to FP, so that again, only the wh-phrase has moved across F. And finally, it can explain the Wh-S-V order found with *lesh* ‘why’. This word order can be derived if F has the definite/specific feature which, together with the EPP-feature, attracts the subject to spec of FP, while *lesh* is externally merged in spec of INTP.

There is no difference between main and embedded questions in terms of word order possibilities, as we have seen in (48). This means that the embedded clause is headed by a C which takes INTP as complement. The structure of the left periphery of embedded wh-questions will be (58):

(58) [C [(INT) [F [T ...]]]]

It has a feature which attracts a verb, that is V+T, unless a (null) copula is externally merged with it. F can be otherwise unmarked, in which case the result is a sentence with VS(O) order. Assume that F can be marked with an [uDef/Specific] feature coupled with an EPP feature. The [uDef/Specific] feature will probe a definite or specific subject, and the EPP feature will trigger its movement to Spec of FP. Assume that F can alternatively be marked with an [uFocus] feature. It is also coupled with an EPP

feature.⁶ It will probe TP for a focus-marked category, which includes wh-phrases (which are inherently focus-marked). The EPP feature will trigger movement of the wh-phrase to spec of FP.⁷

Following Rizzi's (2001) analysis of the left-periphery in Italian, I propose that the F head is the lowest C-head in the left periphery. An interrogative head INT is marked with an [uWh] feature. It marks the sentence as a question. If INT is merged with FP, its [uWH] feature probes for a wh-phrase. This feature is checked/valued by further movement of the wh-phrase from SpecFP to SpecINT, or by an externally merged wh-phrase in specINTP like *perché* in Italian, and *lesh* 'why' in SA. When the latter option is taken, F can have any feature, which means that it can attract a subject if definite, which then will yield the word order Wh-S-V, as in (44a).

The EPP feature of FP has the property that it prevents movement of any other phrase across F. But an adverb can externally merge with FP; this is the derivation of (55). Or a referential XP can externally merge with INTP. This yields a wh-question with an initial topic, such as (53).

From what has been discussed it can be concluded that SA is not a V2 language, yet the V-S order is obligatory in wh-questions. This order is a result of a special property on F which is in common with V2 languages. It attracts a finite verb and allows movement of one and only one constituent past its specifier. More than one XP can appear before the verb if the first XP is externally merged.

6 Fronting of focus is a controversial phenomenon in Arabic syntax (see Fassi Fehri 1993). A detailed discussion of focus in SA is outside the scope of this research. I leave it for future work.

7 Here I adopt Pesetsky & Torrego's (2007) system feature valuation proposal. Due to this proposal, there are two principles that drive syntactic valuation. The first is the requirement that every feature must possess a value by LF. Any unvalued feature F[] must probe for a valued instance of itself F[val] to agree with following Chomsky (2000). For further discussion on the feature valuation theory, see chapter four.

2.7. Conclusion

In this chapter, the dialect of Syrian Arabic has been discussed. It has been argued that the unmarked word order in SA is VSO (in the past tense, which is what we are focusing on here), with SVO as a commonly occurring alternative. The picture that emerges of the left periphery in SA is the following:

- The subject always moves to spec of TP, checking full agreement (unlike Standard Arabic, where the subject can remain in VP, with deficient agreement on the verb).
- There is a head F above T which always attracts the verb (i.e. it attracts T incorporating the verb), except when F hosts a null copula and spec of TP hosts an expletive which may be null.
- F can be otherwise unmarked, in which case the sentence is spelled out with V-S-(O) order.
- If F contains a null copula and spec of TP an expletive, the word order will be S-V-(O) with an indefinite or quantified subject as associate of the expletive.
- F can be marked by a definite/specific feature, coupled with an EPP feature, which attracts the subject if the subject is definite or specific. This yields S-V-O order with a definite or indefinite specific subject.
- SA is a wh-movement language that shows sensitivity to islands, mainly strong islands. With respect to weak islands, arguments show less sensitivity than adjuncts. S-V inversion is obligatory with most wh-phrases including some adjuncts. However, it is optional with certain adjuncts, including *lesh* 'why'.
- This is accounted for if F can, alternatively, be marked by a focus feature, also coupled with an EPP-feature, which attracts a focus-marked phrase or a wh-phrase. In the case of wh-questions, this yields wh-V-S order.
- Following Rizzi (2001), there is a head INT taking FP as complement. This head is marked by an unvalued feature [uWH], which is checked/ valued either by movement of a wh-phrase in spec of FP to Spec of INT or by a wh-phrase externally merged in spec of INTP. Only some adjunct wh-phrases can do this. When this option is taken, F can have any feature, which means that it can attract the subject, if definite, which then will yield the word order Wh-S-V.

Chapter 3. Strategies of Wh-question Formation in Syrian Arabic

3.1. Introduction

The typological differences of wh-questions among languages have been a main point of interest for many studies. In English, for example, wh-questions with a single wh-word are formed by moving the wh-expression to the specifier of CP, while in Mandarin Chinese wh-expressions remain in situ (Huang 1998). Other languages, like Egyptian Arabic, have both options; the in-situ strategy is the default strategy, but wh-movement is also available (Wahba 1984). Languages also show variation with respect to questions involving more than one wh-phrase, so called *multiple wh-questions*. In Bulgarian, all wh-phrases in such questions front. In English, only one wh-phrase does, while the other wh-phrase(s) stay in-situ.

In this chapter, I will discuss the different types of wh-questions employed in SA. I will argue that SA is a wh-movement language. Wh-movement questions involve three strategies, illustrated in (1)-(3):

(1) [ʔayya ktab]_i akhad majd t_i? *Gap Strategy*
 which book took.3SG.M Majd
 ‘Which book did Majd take?’

(2) [ʔayya ktab]_i akhad-w_i majd? *Resumptive Strategy*
 which book took.3SG.M-it Majd
 ‘Which book did Majd take?’

(3) [ʔayya ktab]_i t_i illi akhad-w majd? *Class II Strategy*
 which book that took.3SG.M-it Majd
 ‘Which book is the one that Majd took?’

In question (1), the *gap strategy* is employed. The wh-phrase *ʔayya ktab* ‘which book’ has moved to the left periphery of the clause leaving a variable in the trace position. This strategy is the default strategy for forming wh-questions in SA. In question (2), the *resumptive strategy* is employed. The wh-phrase *ʔayya ktab* ‘which book’ appears at the left edge of the clause associated with the resumptive pronoun *w*, which appears in a

position corresponding to the wh-constituent. Question (3) employs *Class II* strategy, as is referred to in Aoun et al (2010). In this strategy, the wh-phrase *ʔayya ktab* ‘which book’ appears at the left periphery of the clause preceding the relative complementizer (*i)lli* and associated with the resumptive pronoun *w*.

Although SA is a wh-movement language, wh-phrases can stay in situ in certain contexts, as in examples (4) and (5):

<p>(4) akhad majd [ʔayya ktab]_i? took.3SG.M Majd which book ‘Which book did Majd take?’</p>	<p><i>In-situ Strategy</i></p>
-----------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------

<p>(5) [miin]_i t_i akhad [ʔayya ktab]_j? who took which book ‘Who took which book?’</p>	<p><i>Multiple wh-question Strategy</i></p>
---------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------

Question (4) is formed by means of *the wh-in-situ* strategy. Unlike wh-movement questions, the wh-constituent *ʔayya ktab* ‘which book’ in this example does not front to a clause initial position. It stays in the position in which it is first merged. Question (5) is formed by the so called *multiple wh-question* strategy involving more than one wh-phrase. Only one wh-phrase, *miin* ‘who’, undergoes movement to the left-periphery, while the other wh-phrase, *ʔayya ktab* ‘which book’, remains in-situ.

Another strategy will be discussed, *multiple wh-questions*. It will be argued that SA employs multiple wh-questions marginally. It is a non-multiple wh-fronting language. A coordinating conjunction is required with multiple questions involving adverbial wh-phrases. It will be proposed that Merchant’s (2001) ellipsis analysis cannot explain the facts of the order of coordinated wh-adverbials involving words like *lesh* ‘why’. It will be proposed that coordinated multiple questions involving wh-adverbials can be derived by *clause structure folding* following Moro’s (2011).

These, then, are the various strategies employed in SA to form Wh-questions. In the remainder of this chapter, I will discuss their further properties and consider their analysis.

3.2 Overview of the chapter

This chapter is organized as follows: section 3 discusses in more detail the *gap strategy*. Section 4 considers movement of a wh-phrase across clausal boundaries. Section 5 focuses on the *class II strategy*, one of whose properties is that it can be employed for questioning out of nominal wh-phrases. Another type of wh-questions is formed by means of the *resumptive strategy*, which will be discussed in section 6. Section 7 provides analysis of the *in-situ strategy*, and section 8 explores *multiple wh-questions* in SA.

3.3 The gap strategy

Following Aoun et al's (2010) classification of wh-words in Lebanese Arabic (LA), the wh-words in SA can be categorised into two different categories, nominal and adverbial⁸. The two groups are illustrated in (6). The wh-words of Standard Arabic (SDA) are given in (7) for comparison. They are classified into 'nominal' and 'adverbial' following Wahba (1984). However, as is pointed out in Aoun et al (2010), there is no obvious reason why some wh-phrases like 'aymat' *when* and 'ween' *where* are classified as adverbial:

(6) Wh-words in SA:

Nominal	Adverbial
a. miin 'who'	f. aymat / emat 'when'
b. šu 'what'	g. ween 'where'
c. ʔayya 'which'	h. kiif 'how'
d. kam 'how many'	i. leš/lašu 'why'
e. ʔaddeš 'how much'	

(7) Wh-words in Standard Arabic

Nominal	Adverbial
a. man 'who'	e. mataa 'when'
b. maaḏaa 'what'	f. ʔayna 'where'
c. ʔayy 'which'	g. kayfa 'how'
d. kam 'how many/much'	h. limaaḏaa 'why'

⁸ SA employs the same wh-words that Lebanese Arabic employs with only marginal differences in the pronunciation. I will only present examples from SA wherever the two structures are identical.

The gap strategy is the default strategy for wh-question formation in Standard Arabic (SDA) and most of the dialects of Arabic, including SA (see examples from SDA (8a, b)):

Standard Arabic

(8) a. [man]_i/[ʔayya mariiDin]_i zaarat naadia t_i?
 who which patient visited.3SG.F Nadia
 ‘Who/which patient did Nadia visit?’

b. [ʔayna]_i ɖahabtum baʕda l-radaaʔi t_i?
 where went.2PL after the-lunch
 ‘Where did you go after lunch?’

(Aoun et al 2010: 132-133)

The gap strategy is used in SA as the main strategy for forming wh-interrogatives. All types of wh-words can be employed in this strategy, as illustrated in (9):

(9) a. [miin]_i t_i fataħ l-bab?
 who opened the-door
 ‘Who opened the door?’

b. [ʔayya wajbeh]_i talb-et muna t_i?
 which meal ordered-3SG.F Muna
 ‘Which meal did Muna order?’

c. [ʔaymat]_i rjʕt-u mn š-šham t_i?
 when returned-2PL from the-Damascus
 ‘When did you come back from Damascus?’

d. [kiif]_i raħ truħ-u ʕa-l-mathaf t_i?
 how will go-2PL on-the-museum
 ‘How will you go to the museum?’

As these examples illustrate, all types of wh-words can be involved in the gap strategy, whether they are arguments or adjuncts. This strategy can also be used in embedded

clauses. Wh-words move to an initial position in the embedded clause, leaving a variable in the gap position, as in (10):

- (10)a. saʔal-ni ramy [ʔaymat]_i jayeh Dima t_i ?
 asked-1SG.OBJ Ramy when coming Dima
 ‘Ramy asked me when Dima is coming.’
- b. btaʕrf-i [miin]_i jayeh t_i ʕa-l-ħafleh?
 know-2SG.F who coming to-the-party
 ‘Do you know who is coming to the party?’

3.4 Long distance wh-movement

Extraction of wh-elements to a clause initial position can occur across clause boundaries in SA; examples are given in (11):

- (11)a. [miin]_i ʔal-l-ek mħammad raħ yʕzom t_i on-the- ʕada?
 who said-to-you Mħammad will invite.3SG.M ʕa-l-lunch
 ‘Who did Mohammad say he is inviting for lunch?’
- b. [ʕu]_i ʔal-l-ek iyad tʕml-i-l-u t_i ʕa-l-ʕasha?
 what said-to-you Iyad make-2SG.F.SU-for-3SGM.OBJ on-the-dinner
 ‘What did Iyad ask you to make for him for dinner?’
- c. [ʔayya flm]_i ʔal-u ʔnn-u t_i ʕam ynʕred b-s-sinema?
 which film said-3PL that-it PROG showing in-the-cinema
 ‘Which film did they say is playing in the cinema?’
- d. [wein]_i ʔal iyad raħ nruħ t_i ʕa-l-ʕid?
 where said Iyad will go.1PL on-the-Eid
 ‘Where did Iyad say that we will go for Eid.’
- e. [ʔaymat]_i ʔal-l-ek ramy ʔnn-u jayeh t_i?
 when said-to-2FS.OBJ Ramy that.3SG.M coming
 ‘When did Ramy say to you that he is coming?’

- f. [kam ktab]_i ?al l-?staz lazem nhadder t_i?
 how many book said the-teacher should prepare.1PL
 ‘How many books did the teacher say that we should prepare?’
- g. [?ddesh]_i ?l -ti kallaf-ek l-laptop l-jdid t_i?
 how.much said-2SG.F cost-2SG.F.OBJ the laptop the-new
 ‘How much did you say the new laptop cost?’

However, some of the adverbial *wh*-constituents cannot be extracted across clause boundaries. This is illustrated in (12), where the sentence initial *wh*-word cannot be interpreted with respect to the embedded verb.

- (12)a. *[kiif] ?l-ti ?nn-ek ?rft-i?
 how said-2SG.F that-2SG.F knew-2SG.F
 Intended: ‘How did you say that you found out?’
- b. *[lesh] ?al ?nn -u ?amal hek t_i?
 why said.3SG.M that-3SG.M did.3SG.M so
 Intended: ‘Why did he do that did he say?’

The sentences in (12) show that the adjuncts *kiif* ‘how’ and *leš/lašu* ‘why’ cannot be related to a gap across a clause boundary. In contrast with the adverbials in (12), *wein* ‘where’ and *aymat* ‘when’ do allow extraction across clausal boundaries, as in (11d, e). The difference lies in the nature of the *wh*-phrase: argumental/referential *wh*-phrases can move out of a clause, while other types of *wh*-phrases cannot.

From what has been discussed, it can be concluded that all types of *wh*-expressions in SA can be employed in the gap strategy. Only argumental and referential *wh*-phrases can be extracted across clause boundaries (see Aoun et al 2010).

3.5 Class II strategy

Wh-interrogatives in SA can be formed by means of another strategy, *Class II interrogatives*, which is discussed in some detail in Shlonsky (2002). In this strategy, the *wh*-expression appears in initial position followed by the complementizer (*?illi*

heading a free relative clause which contains a resumptive pronoun associated with the initial wh-expression. The following examples illustrate this strategy in Standard Arabic and the dialects of Palestinian and Egyptian Arabic (see Aoun et al 2010: 148):

(13) a. man llađi raʔ-at-hu mona? Standard Arabic
 who that.SG.M saw.3SG.F.SU-3SG.M.OBJ Mona
 ‘Who did Mona see?’

b. šu ʔilli ʔinti katab -ti-i mbaareh? Palestinian Arabic
 what that you wrote-2SG.F.SU-it yesterday
 ‘What did you write yesterday?’

c. ʔeh lli mona ʔar-it-uh? Egyptian Arabic
 what that Mona read-3SG.F.SU-it
 ‘What did Mona read?’

This strategy is analysed by Shlonsky (2002) as a copula construction, the subject of which is the wh-phrase, while the predicate is the free relative which provides a definite description, a statement of identity.

Like SDA and the dialects, SA too employs this strategy in question formation; see example (14):

(14)[miin] lli shaf-ət-uu mona b-l-matʕam?
 who that saw-3SG.F.SU-3SG.M.OBJ Mona in-the-restaurant
 ‘Who did Mona see in the restaurant?’

Whereas all wh-words can be used in wh-questions involving gaps (see the examples in (11)), only nominal wh-expressions can be used in *Class II interrogatives*, as illustrated in (15):

(15)a. [miin] illi kn-ti ʕam tħk-i maʕ-u?
 who that was-2SG.F PROG talking-2SG.F with-him
 ‘Who were you talking to?’

b. [ʔayya walad] illi nkasr-et rjl-u ?
which child that broke-3SG.F leg-his
'Which child has his leg broken?'

c. [šu] lli katab-u ramy ʕa-l-loħ?
what that wrote-it Ramy on-the-board
'What did Ramy write on the board?'

Adjunct wh-expressions, adverbials and PPs cannot be used in this construction. Compare the sentences in (15) with the ungrammatical sentences in (16):

(16)a. *[ʔaymat] lli rjʕ-et haneen?
when that returned-3SG.F Hanin
Intended: 'When did Haneen come back?'

b. *[kiif] lli fataħ-ti l-bab?
how that opened-2SG.F the door
Intended: 'How did you open the door?'

c. * [wein] lli raħ maher ?
where that went Maher
Intended: 'where did Maher go?'

d. *[la miin] lli bʕatt-i r-risaleh?
to who that sent-2SG.F the-letter
Intended: 'Who did you send the letter to?'

In the grammatical sentences (15a-c), the nominal wh-words *miin* 'who', *ʔayya* 'which', and *šu* 'what' are employed, whereas the ungrammatical sentences (16a-d) involve the adverbial adjuncts *ʔaymat* 'when', *kiif* 'how', *wein* 'where' and the PP *la-miin* 'to whom'.

Class II interrogatives can also be used in embedded questions, as in (17):

- (17) ma baʕref [ʔayya ktab] lli akhdət-u muna?
 not know which book that took-it Muna
 ‘I don’t know which book Muna took?’

This type of questions allows questioning into islands. Example (18), for instance, is grammatical although the relation between the wh-item and the resumptive pronoun does not obey subjacency:

- (18)[ʔayya bnt] lli shf-ti l-ʔasad lli ʔakl-a
 which girl that saw-2SG.F the-lion that ate.3SG.M.SU-3SG.F.OBJ
 ‘For which girl did you see the lion that ate her?’

In this structure, a pronominal copula can occur in a position between the wh-expression and *ʔilli* as in (19):

- (19)a. miin (hi) ʔilli l-ʔasad ʔakal-ha mbaariḥ?
 who PRON that the-lion ate-her yesterday
 ‘Who did the lion eat yesterday?’

- b. miin (hi) ʔilli ʔakl-at l-ʔasad mbaariḥ?
 who PRON that ate.3SG.F the-lion yesterday
 ‘Who ate the lion yesterday?’

Shlonsky (2002) argues that the occurrence of PRON to the right of the wh-expression is evidence that the wh-expression in *Class II interrogatives* is external to the lower CP. No such PRON can occur in the gap strategy, as illustrated in the ungrammatical sentences in (20):

- (20) a. *miin_i hi l-ʔasad ʔakal t_i mbaariḥ?
 who PRON the-lion ate yesterday
 Intended: ‘who did the lion eat yesterday?’

- b. *miin_i hi t_i ʔakl-at l-ʔasad mbaariḥ?
 who PRON ate-3SG.F the-lion yesterday
 Intended: ‘Who ate the lion yesterday?’ (Shlonsky 2002, 147)

The distribution of resumptive pronouns indicates that, in *class II* questions, the wh-phrase undergoes movement to SpecCP of the matrix clause from a position external to the relative clause which contains the variable. In this strategy, resumptive pronouns are obligatory in all positions except the subject position in which they are disallowed. The contrast is illustrated in (21) and (22):

(21)a. miin ?illi l-?asad ?akal-ha mbaarih?
 who that the-lion ate-her yesterday
 ‘Who did the lion eat yesterday?’

b. *miin ?illi l-?asad ?akal mbaarih?
 who that the-lion ate yesterday
 Intended: ‘Who did the lion eat yesterday?’

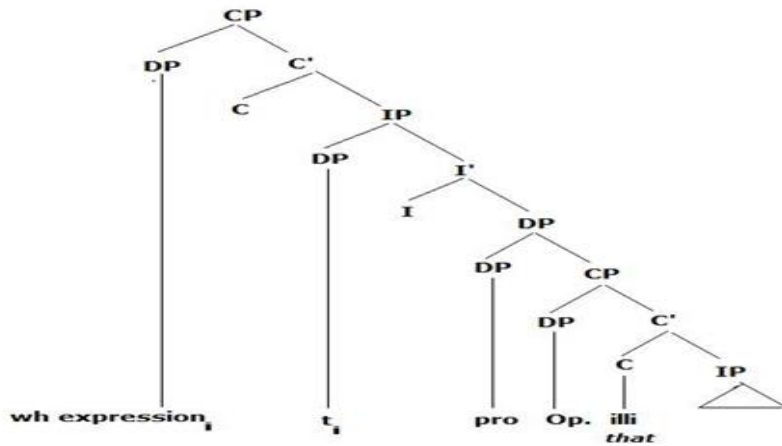
(22)a. *miin ?illi hi ?akal-at l-?asad mbaarih?
 who that she ate-3SG.F the-lion yesterday
 Intended meaning: ‘Who ate the lion yesterday?’

b. miin ?illi t_i ?akal-at l-?asad mbaarih?
 who that ate-3SG.F the-lion yesterday
 ‘Who ate the lion yesterday?’

A resumptive pronoun must appear in (21), in the position of the interrogated direct object, whereas in (22), in which the subject is interrogated, a resumptive pronoun is not allowed.

Building on these facts, Shlonsky (2002) argues that *class II* questions contain a bi-clausal copular construction, the subject of which is the wh-phrase, and the predicate is a free relative clause, which is a nominal predicate. The CP predicate is headed by the relative pronoun *?illi*. The full structure is represented in (23):

(23)



(Shlonsky 2002:152)

Here, *wh*-movement occurs from the highest subject position. The clause headed by *illi* is a predicate taking a null pronominal *pro* as its subject in SpecDP. It agrees with a null operator in Spec of the CP headed by *illi*, and with the resumptive pronoun inside the lower IP. The fact that the *Wh*-phrase starts out as a subject provides an immediate explanation for the fact that *class II* questions are only possible with nominal *Wh*-phrases, as in (15), not with adjuncts and PPs, as in (16). The analysis also makes available a natural position for the pronominal copula that can appear in this construction, as in (19). It is simply the overt realisation of the null pronoun *pro*.

To sum up, *wh*-questions in SA can be formed by means of the *illi strategy* discussed in Shlonsky (2002). This strategy can be used with nominal *wh*-phrases but not adverbial or prepositional phrases. The *wh*-phrase functions as the subject of the relative clause headed by the relative complementizer *illi* which is associated with a resumptive pronoun. The Spec of this clause is filled by a null operator. According to Shlonsky's analysis, the *wh*-phrase undergoes movement from the highest subject position, external to the relative clause.

The lack of sensitivity of this type of interrogatives to islands and the occurrence of a resumptive pronoun in the site of interrogation might be taken to suggest that there is no *wh*-movement in this type of questions. However, Shlonsky (2002) argues that this type of questions does involve *wh*-movement, but this movement takes place from a position distinct from where the resumptive pronoun appears. The *wh*-phrase is not directly

associated with the resumptive pronoun because the resumptive pronoun is not in the variable position corresponding to the wh-phrase.

3.6 The Resumptive Strategy

Another strategy that can be used for forming interrogative questions in SA is the *resumptive strategy* (see Aoun et al 2010). In this strategy, the wh-element is related to a resumptive pronoun in the position left after movement of the wh-constituent; see examples (24a, b) from SDA and SA⁹:

(24)a. man/?ayya mariiD zaarat-hu naadia? [SDA]
 who/which patient visited-3SG.F.SU-3SG.M.OBJ Nadia
 ‘Who/which patient did Nadia visit?’

(Aoun et al 2010: 132)

b. miin/?ayya maariD zarit-u naadia? [SA]
 who/which patient visited-3SG.F-3SG.M.OBJ Nadia
 ‘Who/which patient did Nadia visit?’

However, there are restrictions on which wh-words can be associated with a resumptive pronoun, as illustrated in examples (25) and (26):

Nominal wh-words

(25)a. *šū štarec-i-i?
 what bought-2SG.F-it
 Intended: ‘what did you buy?’

b. *kam ktab jbt-i-i maʕ-ek?
 how many book brought-2SG.F-it with-you
 Intended: ‘How many books did you bring with you?’

⁹ Some analyses treat bound forms encoding phi-features as inflections carrying rich agreement features (see Fassi Fehri 1993). Null subject pronouns can be expressed in the presence of a corresponding agreement morpheme on the verb. Object pronominals must be expressed as suffixes on the verb rather than as null forms. Here I follow the assumption that bound forms are bound pronouns.

Adverbial wh-words

(26)a. *ʔaymat wSSal-ti fi-i ʕa-l-beit?
when arrived-2SG.F in-it on-the-house
Intended: ‘When did you arrive at the house?’

b. *wein rħt-u -l-u?
where went-2PL-to-it
Intended: ‘Where did you go to?’

As can be seen from these examples, the nominal wh-words *šu/maadāa* ‘what’, and *kam/ʔaddesh* ‘how much’/ ‘how many’, and the adverbials are excluded from this strategy. Only wh-words like *miin* ‘who’ and *ʔayya* ‘which’ can be involved in this strategy (see (27)):

(27) a. ʔayya wlad ʔlt-u ʔnn-on rbħ-u l-jaʔize?
which children said-3PL that-3PL won-3PL the-prize
‘Which children did you say won the prize?’

b. miin ʔlt-u ʔnn-u rəbeħ l-jaʔize?
who said-3PL that-3SG won the-prize
‘Who did you say won the prize?’

As is the case in Lebanese Arabic discussed in Aoun et al (2010), resumptive pronominals are also excluded from subject positions. No pronoun can appear in the subject variable position. Instead, an accusative pronominal clitic appears on the complementizer *ʔnn-* ‘that’, as in (27a, b).

The question is what adjuncts and measure phrases have in common with *šu* ‘what’, such that the relevant property results in all of them disallowing resumption. In their answer to this question, Aoun et al (2010) propose that the difference between *šu* ‘what’ and *ʔayya NP* ‘which NP’ lies in the notion of membership in a presupposed set.

In a discourse context like (28), the addressee is presented with a choice between two books. The relevant question can be introduced with *ʔayya NP* ‘which NP’, but *Šu* ‘what’ is infelicitous in this context, as the contrast between (29a) and (29b) illustrates:

(28) S: fi kaliila wa dimna w fi n-nabi
 in-it Kalila and Dimna and in-it The-Prophet
 ‘There is *Kalila and Dimna* and there is *The Prophet*.’

(29) a. *šū baddak təʔra b-l-ʔawwal?
 what want.2SG.M read.2SG.M in-the-first
 Intended: ‘Which book do you want to read first?’

b. ʔayya kteeb baddak təʔra b-l-ʔawwal?
 which book want.2SG.M read.2SG.M in-the-first
 ‘Which book do you want to read first?’

(Aoun et al 2010: 140)

Šū ‘what’ cannot pick up a discourse referent as its antecedent. Thus, it cannot be used in some contexts of discourse where ʔayya NP ‘which NP’ can, as in (29b). It appears that what brings šū ‘what’ and adjuncts together in not allowing resumption is referentiality. Referential noun phrases are noun phrases associated with a presupposition of existence (see Cinque 1990). Šū is not a referential noun phrase. It cannot enter into a coreference relation with pronouns. Thus, it cannot refer to a member of a presupposed set. This can be illustrated by the contrast between (30) and (31):

(30) a. ʔayya kteeb ʔiryo t-tleemiz? [LA]
 which book read.3PL the-students
 ‘Which book did the students read?’

b. ma baʕrif, bas l-m'allme ʔaal-it ʔanno ma habbu-u
 Neg know.1SG but the-teacher.SG.F said-3SG.F that Neg like.3PL-it
 ‘I don’t know, but the teacher said that they didn’t like it.’

(31) a. *šū ʔiryo t-tleemiz? [LA]
 what read.3PL the-students
 ‘What did the students read?’

b.ma baʕrif, bas l-mʕallme ʔaal-it ʔanno ma ʕabb-u-u
 Neg know.1SG but the-teacher.SG.F said.3SG.F that Neg like-3PL-it
 ‘I don’t know, but the teacher said that they didn’t like it.’

(Aoun et al 2010: 141)

Another difference between *šu* ‘what’ and *ʔayya NP* ‘which NP’ is that *ʔayya NP* can participate in partitive expressions, while *šu* cannot (see (32)):

(32)a. ʔayya waahad/kteeb mn ha-l-kətib? [LA]
 which one book of this-the-books
 ‘Which one of these books?’

b.*šu mn ha-l-kətib?
 what of this-the-books

Based on Cinque (1990), Aoun et al argue that partitivity is closely related to referentiality as it signals membership in a presupposed set. Thus, wh-words that can be related to resumptive elements must be referential. However, this conclusion does not account for the fact that measure wh-phrases like *kam NP* ‘how many NP’ cannot be associated with resumptive pronouns, even though they can have a referential interpretation in some contexts, as in (33):

Lebanese Arabic

(33)a. fi-i hakiim ʔalb, hakiim sneen, hakiim məʕde, hakim nəfseene
 in-it doctor heart doctor teeth doctor stomach doctor spiritual
 ‘There is a cardiologist, a dentist, an internal medicine specialist, and a psychiatrist.’

b. kam hakiim/waahad baddak t-šuufu-u?
 how.many doctor one want.2SG.M 2SG.M. see.3SG.M
 ‘How many doctors/ones do you want to see?’

In response to the question in (33b), the addressee is expected to pick out a number of the doctors listed in by the speaker in (33a). Thus, *kam NP* ‘how many’ NP can pick up

its referent from the preceding context. However, *kam NP* cannot be related to a resumptive element, unlike the referential wh-phrases *miin* ‘who’ and *ʔayya NP* ‘which’.

Following from these facts, Aoun et al propose that not all referential wh-phrases can be related to a resumptive element. Therefore, the notion of referentiality is not sufficient to account for resumptive interrogative wh-phrases. What brings wh-words like *šu* ‘what’ and *kam NP* ‘how many NP’ together that keeps them distinct from wh-words like *ʔayya NP* ‘which NP’ and *miin/man* ‘who’ can be summarized as follows:

(34) ‘a. wh-phrases can be decomposed into parts: (i) a wh-element, which bears the question feature, and (ii) a noun phrase, which can either be a full DP, or not.

b. Only those wh-phrases which are composed of a wh-element co-occurring with a full DP can be related to a resumptive element’.

(Aoun et al 2010: 144)

Under this proposal, *ʔayya* ‘which’ and *miin/man* ‘who’ consist of a wh-element and DP, whereas *šu* ‘what’ and *kam NP* ‘how many NP’ consist of a wh-element and NP. ‘Resumptive elements correspond to the DP complement of *wh*’.

3.7 Wh in-situ

In the previous sections, various strategies of wh-movement have been discussed. In this section, I will discuss a strategy in which the wh-phrase does not undergo wh-movement to an initial position, the *in-situ strategy*.

In this strategy, the wh-phrase appears in the position where its non-wh lexical counterpart would normally occur. Some languages employ this strategy as the default strategy, as is the case in Egyptian Arabic (EA) (see (35)):

(35)a. mona nisit tiktib ʔeh? [EA]

Mona forgot.3SG.F write.3FS what

‘What did Mona forget to write?’

b. mona nisit tiktib il-gawab

Mona forgot.3SG.F write.3SG.F the-letter

‘Mona forgot to write the letter.’

(Aoun et al 2010: 154)

In other languages, this strategy can be employed as an alternative to wh-movement. SA employs this strategy only marginally, as in (36):

- (36)a. *shft-i miin b-l-matʕam?* [SA]
 saw.2SG.F who in-the-restaurant
 ‘Who did you see in the restaurant?’
- b. *shft-i reema b-l-matʕam.*
 saw.2SG.F Reema in-the-restaurant
 ‘Who did you see in the restaurant?’

The use of this strategy varies across the dialects of Arabic. In standard Arabic, the in-situ strategy can only be used in echo questions; whereas in Egyptian Arabic, it is used as the default strategy for question formation. All types of wh-words can be involved, whether they are nominal or adverbial, referential or non-referential. Adverbial wh-words can appear in-situ in simplex (37a) as well as embedded wh-interrogatives (37b) (see Aoun et al (2010)):

- (37)a. *saami ha-yruuħ ʔimta?* [EA]
 Sami FUT-go.3SG.M when
 ‘When will Sami go?’
- b. *zeinab fakr -a saami raħ feen?*
 Zeinab thinking.3SG.F Sami went.3SG.M where
 ‘Where does Zeinab think Sami went?’

SA employs this strategy only marginally as an alternative to wh-movement in certain discourse-linked contexts (see Aoun et al 2010). There are restrictions on which wh-words can be employed. The major distinction is between nominal and adverbial wh-phrases. Nominal wh-phrases, except *šu* ‘what’, can occur in-situ in simplex as well as embedded clauses, as illustrated in (38).

- (38)a. *shft-o miin l-yom?*
 saw-2PL who the-day
 ‘Who did you see today?’

b. *štareṭ-u šu mn l-maḥal?
 bought-2SG.PL what from the shop
 ‘What did you buy from the shop?’

c. ?štareṭ-i j-jbneh mn ?ayya maḥal?
 bought-2SG.F the-cheese from which shop
 ‘From which shop did you buy the cheese?’

d. ?jb-ti kam ũlbet jbneh mn hadol?
 brought-2SG.F how many box cheese of those
 ‘How many of those cheese boxes did you bring?’

As can be seen from the sentences in (38), nominal wh-words *miin* ‘who’, *?ayya* ‘which’, *kam NP* and ‘how many’ can marginally occur in situ, whereas *šu* ‘what’ cannot be employed in this strategy.

Unlike gapped wh-interrogatives, wh-in-situ cannot occur in a discourse out of the blue. (Compare sentences (38c) and (39)):

(39) *dafaṭ-ti kam ḥa? s-sayara?
 paid-2SG.F how.much cost the car
 ‘How much did you pay for the car?’

(38c) occurs in a discourse-linked context. It presupposes the existence of a previous discourse in which the cheese boxes have been referred to earlier. In (39), the conversation is not linked to a previous discourse, which renders the sentence ungrammatical.

Adverbial wh-phrases are less likely to appear in-situ than nominal wh-phrases. They can marginally appear in-situ in simplex and embedded clauses with restriction on the acceptability of non-referential wh-adverbials, as illustrated in (40) for simplex clauses:

(40)a. ?kn-ti wein mbareḥ?
 were-2SG.F where yesterday
 ‘Where have you been yesterday?’

b. ?wslt-i ?aymat mbareh?
arrived-2SG.F when yesterday
'When did you arrive yesterday?'

c. *rjʕ mazen kiif?
returned Mazen how
'How did Mazen come back?'

d. *ʔj-et muna leš?
came-2SG.F Muna why
'Why did Muna come?'

As can be seen in (40), referential wh-phrases like *wein* 'where', *?aymat* 'when' are more acceptable in situ than the non-referential wh-phrases *kiif* 'how' and *leš* 'why'. Similar facts can also be seen in complex sentences like (41):

(41)a. ?fkkar-ti basem kan wein?
thought-2SG.F Basem was where
'Where did you think Basem was?'

b. *ʔal-l-ek raḥ leš?
told.3SG.M.SU-to-2SG.OBJ left.3SG.M why
'Why did he say he left?'

c. *fkkar-ti ?nn-u Sallaḥ-u kiif?
thought-2FS that-2SG.M fixed.3SG.M-it how
'How did you think he fixed it?'

In conclusion, the wh-in-situ strategy can be used marginally in SA but only in discourse-linked contexts. It is preferred with nominal wh-phrases more than with adverbials, and only referential adverbials can be involved.

3.8 Multiple wh-questions in SA

Another strategy for forming wh-interrogatives involves sentences with more than one wh-phrase. This is known as multiple wh-questions. There are three distinct ways for forming multiple wh-questions across languages: all wh-elements move to an initial position, as in Bulgarian and Polish (42a); all wh-elements stay in situ, as in Chinese and Japanese (42b); one wh-element moves to the front while the other wh-phrases remain in situ, as in Italian and English (42c):

- (42)a. [_{CP} wh-phrase C wh-phrase C [_{TP} . . . t . . . t . . .]] (Bulgarian, Polish, . . .)
b. [_{CP} [_{TP} wh-phrase . . . wh-phrase]] (Chinese, Japanese, . . .)
c. [_{CP} wh-phrase C [_{TP} . . . t . . . wh-phrase]] (English, Italian, . . .)
(Moro 2011: 389)

It has been demonstrated that SA is a wh-movement language. It employs the wh-in-situ strategy in discourse linked contexts with nominal and referential wh-adverbials. Multiple wh-questions can also be used marginally in discourse linked contexts. One wh-element moves to the left periphery, while the other wh-elements remain in-situ (see examples (43) and (44)). Movement of more than one wh-phrase is ungrammatical:

- (43)a. miin šaf miin?
who saw whom
'Who saw whom?'

- b. *miin miin šaf?
who whom saw
'Who saw whom?'

- (44)a. miin štara šu?
who bought what
'Who bought what?'

- b. *miin šu štara?
who what bought

According to Stoyanova (2008, 143), in languages that do not allow multiple wh-question fronting, the interrogative system parallels the focus mechanism available in these languages. Wh-phrases possess a focus feature. They are only licensed through a Spec-head relationship with a head endowed with focus. In these languages, multiple focusing is ruled out. Focus can only be licensed in a unique position, and neither focus nor wh-phrases are allowed in situ, nor is clustering of multiple focused constituents, or recursion of focus.

Multiple wh-questions in SA manifest superiority effects, as illustrated in (45) and (46):

(45)a. *miin štara šu*
 who bought what
 ‘who bought what?’

b. **šu štara miin ?*
 what bought who

(46) a. *miin fkkar-ti raħ la-wein?*
 who thought-2SG.F went to-where
 ‘Who did you think went where?’

b. **la-wein fkkar-ti raħ miin?*
 to-where thought-2.SG.F went who
 Intended: Who did you think went where?

The subject wh-word *miin* ‘who’ fronts while the object wh-phrase *šu* ‘what’ and the adverbial *la-wein* ‘to where’ remain in-situ. The opposite order is not acceptable.

When a clause contains two adverbial wh-phrases, a coordinative head appears before the adverbial wh-phrase in situ. Two different orders of the coordinated clauses are possible (see (47)):

(47)a. *?aymat raħ fadi w leš?*
 when left Fadi and why
 ‘When did Fadi leave and why?’

b. ʔaymat w leš raḥ fadi?
 when and why left Fadi
 ‘When did Fadi leave and why?’

In (47a), the coordinative head *w* ‘and’ is preceded by the full clause *ʔaymat raḥ fadi* ‘when left Fadi’. In (47b), *w* ‘and’ is only preceded by the wh-phrase *aymat* ‘when’. The order in (47b) is generally preferred by most speakers of SA.

Conjoined questions in non-multiple wh-fronting languages are analysed as biclausal involving ellipsis of everything in the clause but the wh-phrase (Merchant 2001, 2005). The ellipsis would be a case of so called sluicing, according to merchant. See (48):

(48)a. yatara ʔaymat raḥ w leš raḥ?
 wonder.1SG when left.3SG.M and why left.3SG.M
 ‘I wonder when he left and why he left.’

b. yatara ʔaymat ~~raḥ~~ w leš raḥ?
 wonder.1SG when left.3SG.M and why left.3SG.M
 ‘I wonder when he left and why he left.’

c. yatara ʔaymat raḥ w leš ~~raḥ~~?
 wonder.1SG when left.3SG.M and why left.3SG.M
 ‘I wonder when he left and why he left.’

However, the ellipsis analysis can not explain some facts like the restriction on the order of multiple wh-questions involving *leš* ‘why’, as illustrated in (49). Compare (49d) with (49a, b, c):

(49)a. yatara ʔaymat raḥ w leš raḥ?
 wonder.1SG when left.3SG.M and why left.3SG.M
 ‘I wonder when he left and why he left.’

b. yatara ʔaymat raḥ w leš ~~raḥ~~?
 wonder.1SG when left.3SG.M and why left.3SG.M
 ‘I wonder when he left and why he left.’

c. yatara leš raḥ w ʔaymat raḥ?
 wonder.1SG why left.3SG.M and when left.3SG.M
 ‘I wonder when he left and why he left.’

d. *yatara leš raḥ w ʔaymat ~~raḥ~~?
 wonder.1SG why left.3SG.M and when left.3SG.M
 ≠ ‘I wonder when he left and why he left.’

If sentences like (49b) are generated by ellipsis, that is by coordinating two clauses by *w* ‘and’, the full clause to the left of the coordinating conjunction and the clause on its right, followed by deleting everything in the lower clause except the wh-phrase, it should be possible to derive sentences like (49d) from (49c). However, this is not the case. It appears that *leš* ‘why’ is preferred after other wh-adverbials in a postverbal position in multiple wh-questions, as in (49a, b). It can appear before other adverbials in a preverbal position in sentences like (49c), but not in sentences involving deletion of the part of the clause lower than *aymat* ‘when’, as in (49d).

The same facts can be seen in (50). *leš* can precede *kif* if the question coordinates two full clauses, (50a,c). If the question involves deletion, *kif* has to precede *leš*.

(50)a. yatara kif raḥ w leš raḥ?
 wonder.1SG how left.3SG.M and why left.3SG.M
 ‘I wonder how he left and why he left.’

b. yatara kif raḥ w leš ~~raḥ~~?
 wonder.1SG how left.3SG.M and why left.3SG.M
 ‘I wonder how he left and why he left.’

c. yatara leš raḥ w kif raḥ?
 wonder.1SG why left.3SG.M and how left.3SG.M
 ‘I wonder why he left and how he left.’

- d. *yatarā leš raḥ w kif raḥ?
wonder.1SG why left.3SG.M and how left.3SG.M
‘I wonder why he left and how he left.’

Only *leš* exhibits this fixed order. Any other combination of adjuncts can occur in either order.

The sluicing analysis cannot explain the contrast between the full questions and the reduced questions when it comes to the preferred order of *leš* and other wh-adverbials. The restrictive order of *leš* ‘why’ co-occurring with other wh-adverbials can, however, be accounted for in terms of Moro’s (2011) *clause structure folding* analysis. This analysis, and the theory which it is based on, is proposed by Moro largely on the basis of observations about Italian which correspond closely to the observations we have made about SA.

According to this analysis, the coordinative head is merged with a clausal constituent rather than with the interrogative phrase it precedes. This analysis can be derived as follows:

- (51)a. . . . [?aymat_i C [raḥ t_i]]
when left.3SG.M
b. . . . [leš C [?aymat_i C [raḥ t_i]]]
why when left.3SG.M
c. . . . [w [leš C [?aymat_i C [raḥ t_i]]]]
and why when left.3SG.M
d. . . . [[?aymat_i C [raḥ t_i]] [w [leš C]]]
when left.3SG.M and why
‘. . . when he left and why’

First *aymat* ‘when’ is moved to Spec of a head in the C-domain (indicated here as a series of C heads following Moro (2011)). Then *leš* ‘why’ is externally merged in a higher Spec position, as in (51b), followed by merging the coordinative conjunction *w* ‘and’. The lower clause containing *aymat* ‘when’ raises to Spec of the coordinative head, which leaves *leš* ‘why’ in a lower position following the coordinative conjunction.

In this way, the construction is analyzed as a coordination of two clauses, but without any ellipsis.

This analysis correctly predicts the order of *leš* ‘why’ co-occurring with other wh-adverbials. *leš* ‘why’ always appears as the rightmost one of the wh-phrases. Recall that it was proposed in chapter two (2.6.4), in the framework of Rizzi’s (2001) theory of the left periphery, that *leš* ‘why’ is externally merged in the left periphery, in specINT, rather than being moved. This was supported by the fact that it does not show a strict constraint on the wh-verb-subject order as other wh-phrases do; see (52):

- (52)a. *leš* *hala* *šam* *tbki*?
why Hala prog crying
‘Why is Hala crying?’
- b. *šu* *šaf-et* *mama*?
who saw-3.SG.F mom
‘What did mom see?’
- c. **šu* *mama* *šaf-et*?
what mom saw-3.SG.F

As can be seen in these examples, *leš* ‘why’ can be followed by a subject, whereas *šu* ‘what’ shows a strict Wh-V-S order. Only *leš* ‘why’ behaves in this way. As discussed by Moro (2011), Italian *perché* ‘why’ behaves exactly like this: Where other wh-questions have the order wh-V-Subj, *perché* questions have the order wh-Subj-V. We thus have two seemingly independent facts concerning ‘why’ in SA and Italian: The exceptional order wh-Subj-V and the behaviour of ‘why’ in coordinative multiple questions, where ‘why’ is always the rightmost one, as illustrated in (51) above. These two facts are connected and explained, by Rizzi’s (2001) postulation that ‘why’ can externally merge in specINTP in conjunction with Moro’s (2011) clause folding analysis of coordinative multiple questions.

Moro (2011) argues that the necessity of this strategy follows from the nature of the left periphery of the language. In Italian, a sequence of two heads endowed with wh-features is not an option (see (53)):

- (53)a. . . Force _ (Top) _ Foc _ (Top) _ Fin _ TP
 b. *. . . Force _ (Top) _ Foc _ Foc _ (Top) _ Fin _ TP

In Moro's theory, two Foc-heads can be merged, though, each attracting a wh-phrase. The resulting structure is ungrammatical if spelled out as such. However, it can be 'saved' by merging a conjunction (which may be covert). The conjunction has the effect of 'absorbing' the two Foc-features, thus circumventing the ban against two Foc-heads. The lower CP moves to the Spec of the conjunction, which yields (53d). When spelled out, this yields the typical wh-question order, with or without an overt conjunction.

Moro (2011) does not discuss cases of coordinative questions like (54). As shown, while *leš* 'why' has to be the rightmost one as in (55), the order of the other adjunct wh-phrases is free.

- (54)a. Kif w aymat Sar l-ħadeth?
 how and when happened the-accident
 'How and when did the accident take place?'

- b. Aymat w kif Sar l-ħadeth?
 when and how happened the-accident

- (55)a. Kif w leš Sar l-ħadeth?
 how and why happened the-accident
 'How and when did the accident take place?'

- b. *leš w kif Sar l-ħadeth?
 why and how happened the-accident

Since they are subject to the same restriction on 'why', they should be derived in basically the same fashion as the questions in (51). They can be accommodated under Moro's theory if we accept so called 'scattered copy deletion' (see Sheehan 2011). (56a) would be derived as follows: First *kif* 'how' moves to the spec of the lower C, then *leš* is externally merged in spec of INTP. This derives (56a) (omitting some details, like verb

movement). Next *w* ‘and’ is merged, and the lower CP moves to the spec of *w*P. This derives (56b). Crucially we assume the copy theory of movement (Chomsky 1995). While in the case of (50), the entire lower CP is deleted under copy deletion, in the case of (56), deriving (55a) above, the TP of the higher copy of the C is deleted, and only the moved *wh*-phrase of the lower copy of the CP is deleted. This is scattered copy deletion.

- (56) a. [_{INTP} *leš* [INT [_{CP} *kif* C [_{Sar} *l-hadeth kif*]]]]
 b. [_{WP} [_{CP} *kif* C [_{Sar} *l-hadeth kif*]] [*w* [_{INTP} *leš* [INT [_{CP} *kif* C [_{Sar} *l-hadeth kif*]]]]]
 c. [_{WP} [_{CP} *kif* C [~~Sar l-hadeth kif~~]] [*w* [_{INTP} *leš* [INT [_{CP} ~~kif~~ C [_{Sar} *l-hadeth kif*]]]]]

Other adjunct *wh*-phrases than *leš* ‘why’ can occur in any order in coordinative questions, as shown in (57) and in (54) above.

- (57)a. *kif Sar l-hadeth w aymat?*
 how happened the-accident and when
 ‘How and when did the accident take place?’
 b. *aymat Sar l-hadeth w kif?*
 when happened the-accident and how
 ‘How and when did the accident take place?’

Under Moro’s theory they can be derived if either adjunct *wh*-phrase can move first, to the lower specCP, the specifier of a FocP, according to Moro. The one that moves first will then end up as the leftmost one, following movement the other adjunct to the higher specCP, merge of the conjunction *w* ‘and’, and remnant movement of the lower CP to the spec of the conjunction. It is questionable, though, whether this is compatible with the proposal made in Chapter 2 regarding the relation between the “lower C”, i.e. F in the theory in Chapter 2 and the “higher C”, i.e. INT.

Moro (2011) proposes his clause folding analysis as a theory of multiple *wh*-questions generally, in languages like Italian, English, and SA, which seemingly can only front one *wh*-phrase in multiple *wh*-questions. Even questions such as *Who said what?* would

be derived by clause folding, both wh-phrases undergoing movement to a higher and a lower specCP, respectively, with merge of a conjunction followed by remnant movement of the lower CP. Only in this case the conjunction would be null. However, his theory makes some glaringly incorrect predictions. In particular, as discussed by Haida and Repp (2011) it cannot exclude coordination of argument wh-phrases of different functions such as (60) and (61)

(60)*Who and whom saw?

(61)*miin w miin shaf?

who and whom saw

As argued by Gribanova (2009), Gracanin-Yukseki (2007), Tomaszewicz (2011), Haida and Repp (2011) coordination of argument phrases of different functions is never possible. Tomaszewicz (2011) and Haida and Repp (2011) both compare multiple wh-fronting in languages like Russian and Polish with coordinated multiple wh-questions in languages like English and Italian, arguing that while the former is derived by multiple wh-movement in a single clause, the latter type of questions always involves coordination of two clauses, with ellipsis in one of the clauses.

I will leave the details of this debate aside. The conclusion we can draw from the discussion in this section is that the clause folding theory can explain the distribution of ‘why’ in coordinated multiple questions, and can do so on the basis of an analysis of why-questions which we have argued for on independent grounds, and which we have seen holds in SA as well as in Italian. I take this as evidence that coordinated multiple wh-questions with *leš* ‘why’ in SA are derived by clause folding, as proposed by Moro (2011). I leave open the possibility that other coordinated multiple wh-questions with other adjuncts than *leš* are derived by coordination of two clauses with ellipsis, along the lines of Merchant (2001, 2005). I assume, without discussion, but following ... that Moro’s clause folding theory should not be generalized to multiple wh-questions with argument wh-phrases.

3.9 Conclusion

In this chapter, various strategies of wh-question formation in SA have been discussed. It has been argued that wh-movement in SA can be formed by one of three strategies,

the gap strategy, the resumptive strategy, and *Class II* strategy. In the first strategy, the wh-phrase raises leaving a gap in the variable position. In the second, the wh-phrase is associated with a resumptive pronoun, while in the latter, the wh-phrase is the subject of a free relative clause introduced by the relative complementiser *illi* and associated with a resumptive pronoun.

In addition to the wh-movement strategies, SA employs the in-situ strategy in discourse-linked contexts. It can be used with nominal wh-phrases, and less often with adverbials, in particular referential adverbials. It is unacceptable with non-referential adverbials.

Another strategy has been discussed, *multiple wh-questions*. It has been argued that SA employs multiple wh-questions marginally. It is a non-multiple wh-fronting language. It allows only one wh-phrase to undergo movement to the left-periphery whereas the other wh-phrases stay in situ. A coordinating conjunction is required with multiple questions involving adverbial wh-phrases. It has been argued that the ellipsis analysis does not explain the restrictive order of coordinated adverbial wh-phrases like *lesh* ‘why’. Multiple wh-questions involving adverbials can best be accounted for by the *clause structure folding* following Moro’s (2011).

Chapter 4. Pied-Piping in Syrian Arabic

4.1. Introduction

In this chapter, I discuss the phenomenon of pied-piping in SA. The problem of pied-piping has been approached in different ways, as in Heck (2009) and Cable (2007). A central claim of Heck's (2009) edge generalization is that wh-pied-pipers move to the edge of the pied-piped phrase. A pied-piping phrase that is not at a left peripheral position undergoes secondary movement to an edge position, as in languages like Chol and Tzotzil.

I show that the possessive structure in SA contradicts this hypothesis. The possessor appears in a post-nominal position. However, in the case of possessive questions, a wh-possessor does not undergo any secondary movement to the edge of the pied-piped phrase (see (1a, b)):

- (1) a. akhadt ?alam deena.
 took.1SG pen Deena
 'I took Deena's pen.'
- b. ?alam miin akhad-ti?
 pen who took-2SG.F
 'Whose pen did you take?'

In (1a), the possessor *Deena* appears in a position after the noun *?alam* 'pen'. Similarly, in the possessive question in (1b), the wh-possessor *miin* 'who' pied-pipes the phrase containing the noun *?alam* 'pen' from a post-nominal position.

Cable (2007) argues that there is no pied-piping in the grammar. Instead, what looks like pied-piping is an instance of phrasal movement of the projection of a Q-particle, which is the agent responsible for movement. In many languages this particle is invisible, as in English and SA, whereas in other languages like Tlingit it is overtly pronounced; see (2):

- (2) Daa sá i éesh al'óon?
 what Q your father he.hunts.it
 'What is your father hunting?'

The Q-particle *sa* must c-command and contain the wh-phrase *daa* 'what' in its QP projection. As Tlingit is a wh-fronting language, fronting the QP results in fronting the wh-phrase. Thus the left peripheral position of the wh-word is a consequence of the movement of the Q-particle. It is the Q-particle, and not the wh-word, that is probed for and which agrees with the interrogative C head of a wh-question.

Cable's (2007) Q-based theory provides an account for the exceptional cases of pied-piping. Cable argues that in some languages pied-piping is restricted. These are limited pied-piping languages in which the Q-particle undergoes agreement with the wh-phrase. This agreement can be blocked by lexical intervention. This is why secondary wh-movement to an edge position is required in such languages. Other languages are non-limited piping languages. In these languages, Q/Wh-agreement is not required. A lexical intervention does not cause any violation of the Q/Wh-agreement relation, thus secondary wh-movement is not required.

In what follows, I argue that SA is a Q/Wh-agreement language. However, in the possessive structure, the wh-phrase can pied-pipe from a post-nominal position. This result can be reconciled with the Q-theory if it is explained in terms of Cinque's (2000, 2005) roll up movement.

4.2.Overview of the chapter

The aim of the chapter is to propose a formal account of wh-movement of possessor phrases with DP pied-piping in SA, and to consider the consequences it has for syntactic theory, especially the theory of pied-piping. It is therefore necessary to establish the status of current theories of pied-piping. This chapter is organized as follows: Section 4.3 provides an overview of the wh-feature percolation theory. Section 4 introduces the edge generalization and secondary wh-movement. Section 5 presents some exceptional

cases to secondary wh-movement. Section 6 is a summary of the pros and cons of Heck's theory.

Section 7 presents arguments against movement to the right edge and introduces an alternative solution, the Q-theory. Section 8 discusses pied-piping in SA, in particular in connection with the *Construct State Nominal*. It introduces an analysis of the Q/Wh-agreement system in SA followed by discussion of the appropriate analysis of the CSN, and the implications of the CSN for theories of pied-piping.

4.3. The feature percolation hypothesis

Movement of wh-words in interrogative clauses has been a fundamental topic in the theory of wh-questions. In many languages, interrogative pronouns undergo movement from the position in which they are assigned a thematic role and Case to a scope position, as in the embedded question in (3):

(3) Ich fragemich, wen₂ du t₂ getroffen hast. [German]

I askREFL who you met have

'I wonder who you met.'

(Heck 2008: 2)

The canonical position for objects in German is to the left of the verb, where t_2 appears. However, the wh-word in (3) moves to the left periphery of the embedded question. It is argued in Chomsky (2001) that this movement is driven by wh-feature checking. There is a wh-feature on the wh-element, the goal, and another on the C head of the interrogative clause, the probe. There is a constraint on this movement, which requires that the relation between the probe and goal be local with no phrase boundary intervening (see Chomsky 1995).

However, this constraint is not always met. In some cases, the moving constituent is not only a wh-element, but a phrase containing the wh-element, as in (4)

(4) Ich frage mich, [_{PP} mit wem₂]₃ du t₃ gesprochen hast.

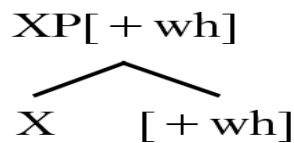
I ask REFL with whom you talked have

'I wonder who you talked to.'

This was first pointed out by Ross (1967) who refers to operations in which movement of some element α displaces an additional constituent β that contains α . This type of movement has been identified as *Pied-piping*. In (4), for instance, the prepositional phrase *mit wem* ‘with whom’ moves along with the wh-word *wem* ‘whom’. Thus, the relation between the wh-feature on the C head (the probe) and the wh-feature on *wem* ‘whom’ is not local, i.e. not a Spec-head relation, due to the intervening PP.

In order to explain how certain constituents can be pied-piped by wh-words, Chomsky (1973) suggests the *wh-feature percolation* theory, which has been adopted as one of the main theories of pied-piping (see Cowper 1987, Grimshaw 2000, Webelhuth 1992). According to this theory, a [wh] feature can spread across phrase boundaries. More precisely, a wh-phrase can transmit its wh-feature to the dominating phrase XP, turning it into a wh-element, as illustrated in (5):

(5)



However, there must be some restriction on feature percolation; otherwise any category containing a wh-element will be able to undergo pied-piping. As it stands, wh-feature percolation cannot explain the ill-formedness of sentences like (6) in which the pied piper of a DP is in the complement position of PP:

(6) *I wonder [DP the sister [PP of whom₂]₄ you met t₄.

(Heck 2008, 7)

Heck (2009) argues that feature-percolation should be dispensed with, mainly because it fails to account for the generalization which he calls the Edge Generalization. He adopts an alternative analysis of pied-piping, as will be discussed in the following section.

4.4. Secondary wh-movement and the Edge Generalization

Heck (2009) argues that the locality on feature checking must be abandoned. This can instead be performed via the operation Agree proposed in Chomsky (2000, 2001). Agree can be performed from a remote distance across phrase boundaries, as long as the goal is c-commanded by the probe. However, Heck departs from Chomsky's assumption that movement is triggered by the need to fill a specifier position, introduced by the EPP feature.

Heck (2009) adopts a violable Agree-based checking theory according to which movement is motivated by feature checking. A feature on a probe must be checked and eliminated by some matching goal. However, it allows at least one XP boundary to intervene between the wh-probe and goal, as in the case of pied-piping (see example (4) above).

Heck argues that the theory of Local Agree provides an explanation for the properties of pied-piping. One of these properties is the *Edge Generalization* (see (7)). A wh-phrase moves to the left edge of the phrase it pied-pipes before reaching its scope position.

(7) If a wh-phrase α pied-pipes a constituent β , then α has to be at the edge of β

Heck calls the type of movement in which the wh-phrase undergoes movement to a position that is not its scope position, *secondary wh-movement*. This hypothesis is supported by examples from various languages. One of these is Tzotzil, a Mesoamerican language (see Aissen 1996: 454-455). In this language, a genitive possessor appears in a post-nominal position, as in (8)¹⁰:

(8) a. s-p'in li Maruch-e
A3-pot the Maruch-ENC
'Maruch's pot'

¹⁰The affixes are glossed as follows: A1/2/3 are set A affixes. They stand for 1st/2nd/3rd person. B1/2 are set B affixes that stand for 1st/2nd person, ENC stands for an enclitic, CP for completive aspect, and ICP for incompletive aspect.

- b. *Maruch s-p'in
 Maruch A3-pot

However, in the case of a wh-possessor, the wh-phrase undergoes obligatory inversion with the noun, as illustrated in (9). In Heck's terms, this is a case of secondary wh-movement within the pied-piped constituent:

- (9) a. [DP Buch'u₂ x-ch'amal t₂]₄ i-cham t₄?
 who A₃-child CP-died
 'Whose child died?'

- b. *[DP X-ch'amal buch'u₂]₄ i-cham t₄?
 A₃-child who CP-died

The same type of movement can be noticed in PP pied-piping in Tzotzil. The pied-piper is a genitive phrase in the complement of P. The wh-possessor phrase moves to the specifier of PP via Spec-D.

- (10) a. [pp Buch'u₂ ta [DP t'₂ s-na t₂]₃]₄ ch-a-bat t₄?
 who to A₃-house ICP-B2-go
 'To whose house are you going?'

- b. *[pp Ta [DP s-na buch'u₂]₃]₄ ch-a-bat t₄?
 to A₃-house who ICP-B2-go

Heck provides further evidence for the edge generalization from French 'relatives' with the genitive pronoun *dont*. When a DP is pied-piped by the genitive *dont*, *dont* has to move to the left as illustrated in (11).

- (11)a. un home [DP dont₂ le comportement t₂]₃ t₃ devient inquiétant
 a man of.who the behaviour become alarming
 'a man whose behaviour becomes alarming'

- b. *un homme [DP le comportement dont₂]₃ t₃ devient inquiétant
 a man the behaviour of.who becomes alarming

In (11a), *dont* appears at the left edge of DP after undergoing secondary wh-movement. Pied-piping does not take place from the complement position of PP, as in (11b). Similar facts exist in German where a non wh-possessor can appear in a post-nominal position, as in (12a), but a wh-possessor cannot (see 12b). It appears at the left edge of the pied-piped constituent, as in (12c) (see Trissler 1999, 152):

(12)a. die Bilder des Künstlers
 the paintings the.GEN artist.GEN
 ‘The artists’ paintings’

b. *Ich weiß, [DP Bilder wessen]₂ du t₂ kaufen würdest
 I know paintings whose you buy would
 ‘I know whose paintings you would buy.’

c. Ich weiß, [DP wessen₃ Bilder t₃]₂ du t₂ kaufen würdest.
 I know whose paintings you buy would

Further evidence for the hypothesis of secondary wh-movement appears in languages such as Polish, Hungarian, Basque, Latin, etc. Heck argues that movement of the wh-pied-piper to the edge position in such instances is not motivated by the need for case checking; it is related to the [Wh] feature of the possessor.

In Hungarian, for example, DP contains two positions for possessors. One is following the definite determiner [nak/nek] and is marked [Nominative], and the other is preceding the definite determiner and is marked [Dative]. In the latter case, the wh-possessor undergoes secondary movement from a post-determiner position to SpecDP. Pied-piping of a DP by a wh-possessor is only possible if the possessor occupies the edge of DP, as illustrated in (13):

(13)a. [DP Kinek₂ a t₂ vendég^{et}]₃ ismert^{et}ek t₃?
 who.DAT the guest you knew
 ‘Whose guest did you know?’

b. *[DP Ki₂ vend'eg'et]₃ ismert'etek t₃?

who.NOM guest you knew

(Szabolcsi, 1994, 202)

Movement of the wh-possessor to a pre-determiner position within DP is motivated by the possessor's wh-feature, rather than the need for case checking. Although the possessor must receive case, it does not have to pick up the dative case in SpecD. If it is in a post determiner position it would have nominative case, which is also fine.

Another striking case of secondary wh-movement is found in Finnish, as described in Brattico (2011). In Finnish, movement of a wh-constituent to the left edge of its clause can be blocked by some islands mainly strong ones, as in example (14) (see Brattico 2011: 2):

(14)*Mitä_i Pekka nukahti syötyään t_i?

what Pekka fall.sleep.ate.TUA.PAST

'What did Pekka fall asleep after eating?'

The wh-element in this example cannot escape from the adjunct island represented by the TUA-adverb. However, a question can still be formed out of (14) as observed originally by Huhmarniemi (2009). This can be achieved by a two-stage process in which the wh-phrase *mitä* 'what' moves first to the left-edge of its island, and then the whole island moves to the final scope position at the left periphery of the matrix clause, as shown in (15):

(15)[Mitä_i syötyään t_i] Pekka nukahti

what ate.TUA Pekka fall.sleep

'After eating what did Pekka fall asleep?'

Movement of *mitä* 'what' to the position before *syötyään* 'ate' is what Heck (2004, 2008) calls 'secondary wh-movement'. Subsequently, the wh-element inside the adjunct phrase pied-pipes that phrase to the left-periphery of the matrix clause.

Huhmarniemi (2009) shows that in Finnish secondary wh-movement can occur in a movement within movement construction with several layers, as in (16):

- (16) [[kenen taloa ____] kohti ____] Pekka käveli ____
 whose house towards Pekka walked
 ‘Towards whose house did Pekka walk?’

Movement in this example occurs in a three stage process. The interrogative DP moves first to the left-periphery of its host DP, which in turn moves to the left periphery of the containing PP. This PP in turn moves to the left periphery of the containing CP. Brattico (2011) calls this type of iterative roll-up movement ‘snowball movement’, and the phrase type XP that allows snowballing a ‘snowball domain’.

4.5 Possible exceptions to the Edge Generalization

Heck (2008) acknowledges that there are some exceptions to secondary wh-movement. In some instances, wh-pied-pipers do not appear at the edge of the pied-piped constituent. One example concerns prepositional phrases in German in which a PP occupies the complement of another preposition. As shown in (17), the pied-piper of a complex PP does not move to the edge of PP:

- (17)a. ein punkt, [PP₃ bis [PP₂ zu dem]₂]₃ man t₃ gehen muss
 a point up to which one go must
 ‘A point that one must reach.’

- b. *Ein punkt, [PP dem_i bis zu t_i]₃ man t₃ gehen muss
 a point which up to one go must

(Heck, 2009, 92)

Heck argues that this exception is still consistent with the Edge Generalisation assuming that the wh-phrase is immediately dominated by PP₂, and since PP₂ is not a phase, the wh-phrase *dem* ‘which’ is still accessible in PP₂. PP₃ does not immediately dominate *dem* but it dominates, PP₂, so the wh-phrase is still accessible in PP₃. However, there is variation among languages with respect to whether a language requires secondary wh-movement in PP or not.

Heck points out that PPs contrast with DPs in that lack of secondary wh-movement in the latter usually leads to a crash of the derivation; compare (17) and (18):

(18)a. die Bilder dessen, den du kennst.
 the paintings the-one.GEN who you know

b. *ein künstler, [DP Bilder dessen]₂ du t₂ kaufen
 an artist paintings whose you buy
 würdest
 would

The contrast between PPs and DPs in terms of the lack of secondary wh-movement can be accounted for by assuming that DP is a phase. A wh-feature must be accessible within DP thus movement of the wh-phrase to the edge is required.

Lack of secondary wh-movement appears also in Greek possessive constructions. A wh-possessor can appear in both positions, pre-nominally and post-nominally. Pied-piping is also possible from both positions, as illustrated in (19):

(19) a. Anarotieme [_{DP} tinose₂ to vivlio]₃ mu ipes pos dhiavases t₃.
 wonder.1SG whose the book you said that read.2SG
 ‘I wonder whose book you said that you read.’

b. Anarotieme [_{DP} to vivlio tinose₂]₃ mu ipes pos dhiavas t₃.
 wonder.1SG the book whose you said that read.2SG

(Horrocks and Stavrou, 1987)

Heck argues that such cases lack secondary wh-movement only apparently. In a sentence like (19b), DP branches to the right, and the wh-phrase *tinose* ‘whose’ occupies the edge position of DP₃.

Similar cases of pied-piping from a post-nominal position can also be found in possessive structures in Syrian Arabic, which will be discussed in section (4.8).

Another type of violation of the left edge generalization can be seen in Spanish DPs containing more than one PP argument. In such cases, the order of PPs is not free. The PP containing the pied-piper must appear at the right edge of the DP, as the contrast in (17a, b) illustrates. In order to explain this exception, Heck suggests that the PP *de qu’é*

diosa ‘of what goddess’ in (20a) counts as the edge of DP, and secondary wh-movement in this example occurs but to the right. It targets a rightward specifier within DP, or there is no DP projection present in the first place.

(20)a. $[_{DP}$ La estatua t_3 $[_{PP}$ en el jardín $]$ $_2$ $[_{PP}$ de qué diosa $]$ $_3$ $]$ $_4$
the statue in the garden of what goddess
te ha dicho Juan que había reconocido t_4 ?
you has told Juan that has.3SG recognized
‘What goddess has Juan told you that he recognized the statue of in the garden?’

b. $*[_{DP}$ La estatua $[_{PP}$ de qué diosa $]$ $_2$ $[_{PP}$ en el jardín $]$ $_3$ $]$ $_4$
the statue of what goddess in the garden
te ha dicho Juan que había reconocido t_4 ?
you has told Juan that has.3SG recognized

(Heck, 2008, 102)

4.6. Summary: pros and cons of Heck’s (2008) theory

To summarize, based on Chomsky’s Agree theory, Heck (2008) provides an account for cases of pied-piping that theories like feature percolation could not account for. Heck’s analysis is built on the assumption that Local Agree is violable. A phrase boundary can intervene between a probe and goal, thus pied-piped clauses do not lead to violation of Agree. Wh-phrases can only pied-pipe a phrase from the edge. If a pied-piper is not at an edge position, it undergoes secondary wh-movement to this position.

Heck’s *Edge Generalization* works for some languages like Tzotzil, French, German, and Finnish, but it does not provide the right explanation for exceptional cases in which pied-piping does not occur from the edge as in Spanish, Greek, and Syrian Arabic. His explanation for the exceptional cases of pied-piping in Greek possessive structures and PPs within a DP in Spanish is built on the assumption that the wh-element in such cases moves to the right, targeting a right-ward specifier. However, an analysis involving rightward movement is excluded under Kayne’s (1994) Linear Correspondence Axiom (LCA), discussed in the next section.

4.7. Q-theory: an alternative to pied-piping

4.7.1 *The problem of rightwards movement*

The following is a slightly simplified formulation of the LCA, proposed by Kayne (1994) as a universal principle regulating the relation between structure and word order.

- (21) A terminal X precedes a terminal Y iff a category dominating X asymmetrically c-commands a category dominating Y.

(Biberauer and Sheehan 2012, 15 adapted from Kayne 1994)

The LCA has two important consequences, one concerning base generation, and one concerning movement. With regards to base generation, base-generation is universally ordered; specifiers precede heads and heads precede complements. The specifier precedes the head as the default order, because by definition a specifier asymmetrically c-commands the head. The head will precede its complement as the default order, because it asymmetrically c-commands the terminal nodes of its complement. A phrase will therefore have the default linear order Spec-Head-Comp as a consequence of the LCA. All other orders must be derived from this order via movement.

With regards to movement, a consequence of the LCA is that movement must be leftward. This is so given that movement is always upward. If movement is always upward it follows that the moved constituent will asymmetrically c-command its trace. Given the LCA, this means that the moved constituent will always precede the trace (the ‘filler will precede the gap’), i.e. movement is leftward.

While Kayne’s (1994) claims have been accepted in a lot of subsequent works, Abels & Neeleman (2006) argue that Kayne’s (1994) claim that base-generated structures are anti-symmetric is empirically vacuous, because the theory allows so much movement that any order is freely derivable. The LCA imposes a ban on rightward movement. It is well known that rightward movement is a rare phenomenon relative to leftward movement (Ross 1967). Abels & Neeleman propose two possible interpretations of this generalization. The first says that rightward movement exists in some circumstances but certain cases that lead to unparsability are ruled out; the second denies the possibility of rightward movement and requires alternative analyses of cases that exhibit apparent

dislocation to the right. It assumes that a moved constituent must be linearized at PF as preceding its sister.

To test their hypotheses, Abels & Neeleman (2006) use facts involving Heavy-NP Shift in English, according to which, a heavy NP appears in a position to the right of its canonical position (Ross 1967). If Heavy-NP Shift is analysed as rightward movement, it would support the first interpretation. However, data supports the second interpretation, according to which Heavy-NP Shift results from leftward movement of the heavy NP, followed by leftward remnant movement, as in Dikken (1995), among others.

Abels & Neeleman (2006) argue that if rightward movement would be allowed for, this would allow for unattested noun final orders in NP. Greenberg (1963) observed that when the specifiers of a noun are prenominal, they have the order (22a). When they follow the noun, they either have the same order in (22a), that is (22b), or the mirror image order, as in (22c). What does not occur is the order (22d) (this is Greenberg's Universal 20; it will be discussed again below in section 4.7.1).

- (22)a. Dem Num A N
- b. N Dem Num A
- c. N A Num Dem
- d. *A Num Dem N

Abels & Neeleman point out that (22b) can be derived from the base order/structure (22a) by leftward movement of N. If rightward movement were possible, (22d) could be derived from the base order/structure (22c) by rightward movement of N. The fact that it does not occur, can be explained if rightward movement is ruled out in principle. It is well known these days, after Cinque (2005), that more orders occur in NP than just (22a, b, c) and some more orders are unattested than just (22d), but Abels & Neeleman argue that the facts can be explained by a ban on rightward movement. Abels & Neeleman's alternative to the LCA is, then, that base ordering of specifiers, heads and complements is free in UG (but parametrized), while rightward movement is ruled out.

If rightward movement should be ruled out, this leaves the question open with regards to exceptional cases of wh-pied-piping from a post-nominal position.

4.7.2. *Pied-piping in the Q-theory*

Cable (2007) proposes a different approach to pied-piping, based on the Q(uestion)-theory. He argues that the agent responsible for wh-movement is not the wh-operator but a distinct element, the Q-particle. Wh-movement involves a relation between the head C and the Q-particle which immediately c-commands the wh-phrase, rather than between C and the wh-word. The interrogative C carries a Q-feature and probes for some interpretable feature of Q rather than [Wh]. Movement of the Q-phrase to check some feature against the head C leads to movement of the wh-phrase to SpecCP.

The Q-particle can be overt or covert. In many languages, it is phonologically empty, as is the case in English. Cable builds his hypothesis on wh-questions in languages in which the Q-particle is overt, as in Tlingit (see example (23) adopted from Dauenhauer & Dauenhauer 2000: 138). As can be seen in this example, the wh-question in Tlingit involves the Q-particle *sá* along with the wh-phrase *waa* ‘how’.

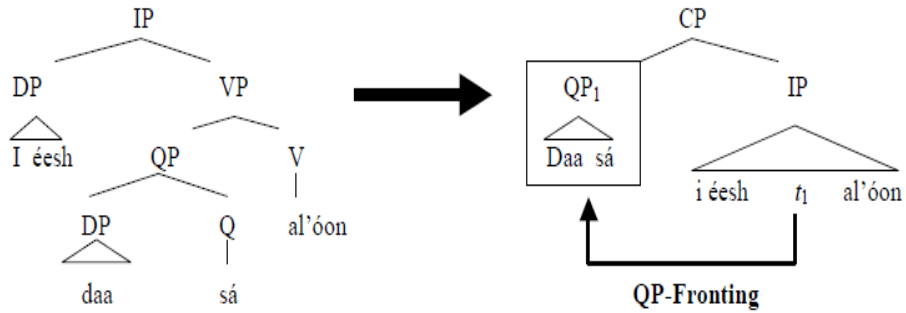
(23) *Waa sá sh tudinookw i éesh?*
how Q he.feels your father
‘How is your father feeling?’

(Cable 2007: 21)

Movement of the wh-phrase is not a condition on the formation of wh-questions. What is relevant in question formation is movement of the Q-particle, as illustrated in (24)-(25):

(24) *Daa sá i éesh al’óon?*
what Q your father he.hunts.it
‘What is your father hunting?’

(25)



(Cable 2007: 25)

Cable argues that there are no true cases of pied-piping in the grammar. These are only instances of phrasal movement of QP containing the wh-phrase. This movement is triggered by features of the the Q-particle (see 26a, b):

(26) a. Whose father's cousin's uncle did you meet at the party?

b. [**QP** [[[[**whose**] father's] cousin's] uncle] **Q**] did you meet at the party?

(Cable 2007: 269)

Certain properties of pied-piping that have resisted explanation under other analyses can be elegantly accounted for by the Q-hypothesis. One of these properties concerns the constraints on P-stranding and possessor extraction in some languages. As is well known, the great majority of wh-fronting languages in the world do not permit P-stranding, as in Russian (see example (27)):

(27)a. [_{PP}Ot čego] sleduet otkazat'sja t₁?

of what follows give.up-self

'What should one give up?'

b. * [_{DP}Čego] sleduet otkazat'sja [_{PP}ot t₁]?

what follows give.up-self of (Abels 2003: 160)

Similarly, a wide variety of wh-fronting languages do not allow a wh-possessor to be directly extracted from the possessive DP, as in English (see example (28b)):

(28)a. [_{DP} Whose book] did you read t₁?

b. * [Whose] did you read [_{DP} t₁ book]?

(Cable, 2007, 195)

Cable (2007: 122) argues that the constraint on extraction of the wh-possessor and on P-stranding follows from the QP-Intervention Condition (QPIC) formulated in (29):

(29) QP Intervention Condition

A QP cannot intervene between a functional head and a phrase selected by that functional head. (Such an intervening QP blocks the selection relation between the functional head and the lower phrase.)

The QPIC is illustrated in the following examples. Tlingit is a head final language. It has an overt Q in wh-questions. Wh-fronting cannot strand a post-position, as illustrated in (30):

(30)a. [_{QP} [_{PP} Aadóo teen] sá]₁ t₁ yigoot ?

who with Q you.went

‘Who did you go with?’

b.* [_{QP} Aadóo sá] [_{PP} t₁ teen] yigoot?

who Q with you.went

A preposition could only be stranded if Q and the wh-phrase form a constituent, selected by the P, as in (30b). But this structure violates (29), if it is the case that the preposition is a functional head in Tlingit. This is, therefore, what Cable claims is the case.

Do we have any independent evidence that adpositions are functional heads in Tlingit? Cable does not present any. Adpositions are notorious for straddling the boundary between functional and lexical. Some are more clearly functional, such as in English, but most adpositions do have some substantive content, like more typical lexical categories. On the other hand they form a closed class, like functional categories do. It has been proposed before in the literature that the possibility of P-stranding correlates with whether P is lexical or functional (see Abels 2003). Cable (2007) is a contribution

to this approach. We will, tentatively, accept the claim that postpositions in Tlingit are functional heads.

Analogically, Tlingit does not allow a *wh*-possessor to be fronted away from a (bare) possessed NP, as in (31):

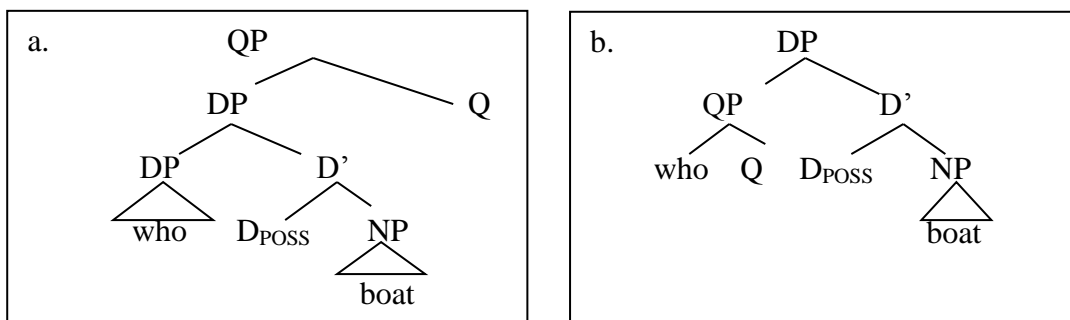
(31)a. [QP [DP Aadóo yaagú]sá] t₁ ysiteen?
 who boat Q you.saw.it
 ‘Whose boat did you see?’

b. * [QP Aadóo sá] [DP t₁ yaagú] ysiteen?
 who Q boat you.saw.it

(Cable 2007: 194, 195)

This can probably best be understood under an analysis of possessive DPs along the lines of Abney (1987). According to this analysis the structure of the possessive phrase in the grammatical (31a) is (32a), while the structure of the ungrammatical one would be (32b).

(32)



In (32b), but not in (32a), a QP boundary intervenes between the functional possessive D head and the *wh*-phrase denoting the possessor. The configuration is not exactly that defined by (29), since the *wh*-phrase is not ‘selected’ by D_{POSS}, but the possessor phrase is assigned Case by D_{POSS}. In (32b) but not in (32a), the QP-boundary intervenes between the case-assigner and the case-assignee. Thus (32b) violates an appropriately extended version of (29).

Although such examples provide supporting evidence for the QPIC, other languages allow P-stranding and possessor extraction, which appear to pose a problem for the QPIC. English, for example, allows preposition stranding, as in (33). Russian allows wh-possessor extraction, as in (34):

(33) Who₁ should I give this [to t₁]?

(34) Ja sprosil [čju₁ ty cital [DP t₁ knigu]]

I asked whose you read book

‘I asked whose book you read.’

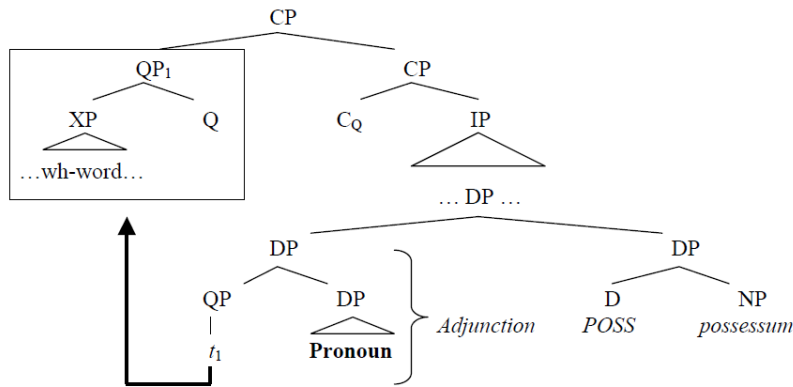
(Heck, 2008, 199)

Q intervention between the preposition *to* and its complement *who* in (33) does not lead to ungrammaticality of the sentence. Similarly, extraction of the wh-possessor *čju* ‘whose’ out of the possessive DP in (34), leaving the possessed NP *knigu* ‘book’ behind is acceptable. Such examples cause a problem for the Q-theory seeking solutions to the ill-formedness of preposition stranding as in Russian and, and possessor extraction as in English (27b, 28b). However, as we shall see, Cable argues that the ill-formedness of P-stranding and possessor movement holds widely across languages, whereas the well-formedness of such extractions in some languages reflects some ‘independent structural difference’ of the language in question.

In some languages, a wh-possessor can be extracted from a possessive DP, as is the case in Russian, Tlingit and the Mayan language Chol. Cable (2007) argues that there are two ways that this can happen. One is by resumptive-possessor extraction. (35)

Illustrates resumptive-possessor extraction in Tlingit:

(35)



(Cable 2007: 204)

As can be seen in (35), the QP is first adjoined to the resumptive pronoun. The resumptive pronoun is the true possessive specifier of the possessive DP clause. Cable argues that this analysis can be mapped on languages that allow possessor extraction like Chol (see (36)). This can be an instance of resumptive-possessor extraction but with a null resumptive pronoun:

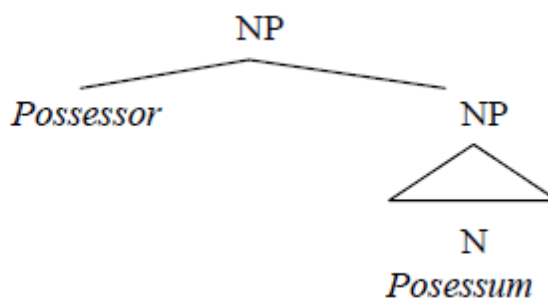
(36)[QP Maxki \emptyset]₁ tyi puli [DP iyotyoty [t₁ pro]]
who Q PERF burn house
'Whose house burned?'

(Coon, 2007, 3)

According to this analysis, sentences like (36) do not violate the QPIC. The possessor is extracted as an adjunct from Spec of the true possessor, which is a null pronoun. The fronted QP is not a possessive specifier.

However, Cable points out that this explanation does not account for languages like Russian in which there are no resumptive pronouns functioning like possessors. For such languages, Cable adopts the left branch extraction analysis and the proposal put forward by Uriagereka (1988), Corver (1992), Bošković (2005) according to which in languages that allow a possessor extraction like Russian and Slavic languages, NPs do not need to be dominated by a DP functional projection. Hence, a possessor is not a specifier to a possessive DP projection, but can simply be located in Spec NP as illustrated in (37):

(37)



Following from this analysis, Cable argues that the Q-based theory accounts for the inconsistent behaviour in languages that allow possessor extraction. In these languages, the QPIC would not be violated by Q intervention between the possessor and the possessed. The possessor is a specifier of NP, a lexical category, and not of a functional category. The structure of possessor extraction in Slavic languages under this analysis will be as in (38):

(38)Ja sprosila [[QP čju \emptyset]₁ ty čital [NP t₁ knjigu]]
I asked whose Q you read book
'I asked whose book you read.'

As for languages that allow P-stranding by wh-movement, like English, the simple solution is that in these languages adpositions are not functional but lexical categories, and as such they have no consequence for the QPIC. An alternative analysis, which Cable claims is right for certain languages that allow P-stranding, is that the QP containing the wh-phrase is adjoined to a resumptive pronoun, which is the true complement of the adposition, just as in the case of possessor extraction in (36). It follows that the QP does not intervene between the preposition and its complement and extraction is thus allowed by the QPIC. Cable claims that this analysis may be right for (apparent) P-stranding in Irish and Tlingit.

4.7.3. *Limited vs. non-limited pied-piping languages*

Cable (2007) argues that the Q-theory provides an explanation for further constraints on pied-piping and discrepancies among languages. English, for example, does not allow

pied-piping past islands (see (39)), nor does it allow pied-piping past lexical items as in (40)¹¹:

(39)*[_{DP} A fish [_{CP} that is how big]] do you want? (Cable, 2007, 280)

(40)?[_{NP} Pictures of whom] did John buy? (Cable, 2007, 282)

However, languages like Tlingit do allow pied-piping past lexical items and past islands; see example (41) used in Cable (2007, 283) to illustrate both cases:

(41)[_{DP} [_{CP} Waa kligéiyi] xáat] sá i tuwáa sigóo?
how it.is.big.REL fish Q your spirit it.is.glad
'How big a fish do you want?'

In this example, the wh-operator *waa* is buried within the relative clause island. This island dominates the wh-operator and separates it from Q. However, the sentence is grammatical. Similarly, this example represents an instance of pied-piping past lexical items. It shows that although the wh-word is dominated by a lexical projection (headed by 'fish') in the sister of the Q-particle, it is acceptable in Tlingit.

In order to explain the differences in pied-piping among languages like English and Tlingit, Cable, following Kratzer and Shimoyama (2002), suggests that languages like English and German are *limited pied-piping* languages. They require an agreement relation between the Q-particle and the wh-element, whereas languages like Tlingit and Japanese are *non-limited pied-piping* languages. They do not require agreement between the Q-particle and the wh-element.

According to Kratzer & Shimoyama's (2002) hypothesis, the difference among languages in their agreement systems indicates differences in their quantificational systems. The difference between Indo-European and Japanese indeterminate pronouns is related to the presence or absence of uninterpretable features on these pronouns. German wh-words bear an uninterpretable instance of the [Q] feature. They must undergo agreement with an interpretable instance of the Q-particle. Japanese wh-words

¹¹ I will adopt Cable's term movement *past islands* and *past lexical items* here, which he uses to refer to cases in which the wh-word can/cannot be dominated by islands or by projections of lexical categories in the sister of the Q.

do not bear an uninterpretable instance of [Q]; hence they need not agree with the Q-particle. This assumption is consistent with the observation that the wh-words in German carry a common morphophonological feature, while Japanese wh-words do not. Compare (42) and (43) (see Cable, 2007, p.273 from Kratzer & Shimoyama, 2002).

(42) Wh-Words of Japanese	Wh-Words of German
Dare ‘who’	Wer ‘who’
Nani ‘what’	Was ‘what’
Doko ‘where’	Wo ‘where’
Itu ‘when’	Wenn ‘when’
Naze ‘why’	Warum ‘why’

All the wh-words of German begin with the sound spelled ‘w’. Thus, they have a shared formal property. Japanese wh-words, on the other hand, do not share any common morpho-phonological material. Quantifier phrases are built using indeterminate pronouns. The meaning of these phrases differs according to the operator the pronoun associates with. The indeterminate pronouns are illustrated in (43) with interrogative translation:

(43) Indeterminate pronouns in Japanese

dare ‘who’	doko ‘where’
nani ‘what’	itu ‘when’
dore ‘which (one)’	naze ‘why’
dono ‘which’ (Det)	doo ‘how’

(Kratzer & Shimoyama’s 2002; 1 from Kuroda 1965)

Indeterminate phrases in Japanese can take on either existential, universal, interrogative, negative polarity, or free choice interpretations, according to the operator they associate with. This is illustrated in example (44). The interpretation of the two sentences differs according to the different operators associated with the indeterminate pronouns. The operator *mo* in (44a) gives a universal interpretation, whereas *ka* in (44b) gives an interrogative one.

(44)a. [[**Dono hon-o** yonda] kodomo] **-mo** yoku nemutta.
 which book-ACC read child -MO well slept
 ‘For every book x, the child who read x slept well.’

b. Taro-wa [[**dare-ga** katta] mochi] -o tabemasita **ka?**
 Taro-TOP who-NOM bought rice.cake-ACC ate Q
 ‘Who is the x such that Taro ate rice cakes that x bought?’

(Kratzer & Shimoyama 2002: 2)

However, not all languages have the characteristic of having different interpretations of the indeterminate pronouns according to the operator they associate with. Indefinite pronouns in Indo-European languages bear an uninterpretable feature combined with a set of roots. Haspelmath (1997: 277) shows that in Latvian, indeterminate pronouns form a unified class, as illustrated in (45):

(45)

	Interrogative	kaut-series	ne-series	jeb-series
person	kas	kaut kas, kads	ne-viens	jeb-kads
thing	kas	kaut kas	ne-kas	jeb-kas
place	kur	kaut kur	ne-kur	jeb-kur
time	kad	kaut kad	ne-kad	jeb-kad
manner	ka	kaut ka	ne-ka	
determiner	kads, kurs	kaut kads	ne-kads	jeb-kads, jeb-kurs

The pronouns used in the interrogative ‘bare’ series are found in the other series too. The ‘bare’ series represents the interrogative pronouns, the *kaut-* series is the existential, the *ne-*series appears under the direct scope of negation, and the *jeb-*series is found in indirect negation contexts in comparatives, and with a free choice interpretation.

Cable adopts Pesetsky and Torrego’s (2007) *valuation and interpretability* hypothesis, which says that features can be valued/unvalued as well as interpretable/uninterpretable, as illustrated in (46). Unvalued features probe for a matching valued feature, and uninterpretable features probe for interpretable features to agree with.

(46) Feature= F Interpretable (iF) Uninterpretable(uF)
 Valued (F[val]) iF[val] uF[val]
 Unvalued(F[]) iF[] uF[]

Following this analysis, Cable proposes that English wh-words bear an uninterpretable but valued $uQ[+]$ feature, and Q bears an $iQ[-]$ feature. Tlingit wh-words do not bear an uninterpretable uQ , and the iQ feature on the Q-particle is already valued. This need for agreement between the Q-particle and the wh-word in Q/wh agreement languages explains the restriction on pied-piping past lexical items and islands in this type of languages. It also explains why non-Q/wh agreement languages, in which the Q can be separated from the wh-word by a lexical projection, are less restricted.

Following from the Q/wh-agreement hypothesis and feature valuation, Cable (2007) proposes the LP-Intervention Condition (LPIC) (see (48)) to account for ungrammatical cases like (40) discussed above and repeated here as (47), in which pied-piping past lexical items is ungrammatical in languages like English:

(47)?[NP Pictures of whom] did John buy?

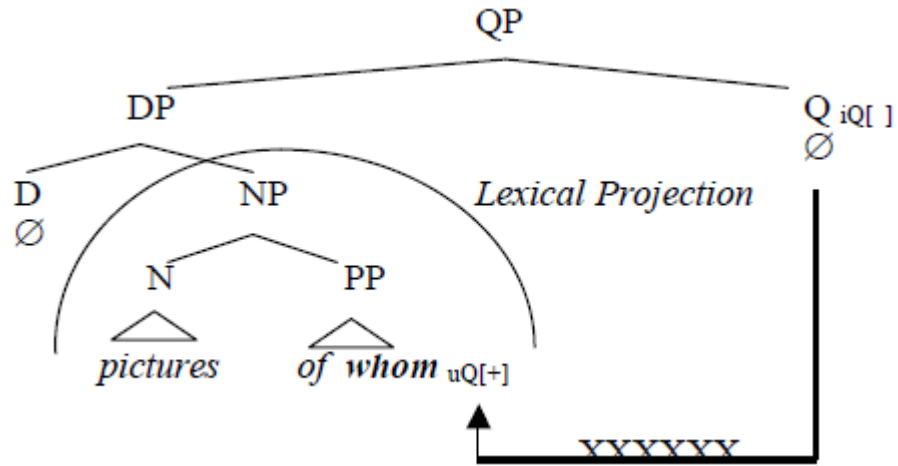
(48) LP-Intervention Condition

A lexical projection (LP) cannot intervene between a Q-particle and a phrase that the Q-particle agrees with. (LP blocks all probing of Q.) (Cable 2007: 282)

The QP-Intervention Condition requires that a QP-projection dominate the wh-word. The domination of the wh-word by a lexical category within the sister of Q would prevent Agreement from taking place between the Q-particle and the wh-word. There is no feature-percolation from complements of lexical categories. The wh-feature will not be accessible, and the wh-phrase cannot pied-pipe past the projection of the lexical head (Cowper 1987, Webelhuth 1992, Grimshaw 2000).

Sentences like (48) are ungrammatical due to the intervention of the lexical projection, in this example, *pictures* (see (50)). It blocks the agreement relation between Q and the wh-element in agreement languages like English (see Cable 2007: 282):

(49)



The lexical phrase intervention condition explains the requirement for secondary wh-phrases in languages like Tzotzil discussed in section (4.4) and Chol, in which the possessor appears in a post-nominal position. Cable argues that the wh-phrase raises to the spec of QP, to reach a domain from which Q/Wh-agreement can occur, as illustrated in (50):

(50)a. [QP [Maxki₁ \emptyset [iyotyoty t₁]] tyipuli ?
 who Q house burned
 ‘Whose house burned?’

b. *[QP [NP Iyotyoty maxki] \emptyset] tyipuli ?
 house who Q burned

(Cable 2007: 327 taken from Coon 2007).

Although Cable’s hypotheses about the unified appearance of the indeterminate pronouns and Q/wh agreement could provide an explanation for some discrepancies among languages, they do not apply to all languages. Cable notes that the wh-pronouns in Haida have a ‘unified appearance’, in that all wh-words begin with *g-* or *tl-*, which suggests that Haida is a Q/wh-agreement language. Yet Haida allows pied-piping of relative clause islands, which should only be allowed in non-Q-wh-agreement languages (see (51) from Cable (2007: 295), taken from Enrico, (2003: 205)):

(51)a. [DP [CP Dang giisda tla.adsiisk'yùu]]-uu dang riidang?
 you who will.help FOC you wait.for
 Intended meaning: Who are you waiting for that is going to help you?

b. [DP [CP Giisda raayaa]]-uu 7aanàa 7iijang?
 who be.fat FOC in.next.room is
 Intended meaning: who that is fat is in the next room?

Another counter-argument to secondary wh-movement among Q/wh agreement languages is the possessive construction in SA, which will be discussed in the following section.

4.8. Pied Piping in SA

In this section, I discuss facts relating to pied-piping and secondary wh-movement in SA, mainly in the possessive construction known as the *Construct State Nominal* (CSN). After that, I discuss the structure of the relevant sentences within the Q-theory and the roll-up remnant movement hypothesis.

In possessive structures in SA, a non-wh-possessor obligatorily follows the possessed noun, as shown in (52)

(52)a. beit 1- ʔstaz
 house the-teacher
 ‘The house of the teacher.’

b. *1-ʔstaz beit
 the-teacher house

Contrary to the case in Chol and Tzotzil, and to what Heck’s *Edge Generalization* and *secondary wh-movement* predict, no inversion of the wh-possessor and the head noun occurs:

- (53)a. *beit miin?*
house who
‘Whose house?’
- b. **miin beit?*
whose house

As can be seen in (52a) and (53a), the position of the possessor in both examples is post-nominal. In the case of pied-piping, the *wh*-phrase does not undergo secondary *wh*-movement to an edge position, as is proposed in Heck (2008). The question is: If such constructions do not require a secondary *wh*-movement, can this exceptional behaviour be accounted for within the Q-theory? The hypothesis is that pied-piping is a result of Q-feature checking against C, rather than *wh*-feature checking. If a language is a non-agreement language, lexical intervention between Q and the phrase that it agrees with does not lead to violation of the Q/*wh*-agreement, hence the sentence is grammatical.

Before discussing the Agreement system in SA, I present some properties of the possessive structure in Arabic.

4.8.1. The Construct State Nominal

The possessive structure *CSN* has certain distinctive properties (see Ritter 1987; Borer 1999; Danon 1996; Fassi Fehri 1999):

- Apparent (N)oun (Poss)essor order, with head initial N followed by the possessor.
- The head of the *CSN* cannot be directly modified by the definite article or an adjective.
- The definiteness value of the possessor spreads over the entire *CSN*.
- The possessor carries the genitive case, whereas the head carries the case of the whole DP.

These properties can be illustrated in the following example:

Standard Arabic

(54)a. ḥtaraqa-t daar-u r-rajul-i l-waasiʔa-t-u
burned-F house-NOM the-man-GEN the- large-F-NOM
'The man's large house burned.'

b. * ḥtaraqa-t **ad**-daar-u r-rajul-i l-waasiʔa-t-u
burned-F the-house-NOM the-man-GEN the-large-F-NOM

c. *ḥtaraqa-t daar -u l-waasiʔa-t-u r-rajul-i
burned-F house-NOM the-large-F-NOM the-man-GEN

(Fassi Fehri 1999: 125)

As can be seen in (54), *Daaru* 'house', the head of the CSN, precedes the possessor *Rrajuli* 'the man'. Modification of the nominal head, *daaru* 'house', by the definite article makes the sentence ungrammatical, as in (54b). The adjective *lwaasiʔatu* 'the large' does not modify the noun directly. It follows the DP *daaru rrajuli* 'house the man'. Adjectives in Arabic appear postnominally and follow the noun directly. However, this is not acceptable in the CSN, as is shown in (54c).

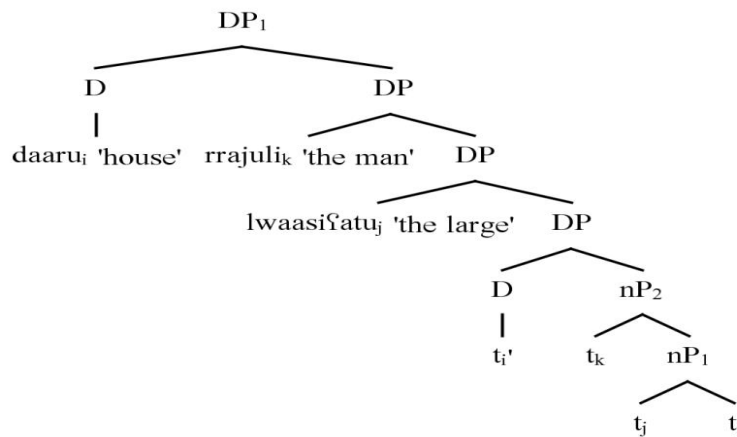
Many analysis of the construct state is based on the idea that the underlying order is Poss-N. The head nominal N raises to a higher head D, giving the word order N-Poss. This analysis explains the impossibility of direct modification of the head by the definite article since movement of N to D blocks the overt realization of a determiner (see Ritter 1987, 1988, 1991; Fassi Fehri 1988, 1989; Hazout 1991; Mohammad 1988; Duffield 1995; Borer 1999; Siloni 1997).

Fassi Fehri (1999) proposes an analysis of the CSN that leads to the derivation of the N-Poss order including APs. This analysis is based on the assumption that APs and the possessor raise separately. APs are generated as left specifiers of NP or nP (in an nP shell structure; see Fassi Fehri (1999: 123)). Adjectives in Arabic are specified for case, definiteness, and number/gender features, which are identical to those of the head noun. In order to check these features, APs raise to an inner Spec of a functional head D. The possessor raises to SpecD to check definiteness transmitting its definiteness feature to D where N has moved. Since the possessor checks definiteness against D, and since the possessor and N do not agree in other features, like Case or Phi-features, Fassi Fehri

following Holmberg & Sandstrom (1996) suggests that these features are split or fissioned and are checked in autonomous domains. If the possessor raises to SpecD to check definiteness, N raises to a higher position to D₁ to check Case assuming that Arabic has a strong Case feature. According to this analysis, a sentence like (56a) will have the structure in (56b):

- (55)a. daar-u r-rajul-i l-waasiḡa-t-u
house-NOM the-man-GEN the-large-F-NOM
‘The man's large house burned.’

b.



This analysis explains the ungrammaticality of sentences in which N is modified by the definite article. If D₁ has a strong definiteness feature, it attracts a DP possessor to its specifier to check its feature. However, if D is realized via an article, possessor movement to Spec D to check definiteness will not be motivated, thus the D-N Poss structure will be unavailable as in (56):

- (56)*d- daar-u r-rajul-i
the-house-NOM the-man-GEN
(Fassi Fehri, 1999, 128)

However, Cinque (2005) argues that Fassi Fehri’s (1999) analysis, which is based on N-to-D movement and assumes separate movements of the possessor and APs does not account for all the possible and impossible orders of APs. It also requires three different types of separate movements that can possibly be reduced to at most two. These orders

can be derived in a simpler and more unified fashion. In Standard Arabic and Semitic languages generally, DPs involve successive XP movement rather than N-movement to D. This type of movement can lead to the derivation of the different orders found in DPs, as discussed in Greenberg (1963: 87) in connection with Universal 20.

These orders appear as follows, if adjectives are to the left of the noun (N), only one order is possible; they always appear in the order demonstrative (Dem), numeral (Num), and descriptive (A), as in (57a). If they follow, they appear to the right of N, either in the same order, as in (62a), or its mirror-image, as in (58b):

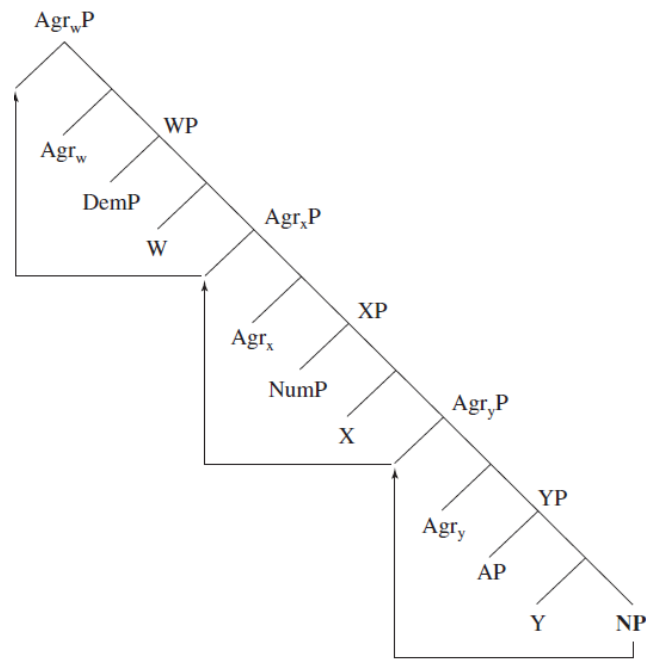
- (57)a. Dem > Num > A > N
b. * A > Num > Dem > N

- (58)a. N > Dem > Num > A
b. N > A > Num > Dem

Cinque adopts the assumptions that movement occurs only to the left, and that the order of specifiers is merged as Dem > Num > A.

Following from these assumptions, the orders in (57) and (58) can be derived as follows: If N remains in situ or moves to a head below the lowest adjective, the order (57a) (Dem > Num > A > N) is derived. If NP raises alone from Spec to Spec of Agr in each of the projections, Adjectives, numerals, and demonstratives, we get the order in (58a), (N > Dem > Num > A), as illustrated in (59):

(59)



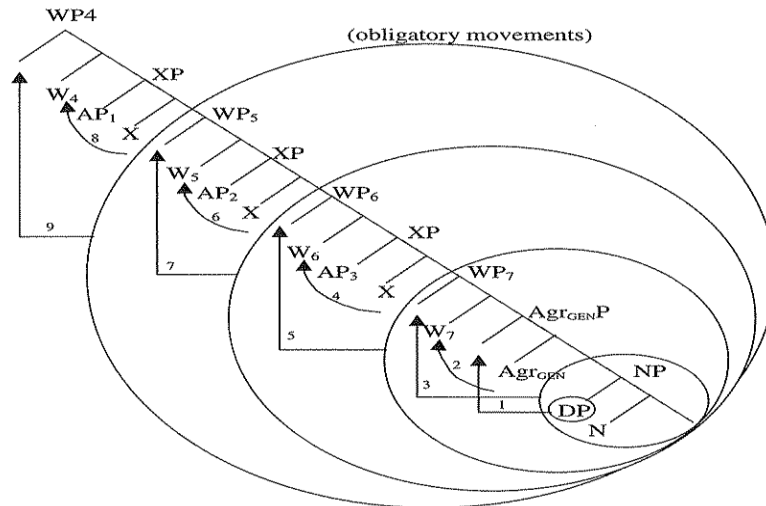
(Cinque 2005: 317)

The order in (58b) is obtained from NP movement in a roll-up fashion from Spec to Spec pied-piping the category that dominates it and reversing the base order. However, this roll-up movement does not lead to generating any unattested order like (57b). In the case of the construct state, the possessor is right adjacent to N and precedes APs. Cinque (2000) argues that the N-Poss order in the CSN in Semitic languages follows from a movement of the possessor DP followed by movement of the remnant NP to a higher spec-position of an abstract head W, which gives the illusion of N movement (see (60)):

(60)[_{WP} [_{NP} t_i N]_j W [_{DP}_i t_j]]

The analysis is shown in more detail in (61). DP raises to Spec of Agr_{GEN} where it is assigned the genitive case. Agr_{GEN} in turn raises to a head W activating its SPEC, which attracts the remnant NP, the complement of the raised Agr_{GEN} head (see Cinque 2005: 68):

(61)



Analogically, this movement can follow to the next head. The head X, which hosts the AP in its specifier, raises to WP₆ activating its specifier, which attracts the complement of X, WP₇, giving the order N DP AP₃, and so on.

To sum up, Cinque's (2005) roll-up movement analysis of the CSN, based on successive leftward movement of the remnant NP around the possessor, leads to the N-poss order and to the derivation of the possible orders of the CSN around APs. The postnominal APs in the CSN occur in the mirror image order to prenominal APs in languages which have them, which follows as a consequence of the roll-up movement, without any separate movement of AP (Cinque 2005).

It should be noted that Cinque (2005) does not mention the generalization that the head noun of the CSN cannot be combined with a definite article, which is one of the main reasons behind Fassi Fehri's account of the CSN. It can be accounted for in Cinque's theory if the lowest NP in (64) is actually a DP, derived by N-movement to D, with the possessor DP being moved to the spec of the head D. This analysis will be detailed below in section (4.8.3). This means reintroducing N-movement in the theory, but since Cinque's theory anyway assumes head-movement, this should not be a problem.

In what follows, I discuss the agreement system in SA within the Q/Wh Agreement theory to find out whether the Q-theory can account for the pied-piping facts in the possessive structure in SA.

4.8.2. The Agreement system in Syrian Arabic

According to Cable's (2007) Q/wh agreement hypothesis, a common feature among the wh-words signals that there is an uninterpretable feature on these words that needs checking against the Q-particle. Three of the wh-words in SA show a common feature 'sh', *lesh*, *kaddesh*, and *shw* see (62).

(62) Wh-words in SA

Shw	<i>what</i>
Ay	<i>which</i>
Miin	<i>who</i>
Wen	<i>where</i>
Kiif	<i>how</i>
Lesh	<i>why</i>
Kam,	<i>kddesh how much</i>

In order to check the significance of the *sh* feature in SA, a comparison of the wh-paradigms in four other Arabic dialects, which have in common most of the wh-words or some of them, as well as the CSN structure, is provided. The dialects investigated are Libyan, Palestinian, Tunisian and Saudi Arabic. The data are given in (63):

(63)English	Libyan	Palestinian	Saudi	Tunisian
<i>What</i>	Shinw	Esh	Esh	Ash
<i>Who</i>	Minw	Min	Min	Min
<i>Where</i>	Wen	Wen	Wen	Wen
<i>How</i>	Kif	Kif	Kif	Kifash
<i>Why</i>	Lesh	Lesh	Leh	Lash
<i>How much</i>	Qddesh	Qaddash	Qaddesh	Qaddash
<i>When</i>	Mita	Amtin	Mita	Waqtash

A comparison between the wh-words in these dialects shows that in Tunisian, the sub-morpheme *sh* is common among five of the wh-words, *ash*, *kifash*, *lash*, *qaddash* and *waqtash*; while in Libyan, Palestinian and Saudi Arabic, the sub-morpheme *sh* is common among four of the wh-words as in *esh*, *shinw*, *lesh*, and *qadd(e)sh*.

The feature *sh* is common among few of the wh-words in the different dialects of Arabic, which indicates that these words bear an uninterpretable feature of Q represented by the sub-morpheme *sh*. In order to get a more accurate result about the agreement system in SA, an analysis of the indefinite pronouns is provided, following Haspelmath's (1997) analysis of the indefinite pronouns in English (see (64)):

(64) Indefinite pronouns in Syrian Arabic

Ayya series

Determiner	<i>Any</i>	Ayya
Person	<i>anybody</i>	ayyahada
Time	<i>anytime</i>	ayya waʔt
Thing	<i>anything</i>	ayya shi
Place	<i>anywhere</i>	ayyamahal
Manner	<i>anyhow</i>	ayyatariʔa

Shi series

Determiner	<i>Some</i>	Shi
Person	<i>somebody</i>	shihada
Time	<i>sometime</i>	shi waʔt
Thing	<i>something</i>	shi shaghleh
Place	<i>somewhere</i>	shimahal
Manner	<i>somehow</i>	shitariʔa

Wala series

Determiner	<i>No</i>	Wala
Person	<i>nobody</i>	mahada
Time	<i>no time</i>	walabwaʔt
Thing	<i>nothing</i>	wala shi
Place	<i>nowhere</i>	walab mahal
Manner	<i>no way</i>	walabtariʔa

An examination of the indefinite pronouns in SA shows that these pronouns form a unified series in Kratzer & Shimoyama's (2002) sense. Each series has a special type of pronouns that gives it its interpretation, unlike the case in languages like Japanese, in which the interpretation of the indeterminate pronouns changes with the change of the

operator it associates with. Relative clauses, for example, employ a special pronoun *illi*, which is different from the pronouns used in wh-questions. (65a) is a relative clause formed by the relative pronoun *illi*, whereas (65b) is a question formed by the question word ‘ayya’ *which*.

(65) a. S-Sura *illi* shtaret-y-a
 the-picture which bought-2SG.F-it
 ‘The picture which you bought.’

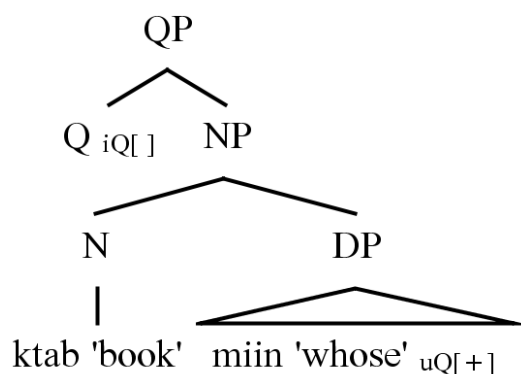
b. *ayya* kateb shft-i?
 which writer saw-2SG.F
 ‘Which writer did you see?’

Not only relative clauses employ a different type of pronouns, but also universal and negative clauses do. Universal clauses are formed by means of two different pronouns *shi* ‘some’ and *ayya* ‘any’, whereas negative clauses are formed by another type of pronouns *wala* ‘no’. Interrogative structures are formed by a different group of pronouns, *shw* ‘what’, *ayya* ‘which’, *miin* ‘who’, *wen* ‘where’, *kiif* ‘how’, *lesh* ‘why’, *kam* ‘how many’, *addesh* ‘how much’. Each series has a different type of indefinite pronouns, which gives it its own distinctive interpretation, although the wh-words do not clearly seem to share a common distinctive morpho-phonological feature.

From what has been discussed, SA can be analysed as an agreement, limited pied-piping, language. Each series of pronouns bears an uninterpretable feature that needs to agree with the interpretable counterpart on the matching operator. If SA is an agreement language, lexical intervention between the Q-particle and the phrase it agrees with should not be possible, following from Kratzer & Shimoyama’s (2002) and Cable’s (2007) ‘unified feature’ hypothesis discussed in section 4.7.3. According to the unified feature hypothesis, wh-words that share a common feature bear an uninterpretable Q feature that requires agreement with the Q particle. However, this assumption is violated in the CSN in SA, as in (66):

(66)a. ktab miin akhad Basem?
 book whose took Basem
 ‘Whose book did Basem take?’

b.



The wh-possessor *miin* ‘whose’ in (66) appears in a post-nominal position preceded by *ktab* ‘book’. It does not move to a left-peripheral position, as is the case in Chol and Tzotzil. Here the wh-phrase should agree with Q, assuming that SA is a Q-wh agreement language. However, the lexical intervention blocks the Q/wh-agreement, thus (66) is supposed to be ungrammatical according to Cable’s (2007) Q-theory. Only non-agreement/ non-limited pied-piping languages allow pied-piping past islands or lexical items.

The exceptional situation in SA is analogical with the situation in Haida, which is an agreement language but allows pied-piping of relative islands in violation of the Q/wh-agreement hypothesis (see Cable 2007). These results raise questions about the Q-theory.

One possible analysis could be Heck’s (2008), which requires movement of the wh-phrase to the edge of the pied-piped phrase. The exceptional cases, in which the wh-possessor does not appear at the edge, as in Greek, and PPs in Spanish, etc., are accounted for under the assumption that movement takes place to the right, so the wh-possessor is at the right edge or in a rightward specifier.

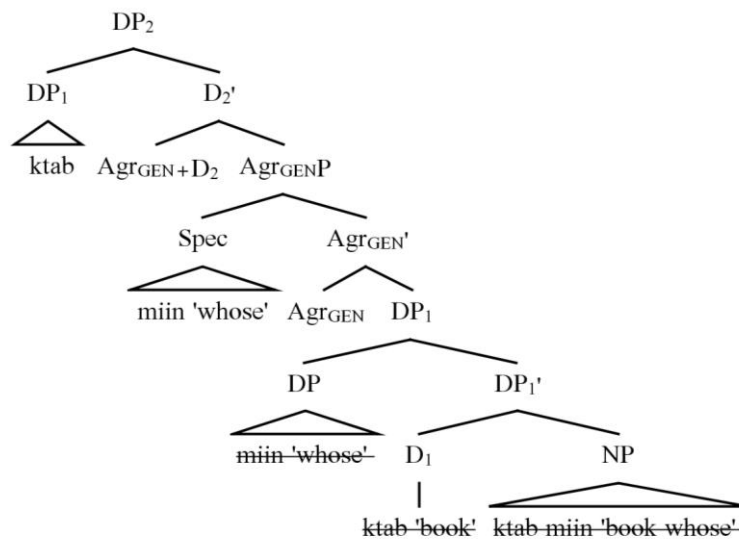
However, as has been pointed out in section (4.7.1), Heck’s account of the exceptional cases is not in line with Kayne’s (1994) LCA, or with the alternative theory proposed by Abels & Neeleman (2006). It leads to the derivation of unattested word orders within the noun phrase and to the wrong order of the adjectives within the CSN (see Borer 1999; Cinque 2005; Abels & Neeleman 2006).

4.8.3. The solution

Following from what has been discussed, SA is a Q/Wh-agreement language, however, it allows pied-piping from a post-nominal position in the CSN. The wh-phrase does not undergo secondary wh-movement to the edge of the pied-piped phrase. The word order in the CSN can be accounted for in terms of Cinque's (2000, 2005) roll up movement. How can these be accounted for?

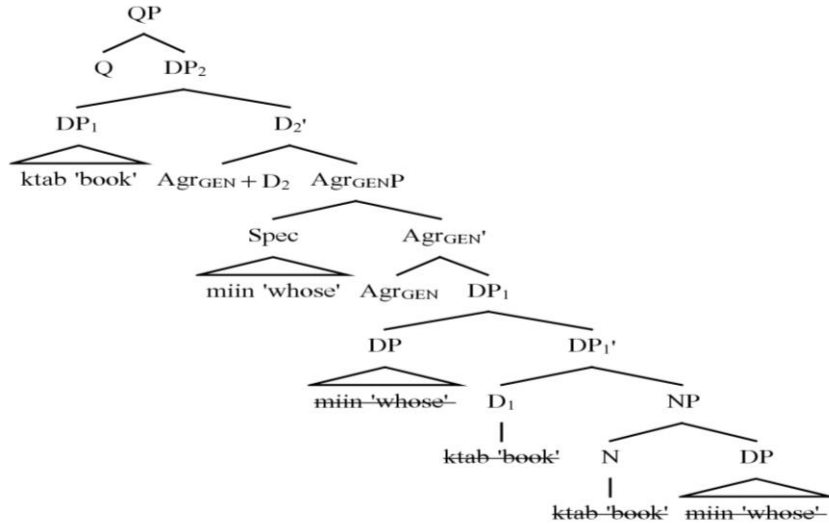
Following from the discussion after (61), I propose that this is a matter of remnant DP-movement. As shown in (67a), first the possessor raises to SpecDP for Def checking with N movement to D where it acquires definiteness via spec-head agreement (see Fassi Fehri 1999). The possessor then raises to Spec of Agr_{GEN} to check its genitive case. Agr_{GEN} raises and adjoins a higher head D₂ activating its specifier, which in turn attracts the remnant DP₂. In the case of a wh-possessor, when undergoing movement to SpecCP, the wh-phrase pied-pipes the whole DP₂ phrase, as illustrated in (67):

(67)



Under this analysis, the fact that the wh-possessor appears in a post-nominal position although SA is a Q/wh-agreement language can be reconciled with Cable's (2007) Q-theory. First, note that the point where Cable's Q-head would be merged with the nominal projection is DP₂. This is the phrase which undergoes wh-movement as *ktab miin*.

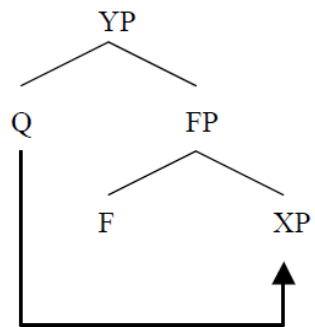
(68)



As stated in Cable's theory, if the Q-particle must agree with the wh-word, the wh-word cannot be dominated by a lexical category, however, a functional category does not block the Q/wh-agreement; see (69a, b):

(69) a.

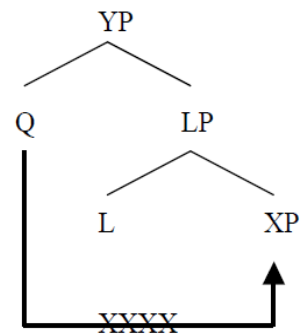
Functional Projection



Probing and Agreement: OK

b.

Lexical Projection



LP-Intervention Condition VIOLATED

(Cable 2007: 281)

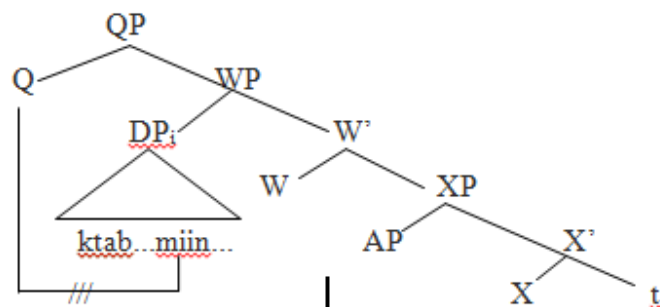
In the tree (70a) there is no lexical projection between Q and the wh-phrase. The wh-phrase is dominated by the functional category to which the remnant DP raises, thus Q/wh-agreement is not blocked. The QP can be probed by a question-C, and moves to specCP, as is the case in (68).

This theory can also explain the effect of adjectives, shown in (70). As already discussed, APs can occur in the CSN, as in (70a); however, they are not acceptable when the possessor is a wh-phrase, as in (70b):

- (70)a. hada ktab hala l-jdid.
 this book Hala the-new
 'This is Hala's new book'
- b. *ktab miin l-jdid hada?
 book who the-new this
 Intended meaning: whose new book is this?

The ungrammaticality of (70b) in contrast with (70a) can be explained under the Q-theory as follows: As discussed, adding an adjective causes another roll-up movement of DP₂, to the spec of the abstract head W.

(71)



Compare (68) and (71). In (68) Q enters an agreement relation with the wh-phrase which is a specifier of the projection line from N to Q; the wh-phrase is a specifier of the complement of Q. In (71), on the other hand, the agreement relation would be between Q and a specifier (the wh-phrase) embedded within a specifier on the projection line from N to Q. It is well established that specifiers are islands for movement (Ross 1967). And even though we do know of cases where a head assigns case to the specifier of its complement (the Exceptional Case Marking configuration), we do not know of any case where a head would assign case to a specifier embedded in the specifier of its complement. We therefore propose that the reason why (70b), with the structure (71), is ungrammatical is that the required agreement relation between Q

and the wh-phrase cannot be established, as an effect of merging an AP in the DP structure.

Finally, as for QP-movement, we postulated in Chapter 2 that wh-movement is triggered in SA by a focus feature on the head F, the lowest C-head in the left periphery. The feature marking the sentence as a question, was taken to be a feature of INT, a head merged with FP which is checked/valued by the fronted wh-phrase. A second movement was postulated from specFP to specINTP (except in the case of why-questions, where the wh-phrase is externally merged in specINTP).

Unfortunately this theory is not immediately reconcilable with the Q-theory, that is if the Q-feature is taken to be equal to the question feature of INT. The problem is that in the Q-theory wh-movement, i.e. QP-movement, is triggered by the unvalued Q-feature, which requires establishing an agree-relation with a wh-phrase in the TP. But in the theory in Chapter 2, there is no direct relation between the (counterpart of) uQ and constituents within TP. The analysis where wh-movement is triggered by a focus feature of F, not a question feature of INT, was motivated primarily by the complementary distribution of a fronted subject and a fronted wh-phrase, a prominent feature of SA syntax (and Arabic syntax more generally). If we are to reconcile the observations accounted for by the theory in Chapter 2 with the observations accounted for by the theory developed here, some adjustments will have to be made. For example, wh-movement could be triggered by the Q-feature in conjunction with a focus feature, in the case of SA. I will leave this problem for future research, though.

4.9. Conclusion

The aim of this chapter was to propose a theory which can explain the properties of wh-movement of the possessor of a DP in SA. This movement requires pied-piping the DP containing the possessor. Because of the form of DP in SA, this has consequences for the theory of pied-piping. Therefore, in this chapter, different theories of pied-piping have been discussed: the theory of feature-percolation, the edge generalization based on secondary wh-movement and/or snowball movement, and the Q-theory.

Data from the possessive structure in SA have been presented, which apparently contradict Heck's (2006) edge generalization. Possessors in SA appear in a post-nominal position. In some languages, including Chol and Tzotzil, DP possessors are a post-nominal, but wh-possessors are prenominal. This can be explained in terms of the edge generalization: the wh-possessor undergoes secondary movement to the DP edge. In SA wh-possessors are also postnominal. Apparently it pied-pipes its complement without undergoing secondary movement to an edge position.

It has been argued that Heck's (2008) justification of the exceptional behavior of wh-phrases in some languages as a result of rightward movement is not tenable. Heck (2008) accounts for the exceptional behavior of wh-phrases in some languages with postnominal possessors by assuming movement to the right edge of DP. This analysis has been rejected here, on the basis of general arguments against rightward movement.

Pied-piping has been discussed in terms of Cable's (2007) Q-theory. Cable argues that what looks like an instance of pied-piping is an instance of phrasal movement of the projection of a Q-particle. It is the agent responsible for movement, not the wh-word. Movement of the QP results in movement of the wh-phrase being c-commanded by the Q-particle and contained within its QP projection. Cable (2007) makes a distinction between languages with Q/wh-agreement, that is agreement between Q and the wh-element, and languages without such an agreement requirement. In languages without the agreement requirement Q and the wh-phrase can be separated by a lexical projection boundary.

It has been argued that if SA did not require wh-agreement, this could explain why it allows post-nominal wh-possessors. However, based on the analysis of the agreement system in SA and other four Arabic dialects, it has been argued that SA is a Q/wh-agreement language. It turns out, however, that if the Q-theory is combined with a modified version of the CSN proposed by Cinque (2000, 2005), the properties of wh-movement of possessor-wh-phrases are correctly predicted. It can also account for an additional observation: possessor-wh-phrases cannot contain adjectives.

Chapter 5. Wh-scope marking in Syrian Arabic: an indirect dependency

5.1. Introduction

Wh-scope marking strategy is employed in some languages for questioning out of embedded clauses along with or instead of the familiar extraction structure. Riemsdijk (1983) has pointed out that in certain dialects of German there is an alternative way to extraction for expressing long-distance wh-dependencies. These two strategies are illustrated in examples (1a, b):

(1) a. Mit wem glaubst du dass Maria gesprochen hat?
with whom think you that Maria spoken has

b. Was glaubst du, mit wem Maria gesprochen hat?
what think you with whom Maria spoken has
'Who do you think Maria has spoken to?'

(Dayal 1994, 137)

Sentence (1) is an instance of long wh-extraction. The wh-expression *mit wem* 'with whom' undergoes long wh-movement to Spec of the matrix CP. (1b) is an instance of scope marking. The contentful wh-phrase *mit wem* moves partially to Spec of the embedded CP. It provides the semantic content of the question. However, the scope of *mit wem* is marked by another wh-phrase *was* in Spec of matrix CP.

Scope marking structures are employed in a number of languages such as Romani, Hindi, Bangla, and Iraqi Arabic (Dayal 1994). Another language that employs this strategy is Syrian Arabic (SA); see (2a, b):

(2) a. maʕ miin fkaar-ti-ni knt ʕam iħk-i?
with who thought-2SG.F.SU-1SG.OBJ was.1SG PROG speaking
'Who did you think I was talking to?'

b. šu fkkar-ty maʕ miin knt ʕam iħk-i?
 what thought-2SG.F.SU with who was.1SG PROG speaking
 ‘What did you think? Who was I speaking to?’

In (2a), the wh-phrase *miin* ‘who’ undergoes long extraction to the left-periphery, whereas in (2b), it moves partially to Spec of the embedded clause. The scope is marked by another wh-phrase *šu* ‘what’ in Spec of the matrix clause.

In this chapter, I discuss different approaches to wh-scope marking constructions, the direct dependency analysis (Riemsdijk 1983; McDaniel 1989), the indirect dependency (Dayal 1994, 2000), the CP-as associate (Horvath 1997), and the complex predicative analysis (Felser 2001), in order to determine which theory can best account for the properties of Syrian wh-scope marking constructions. The detailed survey of different theories also serves to bring out and discuss the various properties that wh-scope marking questions have been found to have, in various languages. As will be demonstrated, there are some important cross-linguistic variation, some depending on other properties of the languages in question, some which are micro-parameters relating to the construction itself. The task is to establish where SA fits in the typology of wh-scope marking.

The main claim of the direct dependency approach stems from the assumption that scope marking is a variant of the extraction structure. The wh-scope marker forms a wh-chain with the embedded CP and its trace. However, Dayal (1994, 2000) argues that this analysis cannot explain some discrepancies between wh-scope marking and extraction structures in languages like Hindi. She proposes another approach for wh-scope marking, ‘the indirect dependency’ arguing that there is no direct dependency between the scope marker and the actual wh-phrase.

Horvath (1997) argues that in Hungarian, the dependency is indirect. The wh-scope marker is an expletive, however, base generated in A-position and undergoes movement to an A-bar position. It takes the embedded wh-clause as its associate at LF.

Felser (2001) suggests another analysis for wh-scope marking constructions in German, which stems from the indirect dependency analysis. This analysis is based on the

assumption that there is a predication relation between the wh-scope marker and the embedded wh-clause.

In what follows, I discuss wh-scope marking in Syrian Arabic (SA). I argue that the structure is a real instance of wh-scope marking. It manifests many of the characteristic properties of the construction. Based on my observations of scope-marking questions in SA, compared with properties of other languages, I argue that there is no direct dependency between the wh-scope marker and the embedded wh-phrase, i.e. they do not form a wh-chain. Instead, I argue that the wh-scope marker and the embedded wh-clause start in the complement of a copula clause embedded under the matrix verb. This clause takes the embedded wh-clause as its subject and the wh-scope marker as its predicate. I propose that the embedded clause can be assimilated to a free relative clause introduced by the wh-expression.

5.2. Overview of the chapter

This chapter is organized as follows: section 3 introduces the properties of wh-scope marking. Section 4 discusses the *direct dependency analysis*. Section 5 argues against this analysis and introduces the *indirect dependency* approach. Section 6 explains Horvath's (1997) analysis of wh-scope marking in Hungarian as a constituent at LF. Section 7 discusses the *indirect dependency analysis* as a common analysis cross linguistically. Section 8 introduces Felser's (2001) analysis of wh-scope marking in German as a complex predicate. This leads up to the discussion and syntactic analysis of wh-scope marking in SA in Section 9.

5.3. Properties of Scope Marking

Wh-scope marking constructions have some distinctive properties across languages. In what follows, I discuss some of these properties manifested mainly in German and Hindi based on Dayal (1994).

- I. Any wh-expression can be associated with the scope marker. There is no restriction on the type of wh-expression that can occur in the embedded clause.

(3) a. Was glaubst du, wo Maria getanzt hatte?

what think you where Maria danced

‘Where do you think Maria danced?’

b. Was glaubst du, warum Maria getanzt hatte?

what think you why Maria danced

‘Why do you think Maria danced?’

Yes/no questions are excluded from this property. A yes/no question cannot be embedded in the complement of the matrix verb, as is the case in German (see (4a)). Some languages, however, seem to allow embedded yes/no questions, as in Hindi. It has been pointed out by Dayal that Hindi allows embedded yes/no questions of the *whether* clause type, as in (4b):

(4) a. *Was glaubst du, ob die Maria mit dem Hans gesprochen hat?

what believe you whether the Maria with the Hans talked has

b. Tum kyaa sochte ho ki meri-ne haans-se baat kiyaa yaa nahiiN?

you what think that Maria Hans-with talked with or not

‘What do you think about whether Maria talked with Hans?’

(Dayal 1994, 139, footnote 2)

II. There is no restriction on the number of wh-phrases that can be associated with the wh-scope marker.

Dayal notes that there can be as many wh-expressions in the embedded clause as the language allows in multiple wh-questions (see examples (5a, b) from German and Hindi respectively:

(5) a. Was glaubst du, wann Hans an welcher Universität studiert hat?

what believe you when Hans at which university studied has

‘When do you think Hans studied at which university?’

b. *juan kyaa soctaa haikaun kahaan jaayegaa?*

John what thinks who where will-go

‘Who does John think will go where?’

(Dayal 1994, 140)

- III. The embedded wh-phrase can take scope across an indefinite number of clauses in which the wh-scope marker is iterated.

German

(6) a. *Was glaubst du, was Peter meint, mit wem Maria gesprochen hat?*

what think you what Peter believes with who Maria spoken has

‘With who do you think that Peter believes Maria has spoken?’

Hindi

b. *jaun kyaa soctaa hai, anu kyaa kahegi, meri kis-se baat karegi?*

John what thinks Anu what will-say Mary with-who will-talk

‘Who does John think Anu will say Mary will talk to?’

- IV. The scope marker must be iterated in every clause higher than the clause containing the contentful wh-phrase if there are multiple embeddings.

German

(7) a. **Was glaubst du, dass Peter meint, mit wem Maria gesprochen hat?*

what think you that Peter believes with who Maria spoken hat?

‘With who do you think that Peter believes Maria has spoken?’

Hindi

b. **jaun kyaa soctaa hai, anu kahegi, meri kis-se baat karegi?*

John what thinks Anu will-say Mary with-who will-talk

‘Who does John think Anu will say Mary will talk to?’

However, it has been pointed out in Beck & Berman (2000) that although Hindi sentences like (6b) are unacceptable, sentences like (6a) are acceptable for some speakers of German.

- V. Dayal (1994) points out that the matrix verb must be of the type that selects a non-interrogative complement, while the complement must be of the [+Wh] type.

German

- (8) a. *Was glaubst du, dass Maria mit Hans gesprochen hat?
what think you that Maria with Hans spoken has
- b. Was glaubst du, mit wem Maria gesprochen hat?
what think you with whom Maria spoken has
- c. *Was fragst du, mit wem Maria gesprochen hat?
what ask you with whom Maria spoken has

Hindi

- (9) a. *jaun kyaa jaantaa hai meri ravi-se baat karegii?
John what knows Mary Ravi-with will-talk
- b. jaun kyaa jaantaa hai meri kis-se baat karegii?
John what knows Mary who-with will-talk
- c. *jaun kyaa puchhtaa hai meri kis-se baat karegii?
John what asks Mary who-with will-talk

Sentences (8a, 9a) are ungrammatical because the complement clauses are not interrogative complements. Sentences (8c, 9c) are ungrammatical because the matrix verbs *fragst* and *puchhtaa* ‘ask’ are of the type that requires an interrogative complement.

Added to the requirement of a [+Wh] complement, the wh-phrase associated with the scope marker must be in a clause subordinate to the wh-scope marker. This explains the ungrammaticality of sentences like (10) (The example is from Beck & Berman 2000: 20; cf. also Brandner 2000: 205):

(10) *Was ist wer gekommen?

what is who_{nom} come_{Part}

Beck & Berman (2000) point out that if Dayal's claim that 'the actual complement must be [+Wh]' implies that the complement must contain a wh-phrase explicitly, this is not always the case. It has been argued that Hindi allows embedded yes/no questions, as in (4b), and this type of questions does not contain an explicit wh-phrase. However, if [+Wh] means being syntactically or semantically a question, then (4b) is not a counter-example for this claim, but the question would be why German does not allow embedded yes/no questions.

- VI. Another property of scope marking is pointed out by Beck & Berman (2000); clause-embedding predicates should be of the type that can participate in wh-scope marking constructions, that is predicates that can take a proposition denoting complement.

Wh-scope marking in German is ungrammatical if the predicate of the matrix clause is factive (see (11) from Beck & Berman 2000: 21):

(11)a. *Was hast Hans gewußt, werge kommen ist?

What has Hans known who come_{Part} is

b. *Was hast du dich erinnert, wer kommen soll?

what has you yourself remembered who come should

c. *Was hast du vergessen, wen wir einladen sollen?

what have you forgotten whom we invite should

Dayal (1994) argues that the existence of the two strategies, scope marking and extraction structures to express long-distance wh-dependencies raises the question of whether semantic equivalence should be mapped onto syntactic representation, or whether syntactic differences should be taken to mean that the two constructions are fundamentally different. A proper approach is required to account for how the syntactic and semantic components interact.

5.4. The direct dependency analysis

McDaniel (1989), following Riemsdijk (1983) adopts the assumption that scope marking is a variant of extraction structures. Both types of questions allow similar types of answers; hence they must have similar structures. Based on this assumption, McDaniel argues that the dependency between the *wh*-scope marker and the embedded *wh*-phrase is direct. The scope marker is an expletive *wh*-expression base generated in Spec of matrix CP. It forms a chain with the *wh*-expression in the embedded CP and its trace, as illustrated in (12):

(12)a. Mit wem_i glaubst du t_i dass Maria t_i gesprochen hat
with whom think you that Maria spoken has

b. Was $_i$ glaubst du mit wem_i Maria t_i gesprochen hat
what think you with whom Maria spoken has

(Dayal 1994: 143)

In (12b), the *wh*-dependency results from coindexing the expletive *was* ‘what’ with the embedded CP *mit wem* ‘with whom’, resulting in a direct *wh*-dependency between the position in which theta role is assigned, the embedded argument position, and the position in which scope is fixed, the matrix Spec position. In the extraction structure (12a), *wh*-dependency results from movement of the contentful *wh*-phrase to Spec of the matrix clause.

However, Dayal (1994) points out some problems that encounter the direct dependency approach. The major issue arises from the assumption that scope marking structures are variants of extraction structures. This appears under negation, as illustrated in (13):

(13)a. Mit wem glaubst du nicht, dass Maria gesprochen hat?
with whom think you not that Maria spoken has

b. *Was glaubst du nicht, mit wem Maria gesprochen hat?
what think you not with whom Maria spoken has
Intended: ‘Whom don’t you think Maria has spoken to?’

Rizzi (1992) points out that negation can block certain instances of wh-movement, as in (14). Wh-movement of adjuncts but not arguments is affected by negation:

- (14) a. Who do/don't you think Mary will hire?
b. How do/*don't you think Mary will behave?

Rizzi explains this contrast by suggesting that arguments can carry a referential index and bind their traces (see chapter 2: 2.6.2); thus negation has no blocking effect. Adjuncts, in contrast, cannot carry a referential index and need to antecedent govern their trace which the negative operator blocks, as in (14b).

Rizzi extends his explanation to account for the negative island effect in sentences like (13a, b). In the extraction structure (13a), *mit wem* 'with whom' carries a referential index and binds its trace in the lower Spec, which is not blocked by the negative island. In the scope marking structure (13b), *was* 'what' is an expletive which cannot carry a referential index. It forms a chain with *mit wem*, which it must antecedent govern, but negation blocks this relation and results in ungrammaticality.

Rizzi's explanation of the negation facts would be lost under the assumption of expletive replacement at LF, since the wh-scope marking and the extraction structure become isomorphic at LF. According to this assumption, the embedded wh-expression that is an argument but not an adjunct should be able to cross over negation and replace the expletive; however, it has been shown in (13b) that this is not the case.

Another problem that faces the direct dependency approach, which is been pointed out by Dayal, concerns embedded questions with more than one wh-expression:

- (15)a. Was glaubst du, wann Hans an welcher Universität studierthat?
what think you when Hans at which university studiedhas
'When do you think Hans studied at which university?'

The problem arises when establishing a direct dependency between the scope marker and the embedded wh-expression as the wh-chain would have one head and two tails, which contradicts with Riemsdijk's hypothesis. Riemsdijk argues that scope markers

can be operators, and their distribution is constrained by the ECP; thus the scope marker and the embedded wh-expression should be in a one-to-one relation.

5.5. The Indirect Dependency Approach

Dayal (1994) suggests another approach of wh-scope marking, *the indirect dependency*, taking the surface syntax of scope-marking structures as the starting point and guide for deriving the representation at LF, in addition to the similarity in meaning to extraction structures. According to this approach, there is no direct dependency between the scope marker and the actual wh-phrase.

Scope marking and extraction structures are two distinct constructions. The similarity arises from the effect of coindexing the dominating nodes that link up the two (local dependencies). Dayal's analysis differs from McDaniel (1989) and Riemsdijk's (1983) analyses in that the expletive is generated in argument position rather than being base generated in Spec of CP. Dayal builds her assumptions based on Hindi, which is an SOV language. The wh-phrase raises from an in-situ position to SpecCP at LF (see examples (16a, b)):

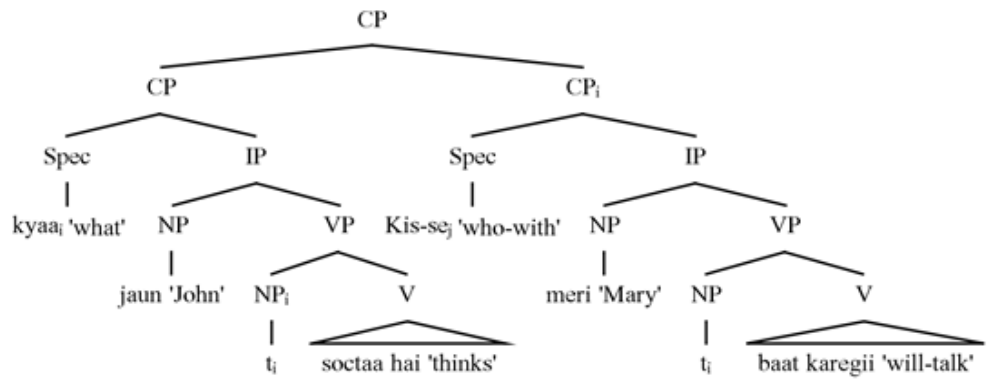
(16)a. jaun (yeh) jaantaa hai ki meri kis-se baat karegii.
John this knows that Mary who-with will-talk
'John knows (this) who Mary will talk to.'

b. Kyaa_i jaun t_i soctaa hai [kis-se_i meri t_j baat karegii]_i
what John thinks who-with Mary will-talk
'With who John thinks Mary will talk?'

(Dayal 1994: 150)

In sentences like (16a), the expletive *yeh* 'this' is in direct object position, and is coindexed with the complement of the embedded phrase containing the contentful wh-phrase. In analogy with the structure in (16a), Dayal argues that the scope marker in Hindi, *kyaa* 'what', in a sentence like (16b), originates in object position, and is coindexed with the complement CP. At LF, It moves from the in-situ position to SpecCP, as illustrated in (17).

(17)



As this is the case in languages like Hindi and Bangla, Dayal argues that this can be extended to apply to languages in which the scope-marker appears in clause-initial position.

In German, CPs can be treated as adjuncts of IP when the expletive correlate *es* occupies the object position (see Cardinaletti 1990). Mapping on this, Dayal proposes an analogous analysis of the wh-scope marking construction giving the following contrast as evidence for the adjunction structure:

(18) Mit wem glaubt[jeder Student]_i, dass er_i gesprochen hat?
with whom thinks every student that he spoken has
'With whom does every student think he has spoken?'

(19) *Was glaubt[jeder Student]_i mit wem er_i gesprochen hat?
what thinks every student with whom he spoken has
(≠ 'With whom does every student think he has spoken?')

In (18), the quantified NP *jeder Student* 'every student' binds the embedded pronoun *er* 'he'. The quantified clause c-commands the pronoun. In (19), the wh-scope marker does not bind the pronoun. This reading renders the sentence ungrammatical, which is evidence for the assumption that wh-scope marking involves adjunction.

However, Beck & Berman (B& B) (2000) provide a counterargument for this analysis (see sentences (20) and (21)):

(20) ..., daß [keine Studentin]₁ bedauert, daß sie₁ die Vorlesung
 that no student_{fem} regrets that she the lecture
 geschwänzt hat
 cut/skipped has
 ‘No student regrets that she cut the lecture.’

(21) ..., daß [keine Studentin]₁ es bedauert, daß sie₁ die Vorlesung
 that no student_{fem} it regrets that she the lecture
 geschwänzt hat
 cut/skipped has

In analogy with the analysis of (19), (21) must be ungrammatical; pronominal binding should be excluded since the embedded clause involves adjunction to IP; hence *keine Studentin* ‘no student’ does not c-command the pronoun *es* ‘it’. However, pronominal binding is equally possible in both sentences (20, 21), which leads B & B to the conclusion that the complement clause in (21) cannot be adjoined higher than VP. (19) Has an isomorphic base structure to that of (21), thus the contrast between (19) and (21) is unaccounted for under Dayal’s account.

Another argument against Dayal’s analysis arises with respect to adjunction to arguments. Dayal argues that the indirect dependency analysis is compatible with Chomsky’s (1986) prohibition against adjunction to arguments, as the subordinate clause is adjoined to the matrix CP, and adjunction to CP is acceptable since it is not an argument.

Beck & Berman (2000) argue that this claim excludes embedded wh-scope marking constructions, in which complement clauses are arguments. These constructions should not constitute a legitimate adjunction site according to Dayal’s account; nevertheless, they do. Sentences like (22) are perfectly acceptable:

(22) Ich weiß nicht_{[CP was er denkt [CP welches Buch sie gelesen hat]]}
 I know not what he thinks which book she read has
 ‘I don’t know which book he thinks she read.’

(Beck & Berman 2000: 25)

5.5.1. Negation in the indirect dependency approach

In order to explain the impossibility of wh-scope marking constructions involving negation, Dayal argues that negative questions are possible only in D-linked domains. For example, questions (23a, b) are possible in a context where the questioner sees a number of purchased items but does not know which of them was bought by John. Either question could be used in this context to refer to what John did or did not buy out of the set of the given items.

- (23)a. What did John buy?
b. What didn't John buy?

However, in a context where the questioner does not know what sort of items was purchased, the negative question is not acceptable. Only the affirmative question is possible. One explanation for this is that listing all the things that John did not buy is impossible. Negative questions lack the open-ended interpretation. The correlation between negation and D-linked questions explains the fact that negation is impossible in scope marking structures since the restriction variable is not free. Its value is contextually fixed, thus the wh-complement cannot be substituted, leaving the structure uninterpreted, in violation of Chomsky's Full Interpretation principle. The wh-scope marker need not be D-linked, so the wh-complement fulfils its restriction.

However, B& B (2000) argue against Dayal's (1994) proposal of linking the negation asymmetry to D-linking. Their argument is illustrated in the following example: a list of possible guests drawn from Maria's friends, are under discussion for Maria's upcoming birthday party. Both sentences (24a) and (24b) are D-linked:

- (24)a. Was meint Hans, wer kommen wird?
what thinks Hans who come will
'Who does Hans think will come?'
- b. *Was meint Hans nicht, wer kommen wird
what thinks Hans not who come will

According to Dayal's analysis, both sentences should be uninterpretable since the embedded wh-phrase is D-linked in the two examples. The fact that (24a) but not (24b) is grammatical constitutes convincing evidence that negation is independent of D-linking, and that it does indeed block scope marking.

Following Beck (1996), B& B (2000) argue that the negation asymmetry between wh-scope marking and long wh-movement is relevant to the distinction between movement at S-structure and at LF. A negative quantifier is a barrier to LF movement but not to S-structure movement (see sentences (25)):

(25)a. ??Was glaubst niemand wen Karl gesehen hat?
what believes nobody.NOM whom Karl seen has
'Who does nobody believe that Karl saw?'

b. Was glaubst Luise wen Karl gesehen hat?
what believes Luise whom Karl seen has
'Who does Luise believe Karl saw?'

c. Wen glaubst niemand daß Karl gesehen hat?
whom believes nobody.NOM that Karl seen has
'Who does nobody believe that Karl saw?'

(Beck & Berman 2000: 35)

In an account for the difference in grammaticality between these sentences, B& B (2000) adopt Beck's (1996) definition (see (26) and (27)):

(26) Negation Induced Barrier (NIB):

The first node that dominates a negative quantifier, its restriction, and its nuclear scope is a Negation Induced Barrier (NIB).

(27) Minimal Negative Structure Constraint (MNSC):

If an LF trace β is dominated by a NIB α , then the binder of β must also be dominated by α .

(Beck & Berman 2000: 35)

The distinction between movement at S-structure and LF is crucial to Beck's analysis. It also provides an argument in favour of the direct dependency approach. Consider example (29a). According to the direct dependency analysis, the main wh-phrase *wen*

Karl gesehen hat ‘whom Karl seen has’ raises at LF to replace the scope marker *was* ‘what’. Its trace is dominated by the NIB, the IP dominating *neimand* ‘nobody’; however, the NIB does not dominate the moving wh-phrase, in violation of the MNSC resulting in ungrammaticality.

In summary, in order to account for the semantic similarities, and the syntactic differences between scope marking and extraction structures, Dayal takes the syntactic differences as a guide for determining the meaning. She suggests an analysis in which the dependency between the wh-expletive and the contentful wh-phrase is indirect. The scope marker moves from the direct object position coindexed with the embedded complement. The syntactic differences between the two structures are maintained.

B& B (2000) argue against the indirect dependency analysis. They show that the negation asymmetry between scope marking and long wh-movement follows from the fact that negation is a barrier to movement at LF but not at surface structure, which supports their hypothesis that the dependency is direct.

5.6. Wh-scope marking cross-linguistically

Further analysis of the phenomenon of wh-scope marking across languages shows that languages with different syntactic properties require different analyses (Horvath 1997). Beck& Berman (2000) argue that Dayal’s (1994) indirect dependency analysis is appropriate for scope marking in Hindi, but problematic for German. On the other hand, Dayal (1994) points out that McDaniel’s (1989) direct dependency approach provides an account for scope marking in German, but not for certain facts in Hindi. Based on the incompatible facts of German and Hindi, Beck& Berman (2000) suggest that scope marking is a combination of two distinct phenomena, which happen to have the same interpretive function.

With regards to the property that any type of wh-phrases can replace the scope marker at LF, yes/no questions, *ob*-clauses, in German cannot participate in the wh-scope marking construction. B & B argue that this follows if *ob* is not a wh-phrase but a complementizer, thus it cannot participate in forming a wh-chain with the wh-scope marker.

The direct dependency analysis can explain why German *ob*-clauses cannot participate in the scope marking construction, while *whether*-clauses in Hindi can do. If the operator corresponding to *whether* in Hindi is regarded as a wh-phrase, and wh-phrases are subject to LF movement. Following from this assumption, a sentence like (28) would have the LF in (29):

(28) tum kyaa socte ho ki meri-ne haans-se baat kiyaa yaa nahiiN?
 you what think that Mary Haans-with talked or not

(29)[CP yaa nahiiN[C' tum socte ho ki meri-ne haans-se baat kiyaa]]
 or not you think that Mary Hans talked

However, the interpretation of (28) would give different answers from the one expected for (29). (28) would be interpreted as ‘do you think that Mary talked to Hans?’, which as Dayal points out would give answers like ‘I think Mary talked to Hans’ or ‘I think Mary didn’t talk to Hans’, whereas movement of *yaa nahiiN* at LF would give an incorrect interpretation as ‘what do you think about whether Mary talked to Hans’. Even if *yaa nahiiN* is allowed to undergo LF movement, whether-questions in Hindi scope-marking would still end up with the wrong interpretation.

B& B conclude that the direct dependency approach is not the appropriate approach for handling scope marking in Hindi, while the indirect dependency fails to explain some facts in German scope-marking constructions. Wh-scope marking in German and Hindi are distinct constructions. Hindi is best treated in terms of the indirect dependency approach, while German is best treated in terms of the direct dependency.

Horvath (1997) argues that languages with different syntactic properties require different analyses. Based on facts from wh-scope marking in Hungarian, Horvath (1997) argues that the scope-marker in Hungarian is not an A-bar expletive, but is an expletive generated in A-position and undergoes movement to an A-bar position. It takes CP as its associate.¹²

¹² Wh-scope markers in the direct dependency seem like counterparts of *that-expletives*. They originate in spec of the matrix clause and are replaced by the contentful wh-phrase at LF. In the indirect dependency, expletives are counterparts of *it-expletives*, as in Hindi (Lahiri 2002). They are associated with the embedded wh-clause. While this distinction can help in identifying the appropriate approach for wh-scope marking in every language, this hasn’t been properly discussed in the literature.

5.6.1. The Indirect *wh*-dependency in Hungarian

Wh-scope marking constructions in Hungarian show that there is no direct linking between the *wh*-scope marker and the contentful *wh*-phrase. Horvath (1997), based on morphological evidence from Hungarian, argues that the *wh*-expletive scope-marker bears non-inherited case, and triggers independent object agreement (see (30)):

- (30)a. Mit mondtál. hogy kinek vett János
 what.ACC said.2SG.INDEF.Do that who.DAT bought John.NOM
 színházegyet?
 Lit. theatre.ticket.ACC
 ‘What-acc did you say for whom John bought a theatre-ticket?’

- b. Mire számítász, hogy melyik fiuval fog Mari
 what.AL count.2SG that which boy.with will Mary.NOM
 besélni?
 speak.INF
 Lit. On what do you count with which boy Mary will speak?
 ‘What do you expect with which boy Mary will speak?’

As can be seen from these examples, the case of the *wh*-scope marker and the contentful *wh*-phrase is distinct and incompatible. Thus, the case of the scope marker is not inherited from the contentful *wh*-phrase.

Object agreement is another piece of evidence. By comparing the matrix clauses in (31a) and (31b), it can be seen that when the sentence has *mit* ‘what’ in the matrix clause, as in (31b), the inflection in the matrix clause and the lower clause is distinct, hence it cannot be transmitted from the lower clause containing the contentful *wh*-phrase.

- (31)a. Tudják hogy melyik fiut szereted.
 know.3PL.DEF.DO that which boy.ACC like.2SG.DEF.Do
 ‘They know which boy you like.’

b. Mit tudnak /*tudják, hogy
 what.ACC know.3PL.INDEF.Do know.3PL.DEF.Do that
 melyik fiut szereted?
 which boy.ACC like.2SG.DEF.Do
 Lit. What do they know which boy you like?
 (Horvath, 1997, 527)

Following from the results of the incompatible cases and agreement markers of the scope marker and the contentful wh-phrase, Horvath proposes that there is no chain relation between the two constituents.

Case in these structures cannot be checked against the head of CP whose Spec is the landing site for wh-phrases. As in full wh-movement questions, case and agreement are checked in a lower A-position. More importantly, the case on the wh-scope marker is not a uniform default one. Wh-scope markers in Hungarian manifest the full variety of cases available in A-position.

The case attested on the scope marker is determined by the grammatical relation that the embedded clause has with respect to the predicate in the matrix clause. For example, the wh-scope marker bears an accusative case only when the complement clause is a direct object argument of the matrix predicate, as in example (32):

(32) Mit_i mondtál [hogy t_i tudnak /*tudják,
 what.ACC said.2SG.INDEF.DO that know.3PL.INDEF.DO know.3PL.DEF.DO
 hogy melyik fiut szereted t]]?
 that like.2SG.DEF.DO which boy.ACC
 ‘Which boy did you say that they know that you like?’
 (Horvath, 1997, 529)

Horvath argues further that the wh-expletive in Hungarian is not base generated in Spec of CP. It moves there from an A-position in its clause, that is the Spec of a case-checking head. The agreement appearing in the intermediate clause in (32) is an indication that *mit* ‘what’ must have been in that clause before it has moved to the matrix clause.

5.6.2. *Island sensitivity*

Horvath argues that *wh*-scope marking in Hungarian exhibits a paradoxical situation with respect to island sensitivity. The construction exhibits successive cyclicity effects, Complex noun phrase constraint CNPC, and *wh*-island, but it does not show CED in both its subject and adjunct islands which full *wh*-movement questions manifest. This is illustrated by examples of subject islands in (33a, b) and adjunct islands in (34a, b):

(33)a. Mi zavatra Marit. [hogy kinek telefonáltál t]?
what.nom disturbed Mary.ACC that who.DAT phoned.2SG

b. ?*Kinek zavatra Marit [hogy telefonáltál t]?
who.DAT disturbed Mary.ACC that phoned.2SG
Lit. To whom did that you phoned disturb Mary?

(34)a. Miért vagy dühös [mert kivel találkoztál t]?
why are.2S Gangry because who.with met.2SG
Lit. Why are you angry because who you had met?

b.*Kivel vagy dühös [mert találkoztál t]?
who.with are.2SG angry because met.2SG
Lit. Who are you angry because you had met?

Building on the subjacency paradox that appears in these examples, Horvath argues that the distinct behaviour between *wh*-scope marking constructions and full *wh*-movement with respect to island sensitivity indicates that the *wh*-chain analysis cannot account for the locality properties between the *wh*-expletive and the contentful *wh*-phrase in *wh*-scope marking constructions.

From what has been discussed, Horvath concludes that a direct *wh*-dependency approach cannot deal with the asymmetries shown in scope making constructions in Hungarian.

To sum up, it has been argued that in *wh*-scope marking constructions in Hungarian the *wh*-scope marker and the contentful *wh*-phrase do not form a *wh*-chain. Results from

case and agreement marking show that the case of the wh-scope marker is distinct from that of the contentful wh-phrase. Similarly, the agreement inflection on the matrix clause is distinct from that of the embedded clause containing the contentful wh-phrase. The case attested on the scope marker is determined by the grammatical relation that the embedded clause has with respect to the predicate in the matrix clause.

Horvath concludes that McDaniel's (1989) direct interpretation analysis is inappropriate for the Hungarian-type of wh-scope making constructions. The syntactic relation between the expletive and the contentful wh-phrase is indirect. The associate of the expletive wh-scope marker is CP, the clause whose Spec contains the partially moved contentful wh-phrase. The wh-scope marker is not an A-bar but an A-position expletive.

Under Dayal's (1994) indirect dependency approach, it has been proposed that the scope marker is linked to the CP which contains the contentful wh-phrase. The scope marker occupies the actual theta-marked argument position of the matrix predicate, while the CP-associate is in an IP/CP adjoined position. The embedded CP restricts the existential quantification of the scope marker over propositions. At LF, it moves to Spec of the matrix CP to replace the wh-scope marker. Horvath points out a serious problem that faces Dayal's approach with respect to the Hungarian scope-marking construction.

Horvath argues that in Hungarian, the CP containing the contentful wh-phrase is in theta-marked argument position of the matrix predicate. It is not in an adjunct position as argued in Dayal (1994). This is supported by examples from Hungarian, in which a pronoun in the embedded CP can be bound while its binder is in the matrix clause containing the wh-expletive (see example (45)):

- (35) Mit nemhisz senki, hogy milyen történeteket
 what.ACC not believe no one.NOM that what stories.ACC
 terjeszt róla a felesége?
 spreads about-him the wife.his.NOM
 'What stories doesn't anyone believe that his wife spreads about him?'

Another piece of evidence which supports the assumption that the embedded CP is not in adjunct position is provided by examples like (36). This example shows that extraction out of the embedded CP is possible:

- (36) Itt van az a színésznő [akinek_i nem emlékszem,
 here is that the actress.NOM who.DAT not remember.1SG
 [hogy mit kért János [hogy kit mutassunkbe t_i]]
 that what.ACC asked John.NOM that who.ACC introduce.SUBJUNC.1PL
 Lit. Here is the actress to whom I don't remember who John requested that we
 introduce.

Following from these results, Horvath proposes that the embedded CP is not in an adjunct position; rather it is in an argument position, hence the expletive does not originate from that argument position.

Horvath argues that the wh-expletive is A-position associated with CP. She builds her assumptions based on examples of non-wh expletive/CP construction in Hungarian:

- (37)a. Bizik benne János [hogy mekeg idő lesz holnap].
 trust.3SG it.INES John.NOM that warm weather will.be tomorrow
 'John is confident that the weather will be warm tomorrow.'

- b. Bizik (*benne) János [a holnapi melegben].
 trust.3SG (*it.INES) John.NOM the tomorrow's warmth.INES
 Lit. John is confident in tomorrow's warm weather.

- (38)a. Azt akarom [hogy győzzünk].
 it.ACC want.1SG.def.DO1 that win.SUBJUNC.1PL
 Lit. I want that we win.

- b. *Azt akar-om/-ok [győzni] (vs. Győzni akarok.)
 it.ACC want-1SG-def/indef. DO win.INF
 'I want to win.'

(Horvath, 1997, 545)

In (37a) and (38a), the non-wh-expletive has a finite CP as its associate. It bears an oblique case in the former, and an accusative case in the latter. Examples (37b) and (38b) show that cases in which the expletive is associated with DPs and infinitival clauses are not acceptable.

By assimilating the wh-expletive to the non-wh expletive which occupy A-position and take finite CP associate, Horvath predicts the restriction on the wh-scope marking strategy. She proposes that the wh-expletive in Hungarian is A-position that is CP associate.

In conclusion, Horvath argues that, the dependency in Hungarian wh-scope marking is indirect. The wh-scope marker is an expletive taking the embedded CP as its associate, rather than the contentful wh-phrase. Horvath concludes that scope marking in various languages may not arise from a unitary source. The CP-as-associate analysis does not account for scope-marking in languages like Bahasa Indonesia, which may involve a chain relation between the wh-scope marker and the wh-contentful wh-phrase. Hindi, on the other hand, can be accounted for in terms of the indirect dependency approach.

5.7. The Indirect dependency a common analysis across languages

Dayal (2000) points out that Horvath's (1997) analysis is not distinct from earlier approaches. It does not result with the tenable interpretation. Some manoeuvring would be needed, which in anyway would render this approach similar to either the direct dependency or the indirect dependency approach.

The cross linguistics variation has been reconciled by suggesting different approaches for different languages, the indirect dependency for Hindi, and the direct dependency for German. However, Dayal (2000) argues that there are many characteristics of wh-scope marking that can be balanced between the two languages and the other languages.

Scope marking is a universal phenomenon. However, English does not employ the same type of wh-scope marking that is common among other languages like Hindi and German. Dayal (2000) argues that English still manifests another type of wh-scope marking, which is a sequence of two questions:

- (39)a. *What do you think who Mary will see?
b. What do you think? Who will Mary see?
c. I think Mary will see Tom.

(Dayal 2000, 171)

Answers to (39b) are analogical to that in (39c). They embed the proposition corresponding to CP₂ as a complement of the verb in CP₁. This gives a value for the wh in CP₂ rather than the one in CP₁. Therefore, English sequential questions must be viewed as wh-scope marking constructions, in which the embedded wh-phrase can take scope outside its embedded clause. This is also supported by the fact that English sequential questions manifest properties of the wh-scope marking construction, and are subject to similar constraints. They can occur with any type of wh-expression, iterated wh scope markers are required in multiple embedded constructions, multiple wh-expressions can occur in such structures, the matrix predicate must be of the type that takes [-wh] complements, and negation is disallowed in the matrix predicate¹³. However, English allows yes/no questions in the second clause, as in (40a):

- (40)a. What did she say? Will Mary come?
b. Yes, she said that Mary will come.
c. No, she said that Mary won't come.

The fact that English sequential questions allow yes/no questions in the complement of the matrix clause indicates that the direct dependency analysis cannot account for English. No wh-chain can be formed.

Dayal argues that an explanation for English wh-scope marking can be sought within the indirect dependency approach. The first question involves quantification over propositions, and the second question is an ordinary question. The issue is to connect the topic variable restricting the propositions under consideration in the first question with the second question. Although English sequential questions might seem syntactically distinct from Hindi, the indirect dependency approach seems to provide the best account for both constructions.

¹³ For further discussion on wh-scope marking in English see Dayal (2000: 171-172)

Reis (2000) makes a similar observation drawing the attention to similarities between *was*-parentheticals and *was...w*-constructions in German (see sentences (41a, b):

(41)a. Was glaubst du, wohin ist er gegangen?

what think you where has he gone

b. Was glaubst du, wohin er gegangen ist?

what think you where he gone has

'Where do you think he has gone?'

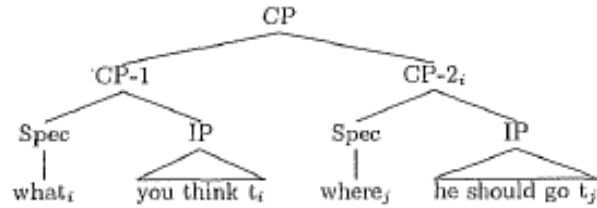
Sentence (41a) is an instance of a parenthetical structure. The two clauses are sequential questions. The second question displays verb second order in CP₂, whereas (41b) is an instance of a *wh*-scope marking construction, the embedded structure of which is subordinate to the matrix clause, as the verb in CP₂ appears in a V-final position.

Reis (2000) argues that *wh*-scope marking structures are obtained historically from parenthetical structures by grammaticalization. The two independent clauses shift into subordination. Hindi scope marking involves a parenthetical structure and an indirect dependency, while German involves subordination and a direct dependency. According to this conclusion, there is no common analysis for *wh*-scope marking among the different languages, but it is clearer why they may require different analyses.

Dayal argues that the notion of grammaticalization can be taken into account, yet the indirect dependency is a common analysis for *wh*-scope marking constructions among languages. Assuming that languages differ with their syntactic rather than semantic realizations of *wh*-scope marking, Dayal proposes different options of the indirect dependency analysis that can account for different languages.

The first option involves adjunction at the CP level, as illustrated in (42). The two clauses are syntactically independent. Neither is subordinate to the other, but they are semantically integrated. The *wh*-scope marker is base generated in the direct object position of the matrix verb and coindexed with the embedded CP₂. Although Dayal (1994) initially referred to the *wh*-scope marker as an expletive, her analysis in Dayal (2000) implies that it is argumental. CP₂ which is a set of propositions provides a restriction over the scope marker.

(42)

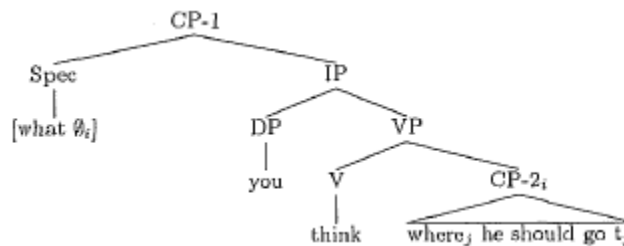


(Dayal 2000: 173)

Dayal argues that this account holds for sequential wh-scope marking, as for English. The fact that there is inversion in English wh-scope marking follows from the syntactic independence of CP₂.

In the second option, the scope marker is base generated in Spec of CP₁, which functions as an existential quantifier over propositions with a phonologically null restrictor coindexed with CP₂. CP₂ is in argument position. It moves to the position of the wh-scope marker at LF. Dayal argues that this approach can account for wh-scope marking in languages like German. It predicts the status of the scope marker as an expletive generated in operator position (see (43)):

(43)

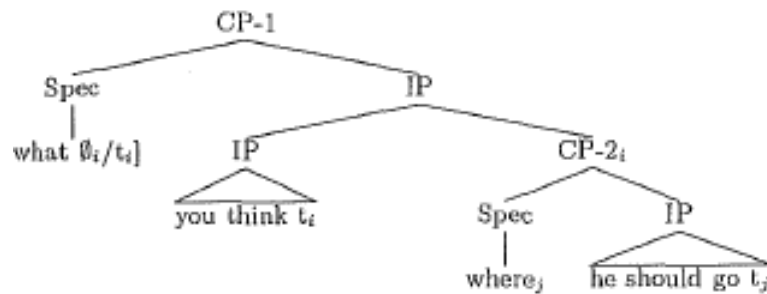


Following from this analysis, there is a direct dependency between the wh-scope marker and the embedded wh-expression. However, Dayal points out that this analysis is equally compatible with an indirect dependency account of wh-scope marking.

The third option of an indirect dependency analysis accounts for a subordinate status to CP₂ with respect to the scope marker. It undergoes an indirect syntactic subordination as it is adjoined to IP. It can be the case that the scope marker and the embedded CP are generated as discontinuous constituents. Thus, CP₂ can be coindexed with a null element inside the wh-phrase.

Another possibility is that CP₂ is generated inside the wh-expression and is extraposed at S-structure leaving behind a trace. At LF, it moves into the position of the restrictor, as a kind of replacement or reconstruction yielding a structure like [CP₁[what [CP₂ where he should go]]_i [IP you think t_i]]. This approach represents cases of indirect subordination in languages like Hindi, as illustrated in (44).

(44)



This analysis is a variant of Herburger’s (1994) analysis of German adopted in Lahiri (2002) for Hindi, and in Bruening (2004) for Passamaquoddy. It suggests that the scope marker and the embedded CP start out as a constituent of the type DP which splits away from its restriction. The scope marker is the head D of DP. It takes CP as its complement and undergoes wh-movement to the matrix SpecCP. The embedded CP is extra-posed and adjoined to IP. It reconstructs at LF to the restriction of the scope marker. The scope marker which is in the main clause forms a question over propositions while the embedded question acts as its restriction.

Dayal (2000) concludes that languages have a universal sequential scope marking but may differ with respect to subordination. The dependency is indirect even after subordination. Variation is in syntax not in semantics.

5.8. The predication analysis

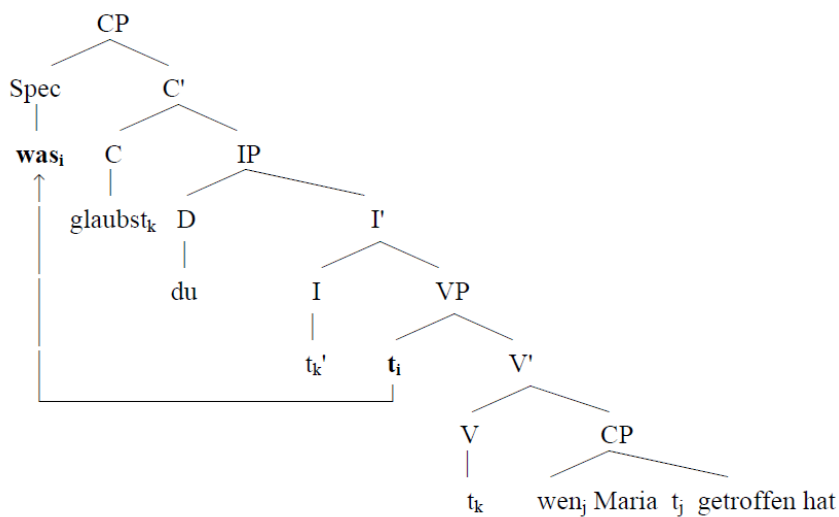
Felser (2001) proposes a different analysis of wh-scope marking constructions in German. Essentially, the claim is that the wh-scope marker and the embedded wh-clause are in a predication relation. There would be no direct relation between the wh-scope marker and the wh-phrase in the embedded clause, but instead a relation between the

wh-scope marker and the entire wh-clause, which is a kind of secondary predication relation similar to that between a DP head and a relative clause.

Under Felser's theory, the structure of the wh-scope marking construction (45) in German is (46):

- (45) Was glaubst du wen Maria getroffen hat?
 what think you who Maria met has
 'Who do you think Maria has met?'

(46)



(Felser 2001: 28)

The wh-scope marker is merged as a specifier of VP. It is an argument of the verb, assigned a thematic role by the verb. It can license a secondary [+Wh] predicate, the embedded wh-clause. It undergoes wh-movement to Spec of CP and the verb undergoes movement to C, the V2 position. The embedded clause and the matrix verb form a complex predicate whose subject is the wh-scope marker.

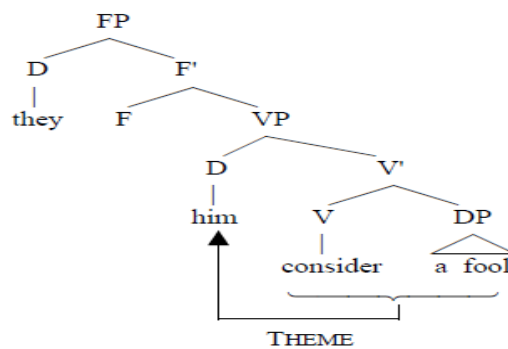
The embedded wh-clause, therefore, is not assigned a thematic role by the verb, but is an 'unselected complement' of the verb construed predicatively. It is a non-thematic expression base-generated in an argument position. Thus, the wh-scope marker is the

internal argument of the matrix verb, and the subject of the embedded predicative wh-clause.

This is the basis for the relation between the wh-scope marker and the wh-clause.

Felser (2001) likens it to the relation between *him* and *a fool* in the small clause construction *They consider him a fool*, but analysed as in Williams (1997) not as a small clause, but as made up, underlyingly, of a complex predicate [consider a fool] assigning an object role to him.

(47)



In this structure, *a fool* would be an unselected complement of *consider*, and the resulting interpretation is that *him* and *a fool* enter a predication relation.

Felser argues that the embedded wh-clause is licensed not through theta marking but through being predicated of the object pronoun *was*. The object pronoun is theta marked. It can license a secondary predicate, which is a [+Wh] CP originated in the complement position of the main verb. The relation between the wh-scope marker and the embedded clause is assimilated to that of a relative clause, the subject of which is the wh-scope marker and the embedded clause is the relative clause, in particular a free relative. Felser argues that restrictive relatives can function semantically as predicates. For example, in (48), the lower CP resembles a free relative clause introduced by a wh-expression.

(48) Sie glaubt nur [was sie glauben will]
 she believes only what she believe wants
 ‘She only believes what she wants to believe.’

(Felser 2001, 29)

(51)[CP₁[+WH] Was_i glaubst du ... [CP₂[-WH] t_i' [C' dass Peter t_i sagt
 what think you that Peter says
 [CP₃[+WH] wen_k Maria t_k getroffen hat]]]
 whom Maria met has
 'Who do you think Peter says Maria has met?'

For those speakers who require an instance of *was* in Spec of every intermediate clause, under the complex predicate analysis, nothing prevents *was*-clause from being repeated more than once. Every *wh*-expression is part of a separate *wh*-chain (see (52)):

(52)[CP₁[+WH] Was_i glaubst du ... t_i ... [CP₂[+WH] was_j Peter t_j sagt [CP₃[+wh]
 what think you what Peter says
 wen_k Maria t_k getroffen hat]]]
 whom Maria met has
 'Who do you think Peter says Maria has met?'

This analysis is also compatible with the fact that a *yes/no* question can occur in the embedded clause of a *wh*-scope marking construction. Following from the assumption that the dependency between the *wh*-scope marker and the contentful *wh*-phrase is indirect, these phrases do not form a *wh*-chain. The relation between the *wh*-scope marker and the embedded CP is rather an abstract subject-predicate relation. The *yes/no* question satisfies the interrogative concord requirement between the *wh*-scope marker and the interrogative question. The [+WH] scope marker licenses the interrogative predicate.

Felser's hypothesis thus makes a number of predictions which are right. However, the syntactic structure in (46) cannot map onto the reading she describes. The two terms of the supposed predication relation, the scope-marking *wh*-word and the embedded CP are related by the verb *denken* 'think', which does not yield predication. I will adopt the idea that there is a predicational relation involved in the scope-marking *wh*-construction in SA, but not by means of a syntactic structure as the one proposed by Felser (2001).

5.9. Syrian Arabic has wh-scope marking

Wh-questions in Syrian Arabic (SA) manifest overt wh-movement. In addition to long extraction questions the partial wh-movement mechanism is employed for questioning out of embedded clauses as in (53).

(53) akl-et ħaneen shokala ʕa-l-ghada.
ate-3SG.F Haneen chocolate on-the-lunch
'Haneen had chocolates for lunch.'

(54) šw akl-et ħaneen ʕa-l-ghada?
what ate-3SG.F Haneen on-the-lunch
'What did ħaneen have for lunch?'

(55) šw fkkart-i maʕ miin tghadd-et ħaneen?
what thought-2SG.F with whom ate-2SG.F Haneen
'What did you think? With whom did Haneen have lunch?'

The question is whether sentences like (55) are real instances of wh-scope marking, or merely two independent sentences, a sequence of questions each involving full wh-movement. The following evidence shows that these are real instances of scope-marking. First, wh-scope marking constructions in Syrian can occur in embedded contexts, as in (56):

(56)a. sual-ek šw raʔy-w min raħ yntSer b-l-akhir ma kan
question-your what opinion-his who will win with-the-end not was
fi daʕi il-w.
in reason for-it
'Your question about what he thinks who will win at the end was not appropriate.'

b. ma tʔul-i-l-u šw ʔal-et-l-ek mama min
notsay-2SG.F-to-3SG.M what said.3SG.F.SU-to-2SG.F.OBJ mom who
jayeh la-ʕanna bukra?
coming to-ours tomorrow

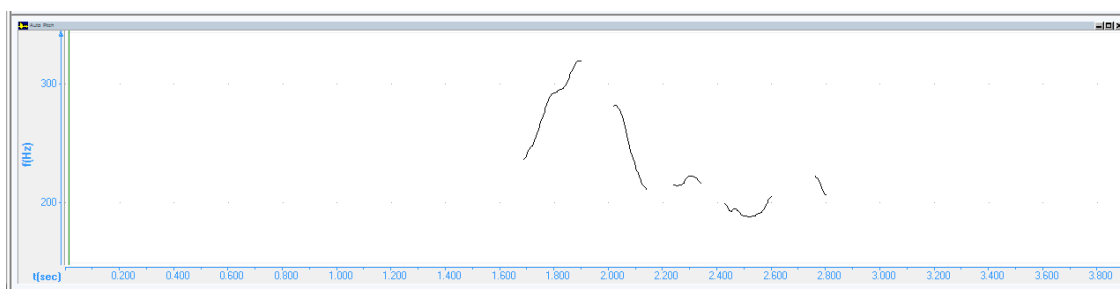
‘Don’t tell him what mom told you about who is visiting us tomorrow.’

Another piece of evidence comes from the fact that a pronoun in the embedded clause can be interpreted as a bound pronoun while its antecedent is in the first clause (see (57)). This entails that the two *wh*-clauses cannot be separate sentences. The pronoun *w* must be *c*-commanded by the antecedent *kl waḥed* ‘every one’.

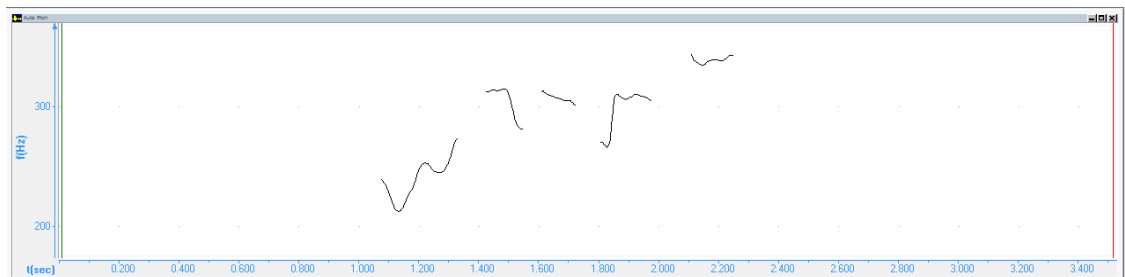
- (57) šw fakkar kl-waḥed addesh raḥ yTlaṣ-l-w?
what thought every-one how.much will get-to-3SG.M
‘How much does every one think he will get?’

Furthermore, *wh*-scope marking constructions in Syrian allow embedded yes/no questions, as will be discussed in property *B* below. Yes/ no questions in Syrian are marked by intonation only. They are not marked by any of the common question formation mechanisms, such as inversion or question particles. (58) And (59) show the contrastive intonation contours of a declarative sentence and the counterpart yes/no question respectively:

- (58) byakol kek bassel.
eat cake Bassel
‘Bassel eats cake.’



(59) byakol kek bassel?
 eat cake Basel?
 ‘Does Basel eat cake?’

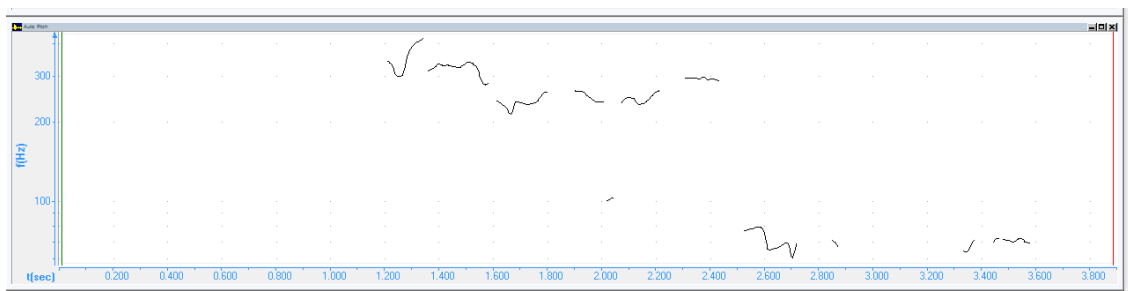


In these examples, there is no syntactic difference between the declarative sentence and the yes/no question. The only means that marks the sentence as a question is the intonation. In (58), there is a significant fall in the intonation, contrary to the case in (59), where the intonation rises significantly.

Scope marking constructions in Syrian allow embedded yes/no questions. These questions are not of the ‘whether clauses’ type, nor are they marked by any complementiser that is wh-phrase equivalent. They are only marked by intonation (Bailey et al (in prep.)).

Analysis of the intonation of wh-scope marking constructions embedding yes/no questions indicates that these are wh-scope marking constructions indeed, and not a sequence of two questions (see the intonation graph in (60)):

(60) šw al-l-ek bassel byakol kek?
 what told.3SG.M.SU-to-2SG.F.OBJ Basel eats cake
 ‘What did Basel say? Does he eat cake?’



In contrast to graph (59), (60) shows that the intonation of the yes/no question changes when it is embedded under a scope marking construction. If (60) involves two questions, the intonation should show a raise at the end of each question, however, this is not the case, which indicates that these are not two separate questions¹⁴.

5.9.1. Properties of *wh*-scope marking in Syrian Arabic

Wh-scope marking in SA manifests the properties of *wh*-scope marking constructions. I present some of these properties following Dayal (1994):

A. Any *wh*-phrase can be associated with the *wh*-scope marker, as in (61):

(61)a. šw fkkart wen raʔset maria?
 what thought.2SG.M where danced Maria
 ‘What did you think? Where did Maria dance?’

b. šw fkkart aymat raʔset maria?
 what thought.2GS.M when danced Maria
 ‘What did you think? When did Maria dance?’

c. šw fkkart leš raʔset maria?
 what thought.2SG.M why danced Maria
 ‘What did you think? Why did Maria dance?’

d. šw fkkart kif raʔset maria?
 what thought.2SG.M how danced Maria
 ‘What did you think? How did Maria dance?’

B. SA allows embedded yes/no questions in scope marking constructions.

It has been argued that embedded yes/no questions in *wh*-scope marking constructions are controversial. They can be embedded in Hindi, but not in German or Hungarian. In

¹⁴ Most speakers of SA prefer using long extraction questions for questioning out of embedded questions. This can be an indication that *wh*-scope marking is a result of grammaticalization of the parenthetical construction involving two independent questions. For discussion on this topic, see Reis (2000).

Hindi, embedded yes/no questions are introduced by the operator *Yaa nahiiN*. This operator can be regarded as a type of wh-phrases, particularly ‘whether clauses’. This can explain the exceptional behaviour of yes/no questions in Hindi.

In German, *ob* is classified as a complementizer but not as a wh-phrase. This complementizer cannot satisfy the expletive replacement requirement, thus it cannot form a wh-chain with the wh-scope marker, which leads to ungrammaticality of embedded yes/no questions introduced by this complementizer.

Horvath (1997) argues that partial wh-movement licensing is dependent on the presence of a moved wh-phrase in the embedded clause. However, the situation in SA is different. As has been pointed out in section (5.9), these questions are only marked by intonation (see (62)):

- (62) a. *šw al-l-ek Iyad bd-w yji?*
 what said.3SG.M.SU-to-2SG.F.OBJ Iyad want-3SG.M come
 ‘What did Iyad say? Is he coming?’
- b. *šw fkkar-ti ʕam iħk-i la-ħaly?*
 what thought-2SG.F PROG speaking-1SG to-myself
 ‘Did you think I am talking to myself?’

This type of questions is not marked by any complementizer that is wh-phrase equivalent. This entails that the scope marker and the embedded wh-question cannot form a wh-chain, and consequently there is no direct dependency between the scope marker and the embedded question.

The fact that a question which is not a wh-question can be embedded in wh-scope marking, suggests that Dayal’s (1994) claim that the complement of the matrix predicate has to be [+wh], can be interpreted as that the complement has to be a question, but not particularly a wh-question.

- C. Wh-scope marking can occur with multiple embedded wh-phrases associated with the scope marker. Multiple wh-questions in SA are allowed in discourse

linked contexts. A coordinative head appears before adverbial wh-phrases, as illustrated in (63) and (64):

(63) šw fkkar-ty aymat raħ basem w la-wen?
 what thought-2SG.F when left Basem and to-where

(64) šw fkkar-ty min štara šw?
 what thught-2SG.F who bought what
 ‘What did you think? Who bought what?’

Dayal argues that embedded questions with more than one wh-expression are a problem for the direct dependency between the scope marker and the embedded wh-phrase. The wh-chain would have one head and two tails. However, this is not a problem for the indirect dependency approach. Each wh-expression can be interpreted in its LF position.

D. An embedded wh-phrase can take scope across an indefinite number of wh-scope markers. However, in SA, it is not a requirement that the scope marker be iterated in every clause higher than the embedded wh-phrase. Sentences with only the matrix scope marker, as in (65a) and (66a), are even preferred to those with an iterated one, as in (65b) and (66b).

(65)a. šw raʔy-ek bykun fakkar bassel maʕ min muna kan-et
 what opinion-your be.3SG.M thought Bassel with whom Muna was-3SG.F
 ʕam tħki?
 PROG talking
 Lit. ‘What do you believe? What did Bassel think? Who was Mary talking to?’

b. ? šw raʔy-ek šw bykun fakkar bassel maʕ min Muna
 what opinion-your what be.3SG.M thought Bassel with whom Muna
 kan-et ʕam tħki?
 was.3SG..F PROG talking

(66)a. šw fkkar-ty Ali ʔal kif bdna nruħ?
 what thought-2SG.F Ali said how will.1PL go
 ‘How did you think Ali said we will go?’

b. ?šw fkkar-ty šw ?al Ali kif bdna nruħ?
 what thought-2SG.F what said Ali how will.1PL go

The fact that sentences (a) are acceptable can be related to the fact that for those speakers, the *wh*-scope marker raises successive cyclically. This has also been suggested in B & B (2000).

- E. The complement of the *wh*-scope marker must be of the interrogative type, whereas the verb must be of the type that requires a [-*wh*] complement (see Dayal 1994).

As (67) illustrates, a verb which requires a [+*WH*] complement like *sʔal* ‘ask’ is not acceptable in this construction:

(67) a. *šw sʔal-ti-a maʕ min kan-et maria ʕam trʔos?
 What asked-2SG.F.SU-3SG.F.OBJ with who was-2SG.F Maria PROG dancing

b. šw ?al-ek šw ħaket Dima?
 what told.3SG.M-2SG what talked Dima

- F. *Wh*-scope marking constructions originating in the complement of factive predicates are grammatical in SA (see sentences (a)), which is contrary to the case with full *wh*-movement questions (see (68b-71b)):

(68) a. šw ʕrft min staʔjar l-maħal?
 what knew.2SG.M who hired the-shop
 Lit. What did you know who will hire the shop?

b. *min ʕrft staʔjar l-maħal?
 who knew.2SG.M hired the-shop

(69) a. šw ktashaft min shaf Iyad?
 what discovered.2SG.M who saw Iyad
 ‘What did you find out? Who did Iyad see?’

b.??Min ktashaf-ty inn-w Iyad shaf?
who discovered-2SG.F that-3SG.M Iyad saw

(70)a. řa-řw ndm-ti kif řkke-ty-a?
on-what regretted-2SG.F how talked-2SG.F.SU-3SG.F.OBJ

b.*kif ndm-ti inn-ek řkke-ty-a?
how regretted-2SG.F that-2SG.F talked-2SG.F.SU-3SG.F.OBJ

(71)a. řw ktashaf-ti kif Sar l-řadeth?
what discovered-2SG.F how happened the-accident
'What did you find out? How did the accident happen?'

b.*kif ktashf-ty Sar l-řadeth?
how discovered-2SG.F happened the-accident

Contrary to what one may predict for non-referential wh-phrases, of which weak islands obstruct antecedent-government, non-referential wh-phrases originating within the complement of a factive island are acceptable, as is the case in Hungarian and unlike German.

G. Wh-scope marking across negative islands is ungrammatical, as well as full wh-extraction (see sentences (a) and (b)) respectively:

(72)a.*řw ma fkkart kif rař yjw
what not thought.2SG.M how will come.3PL

b.*kif ma fkkart inn-w rař yjw?
how not thought.2SG.M that.3SG.M will come.3PL

(73)a.*řw ma fkkart mař miin Deema kan-et řam řķki?
what not thought.2SG.M with whom Deema was-3SG.F PROG speaking

b.*maʕ miin ma fkkart inn-w Deema kan-et ʕam
 with who not thought.2sg.m that-3SG.M Deema was-3SG.F PROG
 thki?
 Speaking

The ungrammaticality of wh-scope marking constructions involving negative islands is similar to the case in German and Hindi. However, negative islands are acceptable with long extraction questions in these two languages. On the other hand, in Hungarian, wh-scope marking involving negative islands is acceptable, but long extraction questions are not.

A closer examination shows that some cases of scope marking fail to show negative island effects even with non-referential wh-phrases (see examples (74a, b)). In these examples, scope marking constructions depart from full wh-movement questions.

(74) a. b-šw ma kan yʕtref kif fataħ l-bab?
 with-what not was admit.3SG.M how opened the-door
 ‘What did he not admit? How did he open the door?’

b.*kif ma kan yʕterf inn-w fataħ l-bab?
 how not was admit.3SG.M that-3SG.M opened. 3SG.M the-door

This contradictory behaviour of scope marking constructions originating within negative islands seems to result from the type of the matrix predicate, i.e. verbs like *yʕtref* ‘admit’ vs. verbs like *yʔul* ‘say’, *yfakker* ‘think’. This has also been pointed out by Horvath (1997). A similar behaviour appears in Hungarian scope marking constructions. Horvath argues that the variation with the acceptability is induced by the D-linked vs. non-D-linked status of the propositional complement of the matrix verb. Verbs like *reveal*, *deny*, *notice*, and *permit*, are of the type that takes D-linked interpretation, whereas verbs like *say*, *hear* and *feel*, are of the latter type. With D-linked predicates, the effect of negative islands does not appear, whereas it appears with the non-D-linked type of verbs.

To sum up, wh-scope marking in Syrian manifests properties of wh-scope marking. The most significant features of these are: SA allows embedded yes/no questions in wh-

scope marking constructions, which are marked by intonation only. Wh-scope marking across negative islands is not acceptable with non D-linked predicates but acceptable with D-linked predicates. Wh-scope marking across factive islands is possible, which is not the case in long extraction questions. Iteration of the scope marker in every clause preceding the embedded clauses is not required.

5.9.2. Approaches to wh-scope marking in Syrian Arabic

5.9.3 Not a direct dependency

We have seen different approaches to wh-scope marking in different languages. The *direct dependency* has been suggested to account for German, and the *indirect dependency* for Hindi. It has been argued in Dayal (2000) that the indirect dependency is a common approach cross-linguistically but with different options.

According to the *direct dependency* analysis, the wh-scope marker and the contentful wh-phrase form a wh-chain at S-structure. However, it has been argued that the wh-scope marker and the embedded wh-phrase do not form a wh-chain. This follows from the facts that a yes/no question can be embedded in wh-scope marking constructions, and multiple wh-questions can occur in the embedded clause.

The other argument against the direct dependency analysis follows from the fact that wh-scope marking in SA is not isomorphic to extraction structures. This can be supported by the contrastive behaviour of wh-scope marking constructions and extraction questions involving factive predicates, and negative islands with D-linked verbs.

From what has been discussed, it can be concluded that wh-scope marking constructions in SA are not isomorphic to extraction structures.

5.9.4. CP as expletive associate

According to Horvath's (1997) analysis of wh-scope marking in Hungarian, the wh-scope marker originates in a non-theta A-position. The embedded CP originates in the argument position of the matrix verb. It raises at LF to adjoin to the expletive wh-scope marker in matrix CP, as in (75b).

(75)a. Mit gondolsz, hogy kit látott Janos?
 what-ACC think-2SG that who-ACC saw-3SG John-NOM
 Who do you think that John saw?

b. [CP [CP hogy kit látott Jáinos] mit [C gondolsz t_{CP}]]
 that who-ACC saw-3SG John-NOM what-ACC think-2SG

(Horvath 1997: 510)

Horvath argues that raising CP at LF can explain the different facts of wh-scope marking in Hungarian such as the acceptability of wh-scope marking constructions across islands. If the CP associate of the scope marker is the island, raising the whole island prevents any violation of the island constraint, as is the case in Hungarian (see (76)):

(76)Mi zavarta Marit, [CP hogy kinek₁ telefonáltál t₁]?
 what.NOM disturbed Mary.ACC that who.DAT phoned.2SG
 ‘What disturbed Mary? To whom did you phone?’

(Horvath, 1997: 530)

The entire subject raises at LF to adjoin to the wh-scope marker. The embedded CP does not cross the subject CP boundary. Since the wh-scope marker is in secondary subject position, extraction of which is grammatical, as is the extraction of an entire subject.

However, there are notable differences between wh-scope marking in SA and Hungarian. Subject islands are not compatible with wh-scope marking constructions in SA, as (77) illustrates:

(77)a.*šu daya?-ek ma? miin Iyad kan ?am yhk-i?
 what disturbed-2SG.F.OBJ with whom Iyad was PROG speaking
 Intended: ‘Who did it bother you that Iyad was talking to?’

b. *šū dayaʔ-ek miin rfʔat-ek ma ḥabb-w?
 what disturbed-2SG.F who friends-your not liked-3PL
 Intended: ‘Who disturbed you that your friends didn’t like?’

Horvath argues that the CP-as associate analysis predicts the acceptability of wh-scope marking constructions with adjunct islands. However, wh-scope marking in SA is not compatible with adjunct islands, as can be seen in (78):

(78)*la-šū ʕssab-ti laʔann-w maʕ miin ḥaka Iyad?
 to-what got.angry-2SG.F bacuase-3SG.M with whom spoke Iyad
 Intended: ‘Why did it get you angry because Iyad talked to?’

The presence of antecedent-government effects in wh-scope marking constructions involving wh-movement across negative, subject and adjunct islands indicates that there is no reconstruction of the embedded CP. The wh-scope marker and the embedded CP do not form a constituent at LF.

5.9.5. *Split constituents*

Another analysis of wh-scope marking is that the wh-scope marker and the embedded question CP form a DP constituent in underlying syntactic structure but split in the course of the derivation, the wh-scope marker undergoing wh-movement to SpecCP. This would be similar to the *was-für* split construction in German illustrated in (79) (see Herburger 1994; Bruening 2004; Leu 2008):

(79)a. [Was für ein Buch] hast du gelesen?
 what for a book have you read
 ‘What kind of/which book did you read?’

b. [Was] hast du [für ein Buch] gelesen?
 what have you for a book read

The wh-scope marker would be the head D, whose sister is the embedded CP, which provides restriction for the wh-scope marker (see (80)):

(80)[CP what_i [TP you [VP say [DP t_i [CP who_j [you saw t_j]]]]]]

The head would separate from the restricting CP and move to the matrix CP. The wh-word and the CP would originate in the same position, as one complement to the matrix verb, which becomes a split constituent due to movement of its head, the wh-scope marker. It cannot actually be movement of a head in the X-bar sense, though, since the movement does not have the properties of head-movement but of A-bar movement. Instead, it would be movement of a ‘maximal wh-word’, a counterpart of *what*, which functions as a determiner of a clausal complement¹⁵.

Whatever the best analysis is of *was-für* split, this seems to be a rare phenomenon. There are cases reported in the literature of determiners or quantifiers splitting from their complement, but the most common ones move the complement stranding the determiner/quantifier. This is the case with quantifier stranding (or quantifier float) (Sportiche 1988). For example, one construction where we might expect to find a split to be possible is the so called adnominal pronoun construction *we students, you scientists* (Postal 1969). Yet it does not seem to be found in any language exhibiting the construction (Georg Höhn, p.c.).

(81)*We have students decided to leave the building.

In SA, split DP constituents are not attested at all. A determiner or a quantifier cannot appear separately from its NP restriction. There is nothing corresponding to *was-für* split. There is not even quantifier stranding.

One kind of split constituent that we do see, in many languages is with extraposed relatives. (82a) derives from the underlying structure (82b).

- (82)a. Everything is true that she told me.
b. [IP is true [DP everything that she told me]]

Even this split is not possible in SA (see (83)):

¹⁵ Bruening (2004) argues against this objection (see Bruening 2004: 284).

(83)a. kl lli ĥaket-w mazbut
 every that said.3SG.F-it true
 ‘everything that she said is true’

b. mazbut kl illi ĥaket-w
 true every that said.3SG.F-it
 Intended: true everything that she said.

c.*kl mazbut lli ĥaket-w
 every true that said.3SG.F-it
 Intended: everything is true that she said.

Note that it is possible to move the relative clause along with the head, as in (83b) in SA. This suggests that, if it were true that the wh-scope marking construction is derived by splitting a DP consisting of a determiner and a restrictive clause, we should expect movement of the entire DP, as an option. This is not possible in SA, or in any language with wh-scope marking, as far as I know (see (84)):

(84)*šū maŕ miin akl-et ĥaneen btzn-i?
 what with who ate-3SG.F Haneen think-2SG.F
 Intended: *What with whom ate Haneen you think?

Another argument against the analysis in which the wh-scope marker and the embedded question form a DP in underlying structure is brought up by Horvath (1997). She argues that a non-wh version of this DP, in which a non-wh D head (a quantifier) restricted by a wh-question should be possible. Whereas this is possible in Passamaquoddy as is argued in (Bruening 2004), it is not attested in SA (see (85)):

(85)a. šw ʔal-l-ek šū ʕaml-w S-Sbyan? [SA]
 what said.3SG.M-to-2SG.F.OBJ what did-3PL.M the-boys
 ‘What did he tell you? What did the boys do?’

b.*ʔal-l-ek ʕan kl-shi šw ʕaml-w S-Sbyan.
 said-to-2SG.F.OBJ about every-thing what did-3PL.M the-boys

As can be seen, there is little reason to think that wh-scope marking constructions in SA arise from a split DP constituent. Instead, the wh-scope marker and the embedded CP are distinct constituents.

5.9.6. *The small clause analysis*

5.9.7. *The wh-scope marker as an argument*

According to the standard analysis of wh-scope marking, the wh-scope marker is an expletive base generated in Spec of matrix CP (Riemsdijk 1983; McDaniel 1989). However, it is argued in Dayal (1994) that the wh-scope marker is an expletive base-generated in matrix object position. The wh-scope marker *was* in German is the [+wh] counterpart of the CP expletive *es* 'it' in structures like (86). This assumption is supported by the observation that *was* never co-occurs with [-wh] CP-expletives.

(86) a. **Es** wird behauptet [CP dass Maria Mel Gibson getroffen hat]
 it is said that Maria Mel Gibson met has
 ‘They are saying that Maria has met Mel Gibson.’

b. **Was** wird (*es) behauptet [CP **wen** Maria getroffen hat]?
 what is it said whom Maria met has
 ‘Who are they saying Maria has met?’

In line with Rothstein’s (1995) claim that true object expletives do not exist, expletives can only originate in subject positions since they get licensed through syntactic predication rather than θ -marking. As discussed in section (5.8), Felser (2001) argues that the wh-scope marker *was* is not an expletive but an internal argument of the matrix verb. It is excluded from positions reserved for true expletives. It cannot substitute for the expletive *es* ‘it’ in sentences like (87):

(87)a. Er findet [SC es überraschend] [dass Maria Hans noch liebt]
 he considers it surprising that Maria Hans still loves
 ‘He considers it surprising that Maria still loves Hans.’

b. *Was_i findet er [sc t_i überraschend] [wen_k Maria t_k noch liebt]?
 what considers he surprising whom Maria still loves

A similar point can be made about the *wh*-scope marker in SA, even though the facts are a bit more complicated. SA has a counterpart of the German expletive, but constructed with a complementizer, as shown in (88):

- (88) *ilt-l-ek inn-w_i [Deena ma raḥ tj-i l-yom]_i*
 told.1SG.SU-to-2SG.F.OBJ that-3SG.M Deena not will come-3SG.F the-today
 ‘I told you that Deena is not going to come today.’

The complementizer *inn-* also co-occurs with referential pronominal clitics, as in (89).

- (89)a. *baʔref inn-ek zʔlaneh.*
 know.1SG that-you upset
 ‘I know that you are upset.’

- b. *baʔref inn-a ma raḥ tji.*
 know.1SG that-her not will come
 ‘I know that she is not going to come.’

This complementizer is employed in Standard Arabic in the form of *ʔanna*, as in (90). It introduces both finite and non-finite clauses, and assigns accusative case to the following noun or pronoun (See Aoun et al 2010: 17; Mohammad 2000: 108). When not immediately followed by a lexical subject, as is the case in (90), it is followed by an expletive, an accusative clitic bearing default masculine singular form.

- (90)a. *Qultu ʔinna-hw wasala l-ʔ-wlaad-u [Standard Arabic]*
 said.1SG that-it arrived.3SG.M the-children-NOM
 ‘I said that the boys arrived.’

(88) has quite a different structure, though. The clitic element *-w* does not substitute for a subject, or take the subject as associate; the embedded clause has an initial lexical subject. Instead, I assume, the clitic is a clausal expletive, in that sense similar to *es* in (87a). It is coindexed with the clause *Deena ma raḥ tji lyom* ‘Deena will not come today’. The underlying structure is [CP-*w* [CP *inn*-IP]], and the surface morpheme order is derived by incorporation of the complementizer in the nominal head *-w*.

The wh-scope marker *šu* can still co-occur with the expletive in sentences like (91). This shows that the wh-scope marker does not originate in the same position of the expletive.

- (91) *šu fkkart ʔnn-w miin maria bthb?*
 what thought.2SG.M that-3SG.M who Maria love
 ‘Who did you think that Maria loves?’

This result entails that the wh-scope marker is not base generated in Spec of the matrix CP. *Šu* is a propositional proform, as in *šu fkkart?* ‘What did you think?’.

Another piece of evidence is that the wh-scope marking strategy is unavailable when the complement of V is a complex DP, as in (92),

- (92) **šu fkkart fkra maʃ miin Deema kan-et ʃam thk-i?*
 what thought.2SG.M idea with whom Deema was-3SG.F PROG speaking
 Intended: Who did you have an idea that Deema was talking to?

This can be understood if *šu* ‘what’ in the scope-marking construction is an argument of the verb base generated and receiving a theta-role in the direct object position. If so, (92) violates the theta-criterion.

Following from this discussion, it can be concluded that the wh-scope marker is not an expletive base generated in Spec of the matrix CP, nor an expletive in construction with an embedded clause, but an argument of the matrix verb.

5.9.8. *The Analysis*

In this section, I propose an alternative analysis of wh-scope marking in SA analogically with small clauses. I propose that the wh-scope marker and the embedded wh-clause start in the complement of a null copula followed by movement of the wh-scope marker to Spec of the matrix CP.

It has been argued in Felser (2001) that wh-scope marking in German can be understood in terms of a predication relation, the subject of which is the wh-scope marker and the predicate is the matrix verb and the embedded clause. While this analysis can account for different facts of wh-scope marking in German, it is not clear that the wh-scope marker and the embedded wh-clause can have a predicational relation mediated by the matrix verb. Moreover, in order to account for the interpretative mismatch between the wh-scope marker and the embedded clause, since the wh-scope marker is assigned the θ -role, Felser proposes that the embedded clause is a non-thematic expression base-generated in argument position. The assumption that the embedded CP is an unselected complement of V is an ad hoc. This assumption had to be implemented in order to account the interpretative mismatch between the wh-scope marker and the embedded wh-clause. The structure of wh-scope marking can rather be accounted for in a simpler derivation.

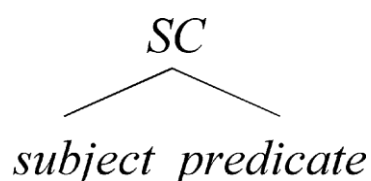
In order to account for wh-scope marking in SA, I propose in line with Felser's analysis that the structure can be assimilated with that of small clauses, however, I depart from Felser's complex predicate analysis by assuming that the structure can rather be accounted for as an instance of copula clauses of the type 'NP be NP', in particular, specificational clauses as in Higgins (1973), illustrated in (93):

- (93) a. What John did was wash himself.
 b. What do you believe DDT is?

The copular sentence can be in the form of a wh-question embedded below a verb of a propositional attitude, as is the case in (93b).

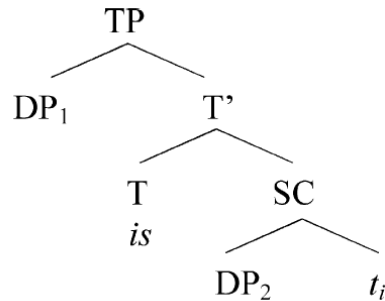
The term small clauses is used to refer to any type of construction consisting of a subject and a non-verbal predicate in the form illustrated in (94):

(94)



It is assumed that the subject of the small clause raises to SpecTP, so in the case of a sentence like ‘John is a doctor’, *John* starts in the complement of T and raises to SpecTP as in (95):

(95)



However, in wh-scope marking sentences, the two categories that are in a specificational relation are the wh-scope marker and the embedded wh-clause. In a sentence like (96), the small clause is embedded in the complement of the verb *?ilti* ‘said’. It consists of a null copula which takes the embedded wh-clause *miin shafet Deema* ‘who did Deema see’ as its subject, and the wh-scope marker *shw* ‘what’ as its predicate. The wh-scope marker raises to Spec of the main verb.

(96)a. *shw ?l-ti [sc [miin shaf-et Deema] COP shw]*
 what said-2SG.F who saw-3SG.F Deema
 ‘What did you say? Who did Deema see?’

The embedded wh-clause resembles a free relative clause introduced by a wh-expression. Free relative clauses can be introduced by wh-expressions in SA, as in (70):

(97) *Btushufi miin ma-badd-ek.*
 2SG.F-see who that-want-3SG.F.ACC
 ‘You see whoever you want’

In this analysis, there is only one variable, and that is *what*, which is a variable over propositions restricted by the ‘embedded question’, which is in fact a headless relative, not a question.

Shw ‘what’ here is a propositional proform, the question counterpart of that. It stands for a set of alternative propositions, which constitute the possible answers to the question (following Hamblin’s 1958 theory of the semantics of questions). In the context we may imagine, the set could be ‘she saw Mona, or she saw Basem, or she saw Fadi’. One of them is the answer to the question.

This analysis is consistent with the fact that wh-scope marking allows embedded yes/no questions. In a question like *shw ?allek bdw yji?* ‘what did he say? Is he coming?’, the yes/no question corresponds to a *whether* clause, as illustrated in (98):

(98)...say [SC [DP whether he is coming] (is) what]

The *whether*-clause here is a relative clause with a null head, like a null ‘that’, as in (99):

(99)[(that) whether he is coming] is irrelevant.

Further evidence can be found in the intonation graphs discussed in section (5.9). It has been shown that yes/no questions in SA are marked by a rising intonation. In contrast, the intonation in wh-scope marking sentences shows a rise in the first part of the sentence followed by a fall. This fall can be an indication that the embedded wh-clause is in fact a relative clause rather than a question.

According to this analysis, there is no direct dependency between the scope marker and the wh-phrase in the embedded clause. There is no LF replacement of the wh-scope marker by the embedded CP; rather they start in a small clause. Unlike the analysis of Felser (2001), the scope marking wh-word is not an argument of the matrix verb ‘say’ or ‘think’. The verb takes a small clause as complement.

If the wh-scope marker undergoes wh-movement to Spec of CP, this explains the fact that wh-scope marking is incompatible with islands. There is no movement at LF where the embedded CP would move along with the island to adjoin the wh-scope marker. The island will still block the movement.

As regards clauses without copies of the wh-scope marker in multiple embedded clauses (see sentence (100)), this can be accounted for as instances of long wh-movement of the wh-scope marker from the copula clause to Spec of the matrix clause.

- (100) Shw fkkarti Deema al-et Ğinni ma' miin knt ?am Ğihki?
what thought-2SG.F. Deema said-3SG.F that-1SG with who was prog speaking
'What did you think Deema said? 'Who was I talking to?'

5.10. Conclusion

This chapter has argued that wh-scope marking strategy is employed in SA for questioning out of embedded clauses as an alternative to long extraction questions. Properties of wh-scope marking in SA have been discussed. Based on these properties, it has been proposed that the dependency between the wh-scope marker and the embedded wh-phrase is indirect. The wh-scope marker and the embedded CP question do not start as a noun phrase headed by the wh-phrase that takes the embedded wh-clause as its complement, at either the underlying structure or at LF.

It has been argued that in wh-scope marking constructions in SA, the wh-scope marker is not base-generated in Spec of the matrix clause. The wh-scope marker and the embedded clause start in the complement of a copula clause, which is embedded under the matrix verb. This clause takes the embedded clause as its subject and the wh-scope marker as its predicate. The embedded wh-clause is assimilated to a free relative clause introduced by the wh-expression.

Chapter 6. Interrogative Slifting or Clausal Pied-Piping

6.1. Introduction

A *wh*-phrase originating within an embedded clause can undergo long *wh*-extraction, as in (1a). In some languages like Basque, it can pied-pipe the embedded clause along, as in (1b) (see Arregi, 2003: 118) (E: ergative case):

- (1) a. [Se pentzate su [t idatzi rabela Jonek]? [Basque]
what you-think written has Jon.E
'What do you think Jon wrote?'
- b. [Se idatzi rabela Jonek] pentzate su
what written has Jon.E you-think
'What do you think Jon wrote?'

Ortiz de Urbina (1989, 1993) argues that in clausal pied-piping in Basque, the *wh*-phrase first raises to Spec of the embedded clause, and then pied-pipes the embedded clause to Spec of the matrix CP.

It has been suggested in Lahiri (2002) that clausal pied-piping structures are semantic equivalents of *wh*-scope marking constructions in languages like Hindi and German. As discussed in Chapter 5, in a *wh*-scope marking construction, a *wh*-phrase does not appear in its scope marking position. It undergoes only partial *wh*-movement, to Spec of the embedded clause (in languages that allow overt *wh*-movement). Then a *wh*-phrase *what* appears in Spec of the matrix clause to mark the scope of the embedded *wh*-phrase, as illustrated in the Hindi example in (2):

- (2) raam kyaa soctaa hai [_{CP} ki ramaa kis-se baat karegii]? [Hindi]
Raam what think-PR that Ramaa who-INS talk do-FUT
'Who does Raam think Ramaa will talk to?'

Analogically, in clausal pied-piping, the embedded clause raises to Spec of the matrix CP, and a covert operator raises at LF to head the embedded clause. Following Lahiri

(2002), Arregi (2003) argues that clausal pied-piping constructions in Basque are more akin to long wh-movement than to wh-scope marking.

A similar type of structure in Finnish is discussed in Brattico (2012) as *snowball movement*, discussed in Chapter 4. In this type of structure, a wh-phrase dislocates to the left edge of a more local phrase, then it pied-pipes that phrase to the edge of the next local phrase until it reaches the edge of the matrix clause. (3) Could be seen as another case of this type of derivation.

Interrogative slifting in English is discussed in the literature. The following is an example:

(3) How old is she, did you say?

Haddican et al (2014) argue that the structure in English is different from either scope marking or clausal pied-piping constructions, as the different facts of interpretation of presupposition, restriction to verbs of saying and cognition, sensitivity to negation in the higher clause, reconstruction, root clause properties, and person restrictions suggest. Instead, the two parts of the construction, the wh-clause (called ‘the slift’) and the main clause are merged in a small clause headed by an evidential morpheme, which takes the main clause as its specifier, and the slift as its complement.

Syrian Arabic has a construction similar to the English one:

(4) addesh ʕmr-a ʔltly?
how.much age-her said.2SG.M.SU-to-1SG.OBJ
‘How old is she, did you say?’

In this chapter, I argue that sentences like (4) in Syrian Arabic are instances of interrogative slifting. This type of sentences manifests some characteristics of scope marking as regards the interpretation of presupposition of the raised clause; however, it behaves differently from either scope marking or long distance movement as regards the restriction to second person subjects. It shows restriction to verbs of saying and cognition. I propose following Haddican et al (2014) that the slifted clause is coindexed with a null operator merged in the complement of the matrix predicate.

6.2. Overview of the chapter

Clausal pied-piping is discussed in section 6.3 in terms of an indirect dependency analysis. In section 6.4, clausal pied-piping in Finnish involving snowball domains, is presented, followed by discussion of wh-slifiting in English in section 6.5, and wh-slifiting in Syrian Arabic in 6.6.

6.3. Clausal pied-piping

6.3.1. Clausal pied-piping and wh-scope marking

It has been suggested in Lahiri (2002) that clausal pied-piping structures like (2) are semantic equivalents of wh-scope marking constructions in languages like Hindi and German. In a wh-scope marking construction, a wh-phrase does not appear in its scope marking position. It undergoes partial wh-movement only to Spec of the embedded clause (in languages that allow overt wh-movement). Then a wh-phrase *what* appears in Spec of the matrix clause to mark the scope of the embedded wh-phrase, as illustrated in the Hindi example in (5):

- (5) raam kyaa soctaa hai [_{CP} ki ramaa kis-se baat karegii]? [Hindi]
Raam what think-PR that Ramaa who-INS talk do.FUT
'Who does Raam think Ramaa will talk to?'

Two main approaches have been proposed for the syntax and semantics of scope marking structures. The first is the *Direct Dependency* approach. In this approach, the wh-scope marker is an expletive wh-phrase *what*. It marks the scope of the embedded wh-phrase. At LF, the wh-expletive is replaced by the embedded wh-phrase. Thus, wh-scope marking under this approach is syntactically equivalent to long wh-movement at LF.

The other approach to wh-scope marking, which is adopted for the analysis of clausal pied-piping by Lahiri (2002) and Arregi (2003), is the *Indirect Dependency* approach proposed in Dayal (1994, 2000). Under this analysis, *what* is not an expletive scope marker base-generated in Spec of the matrix CP. Rather, it is a wh-quantifier over propositions. The embedded clause provides a syntactic restriction to the wh-scope

marker. It forms a syntactic constituent with the *wh*-scope marker at LF, where the *wh*-clause is a syntactic complement of the *wh*-scope marker¹⁶ (see Herburger 1994, Dayal 2000, and Lahiri 2002), as illustrated in (6), the LF structure of (5):

- (6) [CP[_{DP} kyaa kis-se ramaa baat karegii]]₁ raam soctaaht_{t₁}] [Hindi]
 what who-INS Ramaa talk do-FUT Raam think-PR

Arregi (2003) points out that the LF structure of scope marking in Basque could be seen as isomorphic to the overt structure of clausal pied-piping. The two constructions may have a similar LF structure and interpretation. The embedded clause would be in a similar fronted position in both cases, and the embedded *wh*-phrase is in Spec of the embedded clause. The LF structure of clausal pied-piping in Basque becomes similar to that of scope marking, if we assume that a covert *se* ‘what’ heads the pied-piped clause. The LF structure of example (2), repeated below as (7a), would be as in (7b):

- (7) a. Se idatzi rabela Jon ek pentzatesu?
 what written has Jon.E you-think
 ‘What do you think Jon wrote?’

- b. [CP [DP what[CP what written has Jon]]]₁ you-think t₁

Arregi (2003) refers to this analysis of clausal pied-piping as the ‘Indirect Dependency approach’. The embedded clause provides restriction for a covert *wh*-quantifier. However, Arregi argues that this approach is not on the right track. He argues that clausal pied-piping constructions should be interpreted as their long-distance *wh*-movement counterparts.

6.3.2. *Presupposition*

Following Herburger’s (1994) analysis of the presupposition of questions, Arregi (2003) argues that clausal pied-piping constructions act like long *wh*-movement. Example (8a, b) (cf. Lahiri (2002)) illustrates the difference between long distance *wh*-movement and *wh*-scope marking:

¹⁶ Dayal (2000) discusses three approaches for how the embedded question provides a restriction for *what* (see chapter four). Here, I am concerned mainly with the analysis discussed above.

(8) a. Who does Raam think that Ramaa saw? [English]

b. raam kyaa soctaa hai [CP ki ramaa-ne kisko dekha]. [Hindi]

Raam what thinks that Ramaa-E who saw

‘Who does Raam think that Ramaa saw?’

In the long extraction question in (8a), the speaker does not necessarily presuppose that Ramaa saw someone. The speaker only assumes that Raam thinks that Ramaa saw someone. However, in the wh-scope marking construction in (8b), the speaker presupposes that Ramaa saw someone. The matrix clause inherits the presupposition from the embedded clause, unlike the case in long-distance wh-movement. The embedded question presupposes the truth of ‘ramaa saw someone’. The matrix clause also shares this presupposes.

If clausal pied-piping is analogical with wh-scope marking, the same presuppositional difference between clausal pied-piping and long wh-movement would be expected. However, Arregi argues that this is not the case. See, for example, sentences (9a, b):

(9) a. Sein₁ pentzaten dau Mirenek [CP Jonek il banela t₁]? [Basque]

who.A thinks Miren.E Jon.E killed had t₁

‘Who does Miren think Jon killed?’

b. [CP Sein il banela Jonek] pentzaten dau Mirenek t_{CP}?

who.A killed had Jon.E thinks Miren.E t_{CP}

‘Who does Miren think Jon killed?’

(Arregi 2003: 126)

As is the case with long-distance wh-movement, there is no presupposition in clausal pied-piping structures. In (9b), the speaker does not presuppose that Jon killed anyone; rather, the presupposition is that Miren thinks that Jon killed someone, which is also the case in long extraction questions, as in (9a). This result leads Arregi to the conclusion that clausal pied-piping in Basque has the same LF structure as its long-distance counterpart.

6.3.3. Amount *wh*-phrases

The other argument that led Arregi to the conclusion that clausal pied-piping in Basque is more akin to long *wh*-movement is based on the scope of amount *wh*-phrases like *how many* over intentional verbs. Scope ambiguity is illustrated in (10a, b) (See Arregi 2003: 127):

- (10) [How many books]₁ do you think [CP Bill read t₁]?¹⁷
- a. Many > think
 What is the number of books such that you think that Bill read those books?
 [CP what_n [*n*-many books₁ [you think [CP Bill read t₁]]]]
- b. Think > many
 [CP what_n [you think [CP *n*-many books₁ [Bill read t₁]]]]
 What is the number *n* such that you think that Bill read *n*-many books?

Arregi proposes an analysis of *how many* NP assuming that it can be divided into a *wh*-part (*how*), interpreted as *what number n*, and a non-*wh* quantifier part *many* NP, interpreted as *n-many* NP (see also Cresti 1995; Rullmann 1995; Beck 1996). The ambiguity of (10) is in terms of the placement of the quantifier part at LF. In (10a), the quantifier is interpreted in the matrix clause. It has scope over the verb *think*. In (10b), the scope of the quantifier is under *think*. It is interpreted in the embedded clause. It has been argued in Lahiri (2002) that this ambiguity does not exist in scope marking constructions in Hindi, as illustrated in (11):

- (11) rameS kyaa soctaa hai [CP ki raam-ne kitnii kitabeN paRhiiN]? [Hindi]
 Rames what thinks that Raam-E how many books read-PST
- a. *many > think
 *What is the number of books such that Rames thinks that Raam read those books?
- b. think > many
 What is the number *n* such that Rames thinks that Raam read *n*-many books?

¹⁷ To illustrate the scope ambiguity of *how many* over intentional verbs, (10) can be interpreted as follows: A thinks that Bill read *Treasure Island* and *Huckleberry Finn*. Many > think means, B asks how many such books there are that A thinks that Bill read. There is no presupposition that A thinks that Bill only read those two books. Think > many means that A has an idea of how many books Bill read (perhaps with no idea which books they were), and B asks him what the quantity is.

In sentences like (10), *many* can have narrow scope, i.e. can be interpreted under *think*. It cannot have wide scope over *think*. Under the *Indirect dependency* approach, the scope marking sentence in (11) would have the LF structure (12):

(12)_{[DP what [_{CP} what_n [n-many books₂ [Raam read t₂]]]]₁ Ramesthinks t₁}

The LF reading in (12) shows that *many* cannot have wide scope over *think* under the indirect dependency approach. *Many* is interpreted under the scope of *think* giving the interpretation in (11b). It is interpreted under the scope of *what n*, which in turn is interpreted under the scope of the expletive *what*, thus *think* is higher in the structure than *many books*.

It is expected that under the indirect dependency approach, clausal pied-piping would have a similar interpretation to wh-scope marking. However, this is not the case in Basque. Clausal pied-piping does rather manifest ambiguities similar to that of the counterpart long-distance construction, as can be seen in (13a, b) (see Arregi, 2003, 128-129):

(13)a. Clausal pied-piping

[_{CP} Semat argaski erakusti lagunai] desiriu rau Jonek t_{CP}?
 how many picture to-show friends.D decided has Jon.E
 ‘How many pictures did Jon decide to show his friends?’

b. Long-distance movement

[Semat argaski]₁ desiriu rau Jonek [_{CP} erakusti lagunai t₁]?
 how many picture decided has Jon.E to-show friends.D
 ‘How many pictures did Jon decide to show his friends?’

The clausal pied-piping sentence (13a) allows the two possible readings of the long wh-movement in (13b), which are (14a, b):

(14) a. decide > many
 What is the number n such that Jon decided to show n -many pictures to his friends?

b. many > decide
 What is the number of pictures such that Jon decided to show those pictures to his friends?

If clausal pied-piping is interpreted in terms of the *Indirect Dependency* structure, the embedded wh-clause would be the complement of a covert *what*, which pied-pipes this complement. Thus the sentence would only have the restricted reading available for wh-scope marking constructions. If it is interpreted as the long distance wh-movement structure, the wh-phrase would be interpreted in the Spec of the matrix CP separately from the embedded clause, which means that pied-piping in this case is semantically vacuous. Therefore, the sentence would allow the interpretative possibilities allowed in long distance movement structures.

A further argument that Arregi employs is that clausal pied-piping is akin to long wh-movement comes from reconstruction of the pied-piped clause, and its interaction with negation. Arregi argues that sentences like (15) involve reconstruction. The LF structure of example (15a), represented in (15b), is derived in two steps. The wh-word raises first out of the pied-piped clause, so it can have scope over the matrix clause, then the remnant clause is reconstructed to its base position:

(15) a. [CP Se idatzi rabela Jonek] pentzaten dau Mirenek tCP?
 what written has Jon.E thinks Miren.E tCP
 ‘What does Miren think Jon wrote?’

b. what [[CP t_{WH} written has Jon.E] thinks Miren.E tCP] →
 what [thinks Miren.E [CP t_{WH} written has Jon.E]]

Since clausal pied-piping has the same LF structure as long-distance wh-movement, the fact that the two constructions have the same presupposition follows. A sentence like (13a) would have the structure in (16) after extraction of the wh-phrase *semat argaski* ‘how many pictures’ and reconstruction of the pied-piped CP:

(16) [Semat argaski]₁ [desiriu rau Jonek [CP t₁ erakusti lagunai]]
 how many picture₁ decided has Jon. E to-show friends.D

If the non-wh quantifier part (many pictures) is reconstructed into the embedded CP, the matrix verb will have scope over it, giving the reading in (14a). If it does not reconstruct, it will have scope over the matrix verb, giving the reading in (14b).

Arregi argues that the hypothesis that clausal pied-piping involves reconstruction explains the fact that this type of movement cannot occur across negation, while long-distance movement can.

(17) a.* [CPSein jun danik] es tau esan Mirenek tCP?
 who gone has not has said Miren.E tCP
 ‘Who didn’t Miren say left?’

b. Sein₁ es tau esan Mirenek [CP t₁ jun danik]?
 who not has said Miren.E gone has
 ‘Who didn’t Miren say left?’

Since clausal pied-piping involves reconstruction of the pied-piped material, negation creates an island that blocks reconstruction¹⁸.

6.4. Snowball domains and adjunction in Finnish

Brattico (2012) discusses a type of structure in Finnish similar to clausal pied-piping, which he calls *snowball movement* (see chapter 4). In this type of structure, a wh-phrase undergoes roll-up movement before it reaches the edge of its scope position. It dislocates to the left edge of the most local phrase, then it pied-pipes that phrase to the edge of the next local phrase, and so on¹⁹:

(18) Mitä_i syötyään t_i Pekka nukahti t_i

¹⁸ For more details on reconstruction and negative islands see Arregi (2003, 136-141). Arregi makes a clear distinction between predicates and arguments. Reconstruction of predicates but not of arguments is obligatory.

¹⁹ The label TUA refers to TUA adverb and is coined from the morphological material of the adverb.

what ate.TUA Pekka fall.asleep
'After eating what did Pekka fall asleep?'

The wh-phrase undergoes movement inside the TUA adjunct called 'secondary movement' (Heck 2004, 2008; see chapter 4). Then the wh-phrase inside the adjunct phrase pied-pipes that phrase to the left periphery of the matrix clause. This iterative roll-up process is called snowball movement. When the wh-phrase is first merged as a constituent of an embedded clause, as in (18), the snowball movement may end up as clausal pied-piping. In fact, finite clauses do not undergo pied-piping, only non-finite clauses do, in Finnish.

6.5. Wh-slifing in English

Another type of apparent clausal pied-piping appears in English (see (19) and (20)):

- (19) How old is she, did she say?
(20) Where did John go, do you think?

It has been argued that sentences like these in Basque are cases of clausal pied-piping, as in Ortiz de Urbina (1989, 1993) and Arregi (2003). However, Haddican et al (2014) argue that English sentences like (19) and (20) are not scope marking constructions, nor are they derived by clausal pied-piping. Rather, these are wh-slifing constructions, cousins of declarative slifing sentences; see (21) below.

Slifing sentences have been analysed in Ross (1973) as being derived transformationally from sentences where the slift is generated as the complement of the main clause. The complementizer *that* is deleted, and the lower clause adjoins to the top of the clause which appears on the right, as in (21):

- (21) Max is a Martian, I feel <Max is a Martian>.
(Haddican et al, 2014, 10 adapted from Ross, 1973, 131)

Haddican et al present some facts about wh-slifing sentences in English which show that it is distinct from both clausal pied-piping and scope marking. First, English wh-slifing manifests an interpretation of presupposition similar to that of wh-scope

marking constructions. In a sentence like (22a), the speaker presupposes that John went somewhere, contrary to the case in long wh-movement (see (22b)), in which the speaker need not presuppose that John went anywhere, only that the subject thinks that he did.

(22)a. Where did John go does she think?

b. Where does she think that John went?

Second, wh-slifing questions in English behave similarly to wh-scope marking constructions, but unlike wh-extraction, in that the set of bridge verbs available is restricted to verbs of saying and cognition, like *think*, *believe*, *suppose*, and *suspect* (see 22a), but marginal with verbs like *claim* and ungrammatical with *be possible*, which are allowed in long wh-movement (compare (23a, b) and (24a, b)):

(23)a. ??How old is she do you claim?

b. How old do you claim that she is?

(24)a. *[Which book did she steal] is it possible?

b. Which book is it possible that she stole?

These contrasts indicate that sentences like (19)-(20) are not derived from the same underlying structure as long wh-movement.

The third piece of evidence comes from negation. Wh-slifing questions behave similarly to wh-scope marking constructions and differently from long wh-movement with respect to the sensitivity to sentential negation in the higher clause. While long wh-movement is fine across negation, as in (25a), wh-slifing is blocked, as in (25b). Wh-scope marking is also blocked by negation. Compare the wh-scope marking construction in (26a) to the extraction structure in (26b):

(25)a. Who don't you think/do you not think [<who> will come]?

b. *[Who will come] don't you think/do you not think?

(Haddican et al 2014: 6)

(26)a. *Was glaubst du nicht, mit wem Maria gesprochen hat? [German]

what believe you not with whom Maria talked has

- b. Mit wem glaubst du nicht, dass Maria gesprochen hat?
 with whom believe you not that Maria talked has
 ‘Who don’t you think that Maria talked to?’ (Dayal 1994)

However, Haddican et al argue that the ungrammaticality of wh-slifiting across negation in English cannot be attributed to the same reasons that render wh-scope marking ungrammatical across negation. Beck (1996) proposes the Minimal Negative Structure Constraint (MNSC) suggesting that the ungrammaticality of wh-scope marking constructions across negation is a consequence of LF movement vs. overt movement across a negative quantifier. This constraint does not arise with long wh-movement since movement of the wh-phrase is overt, as in (26b). It appears with wh-scope marking constructions when the lower wh-phrase in the lower clause raises at LF to the position of the wh-scope marker in the matrix clause. In (25b), the clause raises overtly past negation, so the degradation cannot be explained in terms of Beck’s MNSC.

It has been argued in Arregi (2003) that clausal pied-piping in Basque involves LF extraction of the wh-word to Spec of the matrix clause and reconstruction of the pied-piped clause (see example (17) repeated in (27) below), which will cause an intervention effect by the negative morpheme *es* between the wh-word in the matrix CP and its reconstructed trace, as in (27b), in violation of Beck’s proposed constraint.

- (27) a.* [CP Sein jun danik] es tau esan Mirenek t_{CP}?
 who gone has not has said Miren.E t_{CP}
 ‘Who didn’t Miren say left?’

- b. Sein es tau esan Mirenek [CP t_l jun danik]?
 who not has said Miren.E gone has
 ‘Who didn’t Miren say left?’

Haddican et al propose that this is not the case in English wh-slifiting. The preposed clause does not reconstruct. This is shown by the absence of condition C violations in sentences like (28). The R-expression *John* is coindexed with the pronoun *he* in the matrix clause, suggesting that John is not c-commanded by the pronoun at LF, and that the preposed clause does not reconstruct.

(28)[What did John_i buy] did he_i say?

Root clause properties of wh-slifiting in English also suggest that they are distinct from clausal pied-piping, scope marking constructions and long wh-movement questions. It has been noted by Lahiri (2002) that subject-auxiliary (SAI) inversion is obligatory in both clauses in non-subject wh- questions:

(29)a.[How old is she] do you think?

b.*[How old she is] do you think? (no SAI in lower clause)

c.*[[How old] is she] you think? (no SAI in upper clause)

Haddican et al point out that SAI does not apply in the embedded clause in long wh-movement questions in English (see (30)), nor does it apply in the lower clause in wh-scope marking constructions in German (see (31)):

(30)*How old do you think is she?

(31)a.*Was glaubst du, mit wem hat Maria gesprochen? [German]

what believe you with whom has Maria talked

b.Was glaubst du, mit wem Maria gesprochen hat?

what believe you with whom Maria talked has

It appears that German scope marking constructions are not root-clause like. The lower clause cannot have main clause verb-second (V₂) word order.

Wh-slifiting constructions are also distinct in that they cannot be embedded questions, as in (32c), unlike the case with long wh-movement (32b) and wh-scope marking constructions (32a) in German:

(32)a.Ich weiss nicht was er denkt welches Buch sie gelesen hat. [German]

I know not what he thinks which book she read has.

‘I don’t know which book he thinks she read.’

b.I wonder how old you think she is.

c. *I wonder how old is she do you think.

The last property that Haddican et al point out about wh-slifiting in English, which differs from German/ Hindi scope marking and clausal pied-piping constructions, is person restriction on the main clause subject. It seems that subjects other than pronominal *you* are degraded in wh-slifiting questions (see example (33) from Lahiri, 2002: 506). However, examples from clausal pied-piping constructions (see (15a) repeated here as (33b)) and wh-scope marking (33c) show that these structures are fine with non-second person subjects. It appears that there is variation among speakers of English regarding 3rd person pronominal subjects. For some speakers, (19) or (28), with *she* and *he* as main clause subject respectively, are perfectly acceptable. For other speakers, *you* is the only subject admissible in the construction. Even for the tolerant speakers, (33a) with a proper name as subject is highly marginal.

(33)a. ?? Who did John see does Bill believe?

b. [CP Se idatzi rabela Jonek] pentzaten dau Mirenek tCP? [German]
what written has Jon.E thinks Miren.E
'What does Miren think Jon wrote?'

c. Was glaubst Luise, wem Karl welches Buch gegeben hat?
what believes Luise who Karl which book given has
'Who does Luis believe that Karl gave which book to?'

From what has been discussed, Haddican et al propose that sentences like (19) and (20) in English are interrogative slifiting constructions which are close cousins of declarative slifiting but they differ in some respects.

Following Rizzi (1997), Haegeman (2004) and Sheehan and Hinzen (2011), Haddican et al (2014) propose that there is an interrogative force head in the slifted clause responsible for subject-auxiliary inversion. It is Q-force which triggers T-to-C movement in English. This force head encodes the pragmatic property that the slifted question is the main information request of the utterance.

This assumption can explain the behaviour of wh-slifing in English. It explains the presupposition fact that wh-slifing questions carry existential presuppositions contrary to the situation with long distance wh-questions. See examples (34) and (35):

(34) Where did she say that John went?

(35) Where did John go, did she say?

For the long-distance wh-question (34), the presupposition that *John went somewhere* does not hold. Haddican et al argue, following Karttunen's (1973) theory of presupposition, that in this type of questions, verbs of saying block the presupposition of the lower clause. In contrast, in the wh-slifing example (35), the presupposition that *John went somewhere and that we would like to know this place* holds since the question of the slifted clause is the main information request. By virtue of the syntactic structure (see below) the verb of saying does not block the presupposition, as it does not c-command the slift.

Haddican et al argue further that their analysis can explain the fact that wh-slifing sentences cannot be embedded questions, as in (36a). This follows from the fact that predicates selecting embedded questions, like *wonder*, *know*, etc, must be the main information request. They do not allow shifting the main information request to a complement clause, assuming that wh-slifing sentences require that they be the main information request. Thus (36b) would be ungrammatical because of a main information request conflict.

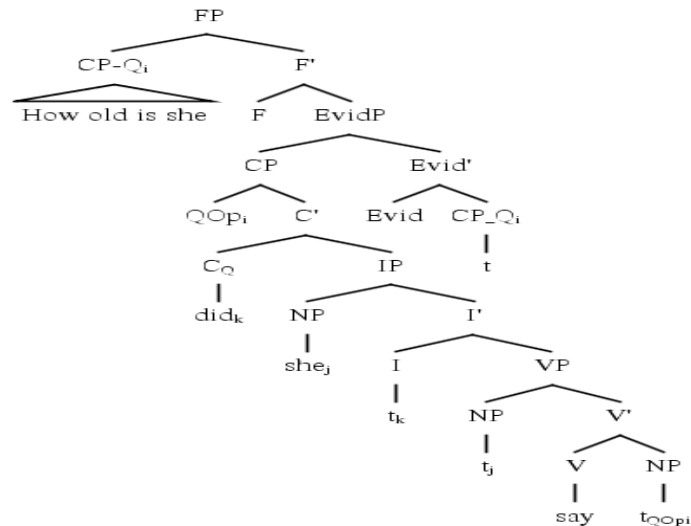
(36)a. I wonder how old you think she is.

b. *I wonder how old is she do you think.

Adopting Rooryck's (2001) assumption, Haddican et al argue that the slifted clause (for instance *Where did John go* in (35)) is not first merged as the complement of the main clause. Instead, the two clauses are merged in a small clause headed by an evidential morpheme, which takes the main clause as its specifier. The slift is merged as the complement of this head. A Q-feature in the slifted clause is coindexed with a Q-operator in the main clause. This Q-operator is first merged in the complement of the main clause (see Collins and Branigan 1997; Cover and Thiersch 2001). Haddican et al

argue that the operator raises to Spec of the main clause, as in (37) adapted from Haddican et al's analysis:

(37)



Operator movement is what triggers subject auxiliary inversion in the main clause. The slifting movement involves movement to a focus position FocusP above the evidential head, as is suggested in Suñer (2000) for quotative constructions.

This analysis follows from the assumption that the main clause is evidence of the content of the slift. The interrogative version of *what she said* in (37) is evidence of *how old she is*, but with an abstract head in place of ‘is evidence of’. In other words, *how old is she did she say?* is the interrogative version of a sentence which can be paraphrased as ‘what she said is evidence of how old she is’, but with the additional tweak that the slifted question is the main information request.

6.6. Wh-slifting in Syrian Arabic

It has been discussed in section (6.3) that a wh-phrase originating from within an embedded clause can pied-pipe an entire clause to Spec of the matrix clause in some languages. It has been argued that this movement is semantically equivalent to wh-scope marking in languages like Hindi (Lahiri 2002), but more akin to long-distance wh-movement than to scope marking in languages like Basque (Arregi 2003).

It has also been pointed out that in English, this type of question, which takes the form of interrogative slifting, is distinct from clausal pied-piping in which the pied-piped clause is merged as the complement of the main clause, and is isomorphic to either scope marking or long wh-extraction questions. Instead, interrogative slifting is akin to declarative slifting (Haddican et al 2014).

A similar construction to clausal pied-piping can be seen in Syrian Arabic, as in sentences like (38a) and (38b). In what follows, I argue that these sentences are not instances of embedded clause pied-piping discussed in (Ross 1973), nor are they akin to wh-scope marking constructions as in Lahiri (2002). Such questions are instances of wh-slifting constructions similar to those discussed in Haddican et al (2014):

(38)a. addesh ʕmr-a al-et-l-ak?
 how much age-her said-3SG.F.SU-to-2SG.M.OBJ
 ‘How old is she, did she tell you?’

b. la-wen raḥ ʕli fkkar-ty?
 to-where went Ali thought-2SG.F
 ‘Where did Ali go, did you think?’

6.6.1. Presupposition

The first argument for interrogative slifting in SA comes from the interpretation of presupposition. In wh-scope marking constructions, the speaker presupposes that the action in the embedded clause has taken place, unlike the case in long wh-movement questions (Herburger 1994). See for example sentences (39a, b, and c):

(39)a. la-wen fakkr-ty bassem raḥ?
 to-where thought-2SG.F Bassem went
 ‘Where did you think Bassem went?’

b. šw fkkar-ty la-wen raḥ bassem?
 what thought-2SG.F to-where went Bassem
 ‘What did you think? Where did Bassem go?’

- c. la-wen raḥ bassem fkkar-ty?
 to-where went Bassem thought-2SG.F
 ‘Where did Bassem go, did you think?’

In the long wh-movement question (39a), the speaker does not presuppose that Bassem went anywhere, contrary to the case in the wh-scope marking construction (39b), where the speaker presupposes that Bassem did go somewhere, but that the addressee thinks that he went somewhere else. In (39c), the speaker does presuppose that Bassem did go somewhere. In this respect, the wh-slifft behaves like scope marking constructions in terms of the presupposition of the raised clause.

6.6.2. Sensitivity to negation

The sensitivity to negation test does not help in deciding whether wh-sliffting in SA is more akin to long wh-movement or to wh-scope marking. The reason is that both constructions, wh-scope marking and long wh-extraction, are ungrammatical across negation (see 40a, b) respectively.²⁰ Wh-sliffting questions are sensitive to negation in the higher clause as well (see 40c):

- (40)a. *Shw ma fkkart-i min raḥ yj-i
 what not thought.2SG.F who will M.come-2SG
- b. *Min ma fkkart-i innw raḥ yj-i?
 who not thought.2SG.F that will m.come-3SG
- c. *Min raḥ yj-i ma fkkar-ty t_{CP}?
 who will M.come-3SG not thought-2SG.F

As mentioned, Arregi (2003) argues that the ungrammaticality of wh-scope marking constructions involving negation in the main clause can be explained in terms of Beck’s (1996) *Minimal Negative Structure Constraint* (MNSC), which rules out sentences in which negation intervenes between a trace created at LF and its antecedent, as in (41):

²⁰ Sentences like (40a) can be acceptable in discourse linked contexts with extra focus on the negative particle. As has been argued in chapter 4, the variation with the acceptability is induced by the D-linked vs. non-D-linked status of the propositional complement of the matrix verb (Horvath 1997).

(41)* [XP₁ [. . . Neg . . . [. . . t₁^{LF} . . .]]]

(Arregi 2003)

This analysis assumes that pied-piped clauses involve LF extraction of the wh-word to the left periphery of the matrix clause, followed by obligatory reconstruction of the remnant CP. However, this does not seem to be the case in SA. Wh-slifing in SA does not manifest condition C violations, indicating that the construction does not involve reconstruction of the preposed clause at LF. In (42), for instance, *Iyad* is co-indexed with the null third person pronoun in the matrix clause, showing that the pronoun does not c-command *Iyad* at LF, and the preposed clause does not reconstruct:

(42)?[šw shtara Iyad] al-l-ek?

what bought Iyad said.3SG.M.SU-to-2SG.F.OBJ

‘What did Iyad buy, did he say?’

Therefore, the effect of negation in wh-slifing in SA is not a consequence of a filter that blocks LF movement. The preposed clause does not reconstruct, analogically with English and contrary to Basque. This makes a clausal pied-piping or a direct dependency analysis inappropriate for explaining the effect of negation in Syrian wh-slifing.

6.6.3. *Person restrictions*

Another property in terms of which SA sentences like (4) show similarity to interrogative slifing constructions is person restrictions. Interrogative slifing is generally restricted to second person subjects (Ross 1973, Lahiri 2002). Syrian manifests person restriction on the main clause subject. Subjects other than a second person singular pronoun tend to be degraded (compare (43a) and (43b)):

(43)a. Miin raḥ yfuz il-ti-l-y?

who will win said-2SG.F.SU-to-1SG.OBJ

‘Who would win, did you say?’

b. ?Min raḥ yfuz al-l-ek basem?
 who will win said.3SG.M.SU-to-2SG.F.OBJ Bassem
 ‘Who would win, did Bassem say?’

In this respect, SA wh-slifing behaves differently from clausal pied-piping constructions, which are fine with non-second person subjects (see (33) above)²¹.

6.6.4. Declarative slifing and wh-slifing

In this section, I compare Syrian wh-slifing and declarative slifing sentences, following Haddican et al (2014). (44) Is an example of declarative slifing in SA. One piece of evidence that a sentence like (4) is an instance of wh-slifing akin to declarative slifing rather than clausal pied-piping comes from the restriction on slifing predicates.

(44) khallas bassel al-et-ly.
 finished Bassel said-3SG.F-to-1SG
 Intended: Bassel finished, she told me.

Interrogative slifing in SA is limited to a certain sort of evidential predicates, mainly, the verb *say*, ‘with an indirect speech and reported belief interpretation’, and verbs like *suppose*, which describe ‘a participant’s beliefs about the proposition described in the slift’, but not factive predicates like *know*, *hope* or *promise* (Haddican et al 2014: 15):

(45)a. Miin jayeh ?l-ti-ly?
 who coming said-2SG.F.SU-to-1SG.F.OBJ
 ‘Who is coming, did you say?’

b. *Miin jayeh btitmanny?
 who coming wish.2SG.F

²¹ Root clause properties were discussed above as another feature distinguishing between wh-slifing, long distance wh-movement and wh-scope marking. They are not discussed here since Syrian has VSO order as the default order (see chapter (2)). Subject-auxiliary inversion does not mark root clause behaviour, and consequently wh-slifing questions cannot be identified by their root-clause vs. non-root-clause behaviour.

Predicates that allow slifting have the function of hedging the epistemic commitment of the speaker to the truth of proposition in the slifted clause in declarative slifting. In wh-slifting, it invites the hearer to lower the evidentiary value in answering the question in the slifted clause. This is not possible with factive predicates; hence they cannot participate in wh-slifting (see Scheffler 2009).

The fact that wh-slifting in Syrian is limited to a certain sort of evidential predicates can explain the blocking effect of negation in the main clause, discussed in section (6.5.2). It is argued in Haddican et al that negated belief predicates cannot be epistemic/evidential hedges in the sense of Scheffler (2009)²².

The fact that second person subjects are favoured in these constructions can be explained under the assumption that these constructions are interrogative slifting. First person arguments are preferred in declarative slifting. This is related to the givenness restriction of the embedded clause. The slifted clause in declarative slifting sentences constitutes the *main point of utterance* (MPU), whereas the matrix clause has an evidential/quotative function (Simons 2007) (see (46)):

(46) Max is a Martian, I believe.

(Ross 1973: 131)

Interrogative slifting constructions are parallel to declarative slifting in that the slifted clause is the MPU, which in questions corresponds to *the main information request*, while the main clause has an evidential/quotative interpretation. Haddican et al take these facts to explain the subject person restrictions in declarative and interrogative slifting. In declarative slifting sentences, the speaker expresses their belief about the proposition in the slifted clause, the main point of utterance. Their belief is presupposed by the declarative speech act. Similarly, in interrogative slifting constructions, the hearer is asked about their belief about the set of propositions presupposed in the main information request in the slifted clause by the act of asking the question. This makes

²² Negative islands seem slightly different in nature from the other islands discussed in this thesis. It seems that their blocking effect, at least in some cases, pragmatic rather than syntactic. This might be a problem for this analysis, however, I will leave it for now.

second person subjects more natural in such contexts. However, other subject persons can be used as evidential source if additional contextual support is available.

Another argument for the slifting analysis comes from the fact that parentheticals are formed in accordance with constraints on chopping transformations, as discussed in Ross (1973) on declarative slifting; see for example, sentences (47a) and (47b). Sentences like (47b) should be excluded by the *Complex NP Constraint* (CNPC), which prohibits movement of any constituent modifying a noun out of the NP clause. The slifted clause *ma rddet ʕle* ‘not answered him’ would move out of the complex NP, *ħakyek innw bassem ʔal inni ma rddet ʕle* ‘your saying that Bassem said that I haven’t answered him’ causing violation of the CNPC principle. Ross argues that the ungrammaticality of sentences like (47b) follows from the slifting analysis of such sentences.

(47)a. bsadde? ħaky-ek inn-w bassem ʔal inn-i ma
 believe.1SG saying-your that-3SG.M Bassem said that-1SG not
 rddet ʕle
 answered.1SG on.him
 ‘I believe what you said, that Bassem said that I have not answered him.’

b. *ma rddet ʕle bsadde? ħaky-ek inn-w bassem ʔal.
 not answered.1SG on.him believe.1SG saying-your that-3SG.M Bassem said

Similarly, interrogative slifting is ungrammatical in cases which require movement out of the clause modifying the complex NP, as in (48):

(48)*ʕa-min ma rddet bsadde? ħaky-ek inn-w bassem aal?
 on-who not answered.1SG believe.1SG saying-your that-3SG.M Bassem said
 Intended meaning: ‘I believe what you said that Bassem said that I did not answer him.’

Another test for the slifting analysis is *So-pronominalization* (Ross 1973). *So* allows the object clause of verbs like *think*, *believe*, *assume*, etc. to delete when it is identical with the object clause of an identical verb, as in (49):

(49) Max thinks that apricot paste has no calories, and his doctor thinks so too.

(Ross 1973: 153)

So-pronominalization cannot use an unembedded clause as an antecedent for *so*, as in (50a). However, if it is coindexed with an antecedent embedded under a parenthetical whose verb is allowed with *so-pronominalization*, (50a) becomes grammatical, as in (50b), which suggests that (50b) is an instance of slifting, and the slifted clause was embedded in the object of the verb of the parenthetical

(50)a. *Rufus is flatulent, and his wife thinks so too

b. Rufus is flatulent, I think, and his wife thinks so too.

Haddican et al (2014) argue that slifting is impossible if the complement position of the matrix clause is occupied by *so*, which is the case in declarative and wh-slifting, as in (51a) and (51b) respectively:

(51)a. Hilda has been brainwashed, I think (*so).

b. Where did John go, do you think (*so)?

This is also the case in SA. Sentence (52a) is an instance of declarative slifting as *hek* ‘so’ can be coordinated with the antecedent *Muna ghaliza* ‘Muna is rough’, which is the embedded object of *bhssa* ‘I feel her’. However, declarative slifting cannot occur in a context in which *hek* ‘so’ occurs in the complement position of the matrix clause, as in (52b):

(52)a. muna ghaliza, bhss-a, w khansaa bhss-a so
Muna rough feel.1SG.SU-3SG.F.OBJ and Khansaa feel-3SG.F.SU -3SG.F.OBJ hek
too
kman.

‘Muna is rough, I feel, and Khansaa feels so too.’

b. *muna ghaliza, bhss-a hek.

Muna rough feel.1SG.SU-3SG.F.OBJ so

Analogically, (53b) is ungrammatical, since the complement position is occupied by *hek* ‘so’.

(53)a. min ghaliz, bħss-i?
who rough feel-2SG.F
‘Who is rough, do you think?’

b. *min ghaliz bħss-i hek?
who rough feel-2SG.F so

Another piece of evidence for movement from the complement position of the main clause is that it gives rise to a wh-island effect, as in (54b):

(54)a. addesh ʕmr-a smʕty-ia ʔal-et?
how.much age-her heard.2SG.F.SU -3SG.F.OBJ said-3SG.F
‘How old is she did you hear her saying?’

b. *addesh ʕmr-a smʕty-ia miin ʔal-et?
how.much age-her heard.2SG.F-her who said-3SG.F

The subjacency effect which appears in (54b), in contrast with (54a), suggests that there is movement of the slifted clause across the wh-island induced by *ʕw* ‘what’. Ross (1973) cites the evidence discussed above in support of a movement analysis arguing that the slift is generated as the complement of the main clause, and the lower clause moves and adjoins to the left of the main clause.

However, Haddican et al (2014) adapting Collins and Branigan’s (1997) and Suñer’s (2000) analyses of direct quotation structures, propose that the slifted clause is coindexed with a null operator first merged as the complement of the main clause predicate. The facts discussed above follow from raising of the null operator, rather than from movement of the slift itself.

6.6.5. *Where is the slift from the parenthetical clause?*

The following argument of anaphor and variable binding in Syrian supports the null operator analysis suggested in Haddican et al (2014). Backwards variable binding is poor in declarative sentences, as in (55a). It is similarly poor with interrogative slifting (see 55b).

(55) a. *ʔmm-w_i ḥlweh kl wahed_i byfakker
mother-his beautiful every one think.3SG.M
Intended translation: ‘Everyone thinks that his mother is beautiful.’

b. *addesh ʕmr ʔmm-w_i byfakker kl wahed_i?
how.much age mother-his think.3SG.M every one
Intended: ‘How old does everyone think his mother is?’

Backwards anaphor binding is also unavailable in declarative slifting, wh-slifting, or long wh-extraction questions (see (56), (57), and (58) respectively:

(56) *šw ḥak-et Muna ʕan ḥal-w_i fakkar_i?
what said.3SG.F Muna about self-his thought.3SG.M
Intended: What said Muna about himself, he thought

(57) *Muna ʕajeb-a ḥal-w_i, fakkar_i.
Muna like.3SG.F self-his thought.3SG.M
Intended: Muna likes himself, he thought.

(58) *šw fakkar inn-w Muna ḥak-et ʕan ḥal-w?
what thought.3SG.M that-3SG.M Muna said.3SG.M about self-his
Intended: What did he think that Muna said about himself?

The unacceptability of backwards binding in these examples suggests that there is no reconstruction of the slifted clause to its position below the main clause, contrary to the case in clausal pied-piping movement.

Another argument for the null operator hypothesis is from split parentheticals: quotes can occur in different positions surrounding the quotative verb.

(59)lesh ʕam tsarrekh, ʕayt-et l-mara, l-walad nayem
why PROG shouting.2SG.M shouted the-woman, the-boy sleeping
'Why are you shouting', exclaimed the woman, 'the boy is sleeping.'

As pointed out in Suñer (2000), sentences which allow movement of only a part of the quote raise the question of whether the quote is base generated in DO position (see also Quirk et al, 1972). Suñer therefore proposes that it is not the quote that occupies the object position but an empty category, a null operator that is anaphorically related to the quote. Suñer supports this hypothesis by another argument. Some quotative verbs are intransitive as is the case in example (59) from SA, which suggests that the quote is not in object position.

Sequence of tense facts could be a good piece of evidence to prove whether sentences like (4) are instances of clausal pied-piping or wh-slifing. Haddican et al (2014) argue that tense agreement is not obligatory in clausal pied-piping sentences. In a sentence like (60), an interpretation where the coming by event is located after the utterance time is acceptable in the case of clausal topicalization, as in (61a). In contrast, this interpretation is constrained in a slifing sentence like (61b):

(60)A: Ruth said she would come by at 5, and it's 5.40 now.

B: She said (she'd/she'll) come at 6.

(Haddican et al 2014: 12)

(61)a. When John would come by exactly, they didn't say.

b. When would you come by, did you say?

However, this analysis cannot be used to support the argument that sentences like (4) are instances of interrogative slifing in SA since there is no tense agreement effects in SA in general. Whereas a sentence like (62a) is degraded in English, the counterpart example (62b) is acceptable in SA :

(62)a. ??He said that Muna is reading a book.

- b. ?al Muna ʕam tʔra ktab.
 said.3SG.M Muna PROG read book
 ‘He said Muna is reading a book.’

In the clausal movement approach. However, sentence agreement between the main clause and the slifted clause in Syrian does not seem obligatory. In sentences like (63), in which the main clause verb is in the past tense, the verb in the slifted clause can take the past tense as in (63a), or the future tense as in (63b). Although the former is preferred, both are acceptable.

- (63)a. aymat wassal ʕali ?l-ti-ly?
 when arrived Ali said.2SG.F.SU-to-1SG.OBJ
 ‘When did Ali arrive, did you say?’

- b. ?aymat raḥ ywassel ʕali ?l-ti-ly?
 when will arrive Alis aid.2SG.F.SU-to-1SG.OBJ
 ‘When would Ali arrive, did you say?’

The facts of the split parentheticals and the binding facts suggest that the construction discussed is an instance of wh-slifing discussed in Haddican et al following Rooryck (2001).

This construction follows from an evidential small clause structure for interrogative slifing. The relationship between the parenthetical clause and the slift is mediated by a silent evidential morpheme. The parenthetical main clause is merged as the specifier of the evidential head. The slift is merged as the complement of this head. Slifing involves movement to a focus position above the evidential head, as in (37). A Q feature in the left periphery of the slifted clause is coindexed with a null Q-operator in the main clause. The operator in the main clause is first merged in the complement of the main clause predicate and moves to the left periphery of this clause.

6.7. Conclusion

Questioning out of an embedded clause can occur by long wh-extraction of the wh-phrase or movement of the wh-phrase pied-piping the embedding clause. This structure is available in languages like Basque, Hindi and German. It has been argued in Lahiri (2002) and Herburger (1994) to be the semantic equivalent of scope marking constructions. This construction has been discussed in Finnish in terms of a roll-up movement of the wh-phrase. It first raises to Spec of its clause, then it pied-pipes that clause to Spec of the next clause until it reaches the Spec of the matrix clause. English has a construction which looks like clausal pied-piping, the interrogative slifting construction. However, Haddican et al have argued that this is distinct from clausal pied-piping. It shares some properties with declarative slifting. The main clause and the slift are merged in a small clause headed by an evidential morpheme. The slift is merged in the complement of the evidential head rather than the main clause, while an operator is first merged in the complement of the main clause and is coindexed with an operator in the slift.

Following Haddican et al, it has been argued that what looks like clausal pied-piping in Syrian is in fact an instance of wh-sifting. It is restricted to verbs of saying and cognition, and preferred with second person subjects. It is different from both scope marking and clausal pied-piping. It does not involve reconstruction of the slifted clause. It allows varied word order of the quotation. These facts have led to the conclusion that the slifted clause does not originate in the complement of the main clause. A null operator is merged in the complement of the main clause and is coindexed with the slifted clause.

Chapter 7. Conclusions

This thesis has presented the different types of wh-questions employed in Syrian Arabic (SA), the common structures they share with other languages and the differences.

The general impression is of a language with a rich and varied system of wh-questions. There are three main strategies (the gap, the resumption, and the so called class II strategy) for wh-question formation, each with their own variations. There are questions with inversion and questions without. There is wh-in situ under restricted circumstances. Long-distance wh-movement is allowed. In addition there is wh-scope marking/partial wh-movement as another strategy for long-distance wh-questions. Yet another construction for questioning out of an embedded clause is so called interrogative slifting. The last two constructions have not been described before in the context of Arabic.

Chapter two has discussed the two possible word orders in SA, SVO and VSO, showing that in the VSO order, the verb raises to a higher functional head F. In the SVO, a definite specific subject is preferred. Although both SVO and VSO orders are possible, the V-S order is obligatory in wh-questions. It has been shown that this does not follow from the V2 nature of SA; rather, it follows from a constraint on movement past F, which allows movement of only one XP (Holmberg (2014)). The verb lands in F, allowing only one phrase to cross. This means that whenever more than one constituent precedes the verb, one of them is externally merged there. The distribution of definite/specific and indefinite/quantified subjects in relation to the verb and F is regulated, at least in part, by the possibility of merging an expletive with FP. Further analysis of preverbal subjects is still required to investigate the few acceptable cases of negated indefinite quantificational nouns.

Chapter three has provided a classification of the strategies of wh-question formation in SA. It has been shown that wh-movement involves three strategies, the gap, the resumption, and class II strategy. Wh-in situ can be employed in discourse linked contexts. Multiple wh-questions are also marginally employed involving movement of one wh-phrase while the other(s) appear in situ. It has been argued that the ellipsis analysis cannot explain the facts in multiple wh-questions in SA, in particular, the

requirement for inserting a coordinative head before adverbial wh-phrases. Instead, these facts are accounted for in terms of Moro's (2011) *clause structure folding* approach. This strategy can be employed in languages that allow only one wh-phrase in the left-periphery. The two wh-phrases are merged in two Foc heads each attracting one wh-phrase. The coordinative head has the function of absorbing the two Foc-features. However, further investigation about the obligatory insertion of the coordinative head is still required. In particular, why is this insertion obligatory with adverbial wh-phrases but not with argumentals, and why is it equally obligatory with all types of adverbial wh-phrases. Another question needs to be taken into consideration is whether non-multiple fronting languages can be derived by multiple wh-movement in a single clause. I will leave these questions for future research.

Chapter four has discussed the phenomenon of pied-piping. It has been argued that Heck's (2008-2009) edge generalization with secondary wh-movement, which claims that the wh-phrase has to move to an edge position before pied-piping its clause, does not explain the fact that a wh-possessor pied-piping a possessed noun does not undergo secondary wh-movement to an edge position in SA. The possibility is discussed that this exceptional behaviour can be accounted for in terms of Cable's (2007) Q-theory if SA is a non-agreement language since Q/wh-agreement is not required in non-agreement languages, allowing lexical projections to intervene. However, it has been argued that SA is an agreement language. The idea that the wh-phrase is in a rightwards specifier or undergoes a rightward movement was rejected, following Kayne (1994), Cinque (2000, 2005) Abels & Neeleman (2006). It has been suggested that if SA is not a Q/Wh-agreement language, the fact that a wh-possessor can pied-pipe from a post-nominal position would be accounted for. However, it has been argued that SA is an agreement language. The properties of wh-movement of possessor-wh-phrases can be accounted for in terms of a combined hypothesis of the Q-theory with a modified version of the CSN proposed by Cinque (2000, 2005).

One interesting point to be further investigated in future research concerns the Q/Wh-agreement system in SA. Although it has been argued here that SA is an agreement language, there remains the question about wh-words that do not carry the morpheme *sh*, like *miin* 'who'. Can it be the case that those exceptional words are residuals of another system, and since *miin* does not carry this common morpheme *sh*, it does not carry any uninterpretable instance of the [Q] feature, thus, it does not induce Q/Wh-agreement,

which can lead to a different explanation for the exceptional behaviour of Wh-possessors that can pied-pipe from a post nominal position. However, this is outside the scope of this dissertation.

Chapter five has explored the structure of wh-scope marking in SA arguing that there is no direct dependency between the wh-scope marker and the embedded wh-phrase. The wh-scope marker and the embedded CP do not form a constituent headed by the wh-phrase taking the embedded CP as its complement neither in the underlying structure (see Herburger 1994; Bruening 2004), nor at LF (see Horvath 1997). The wh-scope marker is not an expletive. It forms a small clause with the embedded wh-clause, in particular a copula clause. This clause takes the embedded clause as its subject and the wh-scope marker as its complement. The embedded wh-clause is assimilated to a relative clause in the specifier of the copula clause.

Chapter six has investigated clausal pied-piping in SA. It has been argued that SA employs another strategy for questioning out of an embedded clause. This strategy is interrogative slifting. It is distinct from either scope marking or long wh-movement. It is similar to declarative slifting sentences, in which the main clause and the slift are merged in a small clause headed by an evidential morpheme, which takes the main clause as its specifier, and the slift as its complement, as is argued in Haddican et al (2014) for English interrogative slifting.

References

- Abels, K. (2003) *Successive Cyclicity, Anti-Locality, and Adposition Stranding*. Doctoral thesis. University of Connecticut.
- Abels, K. and Neeleman, A. (2006) 'Universal 20 without the LCA', Ms., University of Tromsø and University College London.
- Abney, S. (1987). *The English noun phrase in its sentential aspect*. Doctoral dissertation. Massachusetts Institute of Technology,.
- Aissen, J. (1996) 'Pied-piping, abstract agreement, and functional projections in Tzotzil', *Natural Language & Linguistic Theory*, 14(3), pp. 447-491.
- Al-Horais, N. (2006) "Arabic verbless sentences: Is there a null VP?." *Pragmalinguistica* 14: 101-116.
- Allan, K. (1971). 'A note on the source of there in existential sentences'. *Foundations of Language*, 1-18.
- Aoun, Joseph E., Elabbas Benmamoun, and Lina Choueiri. (2009) *The syntax of Arabic*. Cambridge University Press.
- Arregi, K. (2003) 'Clausal pied-piping', *Natural Language Semantics*, 11(2), pp. 115-143.
- Bailey, L., Holmberg, A., Krzek, M., Sheehan, M. and Sulaiman, M. (2010) 'Intonation questions', *The 2010 Annual Meeting of the Linguistics Association of Great Britain*. Leeds, 1st--4th September 2010.
- Beck, S. (1996a) 'Quantified Structures as Barriers for LF Movement', *Natural Language Semantics*, 4, pp.1-56.
- Beck, S. (1996b) *Wh-Constructions and Transparent Logical Form*. Doctoral thesis. Universität Tübingen.

- Beck, S. and Berman, S. (2000) 'Wh-scope marking: Direct vs. indirect dependency', *Wh-scope marking*, pp. 17-44.
- Benmamoun, E. (2000) *The Feature Structure of Functional Categories: A Comparative Study of Arabic Dialects*. Oxford: Oxford University Press.
- Biberauer, T. and Sheehan, M. (2012) 'Disharmony, antisymmetry, and the Final-over-Final Constraint', in Elguea-Valmala, V. and Uribe-Extebarria, M. (ed.) *Ways of structure building*. Cambridge: Cambridge University Press, pp. 106–244
- Borer, H. (1999) 'Deconstructing the construct', in Johnson, K., and Roberts, I. (Eds.) *Beyond Principles and Parameters*. Dordrecht: Kluwer, pp. 43–89.
- Bošković, Ž. (2005) 'On the locality of left branch extraction and the structure of NP*', *Studia linguistica*, 59(1), pp. 1-45.
- Brandner, E. (2000) 'Scope marking and clausal typing', *U. Lutz, G. Müller and A. von Stechow (eds.)*, pp. 45-75.
- Brattico, P. (2011) 'Snowball domains and adjunction coincide in Finnish', Ms, University of Helsinki.
- Brattico, P. (2012) 'Pied-piping domains and adjunction coincide in Finnish', *Nordic Journal of Linguistics*, 35(01), pp. 71-89.
- Bruening, B. (2004) 'Two types of wh-scope marking in Passamaquoddy', *Natural Language & Linguistic Theory*, 22(2), pp. 229-305.
- Cable, S. (2007) *The grammar of Q: Q-particles and the nature of Wh-fronting, as revealed by the Wh-questions of Tlingit*. Doctoral thesis. Massachusetts Institute of Technology.
- Cardinaletti, A. (1990) *Impersonal constructions and sentential arguments in German*. Padua Unipress.

- Cattell, R. (1976) "Constraints on Movement Rules," *Language* 52, 18-50.
- Cheng, L.L.S. (1997) *On the typology of wh-questions*. Taylor & Francis.
- Chomsky, N. (1973) 'Conditions on Transformations', in Anderson, S., Kisparsky, P. (ed.) *A Festschrift for Morris Halle*. New York: Holt, Rinehart and Winston.
- Chomsky, N. (1986) *Barriers*. MIT press.
- Chomsky, N. (1993) *Lectures on government and binding: The Pisa lectures*. No. 9. Berlin: Walter de Gruyter.
- Chomsky, N. (1995) *The minimalist program*. Cambridge: Cambridge University Press.
- Chomsky, N. (2000) 'Minimalist inquiries: The framework. Step by step: Essays on minimalist syntax in honor of Howard Lasnik, (ed.) by Roger Martin, David Michaels, and Juan Uriagereka, 89–155'. Cambridge, MA: MIT Press.
- Chomsky, N. (2001) 'Derivation by phase ', in Kenstowicz, M. (ed.) *Ken Hale: A life in language*. Cambridge: MA, MIT Press, pp. 1-52.
- Cinque, G. (1990) *Types of \bar{A} -dependencies*. Cambridge, Mass: MIT press.
- Cinque, G. (2000) 'On Greenberg's Universal 20 and the Semitic DP1', *Working Papers in Linguistics*, 10(2), p. 45.
- Cinque, G. (2005) 'Deriving Greenberg's universal 20 and its exceptions', *Linguistic inquiry*, 36(3), pp. 315-332.
- Collins, C. and Branigan, P. (1997) 'Quotative inversion', *Natural Language & Linguistic Theory*, 15(1), pp. 1-41.
- Coon, J. (2007) 'Wh-Possessors and the Problem with Pied-Piping in Chol Mayan. Ms'. MIT.
- Corver, N. (1992) 'Left branch extraction', *Proceedings of NELS*.

- Corver, N. and Thiersch, C. (2001) 'Remarks on parentheticals', in van Oostendorp, M. & Anagnostopoulou, E. (ed.) *Progress in Grammar. Articles at the 20th Anniversary of the Comparison of Grammatical Models Group in Tilburg*. Utrecht: Roquade.
- Cowper, E. (1987) 'Pied piping, feature percolation, and the structure of the noun phrase', *Canadian Journal of Linguistics* 32, pp. 321–338.
- Cresti, D. (1995) 'Extraction and reconstruction', *Natural Language Semantics*, 3(1), pp. 79-122.
- Danon, G. (1996) *The Syntax of Determiners in Hebrew*. Doctoral thesis. Tel Aviv University.
- Dauenhauer, N.M. and Dauenhauer R. (2000) *Beginning Tlingit*. Juneau, AK: Sealaska Heritage Institute.
- Dayal, V. (2000) 'Scope marking: Cross-linguistic variation in indirect dependency', *Wh-scope marking*, 37, pp. 157-193.
- Dayal, V.S. (1994) 'Scope marking as indirectwh-dependency', *Natural language semantics*, 2(2), pp. 137-170.
- Den Dikken, M. (1995) *Particles: On the syntax of verb-particle, triadic, and causative constructions*. Oxford: Oxford University Press.
- Duffield, N. (1995) *Particles and Projections in Irish Syntax*. Dordrecht: Kluwer Academic Publishers.
- Fassi Fehri, A. (1988) 'Case inflection, VS order and X'-Theory', *Proceedings of the 1st International Conference of the Linguistic Society of Morocco*.
- Fassi Fehri, A. (1989) 'Generalized IP structure, case and VS word order', *MIT working papers in linguistics*, 10, pp. 75-113.

- Fassi Fehri, A. (1993) *Issues in the structure of Arabic clauses and words*. Dordrecht: Kluwer Academic Publishers.
- Fassi Fehri, A. (1999) 'Arabic modifying adjectives and DP structures', *Studia Linguistica*, 53(2), pp. 105-154.
- Felser, C. (2001) 'Wh-expletives and secondary predication: German partial wh-movement reconsidered', *Journal of Germanic Linguistics*, 13(01), pp. 5-38.
- Gracanin-Yukse, M. (2007). *About Sharing*. Doctoral dissertation, MIT.
- Greenberg, J. (1963) 'Some universals of grammar with particular reference to the order of meaningful elements', In J. Greenberg (ed.), *Universals of Language*. Cambridge: MA, pp. 73-113.
- Gribanova, V (2009). 'Structural Adjacency and the Typology of Interrogative'. *Linguistic Inquiry*, 40(1), pp. 133-154.
- Grimshaw, J. (2000) 'Locality and extended projection', in Coopmans, P., Everaert, M. and Grimshaw, J. (eds.) *Lexical specification and insertion*. Amsterdam: John Benjamins, pp. 115-134.
- Haddican, B., Holmberg, A., Tanaka, H. and Tsoulas, G. (2014) 'Interrogative slifting in English', *Lingua*, 138, pp. 86-106.
- Haegeman, L. (2004) 'Topicalization, CLLD and the left periphery', *ZAS Papers in Linguistics*, 35(1), pp. 157-192.
- Haida, A, and Repp, S. (2011) 'Monoclausal question word coordinations across languages.' *Proceedings of NELS*. 39.
- Haspelmath, M. (1997) *Indefinite Pronouns*. Oxford: Oxford University Press.
- Hazout, I. (1991) *Verbal nouns: theta theoretic studies in Hebrew and Arabic*. University of Massachusetts.

- Heck, F. (2004) *A Theory of Pied-Piping*. PhD thesis. Universität Tübingen.
- Heck, F. (2008) *On pied-piping: Wh-movement and beyond*. Berlin: Walter de Gruyter.
- Heck, F. (2009) 'On certain properties of pied-piping', *Linguistic Inquiry*, 40(1), pp. 75-111.
- Herburger, E. (1994) 'A Semantic Difference between Full and Partial Wh-movement in German', *Annual Meeting of the Linguistic Society of America*. Boston.
- Higginbotham, J. and May, R. (1981) 'Questions, quantifiers and crossing', *The Linguistic Review*, 1(1), pp. 41-80.
- Higgins, F.R. (1973) *The pseudo-cleft construction in English*. Doctoral thesis. Massachusetts Institute of Technology.
- Hinzen, W. and Sheehan, M. (2011) 'Moving towards the edge: The grammar of reference', *Linguistic Analysis*, 37(3-4), pp. 405-458.
- Holmberg, A. (2014) 'Verb second', in Kiss, T. and Alexiadou, A. (eds.) *Syntax – an International Handbook of Contemporary Syntactic Research*. Berlin: Walter de Gruyter Verlag, pp. 343-384.
- Horrocks, G. and Stavrou, M. (1987) 'Bounding theory and Greek syntax: evidence for wh-movement in NP', *Journal of Linguistics*, 23(01), pp. 79-108.
- Horvath, J. (1997) 'The status of 'wh-expletives' and the partial wh-movement construction of Hungarian', *Natural Language & Linguistic Theory*, 15(3), pp. 509-572.
- Huang, C.T.J. (1998) *Logical relations in Chinese and the theory of grammar*. Taylor & Francis.
- Huhmarniemi, S. (2009) *A-bar movement in Finnish*. MA thesis. university of Helsinki.

- Karttunen, L. (1973) 'Presuppositions of compound sentences', *Linguistic inquiry*, pp. 169-193.
- Kayne, R.S. (1994) *The antisymmetry of syntax*. MIT Press.
- Kiparsky, P., Kiparsky, C. (1970) 'Fact', in Bierwisch, M., Heidolph, K.E. (eds.), *Progress in Linguistics: A Collection of Papers*. The Hague: Mouton, pp. 143–173.
- Kratzer, A. and Shimoyama, J. (2002) *3rd Tokyo conference on psycholinguistics*.
- Kuroda, S.-Y. (1995) *Generative Grammatical Studies in The Japanese Language*. Doctoral thesis. MIT.
- Lahiri, U. (2002) 'On the proper treatment of “expletive< i> wh</i>” in Hindi', *Lingua*, 112(7), pp. 501-540.
- Leu, T. (2008) 'What for internally', *Syntax*, 11(1), pp. 1-25.
- McCloskey, J. (1990) 'Resumptive Pronouns, A-bar Binding and Levels of Representation', in In Hendrick, R. (ed.) *The Syntax and Semantics of Modern Celtic Languages*. New York: Academic Press.
- McCloskey, J. (2002) 'Resumption, successive cyclicity, and the locality of operations', *Derivation and explanation in the minimalist program*, pp. 184-226.
- McDaniel, D. (1989) 'Partial and multiple wh-movement', *Natural Language & Linguistic Theory*, 7(4), pp. 565-604.
- Merchant, Jason. (2001) *The syntax of silence: Sluicing, islands, and the theory of ellipsis*. Oxford: Oxford University Press.
- Merchant, Jason. (2005) 'Sluicing', in Everaert M. and van Riemsdijk, H (ed) *The Blackwell companion to syntax*, vol. 4. Oxford: Blackwell.

Mohammad, M. (1988) 'On the parallelism between IP and DP', *Proceedings of WCCFL*.

Mohammad, M. (2000) *Word order, agreement, and pronominalization in Standard and Palestinian Arabic*. Vol. 181. John Benjamins Publishing,

Moro, A. (2011) "Clause Structure Folding and the “Wh-in-Situ Effect”." *Linguistic inquiry* 42.3: 389-411.

Ortiz de Urbina, J. (1989) *Parameters in the Grammar of Basque: A GB Approach to Basque Syntax*. Dordrecht: Foris.

Ortiz de Urbina, J. (1990) 'Operator feature percolation and clausal pied-piping', *MIT working papers in linguistics*, 13, pp. 193-208.

Ortiz de Urbina, J. (1993) 'Feature percolation and clausal pied-piping', *Generative studies in Basque linguistics*, 105, p. 189.

Pesetsky, D. and Torrego, E. (2007) 'The syntax of valuation and the interpretability of features', in Karimi, S., Samiian, V., and Wilkins, W. K. (ed.) *Phrasal and clausal architecture: Syntactic derivation and interpretation*, pp. 262-294.

Postal, P. (1966) 'On so-called pronouns in English', *Monograph series on language and linguistics*, 19, pp. 177-206.

Quirk, R., Greenbaum, S., Leech, G.N. and Svartvik, J. (1972) *A grammar of contemporary English*. London: Longman.

Reis, M. (2000) 'On the parenthetical features of German was... w constructions and how to account for them', in Lutz, U., Müller, G. and von Stechow, A. (eds.) *Wh-Scope Marking*. Amsterdam: John Benjamins, pp. 359-407.

Riemsdijk, H.v. (1983) *Correspondence effects and the empty category principle*, in Otsu et al (eds.), *Studies in Generative Grammar and Language Acquisition*, Tokyo: International Christian University, pp. 5-16.

- Ritter, E. (1987) 'NSO Noun Phrases in Modern Hebrew', *NELS* 17, pp. 521-537.
- Ritter, E. (1988) 'A head-movement approach to construct-state noun phrases', *Linguistics*, 26(6), pp. 909-930.
- Ritter, E. (1991) 'Two functional categories in noun phrases: Evidence from Modern Hebrew', *Syntax and semantics*, 25, pp. 37-62.
- Rizzi, L. (1990) *Relativized minimality*. The MIT Press.
- Rizzi, L. (1991) 'Residual verb second and the Wh criterion', *Technical Reports in Formal and Computational Linguistics* 2, University of Geneva.
- Rizzi, L. (1992). 'Argument/adjunct (a) symmetries', *Proceedings of NELS*.
- Rizzi, L. (1997) 'The fine structure of the left periphery', in *Elements of grammar*. Springer, pp. 281-337.
- Rizzi, L. (2001) 'On the position "Int (errogative)" in the left periphery of the clause', *Current studies in Italian syntax*, 14, pp. 267-296.
- Roberts, I. (2004) 'The C-system in Brythonic Celtic languages, V2, and the EPP', *The structure of CP and IP: the Cartography of syntactic Structures*, 2, pp. 297-328.
- Rooryck, J. (2001) 'Evidentiality, part I', *Glott International*, 5(4), pp. 125-133.
- Ross, J. (1967) *Constraints on variables in syntax*. Doctoral thesis. MIT.
- Ross, J. (1973) 'Slifting', in Gross, M., Halle, M. and Schuetzenburger, M. (eds.) *The Formal Analysis of Natural Languages*. Paris: Mouton, pp. 131-169.
- Rothstein, S. (1995) 'Pleonastics and the interpretation of pronouns.', *Linguistic Inquiry*, 26, pp. 499-529.
- Rullmann, H. (1995) *Maximality in the semantics of wh-constructions*. Doctoral thesis. University of Massachusetts Amherst.

- Scheffler, T. (2009) 'Evidentiality and German attitude verbs', *University of Pennsylvania Working Papers in Linguistics*, 15(1), p. 21.
- Sheehan, M. (2010). 'Extraposition and antisymmetry.' *Linguistic variation yearbook* 10(1): 201-251.
- Shlonsky, U. (2002) "Constituent questions in Palestinian Arabic", in Ouhalla, J. and Shlonsky U. (eds) *Themes in Arabic and Hebrew syntax*. Dordrecht: Kluwer, 137-159.
- Siloni, T. (1997) *Noun phrases and nominalizations: The syntax of DPs*. Dordrecht: Kluwer.
- Simons, M. (2007) 'Observations on embedding verbs, evidentiality, and presupposition', *Lingua*, 117(6), pp. 1034-1056.
- Sportiche, D. (1988) 'A theory of floating quantifiers and its corollaries for constituent structure', *Linguistic inquiry*, pp. 425-449.
- Stepanov, A. and Tsai, W.-T.D. (2008) 'Cartography and licensing of wh-adjuncts: a cross-linguistic perspective', *Natural Language & Linguistic Theory*, 26(3), pp. 589-638.
- Sueñr, M. (2000) 'The syntax of direct quotes with special reference to Spanish and English', *Natural Language & Linguistic Theory*, 18(3), pp. 525-578.
- Szabolcsi, A. (1994) 'The noun phrase', *Syntax and semantics*, 27, pp. 179-274.
- Tomaszewicz, B (2011) 'Against spurious coordination in multiple wh-questions.' In *WCCFL 28: Proceedings of the 28th West Coast Conference on Formal Linguistics*, pp. 186-195.
- Trissler, S. (1999) *Syntaktische Bedingungen für w-Merkmale: Zur Bildung interrogativer w-Phrasen im Deutschen*. Doctoral thesis. Universität Tübingen.
- Uriagereka, J. (1988) *On Government*. Doctoral thesis. University of Connecticut.

Von Stechow, A. and Sternefeld, W. (1988) *Bausteine syntaktischen Wissens*. Westdt. Verlag.

Wahba, W. A.-F. B. (1984) *WH-constructions in Egyptian Arabic*. Doctoral thesis. University of Illinois.

Wahba, W.A.-F.B. (1992) 'LF movement in Iraqi Arabic', in *Logical structure and linguistic structure*. Springer, pp. 253-276.

Webelhuth, G. (1992) *Principles and parameters of syntactic saturation*. Oxford University Press.

Williams, E. (1997) 'Lexical and syntactic complex predicates', *Complex predicates*, (64), pp. 13-28.