

THE SYNTAX AND SEMANTICS OF GAP AND  
RESUMPTIVE STRATEGIES IN IRAQI ARABIC  
D-LINKED CONTENT QUESTIONS

by

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## Abstract

This thesis examines Iraqi Arabic D-linked content questions of the type “*Which woman saw Ragheb?*”. I develop a syntactic and semantic analysis of both the gap and resumptive strategies of such D-linked content questions. Chapter 1 provides background information on Iraqi Arabic. Chapter 2 develops the syntactic analysis: the gap strategy is treated as an instance of full DP-deletion, with the deletion site being structurally ambiguous between a D-N and a D- $\phi$ -N structure. I further propose that the resumptive strategy is an instance of remnant DP-deletion with a D- $\phi$ -N structure, and treat the resumptive pronoun as a stranded  $\phi$ -element. Chapter 3 relates the two syntactic structures — D-N versus D- $\phi$ -N — to the semantic distinction between the pair-list interpretation versus a natural-function interpretation. A pair-list reading is found when a question such as “*Which woman did every man invite?*” is answered with a list such as: “*John, Sue; Bill, Lucy, ...*”. A natural function reading would answer the same question with a relational noun: “*His sister.*” In contexts where both the gap and resumptive strategy are possible, we observe the following: the gap strategy is ambiguous between a pair-list and a natural function reading; the resumptive strategy only allows a natural function reading. I propose that the semantic ambiguity of the gap strategy reflects its structural ambiguity: if the deletion site is D-N, this corresponds to the pair-list reading; if the deletion site is D- $\phi$ -N, this corresponds to the natural function reading. As for the resumptive strategy, in contexts where the gap strategy is also possible, it is unambiguously interpreted with a natural functional reading; this is consistent with the syntactic remnant DP-deletion, which requires a D- $\phi$ -N structure. I further show that, in contexts where only the resumptive strategy is possible, economy considerations allow syntactic remnant DP-deletion to be semantically ambiguous between a pair-list and a natural function reading. Chapter 4 examines the syntactic and semantic parallels between D-linked content questions and genitive interrogatives and argues that the latter are inherently D-linked.

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## List of Abbreviations

S	singular
Pl	plural
M	masculine
F	feminine
Acc	Accusative

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# 1 Introduction

The goal of this thesis is to describe and analyze the syntax and semantics of resumption in content questions in Iraqi Arabic.

In this chapter, I give general information about Iraqi Arabic (§1.1) and I describe the phenomenon of resumption with a preview of the thesis (§1.2.).

## 1.1 Background information about Iraqi Arabic

After providing information about the geographical and historical situation of Iraqi Arabic (§1.1.1), I present some of the linguistic background that is relevant to the concerns of this thesis, focusing on word order (§1.1.2), verbal inflection (§1.1.3), subject pro-drop (§1.1.4), occurrence of the null copula (§1.1.6) and adjectival agreement (§1.1.6).

### 1.1.1 Geographical and historical classification of Iraqi Arabic

**Iraqi Arabic** (عراقي *ʿiraqī*; formally: اللغة العربية العراقية *al-luḡat al-ʿarabiyya al-ʿiraqiyya*), also known as Mesopotamian Arabic [ISO 639-3]) is a variety of Arabic spoken in the Mesopotamian basin of Iraq, from Baghdad south, as well as in Khuzestan Province of Iran and eastern Syria.

The linguistic situation in the Arab countries is largely characterized by diglossia, given by the coexistence of Classical Arabic (or Modern Standard Arabic) and colloquial Arabic. Modern Standard Arabic is the language of the mass-media, universities, conference discussions, lectures and literature across all Arab countries. The unity of the Arab culture across political boundaries is given by the language, hence the privileged role of Modern Standard Arabic. Colloquial Arabic is the language spoken by people in their everyday activities in all social occasions; it is spoken as mother tongue. It displays

varieties given by geographical distribution, education, religion. There is a predominant colloquial dialect in each Arab country, given by the variety spoken in the capital. In the case of Iraqi Arabic, the predominant colloquial dialect is the Baghdadi one.

A distinction is recognised between Mesopotamian Qeltu Arabic and Mesopotamian Gelet Arabic, the appellations deriving from the form of the word قلت (*qeltu/ gelet*, meaning 'I said'). The Qeltu group includes the Anatolian dialect cluster, also known as North Mesopotamian Arabic or *Maslawi* (Mosul Arabic), and Jewish and Christian dialects. The Gelet group includes a Tigris dialect cluster, of which the best-known form is Baghdadi Arabic, and a Euphrates dialect cluster, known as *Furati* (i.e. Euphrates Arabic) which has some affinities to Gulf Arabic. Both the Gelet and the Qeltu varieties of Iraqi Arabic have some speakers in the extreme eastern parts of Syria. Some features of rural Palestinian Arabic, such as the pronunciation of ك kaf as [tʃ], are also shared with Iraqi Arabic. Medieval Iraqi Arabic appears to have been of the Qeltu type; Blau (1965) considers that the *gelet* features in mainstream Iraqi Arabic today are the result of a process of "re-Bedouinization"; the affinity to Gulf Arabic, and the persistence of *qeltu* features in the Jewish and Christian dialects, offer some support to this view. In modern day Iraq there are three main varieties of spoken Arabic: the northern (Mosul Arabic), southern (Basra Arabic) and Baghdadi Arabic. The dialect investigated in this thesis is Baghdadi Arabic.

The examples I give in this thesis from Iraqi Arabic are first written in the Arabic alphabet, then they are followed by their phonological realization, by the gloss and finally by their translation into English. I adopt an etymological writing in Arabic, which means a writing that is faithful to Modern Standard Arabic, and in the following I explain why. There are phonological differences between Modern Standard Arabic and the Iraqi dialect: for example, the voiceless velar stop /k/ is pronounced as voiceless affricate /tʃ/ in some contexts (Alkalesi 2006). Since this phonological phenomenon is predictable, when I wrote the Iraqi Arabic sentences with the Arabic alphabet, I chose to maintain the writing of the words with ك /k/ as they would appear in Modern Standard Arabic, in order to ease the reading and the understanding for those who can read Arabic, but are not Iraqis. This also makes it possible for the root to be easily identifiable as it appears across all varieties of Arabic. Also, there are other predictable phonological processes, for

example where the enclitic pronoun /hu/ attaches to the verb, the /u/ is pronounced in Modern Standard Arabic, but in most vernaculars the /u/ is deleted in the phonology. I also chose to be faithful to the writing of Modern Standard Arabic, because the phenomenon is predictable and because it is relevant to know that the enclitic pronoun exists there regardless of how vernaculars decide to pronounce it (1).

### (1) ENCLITIC PRONOUN

#### a. *Iraqi Arabic enclitic pronoun*

درسته

darasta=h

studied.1S=3MS

'I studied it.'

#### b. *Classical/ Modern Standard Arabic*

درسته

darastu=hu

studied.1S=3MS

'I studied it.'

The transliteration in Latin script is however faithful to the phonology, since this is the accepted practice in rendering the gloss of languages.

### 1.1.2 Word order: deriving SVO versus VSO order

The basic word order of Arabic is VSO; however as early as Classical Arabic SVO is also mentioned in the grammars of Arabic. In modern times, spoken Arabic varieties have been reported to show both VSO and SVO. The VSO/SVO alternation in word order in spoken Arabic is itself a lively topic of study, but is not discussed in this thesis. With VSO order, the verb agrees with the subject in gender, but not in number, as shown in (2a). This is sometimes called “weak agreement”, and is associated with the

derivation in (2b). In particular, note that the verb *ʃa:f* ‘saw.3MS’ raises all the way to Infl, while the subject *il-asa:tiða* ‘the professors, masculine’ remains in a VP-internal position.

**(2) a. Verb-Subject-Object**

شاف الأساتذة الكتاب بالمكتبة.

*ʃa:f*            *il-asa:tiða*            *il-kitab*    *bi-l-maktaba*  
saw.3MS   the-professors.M   the-book   in-the-library  
'The professors saw the book in the library.'

(16 FEB 2011, SA offered freely)

**b. representation of VSO in Iraqi Arabic**

[<sub>IP</sub> [<sub>I</sub> *ʃa:f*] [<sub>VP</sub> [<sub>DP</sub> *il-asa:tiða*] [<sub>V</sub> *ʃa:f*] [<sub>DP</sub> [<sub>D</sub> *il*] [<sub>N</sub> *kitab*]]] [<sub>PP</sub> *bi-l-maktaba*]]]

With SVO order, the verb agrees with the subject in both gender and number, as shown in (3a). This is sometimes called “strong agreement”, and is associated with the derivation in (3b). In particular, note that as before the verb *ʃa:fwu* ‘saw.3MPI’ raises to Infl, and the subject *il-asa:tiða* ‘the professors’ raises to SpecIP.

**(3) a. Subject-Verb-Object**

الأساتذة شافوا الكتاب بالمكتبة.

*il-asa:tiða*            *ʃa:fwu*            *il-kita:b*    *bi-l-maktaba*  
the-professors.M   saw.3MPI   the-book   in-the-library  
'The professors saw the book in the library.'

(16 FEB 2011, SA offered freely)

**b. representation of SVO in Iraqi Arabic**

[<sub>IP</sub> [<sub>DP</sub> *il-asa:tiða*] [<sub>I</sub> *ʃa:fwu*] [<sub>VP</sub> [<sub>DP</sub> ~~*il-asa:tiða*~~] [<sub>V</sub> *ʃa:f*] [<sub>DP</sub> *il-kita:b*] [<sub>PP</sub> *bi-l-maktaba*]]]]]

### 1.1.3 Verbal inflection

Arabic words have a three consonantal root which carries the meaning. The vowel melody as well as some affixes carry the inflection. The paradigm of an inflected verb in the perfect aspect is given in Table 1 below.

Person and number	The verb كُتِبَ <i>kitab</i> "to write"	
1S	كُتِبْتُ	kitab=it
2MS	كُتِبْتَ	kitab=it
2FS	كُتِبْتِ	kitab=ti
3MS	كُتِبَ	kitab=Ø
3FS	كُتِبَتْ	kitab=at
1Pl	كُتِبْنَا	kitab=na
2Pl	كُتِبْتُمْ	kitab=tu
3Pl	كُتِبُوا	kitab=w

**Table 1. The paradigm of inflected verbs in Iraqi Arabic**

#### 1.1.4 Subject pro-drop

Iraqi Arabic is a subject pro-drop language. (4a) is an example where the subject is not expressed overtly and (4b) an example where the subject is expressed overtly.

**(4) a. subject not expressed overtly**

شافت راغب بالمكتبة البارحة.

ʃa:fət Ragheb bi= l-maktaba il-ba:riHa.

saw.3FS Ragheb in the-library yesterday

'She saw Ragheb in the library yesterday.'

(8 MAR 2011, SA offered freely)

**b. subject expressed overtly**

إيمان شافت راغب بالمكتبة البارحة.

Iman ʃa:fət Ragheb bi=l-maktaba il-ba:riHa.

Iman saw.3FS Ragheb in the-library yesterday

'Iman saw Ragheb in the library yesterday.'

(8 MAR 2011, SA offered freely)

### 1.1.5 Null copula

Arabic is characterized by the absence of the copula when the state described is an unfinished act or state (the Imperfect aspect); this has been rendered by grammarians in the Indo-European languages in the present tense. The Arabic grammarians consider this a nominal sentence, because it starts with a noun. However, the verb *to be* surfaces when the state described is finished or complete (the Perfect) rendered in Indo-European languages in the past tense. This is illustrated in (5a) for the imperfect state and in (5b) for the perfect state.

#### (5) a. *The copula - Imperfect state*

بغداد مدينة بها هواية عجائب.

Baghdad madiyna bi=ha hawa:ya ʃaɖʒaʔib.

Baghdad city.F in=3F many marvels

'Baghdad is a city in which there are many marvels.'

(8 MAR 2011, SA offered freely)

#### b. *The copula - Perfect state*

كانت بغداد مدينة بها هواية عجائب.

ʃa:nat Baghdad madiyna bi=ha hawa:ya ʃaɖʒaʔib.

was.3FS Baghdad city.F in=3F many marvels

'Baghdad was a city in which there are many marvels.'

(8 MAR 2011, SA offered freely)



### 1.1.6 Adjectival agreement: human versus non-human nouns

Arabic has two grammatical genders, masculine and feminine, and only human nouns show gender agreement. The verbs agrees with the subject in gender, when the verb precedes the subject, i.e., with VSO order, as shown above in (2a).

Predicate adjectives also show agreement with their subjects. This is shown in (6) for masculine agreement. In (6a), *fa:Tir* 'smart, masculine' agrees with the noun *aT-Ta:lib* 'the student, masculine'. In (6b), *fa:Tiri:n* 'smart, masculine plural' agrees with the noun *aT-Tulba* 'the students, masculine'. (7) shows the same contrast with feminine agreement. In (7a), *fa:Tira* 'smart, feminine' agrees with the noun *aT-Ta:liba* 'student, feminine'. In (7b), *fa:Tira:t* 'smart, feminine plural' agrees with the noun *aT-Taliba:t* 'students, feminine'.

#### (6) adjective - noun agreement with human noun

a. الطالب إلهي حكيت ويه شاطر.

aT-Ta:lib      illyi      Haṭṭi:t      wuya=h      **fa:Tir**  
the-student.MS    who.Rel    spoke.1Sg    with=3MS    smart.MS  
'The student with whom I spoke is smart.'

b. الطلبة إلهي حكيت وياهم شاطرين.

aT-Tulba      illyi      Haṭṭi:t      wuya=huma      **fa:Tiri:n**  
the-students.M    who.Rel    spoke.1S    with=3MPI    smart.MPI  
'The students with whom I spoke are smart.'

(8 MAR 2011, SA offered freely)

(7) *adjective - noun agreement with human noun*

a. الطالبة إلی حکیت ویاها شاطرة.

aT-Ta:liba illyi Haʃki:t wuya=ha **ʃa:Tira**

the-student.FS who.Rel spoke.1Sg with=3FS smart.FS

'The student with whom I spoke is smart.'

(5 JUL 2011, SA offered freely)

b. الطالبات إلی حکیت ویاهم شاطرات.

aT-Taliba:t illyi Haʃi:t wuya=huma **ʃa:Tira:t**

the-students.F who.Rel spoke.1S with=3FPl smart.FPl

'The students with whom I spoke are smart.'

(5 JUL 2011, SA offered freely)

However, with non-human nouns, gender agreement shows a different pattern. With a singular subject, the predicate adjective shows gender agreement, as in (8a) and (9a). But with a plural subject, the predicate adjective always appears in the in feminine singular, as shown in (8b) and (9b).

(8) *adjective - noun agreement with non-human noun*

a. بیت سهی کبیر.

beyt Suha ʃibi:r

house.MS Suha big.MS

'Suha's house is big.'

b. بیوت أهل سهی کبیرة.

buyu:t ʔahl Suha kabi:ra

house.MPl family.MS Suha big.FS

'Suha's family's houses are big.'

(5 JUL 2011, SA offered freely)

(9) *adjective - noun agreement with non-human noun*

a. شفت الجزيرة الصغيرة من السفينة.

ʃuft il-ɟazi:ra iS-Sagi:ra min is-safi:na

saw.1S the-island.FS the-small.FS from the-ship

‘I saw the small island from the ship.’

b. شفت الجزائر الصغيرة من السفينة.

ʃuft il-ɟaza:ʔir iS-Sagi:ra min is-safi:na

saw.1S the-islands.FPl the-small.FS from the-ship

‘I saw the small island from the ship.’

(5 JUL 2011, SA offered freely)

## 1.2 Background information about resumptive pronouns

This section presents the resumptive pronoun strategy. After defining resumption (§1.2.1), I introduce a well-known syntactic restriction on resumption, namely the highest subject restriction (§1.2.2) and then illustrate a restriction on resumption that is sensitive to whether resumption is obligatory or optional (§1.2.3).

### 1.2.1 Defining resumption

Rouveret (2011) defines a “*resumptive pronoun*” as follows: *The overt pronominal element found in some languages in the variable position of unbounded A'-dependency constructions—the latter include relative clauses, constituent questions, comparative clauses, dislocation and focus constructions.*

Given this characterization of resumption, for the purposes of this thesis, I adopt the following working definitions:

(10) **A-position** (argument position): a position to which a thematic role is assigned.

(11) **A'-position** (non-Argument position): a position to which a non-thematic role is assigned.

(12) **A'-dependency**: An A'-dependency is a dependency relation between two syntactic objects, one of which is in an A'-position, and the other is in an A-position.

(13) A **pronominal element** is:

- a. a weak pronoun;
- b. a strong pronoun;
- c. a weak pronoun doubled by a strong pronoun; or
- d. an epithet.

(14) **variable position**: the thematic A-position that corresponds to the extraction site of an A'-dependency.

With these definitions in mind, consider the examples in (15), which illustrate an A'-dependency in Iraqi Arabic in the context of relativization. In (15a), the pronominal element *-hu* 'him' (a weak pronoun) occupies the thematic A-position of the moved constituent *illyi* 'whom', which is in an A'-position. Thus, there is an A'-dependency between the interrogative operator *illyi* and the weak pronoun *-hu* 'him'; in other words, *-hu* is a resumptive pronoun. In (15b), there is a gap in the thematic A-position: in the context of relativization, the gap strategy is ill-formed in Iraqi Arabic.

(15) a. *resumptive strategy*

الرجال إल्ली شفته ببیت سهی کاتب عظیم.

ir-ridʒa:l illyi fuft=**hu** bi=beyt Suha ka:tib ʕaδ'yim  
the-man whom saw.1S=3MS in house Suha writer great

'The man whom I saw [**him**] at Suha's house is a great writer.'

### b. gap strategy

\* الرجال إلی شفت ببیت سهی کاتب عظیم.

\*ir-ridʒa:l illyi fuft\_\_\_\_\_ bi=beyt Suha ka:tib ʕaδ'yim

the-man whom saw.1S\_\_\_\_\_ in house Suha writer great

'The man whom I saw \_\_\_\_\_ at Suha's house is a great writer.'

Traditionally, the gap strategy is analyzed as the result of movement of a constituent to an A'-position, leaving behind a gap or a trace. The resumptive strategy has often been analyzed as the result of a binding relation between an antecedent in A'-position and a pronoun in an A-position. On this view, while the gap strategy involves movement, the resumptive strategy does not (Sells 1984; McCloskey 1990).

Typologically, the resumptive strategy is widely attested in VSO languages. Semitic languages, which are VSO, are no exception to this generalization<sup>1</sup>.

### 1.2.2 A syntactic restriction: the highest subject restriction

The previous literature on resumption has established that, in many languages that use the resumptive strategy, there is an additional syntactic restriction that prohibits resumptive pronouns from occurring in the highest subject position (Borer 1984, McClosky 1990, Rouveret 2011, to appear). This is called *the highest subject restriction*. For Iraqi Arabic, a question that arises regarding the highest subject restriction concerns the syntactic status of subject agreement on the verb. On the one hand, if agreement is treated as a pronominal element, then subject agreement will have the status of a resumptive element, and Iraqi Arabic would be analyzed as not exhibiting the highest subject restriction. But if agreement is not a pronominal element for the purposes of establishing an A'-dependency, then Iraqi Arabic would be analyzed as exhibiting the highest subject restriction. To choose between these two alternatives, one needs to examine island contexts, which obligatorily require resumption. If, in such island

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<sup>1</sup> The Celtic languages are another language family that makes regular use of the resumptive strategy, and which also has VSO word order.

contexts, subject agreement by itself is sufficient to license an A'-dependency, then one can conclude that subject agreement has the status of a pronominal element for the purposes of resumption. But if an additional pronoun is needed in such contexts, then one can conclude that subject agreement is not a pronominal element for the purposes of resumption. The relevant data are given in (16) and (17) for *wh*-islands and adjunct islands respectively. In (16a) and (17a), where there is subject agreement only, extraction from the island is illicit. And in (16b) and (17b), where an overt subject pronoun is present, extraction from the island is licit. On the basis of such contrasts, I conclude that subject-verb agreement in Iraqi Arabic does not qualify as a pronominal element for the purposes of resumption.

#### (16) WH-ISLAND

##### a. no overt pronoun

منو يتساءل راغب ليش باست بهجت بالحفلة؟\*

\*minnu: ytasɑ:ʔil Ragheb le:f \_\_\_\_ ba:sit Behjet bi-l-Hafla  
 who wonder.3MS Ragheb why \_\_\_\_ kissed.3FS Behjet at-the-party  
 'Who is Ragheb wondering why \_\_\_\_ kissed Behjet at the party ?'

##### b. overt pronoun

منو يتساءل راغب ليش هي باست بهجت بالحفلة؟

minnu: ytasɑ:ʔil Ragheb le:f **hyi** ba:sit Behjet bi-l-Hafla  
 who wonder.3MS Ragheb why **she** kissed.3FS Behjet at-the-party  
 'Who is Ragheb wondering why she kissed Behjet at the party ?'

#### (17) ADJUNCT ISLAND

##### a. no overt pronoun

منو قال سامر لراغب شوقت راح تمشي لبغداد؟\*

\*minnu: ga:l Samer li-Ragheb f w:aget \_\_\_\_ ra:H timʃi: li-Baghdad  
 who said.3MS Samer to-Ragheb when \_\_\_\_ will go.3FS to-Baghdad  
 'Who did Samer say to Ragheb when \_\_\_\_ will go to Baghdad ?'

**b. overt pronoun**

منو قال سامر لراغب شوقت هي راح تمشي لبغداد ؟

minnu: ga:l            Samer li-Ragheb    ʃw:aget **hyi**    ra:H timʃi:    li-Baghdad

who    said.3MS Samer to-Ragheb    when    **she**    will go.3FS    to-Baghdad

'Who did Samer say to Ragheb when she will go to Baghdad ?'

### **1.2.3 A semantic restriction: on optional versus obligatory resumption**

Previous work on resumption in other varieties of Arabic includes Lebanese (Aoun et al. 2001; Choueiri 2003), Palestinian (Shlonsky 1992), Egyptian (Demirdache 1991) and Jordanian (Guilliot 2006; Malkawi 2009). For Jordanian Arabic, Malkawi (2009) investigates all syntactic contexts where the resumptive strategy is employed — including left dislocation, relativization and content questions — and examines both the syntax and the semantics of resumption, specifically contrasting contexts where resumption is optional versus those where it is obligatory. The interpretive difference that he observes relates to interrogative contexts, where a distinction is made in the semantics literature between the “natural function reading” versus the “pair-list reading” of a question as in (18).

**(18)**    *Which woman did every man invite?*

**a.** NATURAL FUNCTION READING: *His sister*

**b.** PAIR-LIST READING: *John, Sue; Bill, Lucy...*

As summarized in Table 2, in contexts where resumption is optional in Jordanian Arabic, the gap strategy is ambiguous between the natural functional reading and the pair-list reading. But the resumptive strategy (with a weak pronoun) is compatible only with the natural function reading. In addition, Jordanian Arabic has the peculiarity of allowing two distinct resumptive strategies: resumption with a weak pronoun and resumption with a weak pronoun doubled by a strong pronoun. These two strategies come

to the fore in contexts where resumption is obligatory: Malkawi observes that, when resumption is obligatory, resumptive with only the weak pronoun is ambiguous between the two readings, while resumptive with a doubled pronoun is only compatible with the natural function reading.

		NATURAL FUNCTION READING	PAIR -LIST READING
OPTIONAL RESUMPTION	GAP	√	√
	WEAK PRONOUN	√	x
	WEAK PRONOUN DOUBLED BY STRONG PRONOUN	(n/a)	(n/a)
OBLIGATORY RESUMPTION	GAP	(n/a)	(n/a)
	WEAK PRONOUN	√	√
	WEAK PRONOUN DOUBLED BY STRONG PRONOUN	√	x

**Table 2. Distribution of natural function and pair-list readings in Jordanian Arabic content questions (adapted from Malkawi 2009)**

Malkawi's findings for Jordanian Arabic are relevant to the present thesis, which focuses on D-linked content-questions. As we shall see in Chapter 3, in such contexts, Iraqi Arabic allows both the gap strategy and the resumptive strategy. In other words, in Iraqi Arabic, D-linked content questions are contexts where resumption is optional. And like Jordanian Arabic, the distribution of the natural function reading and the pair-list reading is sensitive to whether resumption is optional and obligatory. However, the two varieties differ in which resumptive strategies are available: while Jordanian Arabic has two resumptive strategies (weak pronoun and weak pronoun doubled by strong pronoun), Iraqi Arabic only has one resumptive strategy (weak pronoun). My findings for Iraqi D-linked content questions are summarized in Table 3.



		NATURAL FUNCTION READING	PAIR-LIST READING
OPTIONAL	GAP	√	√
RESUMPTION	WEAK PRONOUN	√	x
OBLIGATORY	GAP	(n/a)	(n/a)
RESUMPTION	WEAK PRONOUN	√	√

**Table 3. Distribution of natural function and pair-list readings in Iraqi Arabic D-linked Content Questions**

### 1.3 Organization of thesis

The thesis is organized as follows. Chapter 2 presents the morphology and syntax of interrogative expressions in Iraqi Arabic and develops a syntactic analysis of the gap and resumptive strategies for D-linked content questions. In particular, I argue that the gap strategy involves full DP-deletion and is structurally ambiguous between a D-N structure and a D- $\phi$ -N structure. In contrast, I propose that the resumptive strategy involves remnant DP-deletion and operates only on a D- $\phi$ -N structure. Chapter 3 extends the syntactic analysis to account for the interpretive differences between the two strategies. I propose that the D-N structure correlates with the pair-list reading, while the D- $\phi$ -N correlates with the natural function reading. This correctly accounts for the fact that, in contexts where resumption is optional, the gap strategy is compatible with both a natural function reading and a pair-list reading, while the resumptive strategy only supports the natural function reading. And in contexts where resumption is obligatory, both readings are available: I conclude that this indicates that, as a last resort, the stranded  $\phi$ -element that corresponds to the resumptive pronoun, may be ignored for purposes of interpretation. Chapter 4 turns to genitive interrogative constructions in Iraqi Arabic. I argue that they are inherently D-linked; this accounts for why they parallel overtly D-linked content questions. Finally, chapter 5 concludes the thesis and suggests directions for future research.

## 2 The syntax of D-linked content questions in Iraqi Arabic

Content questions are questions that contain an interrogative expression. The interrogative expression may be bare (as in *who*, *what*, *where*), or it may be D-linked (as in *which person*, *which table*, *which city*). Examples of Iraqi Arabic bare interrogative expressions are given in (19); examples of D-linked interrogatives are given in (20).

### (19) BARE INTERROGATIVE EXPRESSIONS

a. منو شفتي ؟

**minnu:** jefti ?

who saw.2FS

*Whom* did you see ?

b. شنو شفتي ؟

**ʃinnu:** jefti

what saw.2FS

*What* did you see ?

### (20) D-LINKED INTERROGATIVE EXPRESSIONS

a. يا مريّة شفت ؟

**ya: mraya** jefti

which woman saw.2FS

*Which woman* did you see ?

b. يا فلم شفت ؟

**ya: film** jefti

which film saw.2FS

*Which film* did you see ?

In this chapter I develop a syntactic analysis of the resumptive and gap strategy of Iraqi Arabic D-linked content questions. First, I present an overview of the problem, the proposed analysis and the consequences of the analysis (§2.1). Then I turn my attention to the distinction between bare interrogative expressions and D-linked interrogative expressions (§2.2). This is followed by a discussion of the distribution of D-linked interrogative expression in Iraqi Arabic (§2.3). Next, I present an analysis of the resumptive strategy (§2.4) and the gap strategy (§2.5) in terms of the copy theory of movement. Then I discuss the implications of the analysis for extraction from subject position (§2.6), for extraction from adjunct position (§2.7), and for reconstruction (§2.8).

## **2.1 Overview of the syntactic problem, analysis and consequences**

Before going into the details, I present an overview of the syntactic problem that presents itself with Iraqi Arabic D-linked content questions, the proposed analysis and the consequences of the analysis.

### **2.1.1 The syntactic problem: A'-dependencies show a complement non-complement asymmetry**

In Iraqi Arabic, D-linked content questions pattern differently according to whether the extraction site is from a complement or a non-complement position. In particular, extraction from a complement position is compatible with both the gap and the resumptive strategy. In contrast, extraction from a non-complement position (subjects and PP adjuncts) allows only the gap strategy. This is summarized in Table 4:

	EXTRACTION FROM COMPLEMENT POSITION	EXTRACTION FROM NON-COMPLEMENT POSITION
GAP STRATEGY	√	√
RESUMPTIVE STRATEGY	√	x

**Table 4. Complement/ Non-complement Asymmetry with Gap versus Resumptive Strategy**

### 2.1.2 The syntactic analysis: the extraction site can have two distinct structures

I propose that Iraqi D-linked content questions are associated with two distinct structures. Specifically, the extraction site may be a D-N structure or a D- $\phi$ -N structure. I argue that the gap strategy is ambiguous between these two structures, permitting either a D-N structure or a D- $\phi$ -N structure with a covert  $\phi$ . In contrast, the resumptive strategy is not structurally ambiguous: it occurs only with the D- $\phi$ -N structure and has an overt  $\phi$ . This is summarized in Table 5.

	INTERNAL STRUCTURE OF EXTRACTION SITE	
	D-N	D- $\phi$ -N
GAP STRATEGY	√	√ (with covert $\phi$ )
RESUMPTIVE STRATEGY	x	√ (with overt $\phi$ )

**Table 5. Structural Differentiation of Extraction Sites with Iraqi D-linked Content Questions**

### 2.1.3 Consequences of the syntactic analysis

The proposed syntactic analysis — which claims that the extraction site can be a D-N structure or a D- $\phi$ -N structure — accounts for the complement/ non-complement asymmetry. In particular, it correctly predicts that only complements will permit overt resumption. This is because the overt pro- $\phi$  which corresponds to the resumptive pronoun is a clitic and cliticization is only possible from a complement position. With non-complement positions — subjects and PP adjuncts — there isn't a syntactic host for the pro- $\phi$  clitic, so the D- $\phi$ -N structure with an overt pro- $\phi$  is not permitted. This derives the fact that extraction from a non-complement position is possible only with the gap strategy.

## 2.2 D-linked versus non-D-linked interrogative expressions

Pesetsky (1987) notes a difference in the behaviour of interrogative expressions such as *who*, *what* and the behaviour of interrogative expressions of the *which*-kind. Given the peculiar behaviour of *which*-phrases, Pesetsky (1987) refers to them as D-linked (for Discourse-linked); he notes that with *which*-phrases, the set of felicitous answers is limited to the set of objects which both speaker and hearer have in mind. It is in this sense that *wh*-phrases are discourse-linked. However, no such requirement is imposed on bare interrogative expressions such as *who*, *what* or *how many*. Pesetsky (1987) notes that *which*-phrases seem to function pronominally in that they are "familiar" rather than novel. To exemplify this, Pesetsky (1987) gives the examples in (21).

ENGLISH (Pesetsky 1987)

(21) a. Some men entered the room. Mary talked to **them**.

b. Some men entered the room. **Which ones** did Mary talk to ?

c. Some men entered the room. **Whom** did Mary talk to ?

Pesetsky's interpretation of (21) is as follows: "In (21b) it is natural, almost obligatory, to assume that the question is asking for a choice among the men who entered the room. In

(21c) considerations of textual connectedness make this assumption possible, but much less natural".

Pesetsky (2000) also observes that while bare interrogatives show Superiority effects, D-linked interrogative expressions do not. Another notable difference between the behaviour of bare interrogative expressions and the D-linked ones is that Superiority effects appear with bare interrogative expressions and disappear with D-linked ones (Pesetsky 1987, 2000; Aoun et al 2003, Boeckx 2003). Pesetsky (2000) further acknowledges that any attempt to explain the semantic sources of the syntactic properties of D-linking will require more conclusive investigation of this issue.

Much of what has been done on resumption in spoken Arabic relies heavily on examples with D-linked interrogative expressions (Aoun et al 2001, Guilliot & Malkawi 2006, 2009; Malkawi 2009). This has to do with the fact that D-linked interrogative expressions appear in questions and the co-presence of the two are used as a way of testing for the semantic distinction between a natural function reading and a pair-list reading. This will be discussed in Chapter 3.

## **2.3 The inventory of interrogative expressions in Iraqi Arabic content questions**

A first question that arises is how the D-linked pronoun *ya*: ‘which’ is related to other pronominal and determiner elements in Iraqi Arabic. I show that:

- (i) *ya*: is unrelated to other interrogative expressions (§2.3.1);
- (ii) *ya*: is in complementary distribution with D-elements (§2.3.2);
- (iii) *ya*: requires an overt lexical noun after it (§2.3.3);
- (iv) *ya*: ‘which’ occurs in a wider range of contexts than bare interrogative expressions (§2.3.4).

### 2.3.1 D-linked *ya*: ‘which’ is unrelated to other interrogative expressions

Consider Table 6, which lists the inventory of Iraqi Arabic interrogative expressions. Observe that there are six non-D-linked interrogative forms, three of which contain the initial morpheme *ʃ*-, namely *ʃinu*: ‘what’, *ʃuwagit* ‘when’ and *ʃlo:n*, ‘how’. The other three non-D-linked forms — namely *minnu*: ‘who’, *we:n* ‘where’ and *le:f* ‘why’ — don’t seem to have internal morpheme structure. As for the D-linked form *ya*: ‘which’, it doesn’t seem to be transparently related to any of the non-D-linked forms. This establishes that, inasmuch as there is any regular paradigmatic structure with Iraqi Arabic interrogative expressions, the D-linked interrogative form *ya*: is not part of that paradigm.

	ARABIC ORTHOGRAPHY	ROMANIZED ORTHOGRAPHY	MORPHEME STRUCTURE	GLOSS
non D-linked forms	منو	<i>minnu:</i>	???	‘who’
	شنو	<i>ʃinu:</i>	<i>ʃ</i> -inu:	‘what’
	شوقت	<i>ʃuwagit</i>	<i>ʃ</i> -uwagit	‘when’
	شلون	<i>ʃlo:n</i>	<i>ʃ</i> -lo:n	‘how’
	وين	<i>we:n</i>	???	‘where’
	لئيش	<i>le:S</i>	???	‘why’
D-linked form	يا	<i>ya:</i>	???	‘which’

**Table 6. The inventory of Iraqi Arabic interrogative expressions**

Etymologically, the Iraqi Arabic D-linked interrogative pronoun *ya*: ‘which’ is related to the Classical and Modern Standard Arabic form أَيّ *ʔayy* ‘which’. As shown in (22), I speculate that in Iraqi Arabic, the initial glottal stop has been dropped, leaving *ayy*, which has been resyllabified into CV *ya*:

(22) POSSIBLE SOURCE OF IRAQI ARABIC *ya*: ‘which’

<i>ʔayy</i>	Classical and Modern Standard Arabic
<i>ayy</i>	loss of initial glottal stop
<i>ya</i> :	metathesis/resyllabification into CV.

### 2.3.2 D-linked *ya*: ‘which’ is in complementary distribution with other D-elements

The D-linked interrogative pronoun does not match with the paradigm of the demonstrative pronouns either. Table 7 shows the paradigm of the demonstrative pronouns in Iraqi Arabic.

	Near			Distance		
MS	هذا	<i>haða:</i>	this	هذاك	<i>haða:k</i>	that
FS	هذي	<i>haði:</i>	this	هذيك	<i>haða:ʔ</i>	that
PI	هذولة	<i>Haðo:la</i>	these	هذولاك	<i>Haðo:lak</i>	those

**Table 7. The paradigm of the demonstrative pronouns in Iraqi Arabic**

Like demonstratives, D-linked *ya*: ‘which’ precedes the noun it combines with, (23a-b). However, D-linked *ya*: doesn’t co-occur with demonstratives, (23c-d).

(23) a. سهى يا مغني شافت بالمطعم؟

Suha *ya*: muɣanyy ʃa:fit\_\_\_\_\_ bi-l-maTʕam

Suha which singer saw.3FS in-the-restaurant

‘Which singer did Suha see in the restaurant?’

(12 SEP 2010, SA 1a, elicited)



b. سهی شافت هذا المغني بالمطعم.

Suha ʃa:fit haða: il-muɣanyy bi-l-maTʃam

Suha saw.3FS this the-singer in-the-restaurant

‘Suha saw this singer in the restaurant.’

(5 JUL 2011, SA 2b, freely given)

c.\* سهی شافت هذا يا المغني بالمطعم.

\*Suha ʃa:fit haða: ya il-muɣanyy bi-l-maTʃam

Suha saw.3FS this which the-singer in-the-restaurant

\*‘Suha saw this which singer in the restaurant.’

(5 JUL 2011, SA 2c, elicited)

d.\* سهی شافت يا هذا المغني بالمطعم.

\*Suha ʃa:fit ya haða: il-muɣanyy bi-l-maTʃam

Suha saw.3FS which this which the-singer in-the-restaurant

\*‘Suha saw this which singer in the restaurant.’

(5 JUL 2011, SA 2d, elicited)

Similarly, D-linked *ya:* is in complementary distribution with the proclitic definite article ال, *il-* the (24).

(24) a. سهی يا مغني شافت بالمطعم ؟

Suha ya: muɣanyy ʃa:fit\_\_\_\_ bi-l-maTʃam

Suha which singer saw.3FS in-the-restaurant

‘Which singer did Suha see in the restaurant?’

(12 SEP 2010, SA 1a, elicited)

b. سهی شافت المغني بالمطعم.

Suha ʃa:fit il-muʔanyy bi-l-maTʃam

Suha saw.3FS the-singer in-the-restaurant

‘Suha saw the singer in the restaurant.’

(5 JUL 2011, SA 3b, freely given)

c.\* سهی شافت ال يا مغني بالمطعم.

\*Suha ʃa:fit il-ya: - muʔanyy bi-l-maTʃam

Suha saw.3FS the-which-singer in-the-restaurant

\*‘Suha saw the which singer in the restaurant.’

(5 JUL 2011, SA 3c, elicited)

d.\* سهی شافت يا المغني بالمطعم.

\*Suha ʃa:fit ya il-muʔanyy bi-l-maTʃam

Suha saw.3FS which the-which-singer in-the-restaurant

\*‘Suha saw the which singer in the restaurant.’

(5 JUL 2011, SA 3d, elicited)

I conclude that that non-occurrence of D-linked *ya*: ‘which’ with demonstratives or the definite article reflects its status as a D-element<sup>2</sup>.

### 2.3.3 D-linked *ya*: ‘which’ requires an overt lexical noun after it

Like other D-elements, *ya*: ‘which’ requires an overt lexical noun after it. This is

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<sup>2</sup> In a given context which is known to the speaker and his interlocutor, it is possible to use *ya*: *wahed* ‘which one’:

Context: the consultant went to a cinema multiplex where she had a choice of watching a movie out of several movies. When she comes out of there, I ask her:

يا واحد شفته ؟

ya wa:hed ʃuft=hu

which one saw.2FS=3MS

Which one did you see ?

Consultant’s note: This is not really used, even though it is possible to say it.

shown in (25) for demonstratives, in (26) for the definite article and in (27) for *ya:*.

(25) a. سهى شافت هذاك المغني.

Suha ʃa:fit haða:k il- muɣanyy

‘Suha saw.3FS that the-singer.’

(5 JUL 2011, SA 4a, freely given)

b.\* سهى شافت هذاك.

\*Suha ʃa:fit haða:k

Suha saw.3FS that

‘Suha saw that’.

(5 JUL 2011, SA 4a, elicited)

(26) a. سهى شافت المغني.

Suha ʃa:fit il-muɣanyy

Suha saw.3FS the-singer

‘Suha saw the singer’.

(5 JUL 2011, SA 5a, freely given)

a.\* سهى شافت ال.

\*Suha ʃa:fit il

Suha saw.3FS the

\*‘Suha saw the’.

(5 JUL 2011, SA 5b, elicited)

(27) a. سهى يا مغني شافت ؟

Suha ya: muɣanyy ʃa:fit

Suha which singer saw.3FS

‘Which singer did Suha see ?’

(12 SEP 2010, SA 1a, elicited)

b. .\*؟ سهی یا شافت

\*Suha ya: ʃa:fit

Suha which saw.3FS

'Which did Suha see?'

(5 JUL 2011, SA 6, elicited)

I conclude that the obligatoriness of an overt lexical noun after D-linked *ya:* 'which' is indicative of its syntactic status as a D-element.

### 2.3.4 D-linked *ya:* 'which' occurs in a wider range of contexts than bare interrogative expressions

In content questions, the interrogative pronoun is moved to the left periphery, preceded by the subject as left-most topic. Aoun et al (1999) and Malkawi (2009) state that in Arabic there are three strategies to form content questions. Their examples are replicated below for Iraqi Arabic showing in (28a) the gap strategy, in (28b) the resumption strategy and in (28c) the in-situ strategy.

#### (28) INTERROGATIVE STRATEGIES WITH D-LINKED INTERROGATIVES

##### a. *the gap strategy*

سهی یا مغنی شافت بالمطعم؟

Suha ya: muɣanyy ʃa:fit\_\_\_\_\_ bi-l-maTʃam

Suha which singer saw.3FS in-the-restaurant

'Which singer did Suha see in the restaurant?'

(12 SEP 2010, SA 1a, elicited)

**b. the resumption strategy**

سهی یا مغني شافته بالمطعم؟

Suha ya: muɣanyy ʃa:fit=**hu** bi-l-maTʃam

Suha which singer saw.3FS=**3MS** in-the-restaurant

'Which singer did Suha see [**him**] in the restaurant ?'

(12 SEP 2010, SA 1b, elicited)

**c. the in-situ strategy**

سهی شافت یا مغني بالمطعم؟

Suha ʃa:fit ya: muɣanyy bi-l-maTʃam

Suha saw.3FS which singer in-the-restaurant

'Suha saw which singer in the restaurant ?'

(12 SEP 2010, SA 1c, elicited)

However, bare interrogative expressions (i.e. non-D-linked interrogative expressions) only allow the gap strategy. This is shown in (29), where a bare interrogative expression is well-formed with the gap strategy (29a), but ill-formed with the resumptive strategy and the in-situ strategy (29b-c).

**(29) INTERROGATIVE STRATEGIES WITH BARE INTERROGATIVES**

**a. the gap strategy**

سهی منو شافت بالمطعم؟

Suha minnu: ʃa:fit\_\_\_\_\_ bi-l-maTʃam

Suha who saw.3FS\_\_\_\_\_ in-the-restaurant

'Whom did Suha see in the restaurant ?'

**b. the resumption strategy**

\*سهی منو شافته بالمطعم ؟\*

\*Suha minnu: ʃa:fit=**hu** bi-l-maTʃam

Suha who saw.3FS=**3MS** in-the-restaurant

'Whom did Suha see [**him**] in the restaurant ?'

**c. the in-situ strategy**

\*سهی شافت منو بالمطعم ؟\*

\*Suha ʃa:fit minnu: bi-l-maTʃam

Suha saw.3FS who in-the-restaurant

'Suha saw whom in the restaurant ?'

(12 SEP 2010, SA 2, elicited)

The patterning of the interrogative strategies described above with respect to the behaviour of the D-linked and non-D-linked interrogative expressions is given below in Table 8.

Strategy	Word Order	Non-D-linked WH	D-linked WH
Gap	Subject - WH - Verb	√	√
Resumptive	Subject - WH - Verb-Resumptive pronoun	x	√
In-situ	Subject - Verb - WH	x	√

**Table 8. Interrogative strategies in Iraqi Arabic**

## 2.4 Extraction from argument positions, adjunct positions, and islands

I give an overview of extraction contexts with D-linked interrogative expressions, including extraction from argument positions (§2.4.1), extraction from adjunct positions (§2.4.2), and extraction from islands (§2.4.3).

### 2.4.1. Extraction from argument positions: subjects, direct objects, prepositional objects

Now consider the distribution of D-linked interrogative expressions in contexts that involve argument extraction. The results are summarized in Table 9.

		Mono-clausal		Bi-clausal	
		Gap	Resumption	Gap	Resumption
	Subject	√	x	√	x
	Direct Object	√	√	√	√
	Object of Preposition	x	√	x	√

**Table 9. Resumption and Gap strategies in Iraqi Arabic mono-clausal and bi-clausal D-linked content questions**

With D-linked interrogative expressions, subject extraction allows only the gap strategy, as in (30). In contrast, direct objects allow both the gap strategy and the resumptive strategy, as in (31). As for prepositional objects (32), they allow only resumption, as preposition stranding is ungrammatical in Arabic; also, PP-fronting allows only the gap strategy, because Arabic does not have resumptives for entire prepositional phrases.

(30) SUBJECT

*a. extraction with gap*

يا صديقة اشترت شقة ببغداد ؟

ya: Sadi:ga iſtarat\_\_\_\_\_ ſigga bi-Baghdad

which friend.F bought.3FS\_\_\_\_\_ apartment in-Baghdad

'Which friend bought an apartment in Baghdad ?'

(1 DEC 2010, SA, offered freely)

*b. extraction with resumption*

\*يا صديقة اشترت هي شقة ببغداد ؟\*

\*ya: Sadi:ga iſtarat **hi:** ſigga bi-Baghdad

which friend.F bought.3FS **she** apartment in-Baghdad

'Which friend [**she**] bought an apartment in Baghdad ?'

(1 DEC 2010, SA, elicited)

(31) DIRECT OBJECT

*a. extraction with gap*

إيمان يا رجال شافت بالحفلة ؟

Iman ya: riðʒa:l ʃa:fit\_\_\_\_\_ bi-l-Hafla

Iman which man saw.3FS\_\_\_\_\_ at-the-party

'Which man did Iman see\_\_\_\_\_ at the party ?'

(1 DEC 2010, SA 1I, offered freely)

*b. extraction with resumption*

إيمان يا رجال شافته بالحفلة ؟

Iman ya: riðʒa:l ʃa:fit=**hu** bi-l-Hafla

Iman which man saw.3FS=**3MS** at-the-party

'Which man did Iman see [**him**] at the party ?'

(1 DEC 2010, SA 1II, offered freely)



### (32) PREPOSITIONAL OBJECT

#### *a. extraction with gap*

سهى يا معلم التقت بالكلية وية ؟\*

\*Suha ya: muʕallim iltagat wu:ya: \_\_\_\_ bi-l-kulli:a

Suha which professor met.3FS with \_\_\_\_ at-the-faculty

'Which professor did Suha meet with \_\_\_\_ at the faculty ?'

(1 DEC 2010, SA 3I, offered freely)

#### *b. extraction with resumption*

سهى يا معلم التقت وياه بالكلية ؟

Suha ya: muʕallim iltagat wu:ya:=h bi-l-kulli:a

Suha which professor met.3FS with=**3MS** at-the-faculty

'Which professor did Suha meet with [**him**] at the faculty ?'

(1 DEC 2010, SA 3II, offered freely)

#### *c. PP-fronting*

سهى وية يا معلم التقت بالكلية ؟

Suha wu:ya: ya: muʕallim iltagat bi-l-kulli:a

Suha with which professor met.3FS at-the-faculty

'With which professor did Suha meet at the faculty ?'

(1 DEC 2010, SA 3III, offered freely)

With long-distance extraction - i.e. extraction from a bi-clausal environment - we observe the same contrasts. While subjects allow only the gap strategy (33), direct objects allow both the gap and resumptive strategy, as in (34). Prepositional objects (35) allow only resumption; as stated before, PP-fronting does not employ resumption.

### (33) SUBJECT

#### a. extraction with gap

راغب يا صديقة يدري إنو اشترت شقة ببغداد ؟

Ragheb ya: Sadiga ydry ennu: \_\_\_\_ iſtarat ʃigga bi-Baghdad

Ragheb which friend.F know.3MS that \_\_\_\_ bought.3FS apartment in-Baghdad

'Which friend does Ragheb know that \_\_\_\_ bought an apartment in Baghdad ?'

(1 DEC 2010, SA, offered freely)

#### b. extraction with resumption

راغب يا صديقة يدري إنو هي اشترت شقة ببغداد ؟\*

\*Ragheb ya: Sadiga ydry ennu: **hi** iſtarat ʃigga bi-Baghdad

Ragheb which friend.F know.3MS that **she** bought.3FS apartment in-Baghdad

'Which friend does Ragheb know that **she** bought an apartment in Baghdad ?'

(1 DEC 2010, SA, elicited)

### (34) DIRECT OBJECT

#### a. extraction with gap

بهجت يا مرية يعرف إنو إيمان شافت بالحفلة ؟

Behjet ya: mraya yaʃarəf ennu: Iman ʃa:fit \_\_\_\_ bi-l-Hafla

Behjet which woman know.3MS that Iman saw.3FS \_\_\_\_ at-the-party

'Which woman does Behjet know that Iman saw \_\_\_\_ at the party ?'

(1 DEC 2010, SA 5I, offered freely)

#### b. extraction with resumption

بهجت يا مرية يعرف إنو إيمان شافتها بالحفلة ؟

Behjet ya: mraya yaʃarəf ennu: Iman ʃa:fit=**ha** bi-l-Hafla

Behjet which woman know.3MS that Iman saw.3FS=**3FS** at-the-party

'Which woman does Behjet know that Iman saw [ **her** ] at the party ?'

(1 DEC 2010, SA 5II, offered freely)

### (35) PREPOSITIONAL OBJECT

#### a. *extraction with gap*

سنا يا معلم تعتقد إنو سهى التقت وية بالكلية؟\*

\*Sena ya: muʕallim taʕatagid ennu: Suha iltagat wu:ya: \_\_\_\_ bi-l-kulli:a

Sena which professor know.3FS that Suha met.3FS with \_\_\_\_ at-the-faculty

'Which professor does Sena know that Suha met with \_\_\_\_ at the faculty ?'

(1 DEC 2010, SA 7I, offered freely)

#### b. *extraction with resumption*

سنا يا معلم تعتقد إنو سهى التقت وياه بالكلية؟

Sena ya: muʕallim taʕatagid ennu: Suha iltagat wu:ya:=**h** bi-l-kulli:a

Sena which professor know.3FS that Suha met.3FS with=**3MS** at-the-faculty

'Which professor does Sena know that Suha met with [**him**] at the faculty ?'

(1 DEC 2010, SA 7II, offered freely)

#### c. *PP-fronting*

سنا وية يا معلم تعتقد إنو سهى التقت بالكلية؟

Sena wu:ya: ya: muʕallim taʕatagid ennu: Suha iltagat bi-l-kulli:a

Suha with which professor think.3FS that Suha met.3FS at-the-faculty

'With which professor does Sena know that Suha met at the faculty ?'

(1 DEC 2010, SA 3III, offered freely)

## 2.4.2 Extraction from adjunct positions: temporal and locative adjuncts

Standard Arabic does not allow resumption with non-D-linked interrogative adjuncts (i.e. non-arguments). Wahba (1984) notes for Egyptian Arabic and Malkawi (2009) for Jordanian Arabic that resumption is possible only with arguments and not possible with non-arguments; the data they show in supporting this argument is non-D-linked adjuncts. Similarly in Iraqi Arabic, adjunct extraction allows only the gap strategy

with non-D-linked interrogative adjuncts, whether the content question is mono-clausal or is bi-clausal. With respect to D-linked interrogative adjuncts, D-linked manner and rationale adjuncts are already beyond the register of spoken Arabic; they belong to the Modern Standard Arabic register. The temporal adjunct of the form *ya: wagit* ‘which time’ is ill-formed in Iraqi Arabic, hence examples of content questions with D-linked interrogative temporal adjuncts are ungrammatical (36). The D-linked interrogative locative adjunct allows only the resumptive strategy and does not allow the gap strategy, as in (37).

### (36) D-LINKED TEMPORAL ADJUNCT

#### a. *extraction with gap*

\*إيمان يا وقت راحت للأردن ؟

\*Iman ya: wagit ra:Het li=l-Urdun \_\_\_\_

Iman which time went.3FS to-the-Jordan \_\_\_\_

'What time did Iman go to Jordan ?'

(9 SEP 2010, SA 1, offered freely)

#### b. *extraction with resumption*

\*إيمان يا وقت راحت للأردن ذاك الوقت ؟

\*Iman ya: wagit ra:Het li=l-Urdun δa:k il-wagit

Iman which time went.3FS to-the-Jordan then

'\*When did Iman go to Jordan then ?'

(9 SEP 2010, SA 1, elicited)

### (37) D-LINKED LOCATIVE ADJUNCT

#### a. *extraction with gap*

\*إيمان يا محلة شافت سهى ب ؟

\*Iman ya: maHalla fa:fit Suha bi \_\_\_\_

Iman which store saw.3FS Suha in \_\_\_\_

'Which store did Iman see Suha in \_\_\_\_ ?'

(9 SEP 2010, SA 3, elicited)

**b. extraction with resumption**

إيمان يا محلة شافت سهى به ؟

Iman ya: maHalla ʃa:fit Suha bi=h

Iman which store saw.3FS Suha in=3MS

'Which store did Iman see Suha in [it] ?'

(9 SEP 2010, SA 3, offered freely)

**c. PP-fronting**

إيمان بيا محلة شافت سهى ؟

Iman bi=ya: maHalla ʃa:fit Suha

Iman in=which store saw.3FS Suha

'In which store did Iman see Suha in ?'

(10 JUL 2011, SA 3, offered freely)

Table 10 summarizes the distribution of D-linked interrogative expression from adjunct position.

		Gap	Resumption
Adjunct	Temporal	x	x
	Locative	x	√

**Table 10. Adjunct extraction with respect to the resumptive strategy and the gap strategy in Iraqi Arabic mono-clausal and bi-clausal content questions**

### 2.4.3 Extraction from islands: wh-islands and adjuncts islands

Let us move to island contexts. By island (Ross 1986) we understand the syntactic domain from where extraction is not possible. The resumptive pronouns have been observed to be oblivious to island phenomena (Rouveret 2011, to appear). Island constraints also play a role in the scope of semantic operators and quantifiers. In the following examples, I use *wh*-islands (i.e. embedded CPs introduced by *wh*-constituents)

and adjunct islands (i.e. islands formed from an adjunct clause). Consider first extracting from a wh-island: the gap strategy is ill-formed, but resumption is possible, as in (38). Similarly, with adjunct islands, the gap strategy is ill-formed, but resumption is possible, as in (39).

**(38) WH-ISLAND**

**a. gap strategy**

يا صورة لابنها سامر يسأل إذا كل مربية شققت ؟\*

\*ya: Su:ra.F li-bni=ha Samer ysʔal iða kull mraya ʃagagat\_\_\_\_  
which picture.F of-son=her Samer ask.3MS if every woman tore.3FS\_\_\_\_

'\*Which photo of her son did Samer wonder if every woman tore \_\_\_\_ ?'

(13 NOV 2010, SA 14aI, elicited)

**b. resumptive strategy**

يا صورة لابنها سامر يسأل إذا كل مربية شققته ؟

ya: Su:ra.F li-bni=ha Samer ysʔal iða kull mraya ʃagagat=**ha**  
which picture.F of-son=her Samer ask.3MS if every woman tore.3FS=**3F**

'Which photo of her son did Samer wonder if every woman tore [it] ?'

(13 NOV 2010, SA 14aII, elicited)

**(39) ADJUNCT ISLAND**

**a. gap strategy**

يا صورة لابنها سامر زعل لأنو كل مربية شققت ؟\*

\*ya: Su:ra.F li-bni=ha Samer zaʕal li-ennu: kull mraya ʃagagat\_\_\_\_  
which picture.F of-son=her Samer get angry because every woman tore.3FS\_\_\_\_

'\*Which photo of her son did Samer get angry because every woman tore\_\_\_\_ ?'

(13 NOV 2010, SA 14bI, elicited)

### **b. resumptive strategy**

يا صورة لابنها سامر زعل لأنو كل مربية شفتتها ؟

ya: Su:ra.F li-bni=ha Samer zaʕal li-ennu: kull mraya ʃagagat=**ha**  
which picture.F of-son=her Samer get angry because every woman tore.3FS=**3FS**  
'Which photo oh her son did Samer get angry because every woman tore [**it**] ?'

(13 NOV 2010, SA 14bII, elicited)

## **2.5 Syntactic analysis of the resumptive strategy**

In this section I present an analysis of the resumptive strategy in Iraqi Arabic content questions. I briefly summarize previous approaches to resumption (§2.5.1), and then consider the relation of the resumptive pronoun to the pronoun inventory (§2.5.2), the internal structure of pronouns (§2.5.3), present my analysis of resumption in terms of remnant-DP deletion (§2.5.4).

### **2.5.1 Previous analyses of resumption**

With respect to the syntax of the resumptive strategies, the earliest theories differentiate between the gap strategies which are derived by movement and the resumption strategies which are derived without movement (Sells 1984; McCloskey 1990) or they propose resumption as a last resort to save a derivation where movement is blocked (Shlonsky 1992). Other theories of resumption consider it a special kind of movement (Demirdache 1991). Within the Minimalist Program, the Phasal Agree approach analyzes the links in the resumptive chain as connected by the operation Agree (Chomsky 2000, 2007; Adger & Ramchand 2001, 2005; Rouveret 2002, 2008).

The most recent analyses of resumption approach this phenomenon by considering that (i) resumptive elements are not considered as a uniform class, but their status is differentiated as strong (i.e. strong pronouns and epithets) and as weak (i.e. weak pronouns and weak pronouns doubled by a strong pronoun) (Guilliot 2006; Guilliot &

Malkawi 2006; Guilliot 2008; Malkawi 2009); (ii) resumptive strategies give rise to reconstruction effects (Aoun & Li 2003; Boeckx 2003; Guilliot & Malkawi 2006; Malkawi 2009; Rouveret 2011, to appear); (iii) resumptive pronouns may have different internal structures (Elbourne 2002; Déchaine & Wiltschko 2002).

### **2.5.2 The inventory of pronouns in Iraqi Arabic**

The personal pronouns in Arabic are strong and weak. The strong personal pronouns correspond to the forms used with the Nominative case, whereas the weak pronominal forms are the ones used with the Accusative and the Genitive. Arabic allows subject pro-drop and the overt presence of a subject pronoun is highly marked. Moreover, as we have already seen, resumption with subject pronouns is not possible in Iraqi Arabic. I return to this below.

Since the Accusative forms are weak pronouns which cliticize to verbs and to prepositions, the resumptive strategy in which they participate is known as *weak resumption* (Malkawi 2009). A complete paradigm of the personal pronouns with their strong and weak forms in Iraqi Arabic is given in Table 11; of these, the Accusative forms are used in resumption in Iraqi Arabic content questions.



Person and number	Nominative (strong pronouns)		Accusative (weak pronouns)		Genitive (weak pronouns)	
1S	أني	any	-ني	-ny	-ي	-y
2MS	إنت	enta	-ك	-ək	-ك	-ək
2FS	إنت	enti	-ك	-iʃ	-ك	-iʃ
3MS	هو	hu:wwa	-ه	-hu	-ه	-hu
3FS	هي	hyia	-ها	-ha	-ها	-ha
1Pl	إحنا	ʔiHna	-نا	-na:	-نا	-na:
2Pl	انتو	intu:	-تم	-tum	-تم	-tum
3MPI	هم	humma	-هم	-hum	-هم	-hum
3FPI	من	henna	-هن	-hunna	-هن	-hunna

**Table 11. The paradigm of personal pronouns in Iraqi Arabic**

The resumptive strategy in Iraqi Arabic content questions is realized via resumptive clitic pronouns (weak pronouns). According to Malkawi's (2009) classification, the resumptive strategy which involves weak resumptive pronouns (clitics or clitics doubled by a strong pronoun) is a case of *weak resumption*. In the following, the resumptive strategy discussed refers only to resumptive clitic pronouns (i.e. weak resumption).

### 2.5.3 Internal structure of the resumptive pronoun

Postal (1969) advanced the claim that pronouns are definite articles. Since then, various authors have treated pronouns as DPs (i.e. determiner phrases) and worked on their internal structure (Evans 1980; Reinhart 1983; Cardinaletti & Stark 1999). Elbourne (2002) proposed that pronouns are definite determiners whose NP-complement has undergone deletion in the phonology (i.e. The NP-deletion Theory) as in (40).

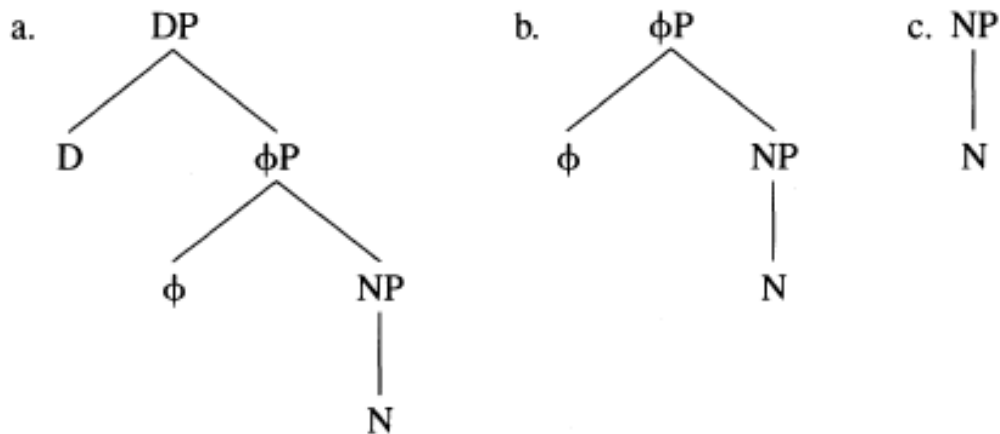
(40) *Elbourne's (2002) internal structure of a pronoun*

[<sub>D</sub> pronoun [<sub>NP</sub> ~~noun~~]]

Elbourne's NP-deletion theory is central to Guilliot & Malkawi's (2006) and Malkawi's (2009) analysis of resumptive pronouns in Jordanian Arabic. In essence, we retain for this thesis that pronouns can have an NP-complement.

Déchaine & Wiltschko (2002) propose that pronouns are not primitives and that they are decomposable. They argue that there are at least three pronoun types: pro-DP, pro- $\phi$ P and pro-NP, each one associated with a distinct syntactic projection as in (41).

(41) DÉCHAINÉ & WILTSCHKO'S (2002) INTERNAL STRUCTURE OF A PRONOUN



The DP-structure in (41a) functions as an R-expression, and, according to Déchaine & Wiltschko (2002), always contains  $\phi$ P and NP as sub-constituents. The  $\phi$ P-structure in (41b) functions as bound variable, while the NP-structure in (41c) has the status of a semantic constant. Relevant to the present analysis is Déchaine & Wiltschko's claim that the  $\phi$ -element is what allows a pronouns to function as a bound variable. Recall that Rouveret's (2011) definition of resumptive pronoun (introduced in §1.2.1) equate the resumptive pronoun with an A'-bound variable position. Combining this with the Déchaine & Witschko analysis predicts that pronominal elements which function as resumptive pronouns should be able to function as bound variables. This is confirmed in Iraqi Arabic: observes that the accusative pronouns that otherwise functions as Condition

B pronoun — it is locally free, as shown in (42) — can also be used as a bound variable as in (43).

**(42) THE PRONOUN CAN BE BOUND FROM OUTSIDE ITS LOCAL DOMAIN**

**a. condition B violation – local domain**

\*إيمان<sub>1</sub> شافتها<sub>1</sub>.

\*Iman<sub>1</sub> ʃa:fit=**ha**<sub>1</sub>

Iman saw.3FS=**3FS**

‘Iman<sub>1</sub> saw her<sub>1</sub>.’

**b. condition B observed – from outside local domain**

إيمان<sub>1</sub> قالت إني شفتها<sub>1</sub>.

Iman<sub>1</sub> ga:lit      ?in=ny ʃuft=**ha**<sub>1</sub>

Iman said.3FS      that=1S saw.1S=**3FS**

‘Iman<sub>1</sub> said that I saw her<sub>1</sub>.’

**(43) THE PRONOUN IS A BOUND VARIABLE**

كل واحد يقول إنو إيمان شافته.

kull waHed<sub>1</sub> ygwul      ennu: Iman ʃa:fit=**hu**<sub>1</sub>

everyone say.3MS that Iman saw.3FS=**3MS**

‘Everyone<sub>1</sub> says that Iman saw him<sub>1</sub>.’

(SA, 1, 14 APR 2011 elicited)

Amending Déchaine & Wiltschko’s (2002) analysis, I propose that D-linked interrogative expressions always have a DP-shell, but differ according to whether the intermediate  $\phi$ -layer is present. In terms of the inputs to the numeration, there are two logical possibilities: a [D-N] structure, and a [D- $\phi$ -N] structure. In terms of how these structure are spelled out, I show that the gap strategy is structurally ambiguous between (44a) and (44b), while the resumptive strategy is always associated with a [D- $\phi$ -N], as in (45).

(44) SYNTAX OF GAP STRATEGY

- a. [D-N]
- b. [D- $\varphi$ -N] (with covert  $\varphi$ )

(45) SYNTAX OF RESUMPTIVE STRATEGY

- [D- $\varphi$ -N] (with overt  $\varphi$ )

## 2.5.4 Resumption as remnant DP-deletion

In this section I show how the resumptive strategy is derived with remnant-deletion. I use the minimalist derivational analysis which employs bare phrase structure and the operations Select, Merge, Copy and Delete. In the following, whenever I use the term "movement", I understand it not as a primitive operation, but as the combination of Copy + Merge (Hornstein et al 2006).

In content questions with the resumptive strategy and D-linked interrogative expressions, I treat the D-linked interrogative expressions as having a tripartite internal structure with a D-  $\varphi$ P - N substructure as shown in (46).

(46) *internal structure of D-linked interrogative expressions*

[<sub>D</sub> [D-linked interrogative] [ <sub>$\varphi$ P</sub> [ $\varphi$  resumptive pronoun] [<sub>N</sub> noun]]]

Let us unpack this with an example of D-linked content question employing the resumptive strategy (47a) whose numeration is given in (47b).

(47) D-LINKED CONTENT QUESTION

a. *the resumptive strategy*

إيمان يا رجال شافته ؟

Iman ya: ridʒa:l ʃa:fit=**hu**

Iman which man saw.3FS=**3MS**

'Which man did Iman see [**him**] ?'

(1 DEC 2010, SA 1II, offered freely)

b. **Numeration:** { $TOP_{\emptyset}$ ,  $C_{\emptyset}$ ,  $I_{\emptyset}$ ,  $Iman_D$ ,  $Sa:fit_V$ ,  $ya:D$ ,  $hu_{\phi}$ ,  $ridʒa:l_N$ ,}

In (48) I show the derivational analysis of (47a). The derivation develops by phases (i.e. the vP phase, the IP phase, etc), where each maximal projection represents a domain for the application of rules (Chomsky 1995; Wojdak 2005; Hornstein 2008). Thus, within the VP<sup>3</sup> phase (48b), the DP is built by: (48bI) merging the pronoun *hu* 'him' with the noun *ridʒal* 'man' and (48bII) merging that complex syntactic object with the D-linked interrogative *ya:* 'which'. Then the verb V *ʃa:fit* 'she saw' merges with the DP *ya: hu ridʒa:l* 'which he man' (48bIII), and cliticization of the pronoun *hu* 'him' immediately takes place via successive application of Copy and Delete (48b IV-V). Thus the cliticization rule of the resumptive pronoun to the verb occurs in the VP phase; the pronoun has to cliticize to the verb and this determines its early movement in the derivation, during the VP phase. The subject DP *Iman* then merges with the V at SpecVP (48bVI). At the IP phase (48c), the inflectional head merges with the VP (48cI), then the subject DP *Iman* is moved to SpecIP via successive application of Copy and Delete (48cII – III). At the CP phase (48d), the remnant of the DP *ya: ~~hu~~ ridʒa:l* is moved to SpecCP via successive application of Copy and Delete (48dI-II). At the TopP phase (48e), the topical head Top merges with the CP (48eI) and the subject DP *Iman* is moved to SpecTopP via successive application of Copy and Delete (48eII-III).

---

<sup>3</sup> It does not make a difference for my analysis if the verb is a v or a V. To keep matters simple, I label the verb as V.

(48) *derivational analysis of (47a)*

**a. Numeration:** {<sub>TOP</sub>∅, C∅, I∅, *Iman*<sub>D</sub>, *Sa:fit*<sub>V</sub>, *ya:*<sub>D</sub>, *hu*<sub>φ</sub>, *ridza:l*<sub>N</sub>, }

**b. VP phase**

**I.** Merge <φ, N>

[<sub>φ</sub> [*hu*<sub>φ</sub>] [*ridza:l*<sub>N</sub>] ]

**II.** Merge <D, φ>

[<sub>D</sub> [*ya:*<sub>D</sub>] [*hu*<sub>φ</sub> *ridza:l*<sub>N</sub>] ]

**III.** Merge <V, D>

[<sub>V</sub> [*a:fit*<sub>V</sub>] [<sub>D</sub> *ya:*<sub>D</sub> *hu*<sub>φ</sub> *ridza:l*<sub>N</sub>] ]

**IV.** Copy *hu*<sub>φ</sub> & Merge <V, φ>

[<sub>V</sub> [*a:fit*<sub>V</sub> *hu*<sub>φ</sub>] [<sub>D</sub> *ya:*<sub>D</sub> *hu*<sub>φ</sub> *ridza:l*<sub>N</sub>] ]

**V.** Delete *hu*<sub>φ</sub>

[<sub>V</sub> [*a:fit*<sub>V</sub> *hu*<sub>φ</sub>] [<sub>D</sub> *ya:*<sub>D</sub> ~~*hu*~~<sub>φ</sub> *ridza:l*<sub>N</sub>] ]

**VI.** Merge <D, V>

[<sub>V</sub> [*Iman*<sub>D</sub>] [<sub>V</sub> [*a:fit*<sub>V</sub> *hu*<sub>φ</sub>] [<sub>D</sub> *ya:*<sub>D</sub> ~~*hu*~~<sub>φ</sub> *ridza:l*<sub>N</sub>] ] ]

**c. IP phase**

**I.** Merge <I, V>

[<sub>I</sub> [<sub>V</sub> [*Iman*<sub>D</sub>] [<sub>V</sub> [*a:fit*<sub>V</sub> *hu*<sub>φ</sub>] [<sub>D</sub> *ya:*<sub>D</sub> ~~*hu*~~<sub>φ</sub> *ridza:l*<sub>N</sub>] ]]]

**II.** Copy *Iman*<sub>D</sub> & Merge <D, I>

[<sub>I</sub> [*Iman*<sub>D</sub>] [<sub>I</sub> [<sub>V</sub> [*Iman*<sub>D</sub>] [<sub>V</sub> [*a:fit*<sub>V</sub> *hu*<sub>φ</sub>] [<sub>D</sub> *ya:*<sub>D</sub> ~~*hu*~~<sub>φ</sub> *ridza:l*<sub>N</sub>] ]]]]]

**III.** Delete *Iman*<sub>D</sub>

[<sub>I</sub> [*Iman*<sub>D</sub>] [<sub>I</sub> [<sub>V</sub> [~~*Iman*~~<sub>D</sub>] [<sub>V</sub> [*a:fit*<sub>V</sub> *hu*<sub>φ</sub>] [<sub>D</sub> *ya:*<sub>D</sub> ~~*hu*~~<sub>φ</sub> *ridza:l*<sub>N</sub>] ]]]]]

#### d. CP phase

I. Copy [<sub>D</sub> ya:<sub>D</sub> ~~hu~~<sub>φ</sub> ridʒa:l<sub>N</sub>] & Merge <C, I>

[<sub>C</sub> [<sub>D</sub> ya:<sub>D</sub> ~~hu~~<sub>φ</sub> ridʒa:l<sub>N</sub>] [<sub>I</sub> [<sub>V</sub> [<sub>Iman</sub><sub>D</sub>] [<sub>V</sub> [ʃa:fit<sub>V</sub> hu<sub>φ</sub>] [<sub>D</sub> ya:<sub>D</sub> ~~hu~~<sub>φ</sub> ridʒa:l<sub>N</sub>]]]]]

II. Delete [<sub>D</sub> ya:<sub>D</sub> ~~hu~~<sub>φ</sub> ridʒa:l<sub>N</sub>]

[<sub>C</sub> [<sub>D</sub> ya:<sub>D</sub> ~~hu~~<sub>φ</sub> ridʒa:l<sub>N</sub>] [<sub>I</sub> [<sub>V</sub> [<sub>Iman</sub><sub>D</sub>] [<sub>V</sub> [ʃa:fit<sub>V</sub> hu<sub>φ</sub>] [<sub>D</sub> ya:<sub>D</sub> ~~hu~~<sub>φ</sub> ridʒa:l<sub>N</sub>]]]]]

#### e. TopP phase

I. Merge <Top, C>

II. Copy *Iman*<sub>D</sub> & Merge <Top, C>

[<sub>Top</sub> *Iman*<sub>D</sub> [<sub>C</sub> [<sub>D</sub> ya: ~~hu~~ ridʒa:l] [<sub>I</sub> [<sub>V</sub> [*Iman*<sub>D</sub>] [<sub>V</sub> [ʃa:fit<sub>V</sub> hu<sub>φ</sub>] [<sub>D</sub> ya: ~~hu~~ ridʒa:l]]]]]]]

III. Delete *Iman*<sub>D</sub>

[<sub>Top</sub> *Iman*<sub>D</sub> [<sub>C</sub> [<sub>D</sub> ya: ~~hu~~ ridʒa:l] [<sub>I</sub> [<sub>V</sub> [~~Iman~~<sub>D</sub>] [<sub>V</sub> [ʃa:fit<sub>V</sub> hu<sub>φ</sub>] [<sub>D</sub> ya: ~~hu~~ ridʒa:l]]]]]]]

To summarize, the resumptive strategy is analyzed as "remnant deletion", because of the deletion of the remnant-DP ya: ~~hu~~ ridʒa:l resulted from the cliticization of the φ-pronoun to V.

The brief description of the remnant DP-deletion process is given in (49).

#### (49) remnant-DP deletion in brief

Remnant-DP deletion = cliticization of resumptive pronoun followed by deletion of remnant-DP

Thus, in this analysis the resumptive pronoun is a stranded pro-φP deleted from the lower occurrence of the DP as in (50).

#### (50) the resumptive strategy as remnant DP-deletion

[<sub>C</sub> [<sub>D</sub> D] [[<sub>φ</sub> [<sub>φ</sub> φ] [<sub>NP</sub> N]]]... [<sub>I</sub> [<sub>V</sub> V φ] ... [<sub>D</sub> ~~D~~] [[<sub>φ</sub> [<sub>φ</sub> φ] [<sub>NP</sub> ~~N~~]]]]]

Observe that the full DP containing all three subcomponents does not surface overtly (i.e. the form *ya: hu ridzal* is ungrammatical).

I stipulated that the motivation for the resumptive pronoun to remain overt in the syntax is that it cliticizes to the verb<sup>4</sup>.

## 2.6 Syntactic analysis of the gap strategy

I propose that the internal structure of the interrogative DP differs with the gap and the resumptive strategy (§2.6.1), and analyze that the gap strategy involve full DP deletion (§2.6.2).

### 2.6.1 Internal structure of the DP

I show that the gap strategy is derived with full DP-deletion. While the D-linked interrogative in the gap strategy has a D-N structure as in (51a), the D-linked interrogative expression of the resumptive strategy has a D- $\phi$ -N structure as in (51b).

#### (51) SYNTACTIC STRUCTURE OF THE D-LINKED INTERROGATIVE EXPRESSION

##### a. *the gap structure*

[<sub>D</sub> D [<sub>N</sub> N]]

##### b. *the resumptive structure*

[<sub>D</sub> D [ $\phi$  [<sub>N</sub> N]]]

---

<sup>4</sup> Various mechanical solutions have been proposed within the Minimalist framework regarding the phenomenon of resumption, for example Adger and Ramchand (2001, 2005) and Rouveret (2002, 2008) propose that the relation between the resumptive pronoun and its antecedent is established via Agree, while Boeckx (2003) analyzes resumption as subextraction in which resumptive strategies involve Match followed by Move, and not Agree. In future research I intent to pursue these analyses and compare and contrast each one of them with the one proposed in this thesis.



## 2.6.2 The gap strategy as full DP-deletion

In content questions where the gap strategy is employed, the lower occurrence of the DP is deleted in full and merged at SpecCP. Let us unpack this by considering the example in (52a) below which is a D-linked content question in which the gap strategy is employed. The numeration is given in (52b).

### (52) D-LINKED CONTENT QUESTION

#### a. *the gap strategy*

إيمان يا رجال شافت بالحفلة ؟

Iman ya: ridʒa:l ʃa:fit \_\_\_\_ bi-l-Hafla

Iman which man saw.3FS \_\_\_\_ at-the-party

'Which man did Iman see \_\_\_\_ at the party ?'

(1 DEC 2010, SA 1I, offered freely)

#### b. Numeration: { $TOP_{\emptyset}$ , $C_{\emptyset}$ , $I_{\emptyset}$ , $Iman_D$ , $Sa:fit_V$ , $ya:D$ , $ridza:l_N$ ,}

Notice that the numeration of (52b), which derives the D-linked content question employing the gap strategy, does not contain the  $\phi$ -element.

The derivation is given in (53). At the VP phase (53b), the DP is built by (53bI) merging the D-linked interrogative *ya* 'which' with the noun *ridʒal* 'man'; then the verb *ʃa:fit* 'she saw' merges with the DP *ya: ridʒa:l* 'which man' (53bII). The subject DP *Iman* merges with the V at SpecVP (53bIII). At the IP phase (53c), the inflectional head merges with the VP (53cI), then the subject DP *Iman* is moved to SpecIP via successive application of Copy and Delete (53cII-III). At the CP phase (53d), the DP *ya: ridʒa:l* 'which man' is moved to SpecCP via successive application of Copy and Delete (53dI-II). At the TopP phase (53e), the topical head *Top* merges with the CP (53eI) and the subject DP *Iman* is moved to SpecTopP via successive application of Copy and Delete (53eII-III).

(53) *derivational analysis of (52a)*

**a. Numeration:** {<sub>TOP</sub>∅, C∅, I∅, *Iman*<sub>D</sub>, *Sa:fit*<sub>V</sub>, *ya:*<sub>D</sub>, *ridʒa:l*<sub>N</sub>, }

**b. VP phase**

**I.** Merge <D, N>

[<sub>D</sub> [*ya:*<sub>D</sub>] [*ridʒa:l*<sub>N</sub>] ]

**II.** Merge <V, D>

[<sub>V</sub> [*Sa:fit*<sub>V</sub>] [<sub>D</sub> *ya:*<sub>D</sub> *ridʒa:l*<sub>N</sub>] ]

**III.** Merge <D, V>

[<sub>V</sub> [*Iman*<sub>D</sub>] [<sub>V</sub> [*Sa:fit*<sub>V</sub>] [<sub>D</sub> *ya:*<sub>D</sub> *ridʒa:l*<sub>N</sub>] ] ]

**c. IP phase**

**I.** Merge <I, V>

[<sub>I</sub> [<sub>V</sub> [*Iman*<sub>D</sub>] [<sub>V</sub> [*ʃa:fit*<sub>V</sub>] [<sub>D</sub> *ya:*<sub>D</sub> *ridʒa:l*<sub>N</sub>] ] ] ]

**II.** Copy *Iman*<sub>D</sub> & Merge <D, I>

[<sub>I</sub> [*Iman*<sub>D</sub>] [<sub>I</sub> [<sub>V</sub> [*Iman*<sub>D</sub>] [<sub>V</sub> [*ʃa:fit*<sub>V</sub>] [<sub>D</sub> *ya:*<sub>D</sub> *ridʒa:l*<sub>N</sub>] ] ] ] ]

**III.** Delete *Iman*<sub>D</sub>

[<sub>I</sub> [*Iman*<sub>D</sub>] [<sub>I</sub> [<sub>V</sub> [~~*Iman*~~<sub>D</sub>] [<sub>V</sub> [*ʃa:fit*<sub>V</sub>] [<sub>D</sub> *ya:*<sub>D</sub> *ridʒa:l*<sub>N</sub>] ] ] ] ]

**d. CP phase**

**I.** Copy [<sub>D</sub> *ya:*<sub>D</sub> *ridʒa:l*<sub>N</sub>] & Merge <C, I>

[<sub>C</sub> [<sub>D</sub> *ya:*<sub>D</sub> *ridʒa:l*<sub>N</sub>] [<sub>I</sub> [<sub>V</sub> [*Iman*<sub>D</sub>] [<sub>V</sub> [*ʃa:fit*<sub>V</sub>] [<sub>D</sub> *ya:*<sub>D</sub> *ridʒa:l*<sub>N</sub>] ] ] ] ]

**II.** Delete [<sub>D</sub> *ya:*<sub>D</sub> ~~*ridʒa:l*~~ ]

[<sub>C</sub> [<sub>D</sub> *ya:*<sub>D</sub> *ridʒa:l*<sub>N</sub>] [<sub>I</sub> [<sub>V</sub> [*Iman*<sub>D</sub>] [<sub>V</sub> [*Sa:fit*<sub>V</sub> *hu*] [<sub>D</sub> ~~*ya:*~~<sub>D</sub> *ridʒa:l*<sub>N</sub>] ] ] ] ]

### e. TopP phase

#### I. Merge <Top, C>

#### II. Copy *Iman<sub>D</sub>* & Merge <Top, C>

[<sub>Top</sub> ***Iman<sub>D</sub>*** [<sub>C</sub> [<sub>C</sub> [<sub>D</sub> *ya:<sub>D</sub>* *riḏa:l<sub>N</sub>*] [<sub>I</sub> [<sub>V</sub> [***Iman<sub>D</sub>***] [<sub>V</sub> [*Sa:fit<sub>V</sub>*] [<sub>D</sub> ~~*ya:<sub>D</sub>*~~ ~~*riḏa:l<sub>N</sub>*~~]]]]]]]

#### III. Delete *Iman<sub>D</sub>*

[<sub>Top</sub> ***Iman<sub>D</sub>*** [<sub>C</sub> [<sub>C</sub> [<sub>D</sub> *ya:<sub>D</sub>* *riḏa:l<sub>N</sub>*] [<sub>I</sub> [<sub>V</sub> [~~*Iman<sub>D</sub>*~~] [<sub>V</sub> [*Sa:fit<sub>V</sub>*] [<sub>D</sub> ~~*ya:<sub>D</sub>*~~ ~~*riḏa:l<sub>N</sub>*~~]]]]]]]

As can be seen from (53), the verb *fa:fit* 'saw' has a DP-complement *ya: riḏa:l* 'which man' (53bIII) which is copied and merged at SpecCP (53dI-II); the full-DP is deleted from its lower occurrence and maintained in its upper occurrence.

Thus, while the gap strategy is derived with full DP-deletion, the resumptive strategy is derived with remnant DP-deletion.

## 2.7 Implications of the analysis for extraction

I present the implications of the syntactic analysis outlined in the two previous sections — namely remnant DP-deletion (§2.5) and full DP-deletion (§2.6) — as they apply to extraction of a subject (§2.7.1), of a prepositional object (§2.7.2), and of a PP (§2.7.3).

### 2.7.1 Why resumption isn't possible with subject extraction

Recall that subjects in Iraqi Arabic can only be strong pronouns which are independent pronouns in that they do not cliticize (see §2.2.2). But, as already observed above, Iraqi Arabic only has weak resumption, in that the pronominal element which serves as a resumptive is drawn from the (Accusative) clitic series. Therefore, subject resumption is not possible because partial DP-deletion cannot occur as the pronoun cannot cliticize to the verb.

In the following I present this analysis in more detail. In (54a) I show the

derivation of a content question with subject extraction employing the gap strategy; the numeration of (54a) is given in (54b).

**(54) SUBJECT EXTRACTION**

**a. extraction with gap**

يا صديقة اشترت شقة ؟

ya: Sadi:ga iftarat figga  
which friend.F bought.3FS apartment  
'Which friend bought an apartment ?'

(1 DEC 2010, SA, offered freely)

**b. the numeration of (54a)**

**Numeration:** {<sub>TOP</sub>∅, C∅, I∅, iftarat<sub>V</sub>, ya:<sub>D</sub>, Sadi:ga<sub>N</sub>, figga<sub>N</sub>}

(55) shows the derivation, which, as before, develops by phases (i.e. the vP phase, the IP phase, etc), where each maximal projection represents a domain for the application of rules. Within the VP phase (55b), the VP is built by merging the verb V *iftarat* 'she bought' with the DP *figga* 'apartment' (55bI). Then, the subject is built by merging the D-linked interrogative pronoun *ya:* 'which' with the noun *Sadi:ga* 'friend', as in (55bII). The subject DP *ya: Sadi:ga* 'which friend' then merges with the V at SpecVP (55bIII). During the IP phase (55c), the inflectional head merges with the VP (55cI). Then the subject DP *ya: Sadi:ga* 'which friend' is moved to SpecIP via successive application of Copy and Delete (55cII-III). At the CP phase (55d), the DP *ya: Sadi:ga* 'which friend' is moved to SpecCP via successive application of Copy and Delete (55dI-II).

**(55) derivational analysis of (54a)**

**a. Numeration:** {<sub>TOP</sub>∅, C∅, I∅, iftarat<sub>V</sub>, ya:<sub>D</sub>, Sadi:ga<sub>N</sub>, figga<sub>N</sub>}

## **b. VP phase**

### **I. Merge <V, D>**

[<sub>V</sub> [*iftarat*<sub>V</sub>] [<sub>D</sub> *figga*<sub>N</sub>] ]

### **II. Merge <D, N>**

[<sub>D</sub> [*ya*:<sub>D</sub>] [*Sadi:ga*<sub>N</sub>]]

### **III. Merge <D, V>**

[<sub>V</sub> [<sub>D</sub> [*ya*:<sub>D</sub>] [*Sadi:ga*<sub>N</sub>]] [<sub>V</sub> [*iftarat*<sub>V</sub>] [<sub>N</sub> *figga*<sub>N</sub>] ]]

## **c. IP phase**

### **I. Merge <I, V>**

[<sub>I</sub> [<sub>V</sub> [<sub>D</sub> [*ya*:<sub>D</sub>] [*Sadi:ga*<sub>N</sub>]] [<sub>V</sub> [*iftarat*<sub>V</sub>] [<sub>N</sub> *figga*<sub>N</sub>] ]]]]

### **II. Copy [<sub>D</sub> *ya*:<sub>D</sub> *Sadi:ga*<sub>N</sub>] & Merge <D, I>**

[<sub>I</sub> [<sub>D</sub> [*ya*:<sub>D</sub>] [*Sadi:ga*<sub>N</sub>] [<sub>I</sub> [<sub>V</sub> [<sub>D</sub> [*ya*:<sub>D</sub>] [*Sadi:ga*<sub>N</sub>]] [<sub>V</sub> [*iftarat*<sub>V</sub>] [<sub>N</sub> *figga*<sub>N</sub>] ]]]]]]

### **III. Delete [<sub>D</sub> *ya*:<sub>D</sub> *Sadi:ga*<sub>N</sub>]**

[<sub>I</sub> [<sub>D</sub> [*ya*:<sub>D</sub>] [*Sadi:ga*<sub>N</sub>] [<sub>I</sub> [<sub>V</sub> [~~[<sub>D</sub> [*ya*:<sub>D</sub>] [*Sadi:ga*<sub>N</sub>]]~~] [<sub>V</sub> [*iftarat*<sub>V</sub>] [<sub>N</sub> *figga*<sub>N</sub>] ]]]]]]

## **d. CP phase**

### **I. Copy [<sub>D</sub> [*ya*:<sub>D</sub>] [*Sadi:ga*<sub>N</sub>] & Merge <C, I>**

[<sub>C</sub> [<sub>D</sub> [*ya*:<sub>D</sub>] [*Sadi:ga*<sub>N</sub>] [<sub>I</sub> [<sub>D</sub> [*ya*:<sub>D</sub>] [*Sadi:ga*<sub>N</sub>] [<sub>I</sub> [<sub>V</sub> [~~[<sub>D</sub> [*ya*:<sub>D</sub>] [*Sadi:ga*<sub>N</sub>]]~~] [<sub>V</sub> [*iftarat*<sub>V</sub>] [<sub>N</sub> *figga*<sub>N</sub>] ]]]]]]]]

### **II. Delete [<sub>D</sub> [*ya*:<sub>D</sub>] [*Sadi:ga*<sub>N</sub>]**

[<sub>C</sub> [<sub>D</sub> [*ya*:<sub>D</sub>] [*Sadi:ga*<sub>N</sub>] [<sub>I</sub> [~~[<sub>D</sub> [*ya*:<sub>D</sub>] [*Sadi:ga*<sub>N</sub>]]~~] [<sub>I</sub> [<sub>V</sub> [~~[<sub>D</sub> [*ya*:<sub>D</sub>] [*Sadi:ga*<sub>N</sub>]]~~] [<sub>V</sub> [*iftarat*<sub>V</sub>] [<sub>N</sub> *figga*<sub>N</sub>] ]]]]]]]]

Let us consider now the ungrammatical example in (56a) showing a content question with subject extraction employing the resumptive strategy; the numeration of (56a) is

given in (56b). Notice that the numeration in (56b) has a resumptive pronoun and the structure of the D-linked interrogative expressions is D- $\phi$ -N.

## (56) SUBJECT EXTRACTION

### a. extraction with resumption

يا صديقة هي اشترت شقة ؟\*

\*ya: Sadi:ga hyia iftarat figga  
which friend.F she bought.3FS apartment  
'Which friend [she] bought an apartment ?'

(1 DEC 2010, SA, offered freely)

### b. the numeration of (56a)

**Numeration:** { $\text{TOP}\emptyset$ ,  $\text{C}\emptyset$ ,  $\text{I}\emptyset$ ,  $\text{iftarat}_V$ ,  $\text{ya:D}$ ,  $\text{Sadi:ga}_N$ ,  $\text{figga}_N$ ,  $\text{hiya}_D$ }

(57) shows the derivation of (56a). Within the VP phase (57b), the VP is built by merging the verb V *iftarat* 'she bought' with the DP *figga* 'apartment' (57bI). The subject DP (57bII) is built by: merging the pronoun *hiya* 'she' with the noun *Sa:diga* 'friend' and (57bIII) merging that complex syntactic object with the D-linked interrogative *ya:* 'which'. At the next step (57bIV), the derivation crashes, because the subject DP merges with V at SpecV and the pro- $\phi$  *hiya* 'she' cannot cliticize to the verb *iftarat* 'she bought' within the VP-phase. Notice that this account crucially assumes that phonological clitic attachments must be resolved within the same syntactic phase that introduces the clitic.

### (57) derivational analysis of (56a)

**a. Numeration:** { $\text{C}\emptyset$ ,  $\text{I}\emptyset$ ,  $\text{iftarat}_V$ ,  $\text{ya:D}$ ,  $\text{Sadi:ga}_N$ ,  $\text{figga}_N$ ,  $\text{hiya}_\phi$ }

### b. VP phase

#### I. Merge <V, D>

[<sub>V</sub> [*iftarat*<sub>V</sub>] [<sub>D</sub> *figga*<sub>N</sub>] ]

## II. Merge <φ, N>

[<sub>φ</sub> [*hiya*<sub>φ</sub>] [*Sa:diga*<sub>N</sub>] ]

## III. Merge <D, φ>

[<sub>D</sub> [*ya*:<sub>D</sub>] [*hiya*<sub>φ</sub> *Sadiga*<sub>N</sub>] ]

## IV. Merge <D, V>

\*[<sub>V</sub> [<sub>D</sub> [*ya*:<sub>D</sub>] [*hiya*<sub>φ</sub> *Sadiga*<sub>N</sub>]] [<sub>V</sub> [*iftarat*<sub>V</sub>] [<sub>D</sub> *figga*<sub>N</sub>] ]]

### 2.7.2 Why resumption is possible with prepositional object extraction

Recall that with D-linked interrogative expressions, temporal adjunct extraction in Iraqi Arabic does not allow either the gap strategy or the resumptive strategy (see §2.3.3). Locative adjunct extraction allows only the resumptive strategy. Given that the resumptive strategy is derived by remnant-DP deletion with cliticization of the resumptive pronoun. It follows that resumption with a prepositional object is possible because the resumptive clitic can cliticize. I present this in more detail by looking at the derivation of the locative adjunct extraction with the gap strategy and respectively with the resumptive strategy.

Consider the example in (58a) of locative adjunct extraction employing the resumptive strategy and its numeration in (58b).

#### (58) D-LINKED LOCATIVE ADJUNCT

##### a. extraction with resumption

إيمان يا محلة راحت إليها ؟

Iman ya: maHalla ra:het ?li:=**ha**

Iman which store went.3FS to=3FS

'Which store did Iman go to [**it**] ?'

(9 SEP 2010, SA 3, elicited)

**b. numeration of (58a)**

Numeration:  $\{C_{\emptyset}, I_{\emptyset}, ra:Het_V, ya:D, maHalla_N, p\tilde{p}ila, ha_{\phi}, Iman_D\}$

In (59) I show the derivational analysis of (58a). As I explained above, the derivation develops by phases (i.e. the vP phase, the IP phase, etc), where each maximal projection represents a domain for the application of rules (Chomsky 1995; Wojdak 2005; Hornstein 2008). The DP is built (59bI) by merging the pronoun *ha* ‘her’ with the noun *maHalla* ‘store’ and (59bII) merging that complex syntactic object with the D-linked interrogative *ya*: ‘which’. Then the preposition P *\tilde{p}ila* ‘to’ merges with the DP *ya: ha maHalla* ‘which her store’ (59bIII) and cliticization of the pronoun *ha* ‘her’ immediately takes place via successive application of Copy and Delete (51bIV-V). Then the verb V *ra:Het* ‘she went’ merges with the PP *\tilde{p}ila ha\_{\phi} ya:D ~~ha\_{\phi}~~ maHalla\_N* (59bVI). The subject DP *Iman* then merges with the V at SpecVP (59bVII). At the IP phase (59c), the inflectional head merges with the VP (59cI), then the subject DP *Iman* is moved to SpecIP via successive application of Copy and Delete (51cII–III). At the CP phase (59d), the remnant of the DP *ya: ~~ha~~ maHalla* is moved to SpecCP via successive application of Copy and Delete (59dI-II). At the TopP phase (59e), the topical head Top merges with the CP (59eI) and the subject DP *Iman* is moved to SpecTopP via successive application of Copy and Delete (59eII-III).

**(59) derivation of (58a)**

**a.** Numeration:  $\{C_{\emptyset}, I_{\emptyset}, ra:Het_V, ya:D, maHalla_N, p\tilde{p}ila, ha_{\phi}, Iman_D\}$

**b. VP phase**

**I.** Merge  $\langle \phi, N \rangle$

$[_{\phi} [ha_{\phi}] [maHalla_N]]$

**II.** Merge  $\langle D, \phi \rangle$

$[_D [ya:D] [ha_{\phi} maHalla_N]]$

**III.** Merge  $\langle P, D \rangle$

$[_P [p\tilde{p}ila] [_D [ya:D] [ha_{\phi} maHalla_N]]]$



**IV. Copy  $ha_\phi$  & Merge <P, D>**

[<sub>P</sub> [<sub>P</sub> *ɔila*  **$ha_\phi$** ] [<sub>D</sub> [<sub>ya</sub>:<sub>D</sub>] [ **$ha_\phi$**  *maHalla<sub>N</sub>* ]]]]

**V. Delete  $ha_\phi$**

[<sub>P</sub> [<sub>P</sub> *ɔila*  **$ha_\phi$** ] [<sub>D</sub> [<sub>ya</sub>:<sub>D</sub>] [ ~~**$ha_\phi$**~~  *maHalla<sub>N</sub>* ]]]]

**VI. Merge <V, P>**

[<sub>V</sub> [*ra*:*Het<sub>V</sub>*] [<sub>P</sub> [<sub>P</sub> *ɔila*  **$ha_\phi$** ] [<sub>D</sub> [<sub>ya</sub>:<sub>D</sub>] [ ~~**$ha_\phi$**~~  *maHalla<sub>N</sub>* ]]]]]]

**VII. Merge *Iman<sub>D</sub>***

[<sub>V</sub> [*Iman<sub>D</sub>*] [<sub>V</sub> [*ra*:*Het<sub>V</sub>*] [<sub>P</sub> [<sub>P</sub> *ɔila* *ha<sub>φ</sub>*] [<sub>D</sub> [<sub>ya</sub>:<sub>D</sub>] [ ~~**$ha_\phi$**~~  *maHalla<sub>N</sub>* ]]]]]]

**c. IP phase**

**I. Merge <I, V>**

[<sub>I</sub> [<sub>V</sub> [*Iman<sub>D</sub>*] [<sub>V</sub> [*ra*:*Het<sub>V</sub>*] [<sub>P</sub> [<sub>P</sub> *ɔila* *ha<sub>φ</sub>*] [<sub>D</sub> [<sub>ya</sub>:<sub>D</sub>] [ ~~**$ha_\phi$**~~  *maHalla<sub>N</sub>* ]]]]]]]]

**II. Copy *Iman<sub>D</sub>* & Merge <D, I>**

[<sub>I</sub> [*Iman<sub>D</sub>*] [<sub>I</sub> [<sub>V</sub> [*Iman<sub>D</sub>*] [<sub>V</sub> [*ra*:*Het<sub>V</sub>*] [<sub>P</sub> [<sub>P</sub> *ɔila*  **$ha_\phi$** ] [<sub>D</sub> [<sub>ya</sub>:<sub>D</sub>] [ ~~**$ha_\phi$**~~  *maHalla<sub>N</sub>* ]]]]]]]]

**III. Delete *Iman<sub>D</sub>***

[<sub>I</sub> [*Iman<sub>D</sub>*] [<sub>I</sub> [<sub>V</sub> [~~*Iman<sub>D</sub>*~~] [<sub>V</sub> [*ra*:*Het<sub>V</sub>*] [<sub>P</sub> [<sub>P</sub> *ɔila*  **$ha_\phi$** ] [<sub>D</sub> [<sub>ya</sub>:<sub>D</sub>] [ ~~**$ha_\phi$**~~  *maHalla<sub>N</sub>* ]]]]]]]]

**d. CP phase**

**I. Copy [<sub>D</sub> [<sub>ya</sub>:<sub>D</sub>] [ ~~**$ha_\phi$**~~  *maHalla<sub>N</sub>* ] and Merge <C, I>**

[<sub>C</sub> [<sub>D</sub> [<sub>ya</sub>:<sub>D</sub>] [ ~~**$ha_\phi$**~~  *maHalla<sub>N</sub>* ] [<sub>I</sub> [*Iman<sub>D</sub>*] [<sub>I</sub> [<sub>V</sub> [~~*Iman<sub>D</sub>*~~] [<sub>V</sub> [*ra*:*Het<sub>V</sub>*] [<sub>P</sub> [<sub>P</sub> *ɔila*  **$ha_\phi$** ] [<sub>D</sub> [<sub>ya</sub>:<sub>D</sub>] [ ~~**$ha_\phi$**~~  *maHalla<sub>N</sub>* ]]]]]]]]]]

**II. Delete [<sub>D</sub> [<sub>ya</sub>:<sub>D</sub>] [ ~~**$ha_\phi$**~~  *maHalla<sub>N</sub>* ]**

[<sub>C</sub> [<sub>D</sub> [<sub>ya</sub>:<sub>D</sub>] [ ~~**$ha_\phi$**~~  *maHalla<sub>N</sub>* ] [<sub>I</sub> [*Iman<sub>D</sub>*] [<sub>I</sub> [<sub>V</sub> [~~*Iman<sub>D</sub>*~~] [<sub>V</sub> [*ra*:*Het<sub>V</sub>*] [<sub>P</sub> [<sub>P</sub> *ɔila*  **$ha_\phi$** ] [<sub>D</sub> [~~<sub>ya</sub>:<sub>D</sub>~~] [ ~~**$ha_\phi$**~~  *maHalla<sub>N</sub>* ]]]]]]]]]]

### e. TopP phase

#### I. Copy *Iman*<sub>D</sub> & Merge <Top, C>

[<sub>Top</sub> [*Iman*<sub>D</sub>] [<sub>C</sub> [<sub>D</sub> [*ya*:<sub>D</sub>] [*ha*<sub>φ</sub> *maHalla*<sub>N</sub>] [<sub>I</sub> [*Iman*<sub>D</sub>] [<sub>I</sub> [<sub>V</sub> [*Iman*<sub>D</sub>] [<sub>V</sub> [*ra*:*Het*<sub>V</sub>] [<sub>P</sub> [<sub>P</sub> *ʔila* *ha*<sub>φ</sub>] [<sub>D</sub> [*ya*:<sub>D</sub>] [*ha*<sub>φ</sub> *maHalla*<sub>N</sub>] ]]]]]]]]

#### II. Delete *Iman*<sub>D</sub>

[<sub>Top</sub> [*Iman*<sub>D</sub>] [<sub>C</sub> [<sub>D</sub> [*ya*:<sub>D</sub>] [*ha*<sub>φ</sub> *maHalla*<sub>N</sub>] [<sub>I</sub> [*Iman*<sub>D</sub>] [<sub>I</sub> [<sub>V</sub> [*Iman*<sub>D</sub>] [<sub>V</sub> [*ra*:*Het*<sub>V</sub>] [<sub>P</sub> [<sub>P</sub> *ʔila* *ha*<sub>φ</sub>] [<sub>D</sub> [*ya*:<sub>D</sub>] [*ha*<sub>φ</sub> *maHalla*<sub>N</sub>] ]]]]]]]]

The derivation of the content question with D-linked locative adjunct employing the resumptive strategy converges because the resumptive pronoun  $\phi$  of the D-linked interrogative adjunct can cliticize to the preposition.

Let us now consider the ungrammatical content question with D-linked interrogative adjunct employing the gap strategy in (60a) and at its numeration (60b).

### (60) D-LINKED LOCATIVE ADJUNCT

#### a. extraction with gap

\*أَمْكْ يَا مَحَلَّةَ رَاحَتْ إِلَى ؟

\*ʔummiʃ ya: maHalla ra:hit ʔila\_\_\_\_

mother=your:F which store went.3FS to \_\_\_\_

'Where did your mother go \_\_\_\_ ?'

(9 SEP 2010, SA 3, offered freely)

#### b. Numeration of (60a)

Numeration: {<sub>C</sub>∅, <sub>I</sub>∅, *ra*:*Het*<sub>V</sub>, *ya*:<sub>D</sub>, *maHalla*<sub>N</sub>, *ʔila*, *Iman*<sub>D</sub>}

(61) shows the derivation of (60a). The DP is built by: (61bI) merging the D-linked interrogative *ya*: 'which' with the noun *maHalla* 'store'. Then the preposition *ʔila* 'to' merges with the DP *ya*: *maHalla* 'which store' (61bII). Then the verb *V ra*:*Het* 'she went' merges with the PP *ʔila ya*:*maHalla*<sub>N</sub> (61bIII). The subject DP *Iman* then merges with the V at SpecVP (61bIV). At the IP phase (61c), the inflectional head merges with the VP (61cI), then the subject DP *Iman* is moved to SpecIP via successive

application of Copy and Delete (61cII – III). At the CP phase (61d), the DP *ya: maHalla* is moved to SpecCP via successive application of Copy and Delete (61dI-II). At this point the derivation crashes, because Arabic does not allow preposition stranding.

**(61) derivation of (60a)**

**a. Numeration:** { $C_{\emptyset}$ ,  $I_{\emptyset}$ , *ra:Het<sub>V</sub>*, *ya:~<sub>D</sub>*, *maHalla<sub>N</sub>*, *p?ila*, *Iman<sub>D</sub>*}

**b. VP phase**

**I. Merge <D, N>**

[<sub>D</sub> [*ya:~<sub>D</sub>*] [*maHalla<sub>N</sub>* ]]

**II. Merge <P, D>**

[<sub>P</sub> [*p?ila*] [<sub>D</sub> [*ya:~<sub>D</sub>*] [*maHalla<sub>N</sub>* ]]

**III. Merge <V, P>**

[<sub>V</sub> [*ra:Het<sub>V</sub>*] [<sub>P</sub> [*p?ila*] [<sub>D</sub> [*ya:~<sub>D</sub>*] [*maHalla<sub>N</sub>* ]]]]

**IV. Merge *Iman<sub>D</sub>***

[<sub>V</sub> [*Iman<sub>D</sub>*] [<sub>V</sub> [*ra:Het<sub>V</sub>*] [<sub>P</sub> [*p?ila*] [<sub>D</sub> [*ya:~<sub>D</sub>*] [*maHalla<sub>N</sub>* ]]]]]]

**c. IP phase**

**I. Merge <I, V>**

[<sub>I</sub> [<sub>V</sub> [*Iman<sub>D</sub>*] [<sub>V</sub> [*ra:Het<sub>V</sub>*] [<sub>P</sub> [*p?ila*] [<sub>D</sub> [*ya:~<sub>D</sub>*] [*maHalla<sub>N</sub>* ]]]]]]]]

**II. Copy *Iman<sub>D</sub>* & Merge <D, I>**

[<sub>I</sub> [*Iman<sub>D</sub>*] [<sub>I</sub> [<sub>V</sub> [*Iman<sub>D</sub>*] [<sub>V</sub> [*ra:Het<sub>V</sub>*] [<sub>P</sub> [*p?ila*] [<sub>D</sub> [*ya:~<sub>D</sub>*] [*maHalla<sub>N</sub>* ]]]]]]]]]]

**III. Delete *Iman<sub>D</sub>***

[<sub>I</sub> [*Iman<sub>D</sub>*] [<sub>I</sub> [<sub>V</sub> [~~*Iman<sub>D</sub>*~~] [<sub>V</sub> [*ra:Het<sub>V</sub>*] [<sub>P</sub> [*p?ila*] [<sub>D</sub> [*ya:~<sub>D</sub>*] [*maHalla<sub>N</sub>* ]]]]]]]]]]

#### d. CP phase

I. Copy [<sub>D</sub> [<sub>ya:D</sub> *maHalla<sub>N</sub>* ]] and Merge <C, I>

[<sub>C</sub> [<sub>D</sub> [<sub>ya:D</sub>] [*maHalla<sub>N</sub>*] [<sub>I</sub> [*Iman<sub>D</sub>*] [<sub>I</sub> [<sub>V</sub> [*Iman<sub>D</sub>*] [<sub>V</sub> [*ra:Het<sub>V</sub>*] [<sub>P</sub> [*p?ila*] [<sub>D</sub> [<sub>ya:D</sub>] [*maHalla<sub>N</sub>* ]]]]]]]

\*II. Delete [<sub>D</sub> [<sub>ya:D</sub>] [~~*ha<sub>φ</sub>*~~ *maHalla<sub>N</sub>* ]

\*[<sub>C</sub> [<sub>D</sub> [<sub>ya:D</sub>] [*maHalla<sub>N</sub>*] [<sub>I</sub> [*Iman<sub>D</sub>*] [<sub>I</sub> [<sub>V</sub> [~~*Iman<sub>D</sub>*~~] [<sub>V</sub> [*ra:Het<sub>V</sub>*] [<sub>P</sub> [*p?ila*] [<sub>D</sub> [~~*ya:D*~~] [~~*maHalla<sub>N</sub>*~~ ]]]]]]] CRASH NO PREPOSITION STRANDING

### 2.7.3 Why resumption is obligatory with extraction from islands

Recall that in *wh*-islands (i.e. embedded CPs introduced by *wh*-constituents) and adjunct islands (i.e. islands formed from an adjunct clause), resumption is obligatory (see §2.4.3). Consider the grammatical example in (62a) of a *wh*-island employing the resumptive strategy and its numeration in (62b).

#### (62) WH-ISLAND

##### a. resumptive strategy

يا صورة سامر يسأل إذا كل مربية شققته ؟

ya: Su:ra.F Samer ys?al iða kull mraya ʃagagat=**ha**

which picture.F Samer ask.3MS if every woman tore.3FS=**3F**

'Which photo did Samer wonder if every woman tore [it] ?'

(13 NOV 2010, SA 14aII, elicited)

b. Numeration of (62a): { <sub>C</sub>∅, <sub>I</sub>∅, *ʃagagat<sub>V</sub>*, *ys?al<sub>V</sub>*, *ya:D*, *Su:ra<sub>N</sub>*, *kull mraya<sub>D</sub>*, *ha<sub>φ</sub>* }

(63) shows the derivation of (62a). During the VP phase, the DP is built (63bI) by merging the pronoun *ha* 'her' with the noun *Su:ra* 'picture' and (63bII) by merging that complex syntactic object with the D-linked interrogative *ya:* 'which'. Then the verb *V ʃagagat<sub>V</sub>* merges with the complex syntactic object *ya: ha Su:ra* (63bIII) and cliticization of the pronoun *ha* 'her' immediately takes place via successive application of Copy and

Delete (63bIV-V). The subject of the embedded clause *kull mraya<sub>D</sub>* ‘every woman’ is merged at SpecV (63VI). During the IP phase, the inflectional head merges with the VP (63cI), then the subject DP *kull mraya<sub>D</sub>* ‘every woman’ is moved to SpecIP via successive application of Copy and Delete (63cII – III). At the CP phase (63d), the DP *ya: ha Su:ra* is moved to SpecCP via successive application of Copy and Delete (63dI-III). At the VP phase, the verb *ysʔal<sub>V</sub>* merges with the embedded clause (63eI), then the subject *Samer<sub>D</sub>* is merged as SpecVP (63eII). During the IP phase, the inflectional head merges with the VP (63fI), then the subject DP *Samer<sub>D</sub>* is moved to SpecIP via successive application of Copy and Delete (63fII – III). At the CP phase (63g), the DP *ya: ha Su:ra* is moved to SpecCP via successive application of Copy and Delete (63gI-III).

**(63) derivation of (62a)**

**a. Numeration:** {  $C_{\emptyset}$ ,  $i\delta a_C$ ,  $I_{\emptyset}$ , *fagagat<sub>V</sub>*, *ysʔal<sub>V</sub>*, *ya:·<sub>D</sub>*, *Su:ra<sub>N</sub>*, *kull mraya<sub>D</sub>*, *ha<sub>φ</sub>* }

**b. VP phase**

**I. Merge <φ, N>**

[<sub>φ</sub> [*ha<sub>φ</sub>*] [*Su:ra<sub>N</sub>* ]]

**II. Merge <D, φ>**

[<sub>D</sub> [*ya:·<sub>D</sub>* ] [*ha<sub>φ</sub>* *Su:ra<sub>N</sub>* ]]

**III. Merge <V, D>**

[<sub>V</sub> [*fagagat<sub>V</sub>*] [[<sub>D</sub> [*ya:·<sub>D</sub>*] [*ha<sub>φ</sub>* *Su:ra<sub>N</sub>* ]]]]

**IV. Copy *ha<sub>φ</sub>* & Merge <V, φ>**

[<sub>V</sub> [*fagagat<sub>V</sub>* *ha<sub>φ</sub>*] [<sub>D</sub> [*ya:·<sub>D</sub>* ] [*ha<sub>φ</sub>* *Su:ra<sub>N</sub>* ]]]]

**V. Delete *ha<sub>φ</sub>***

[<sub>V</sub> [*fagagat<sub>V</sub>* *ha<sub>φ</sub>*] [<sub>D</sub> [*ya:·<sub>D</sub>* ] [~~*ha<sub>φ</sub>*~~ *Su:ra<sub>N</sub>* ]]]]

## VI. Merge <D, V>

[<sub>V</sub> [*kull mraya*<sub>D</sub>] [<sub>V</sub> [<sub>φ</sub>agagat<sub>V</sub> *ha*<sub>φ</sub>] [<sub>D</sub> [*ya*:<sub>D</sub>] [~~*ha*~~<sub>φ</sub> Su:ra<sub>N</sub>] ]]]]

## c. IP phase

### I. Merge <I, V>

[<sub>I</sub> [<sub>V</sub> [*kull mraya*<sub>D</sub>] [<sub>V</sub> [<sub>φ</sub>agagat<sub>V</sub> *ha*<sub>φ</sub>] [<sub>D</sub> [*ya*:<sub>D</sub>] [~~*ha*~~<sub>φ</sub> Su:ra<sub>N</sub>] ]]]]

### II. Copy *kull mraya*<sub>D</sub> & Merge <D, I>

[<sub>I</sub> [*kull mraya*<sub>D</sub>] [<sub>V</sub> [*kull mraya*<sub>D</sub>] [<sub>V</sub> [<sub>φ</sub>agagat<sub>V</sub> *ha*<sub>φ</sub>] [<sub>D</sub> [*ya*:<sub>D</sub>] [~~*ha*~~<sub>φ</sub> Su:ra<sub>N</sub>] ]]]]

### III. Delete *kull mraya*<sub>D</sub>

[<sub>I</sub> [*kull mraya*<sub>D</sub>] [<sub>V</sub> [~~*kull mraya*~~<sub>D</sub>] [<sub>V</sub> [<sub>φ</sub>agagat<sub>V</sub> *ha*<sub>φ</sub>] [<sub>D</sub> [*ya*:<sub>D</sub>] [~~*ha*~~<sub>φ</sub> Su:ra<sub>N</sub>] ]]]]

## d. CP phase

### I. Merge <C, I>

[<sub>C</sub> [<sub>i</sub>δa<sub>C</sub>] [<sub>I</sub> [*kull mraya*<sub>D</sub>] [<sub>V</sub> [~~*kull mraya*~~<sub>D</sub>] [<sub>V</sub> [<sub>φ</sub>agagat<sub>V</sub> *ha*<sub>φ</sub>] [<sub>D</sub> [*ya*:<sub>D</sub>] [~~*ha*~~<sub>φ</sub> Su:ra<sub>N</sub>] ]]]]]]

### II. Copy [<sub>D</sub> [*ya*:<sub>D</sub>] [~~*ha*~~<sub>φ</sub> Su:ra<sub>N</sub>] ] & Merge <D, C>

[<sub>C</sub> [<sub>D</sub> [*ya*:<sub>D</sub>] [~~*ha*~~<sub>φ</sub> Su:ra<sub>N</sub>] ] [<sub>C</sub> [<sub>i</sub>δa<sub>C</sub>] [<sub>I</sub> [*kull mraya*<sub>D</sub>] [<sub>V</sub> [~~*kull mraya*~~<sub>D</sub>] [<sub>V</sub> [<sub>φ</sub>agagat<sub>V</sub> *ha*<sub>φ</sub>] [<sub>D</sub> [*ya*:<sub>D</sub>] [~~*ha*~~<sub>φ</sub> Su:ra<sub>N</sub>] ]]]]]]

### III. Delete [<sub>D</sub> [*ya*:<sub>D</sub>] [~~*ha*~~<sub>φ</sub> Su:ra<sub>N</sub>] ]

[<sub>C</sub> [<sub>D</sub> [*ya*:<sub>D</sub>] [~~*ha*~~<sub>φ</sub> Su:ra<sub>N</sub>] ] [<sub>C</sub> [<sub>i</sub>δa<sub>C</sub>] [<sub>I</sub> [*kull mraya*<sub>D</sub>] [<sub>V</sub> [~~*kull mraya*~~<sub>D</sub>] [<sub>V</sub> [<sub>φ</sub>agagat<sub>V</sub> *ha*<sub>φ</sub>] [<sub>D</sub> [~~*ya*~~:<sub>D</sub>] [~~*ha*~~<sub>φ</sub> Su:ra<sub>N</sub>] ]]]]]]

## e. VP phase

### I. Merge <V, C>

[<sub>V</sub> [<sub>ysʔal</sub><sub>V</sub>] [<sub>C</sub> [<sub>D</sub> [*ya*:<sub>D</sub>] [~~*ha*~~<sub>φ</sub> Su:ra<sub>N</sub>] ] [<sub>C</sub> [<sub>i</sub>δa<sub>C</sub>] [<sub>I</sub> [*kull mraya*<sub>D</sub>] [<sub>V</sub> [~~*kull mraya*~~<sub>D</sub>] [<sub>V</sub> [<sub>φ</sub>agagat<sub>V</sub> *ha*<sub>φ</sub>] [<sub>D</sub> [~~*ya*~~:<sub>D</sub>] [~~*ha*~~<sub>φ</sub> Su:ra<sub>N</sub>] ]]]]]]

## II. Merge *Samer<sub>D</sub>*

[<sub>V</sub> [***Samer<sub>D</sub>***] [<sub>V</sub> [*ysʔal<sub>V</sub>*] [<sub>C</sub> [<sub>D</sub> [*ya:Ḍ*] [*ha<sub>φ</sub>* *Su:ra<sub>N</sub>*] ] [<sub>C</sub> [*iḏa<sub>C</sub>*] [<sub>I</sub> [*kull mraya<sub>D</sub>*] [<sub>V</sub> [~~*kull mraya<sub>D</sub>*~~] [<sub>V</sub> [*ʃagagat<sub>V</sub> ha<sub>φ</sub>*] [<sub>D</sub> [~~*ya:Ḍ*~~] [*ha<sub>φ</sub>* *Su:ra<sub>N</sub>*] ]]]]]]

## f. IP phase

### I. Merge <I, V>

[<sub>I</sub> [<sub>V</sub> [***Samer<sub>D</sub>***] [<sub>V</sub> [*ysʔal<sub>V</sub>*] [<sub>C</sub> [<sub>D</sub> [*ya:Ḍ*] [*ha<sub>φ</sub>* *Su:ra<sub>N</sub>*] ] [<sub>C</sub> [*iḏa<sub>C</sub>*] [<sub>I</sub> [*kull mraya<sub>D</sub>*] [<sub>V</sub> [~~*kull mraya<sub>D</sub>*~~] [<sub>V</sub> [*ʃagagat<sub>V</sub> ha<sub>φ</sub>*] [<sub>D</sub> [~~*ya:Ḍ*~~] [*ha<sub>φ</sub>* *Su:ra<sub>N</sub>*] ]]]]]]

### II. Copy *Samer<sub>D</sub>* and merge <D, I>

[<sub>I</sub> [***Samer<sub>D</sub>***] [<sub>I</sub> [<sub>V</sub> [***Samer<sub>D</sub>***] [<sub>V</sub> [*ysʔal<sub>V</sub>*] [<sub>C</sub> [<sub>D</sub> [*ya:Ḍ*] [*ha<sub>φ</sub>* *Su:ra<sub>N</sub>*] ] [<sub>C</sub> [*iḏa<sub>C</sub>*] [<sub>I</sub> [*kull mraya<sub>D</sub>*] [<sub>V</sub> [~~*kull mraya<sub>D</sub>*~~] [<sub>V</sub> [*ʃagagat<sub>V</sub> ha<sub>φ</sub>*] [<sub>D</sub> [~~*ya:Ḍ*~~] [*ha<sub>φ</sub>* *Su:ra<sub>N</sub>*] ]]]]]]

### III. Delete *Samer<sub>D</sub>*

[<sub>I</sub> [***Samer<sub>D</sub>***] [<sub>I</sub> [<sub>V</sub> [~~*Samer<sub>D</sub>*~~] [<sub>V</sub> [*ysʔal<sub>V</sub>*] [<sub>C</sub> [<sub>D</sub> [*ya:Ḍ*] [*ha<sub>φ</sub>* *Su:ra<sub>N</sub>*] ] [<sub>C</sub> [*iḏa<sub>C</sub>*] [<sub>I</sub> [*kull mraya<sub>D</sub>*] [<sub>V</sub> [~~*kull mraya<sub>D</sub>*~~] [<sub>V</sub> [*ʃagagat<sub>V</sub> ha<sub>φ</sub>*] [<sub>D</sub> [~~*ya:Ḍ*~~] [*ha<sub>φ</sub>* *Su:ra<sub>N</sub>*] ]]]]]]

## g. CP phase

### I. Copy [<sub>D</sub> [*ya:Ḍ*] [*ha<sub>φ</sub>* *Su:ra<sub>N</sub>*] & Merge <C, I>

[<sub>C</sub> [<sub>D</sub> [*ya:Ḍ*] [*ha<sub>φ</sub>* *Su:ra<sub>N</sub>*] ] [<sub>I</sub> [*Samer<sub>D</sub>*] [<sub>I</sub> [<sub>V</sub> [~~*Samer<sub>D</sub>*~~] [<sub>V</sub> [*ysʔal<sub>V</sub>*] [<sub>C</sub> [<sub>D</sub> [*ya:Ḍ*] [*ha<sub>φ</sub>* *Su:ra<sub>N</sub>*] ] [<sub>C</sub> [*iḏa<sub>C</sub>*] [<sub>I</sub> [*kull mraya<sub>D</sub>*] [<sub>V</sub> [~~*kull mraya<sub>D</sub>*~~] [<sub>V</sub> [*ʃagagat<sub>V</sub> ha<sub>φ</sub>*] [<sub>D</sub> [~~*ya:Ḍ*~~] [*ha<sub>φ</sub>* *Su:ra<sub>N</sub>*] ]]]]]]]]

### II. Delete [<sub>D</sub> [*ya:Ḍ*] [*ha<sub>φ</sub>* *Su:ra<sub>N</sub>*]]

[<sub>C</sub> [<sub>D</sub> [*ya:Ḍ*] [*ha<sub>φ</sub>* *Su:ra<sub>N</sub>*] ] [<sub>I</sub> [*Samer<sub>D</sub>*] [<sub>I</sub> [<sub>V</sub> [~~*Samer<sub>D</sub>*~~] [<sub>V</sub> [*ysʔal<sub>V</sub>*] [<sub>C</sub> [<sub>D</sub> [~~*ya:Ḍ*~~] [~~*ha<sub>φ</sub>*~~ *Su:ra<sub>N</sub>*] ] [<sub>C</sub> [*iḏa<sub>C</sub>*] [<sub>I</sub> [*kull mraya<sub>D</sub>*] [<sub>V</sub> [~~*kull mraya<sub>D</sub>*~~] [<sub>V</sub> [*ʃagagat<sub>V</sub> ha<sub>φ</sub>*] [<sub>D</sub> [~~*ya:Ḍ*~~] [~~*ha<sub>φ</sub>*~~ *Su:ra<sub>N</sub>*] ]]]]]]]]

The derivation of the content question with D-linked locative adjunct employing the resumptive strategy converges because the resumptive pronoun  $\phi$  of the D-linked interrogative adjunct can cliticize to the verb.

Consider the ungrammatical example (64a) and its numeration (64b). Notice that the numeration (64b) does not have a resumptive pronoun and the structure of the D-linked interrogative is D-N.

**(64) WH-ISLAND**

**a. gap strategy**

يا صورة سامر يسأل إذا كل مربية شققت؟

\*ya: Su:ra.F Samer ysʔal iða kull mraya ʃagagat\_\_\_\_  
which picture.F Samer ask.3MS if every woman tore.3FS\_\_\_\_

'\*Which photo did Samer wonder if every woman tore \_\_\_\_ ?'

(13 NOV 2010, SA 14aI, elicited)

**b. Numeration:** {  $C_{\emptyset}$ ,  $i\delta a_C$ ,  $I_{\emptyset} \text{ʃagagat}_V$ ,  $ya:D$ ,  $Su:ra_N$ ,  $kull \text{ mraya}_D$  }

(65) shows the derivation of (64a). During the VP phase, the DP is built (65bI) by merging the D-linked interrogative *ya*: ‘which’ with the noun *Su:ra* ‘picture’. Then the verb *V ʃagagat<sub>V</sub>* merges with the direct object *ya: Su:ra* (65bII). The subject of the embedded clause *kull mraya<sub>D</sub>* ‘every woman’ is merged at SpecV (65bIII). During the IP phase, the inflectional head merges with the VP (65cI), then the subject DP *kull mraya<sub>D</sub>* ‘every woman’ is moved to SpecIP via successive application of Copy and Delete (65cII – III). At the CP phase (65d), the complementizer  $i\delta a_C$  ‘whether’ is merged at C (65dI) and then the DP *ya: Su:ra* is moved to SpecCP via successive application of Copy and Delete (65dII-III). At this point the derivation crashes, because there is no clitic to remain cliticized to the verb.

**(65) derivation of (64a)**

**a. Numeration:** {  $C_{\emptyset}$ ,  $I_{\emptyset} \text{ʃagagat}_V$ ,  $ya:D$ ,  $Su:ra_N$ ,  $kull \text{ mraya}_D$  }

**b. VP phase**

**I. Merge <D, N>**

[<sub>D</sub> [*ya:D*] [*Su:ra<sub>N</sub>*]]



## II. Merge <V, D>

[<sub>V</sub> [**fagagat**<sub>V</sub>] [<sub>D</sub> [*ya*:<sub>D</sub>] [*Su:ra*<sub>N</sub>] ]]

## III. Merge <D, V>

[<sub>V</sub> [*kull mraya*<sub>D</sub>] [<sub>V</sub> [*fagagat*<sub>V</sub>] [<sub>D</sub> [*ya*:<sub>D</sub>] [*Su:ra*<sub>N</sub>] ]]]]

### c. IP phase

#### I. Merge <I, V>

[<sub>I</sub> [<sub>V</sub> [*kull mraya*<sub>D</sub>] [<sub>V</sub> [*fagagat*<sub>V</sub>] [<sub>D</sub> [*ya*:<sub>D</sub>] [*Su:ra*<sub>N</sub>] ]]]]

#### II. Copy *kull mraya*<sub>D</sub> & Merge <D, I>

[<sub>I</sub> [*kull mraya*<sub>D</sub>] [<sub>V</sub> [*kull mraya*<sub>D</sub>] [<sub>V</sub> [*fagagat*<sub>V</sub>] [<sub>D</sub> [*ya*:<sub>D</sub>] [~~*ha*~~<sub>φ</sub> *Su:ra*<sub>N</sub>] ]]]]]]

#### III. Delete *kull mraya*<sub>D</sub>

[<sub>I</sub> [*kull mraya*<sub>D</sub>] [<sub>V</sub> [~~*kull mraya*~~<sub>D</sub>] [<sub>V</sub> [*fagagat*<sub>V</sub>] [<sub>D</sub> [*ya*:<sub>D</sub>] [~~*ha*~~<sub>φ</sub> *Su:ra*<sub>N</sub>] ]]]]]] - CRASH NO CLITIC TO CLITICIZE TO VERB

## 2.8 Implications of the analysis for reconstruction

Resumptive strategies give rise to reconstruction effects (Rouveret 2011, to appear).

Let's first define what reconstruction is (66). Given a relation between an XP and its extraction site (66i), "reconstruction" is a term used to describe the interpretation of XP in its in-situ position relative to a c-commanding antecedent YP, as in (66ii), and the interpretation of XP in its in-situ position relative to a c-commanding quantifier YP, as in (66iii) below.

## **(66) DEFINITION OF RECONSTRUCTION**

**(i)**  $[XP]_i \dots [ \_\_\_\_\_\_ ]_i$

**(ii)**  $[XP]_i \dots [Y_{P_{\text{antecedent}}}] \dots [ \_\_\_\_\_\_ ]_i$

**(iii)**  $[XP]_i [QP] [ \_\_\_\_\_\_ ]_i$

The authors who work on the syntax of resumption in either Semitic or Celtic use reconstruction effects to account for the bound variable readings of the resumptive elements (Lebeaux 1990; Aoun et al 2001; Rouveret 2002, 2008; Guilliot 2006; Guilliot & Malkawi 2006; Malkawi 2009).

There are two kinds of reconstruction: scope reconstruction and binding reconstruction. After illustrating that the copy theory of movement derives these two types of reconstruction (§2.8.1 - §2.8.2), I show how the two kinds of reconstruction play out in Iraqi Arabic (§2.8.3 - §2.8.4).

### **2.8.1 Scope reconstruction with a quantificational antecedent**

Scope reconstruction is illustrated in (67) below with an example adapted from Guilliot & Malkawi (2009).

#### **SCOPE RECONSTRUCTION IN ENGLISH (Guilliot & Malkawi 2009)**

**(67)** Which patient did every doctor examine ?

**(i)** 'Every doctor examined a different patient'

$Ax, Ey$  [examine (x, y)]

**(ii)** 'There is one patient that every doctor examined'

$Ey, Ax$  [examine (x, y)]

One of the possible readings of the question in (67) is the one where every doctor

examined a different patient: the universal quantifier *every* has scope over *patient*. This is possible if *patient* “reconstructs” to its thematic position as the complement of the verb *examine*, where it would be in the scope of the quantifier. Reconstruction is automatically available in the copy theory of movement that is assumed in this thesis, as shown in (68).

(68) *reconstruction applied to example in (67)*

- a. Which patient did every doctor examine ~~which patient~~ ?
- b. [<sub>CP</sub> [<sub>C</sub> which patient<sub>i</sub>] [<sub>TP</sub> [<sub>T</sub> did] [<sub>VP</sub> [<sub>DP</sub> every doctor] [<sub>V</sub> examine][<sub>DP</sub> ~~which patient~~<sub>i</sub>]]]

In particular, *scope reconstruction* automatically follows because the constituent *which patient* can be interpreted in its thematic position as complement of the verb *examine*, which is under the scope of the quantifier *every*.

Observe that when scope reconstruction applies, the interpretation assigned to the D-linked wh-phrase *which patient* is that of an indefinite expression: ‘for every doctor there is a patient that the doctor examines’. How is this possible? Here I follow other scholars (Kayne 1994, Agüerro-Bautista 2001, Guillot & Malkawi 2009) in assuming that the lower copy in (68) can be interpreted as an indefinite. For concreteness, I adopt the mechanics proposed by Guillot & Malkawi (2009), for whom the indefinite construal is an instance of a *skolemized choice function*, defined as follows (69):

- (69)
- a. *skolemization*: the method for removing existential quantifiers from a logical form (Kratzer 1999; Agüerro-Bautista 2001)
  - b. *choice function*: a function which chooses exactly one element from each set in the domain (Kratzer 1999; Agüerro-Bautista 2001)
  - c. *skolemized choice function*: a function which takes one individual *x* and a set of entities *P* and returns one individual of that set relative to *x* (Guillot & Malkawi 2009)

As a skolemized choice function, the copy *which patient* in (68) is bound by the quantifier *every doctor*, yielding the distributive reading where each doctor is mapped to a different patient. Guillot & Malkawi (2009) further point out that, according to

Agüerro-Bautista (2001), the interpretation of the copy as a skolemized choice function gives rise to the pair-list reading, as follows (69):

(69) *deriving the pair-list reading for (68)*

1. Which patient did every doctor examine?

2. LF: **WHICH(y), patient(y)**,  $\forall(x)$  doctor (x), [examine (x, y) ]

3. Which patient = indefinite

**$\exists(y)$ , patient(y)**,  $\forall(x)$  doctor (x), [examine (x, y) ]

4. Skolemized choice function

$\forall(x)$  doctor (x), [examine (x,  **$f(y)$** , patient(y) ) ]

5. Pair-list answer: Dr. Johnson examined Victor, Dr. Smith examined Joyce, etc

We saw that (69) is an example of scope reconstruction.

## 2.8.2 Binding reconstruction with a referential antecedent

Let us now consider the sentence in (70) which illustrates a case of binding reconstruction.

**ENGLISH** (Guilliot 2006)

(70) Which picture of himself<sub>1</sub> does every man<sub>1</sub> prefer ?

=  $\lambda x$  [x prefer picture of x]

(70) is an example of binding reconstruction: *picture of himself* is reconstructed to its thematic position as the complement of the verb *prefer*. This allows the pronoun *himself* to be bound by the quantifier *each*, resulting in a bound variable reading, which maps a different picture to each man.

(71) *reconstruction applied to example (70)*

a. Which picture of himself<sub>1</sub> does every man<sub>1</sub> prefer ~~picture of himself<sub>1</sub>~~?

The representation in (71) is an example of binding reconstruction, because *picture of himself* can be reconstructed in its thematic position as the complement of the verb *prefers*, such that the pronoun *him* is bound by *each man*; the result will be a bound variable reading which maps a different *picture* for *each man*. This is illustrated in the abstract representation in (72) below.

(72) *representation of (71) - binding reconstruction*

[<sub>CP</sub> [<sub>DP</sub> which picture of himself<sub>1</sub>][<sub>TP</sub> does [<sub>DP</sub> each man] [<sub>V</sub> prefer] [<sub>DP</sub> ~~picture of himself<sub>1</sub>~~]]]]]

### 2.8.3 Reconstruction with resumption

So far we have seen how reconstruction effects appear with the gap strategy. In the following I show Guilliot & Malkawi's (2006) account of reconstruction effects with resumptive strategies in Jordanian Arabic.

Both (67) and (70) above are structures with gaps. In reconstruction with gap strategies, we reconstruct a copy of the displaced constituent in its thematic position, as we saw above. Let us now consider the example in (73) which shows a resumptive strategy.

**JORDANIAN ARABIC** (Guilliot & Malkawi 2006)

(73) *resumptive strategy*

[Talib-[ha]<sub>1</sub> l-kassul]<sub>2</sub> ma ziʕlat wala mʕalmih<sub>1</sub> laʔannuh l-mudiirah  
student.M=3FS the-bad Neg upset.3FS no teacher because the-principal

kaHʕat-uh<sub>2</sub> mn l-madrase  
expelled=3MS from the school

'Her<sub>1</sub> bad student, no teacher<sub>1</sub> was upset because the principal expelled [him] from school'.

In the construction with resumptive pronoun in (73), a resumptive pronoun occupies the thematic position which is otherwise occupied by a gap in the gap strategies; apparently, we could not reconstruct a copy of the displaced constituent *Talib-ha l-kassul* "her bad student" in its thematic position, since that position is occupied by a pronoun. The solution that Guilliot & Malkawi (2006) propose is to consider the pronoun to be a definite description in the spirit of Elbourne (2002). Then the reconstruction the displaced constituent is possible as the pronoun's NP-argument whose copy is elided under identity with its antecedent (Guilliot & Malkawi 2006). The abstract representation of the reconstruction with resumptive strategy in (73) is given in (74) below:

**(74) reconstruction of (73) - resumption**

[<sub>DP</sub> Talib=[ha]<sub>1</sub> l-kassul]<sub>2</sub> ... [wala mʕalmih]<sub>1</sub> ... [<sub>DP</sub> -uh [<sub>NP</sub> ~~Talib=ha<sub>1</sub> l-kassul~~]]<sub>2</sub>

Therefore, they amend Lebeaux's (1990) formulation of reconstruction, given in (75a), to (75b).

**(75) RECONSTRUCTION**

- a. Lebeaux 1990:** if an XP allows for reconstruction, then that XP has undergone movement
- b. Guilliot & Malkawi 2006:** if an XP allows for reconstruction, then a **copy** of that XP is present in the derivation.

For Lebeaux, reconstruction is a diagnostic for movement. For Guilliot & Malkawi (2006) reconstruction is a diagnostic for the presence of a copy. These two approaches make different predictions about the interaction of reconstruction with the resumptive strategy. For analyses of resumption that treat it as a binding relation, the Lebeaux movement-account of reconstruction (incorrectly) predicts that reconstruction won't be possible with resumptive. But for analyses such as the copy theory of movement, where both the gap strategy and the strategy involve the copy-and-delete operation, reconstruction is (correctly) predicted to apply in both contexts.

## 2.8.4 Scope Reconstruction of Iraqi D-linked interrogatives

In Iraqi Arabic reconstruction can be seen in contexts where the resumptive strategy is optional and in contexts where the resumptive strategy is obligatory.

Consider the optional resumption examples in (76), where (76a) employs the gap strategy and (76b) employs the resumptive strategy.

### (76) optional resumption

#### a. the gap strategy

يا صورة لابنها كل مرية شقت ؟

ya: Su:ra.F li-bni=ha kull mraya jagagat\_\_\_\_\_

which picture.F of-son=her every woman tore.3FS

'Which photo of her son did every woman tear\_\_\_\_\_ ?'

(13 NOV 2010, SA 10a, elicited)

#### b. the resumptive strategy

يا صورة لابنها كل مرية شقتها ؟

ya: Su:ra.F li-bni=ha kull mraya jagagat=**ha**

which picture.F of-son=her every woman tore.3FS=**3FS**

'Which photo of her son did every woman tear [**it**] ?'

(13 NOV 2010, SA 10b, elicited)

The possessive pronoun *-ha* 'her' in the interrogated expression *ya: Su:ra li-bni=ha* 'which photo of her son' can be interpreted as a variable bound by the quantified expression *kull mraya* 'every woman'. The availability of this interpretation suggests that the possessive pronoun *-ha* 'her' can be reconstructed in the scope of the quantified expression *kull mraya* 'every woman'. The representation of the reconstruction of (76a) is given below in (77a) and its representation in (77b).

(77) a. *reconstruction applied to example in (76a)*

ya: Su:ra.F li-bni=ha kull mraya jagagat ~~Su:ra li-bni=ha~~

which picture.F of-son=her every woman tore.3FS

'Which photo of her son did every woman tear ~~picture of her son~~ ?'

b. *representation of (76a)*

[<sub>DP</sub> ya: Sura<sub>1</sub> li-bni=[ha]<sub>2</sub>] .... [kull mraya]<sub>2</sub>.... [<sub>VP</sub> [<sub>V</sub> jagagat]... [<sub>NP</sub> ~~Sura<sub>1</sub> li-bni=[ha]<sub>2</sub>~~]]

When we reconstruct in (76a), *Su:ra li-bni=ha* 'photo of her son' we consider a copy of it in its thematic position as complement of the verb *jagagat* 'she tore', where it is c-commanded (i.e. in the scope of) the universal quantifier *kull* 'every' in *kull mraya* 'every woman'. The reconstruction allows for the bound variable reading in which every woman tore a different picture of her son.

Consider now in (78) below how reconstruction applies to a D-linked content question with the resumptive strategy in (76b). We can reconstruct *Su:ra li-bni=ha* 'photo of her son' in its thematic position as the NP-complement of the resumptive pronoun *-ha* 'it'.

(78) *reconstruction applied to example in (76b)*

ya: Su:ra<sub>1</sub> li-bni=ha<sub>2</sub> kull mraya<sub>2</sub> jagagat=[<sub>DP</sub> ya: [<sub>CP</sub> ~~ha~~<sub>1</sub> [<sub>NP</sub> ~~Su:ra<sub>1</sub> li-bni=ha~~<sub>2</sub>]]

which picture of-son=3FS every woman tore=[<sub>DP</sub> ~~which~~ [<sub>CP</sub> ~~it~~<sub>1</sub> [<sub>NP</sub> ~~picture<sub>1</sub> of-son=3FS~~<sub>2</sub>]]

'Which picture of her son did every woman tear [<sub>DP</sub> ~~which~~ [<sub>CP</sub> ~~it~~<sub>1</sub> [<sub>NP</sub> ~~picture<sub>1</sub> of her<sub>2</sub> son~~]]?'

Thus, in the copy theory of movement, reconstruction is correctly predicted to occur with both the gap strategy and the resumptive strategy. We conclude that reconstruction is possible in Iraqi Arabic D-linked content questions with a resumptive pronoun in cases where the resumptive strategy is optional.

Let us see how reconstruction is applied to the island contexts in (79) and (80).



(79) WH-ISLAND

يا صورة لابنها سامر يسأل إذا كل مربية شققته ؟

ya: Su:ra.F li-bni=ha Samer ysʔal iða kull mraya ʃagagat=**ha**  
which picture.F of-son=her Samer ask.3MS if every woman tore.3FS=**3F**

'Which photo of her son did Samer wonder if every woman tore [it] ?'

(13 NOV 2010, SA 14aII, elicited)

(80) ADJUNCT ISLAND

يا صورة لابنها سامر زعل لأنو كل مربية شققته ؟

ya: Su:ra.F li-bni=ha Samer zaʃal li-ennu: kull mraya ʃagagat=**ha**  
which picture.F of-son=her Samer get angry because every woman tore.3FS=**3FS**

'Which photo oh her son did Samer get angry because every woman tore [**it**] ?'

(13 NOV 2010, SA 14bII, elicited)

Let us first apply reconstruction to the *wh*-island example in (79). The representation of the reconstruction applied to (79) is given below in (81).

(81) *reconstruction applied to the resumptive strategy in (79)*

ya: Su:ra<sub>1</sub> li-bni=ha<sub>2</sub> Samer ysʔal iða kull mraya<sub>2</sub>  
which picture.F of-son=3FS Samer ask.3MS if every woman

ʃagagat=[<sub>DP</sub> ya: [<sub>φ</sub> **ha**<sub>1</sub> [<sub>NP</sub> Su:ra<sub>1</sub>–li-bni=ha<sub>2</sub>]]

tore.3FS=[<sub>DP</sub> ~~which~~ **it**<sub>1</sub> [<sub>NP</sub> ~~picture~~<sub>1</sub>–of-son=3FS<sub>2</sub>]]

'Which photo of her son did Samer wonder if every woman tore [<sub>DP</sub> **it**<sub>1</sub> [<sub>NP</sub> ~~picture~~<sub>1</sub>–of-her<sub>2</sub> son]]?'

Consider now the representation in (82) where I show how reconstruction is applied to the resumptive strategy in the adjunct island example in (80).

(82) *reconstruction applied to the resumptive strategy in (80)*

ya: Su:ra<sub>1</sub> li-bni=ha<sub>2</sub> Samer zaʕal li-ennu: kull mraya<sub>2</sub>  
 which picture.F of-son=her Samer get angry because every woman

ʃagagat=[<sub>DP</sub> ya: [<sub>φ</sub> ha<sub>1</sub> [<sub>NP</sub> Su:ra<sub>1</sub>—li-bni=ha<sub>2</sub>]]]  
 tore.3FS=[<sub>DP</sub> which [<sub>φ</sub> it<sub>1</sub> [<sub>NP</sub> picture<sub>1</sub>—of-son=3FS<sub>2</sub>]]]

Which photo oh her son did Samer get angry because every woman tore [<sub>DP</sub> which [<sub>φ</sub> it<sub>1</sub> [<sub>NP</sub> picture<sub>1</sub>—of-her<sub>2</sub>-son]]]?

The availability of the bound variable readings with the resumptive strategies in the *wh*-island example in (79) and in the adjunct island in (80) suggest that we could reconstruct the interrogated constituent in its thematic position in the scope of the quantifier.

I have shown that scope reconstruction is possible with the resumptive strategy employing a resumptive pronoun in both optional resumption contexts and obligatory resumption<sup>5</sup> contexts. These findings are given in Table 12 below.

	Optional resumption	Obligatory resumption (island context)
<b>Reconstruction with quantificational antecedent</b>	√	√

**Table 12. Scope reconstruction with resumptive pronoun**

### 2.8.5 Binding Reconstruction of Iraqi D-linked interrogatives

Before I proceed with the binding reconstruction examples, I show that Condition A holds for Iraqi Arabic. Condition A of binding theory stipulates that a reflexive

<sup>5</sup> Obligatory resumption is tied to extraction from islands.

pronoun must be locally bound. Consider the example in (83) below which shows a grammatical sentence where condition A holds as in (83a), an ungrammatical example where the reflexive pronoun has no antecedent (83b), and a grammatical example where the reflexive pronoun is locally bound (83c) an ungrammatical example where the reflexive pronoun is not locally bound (83d).

**(83) Condition A in Iraqi Arabic**

a. فارس يحب نفسه.

Faris yHebb nafs=hu

Faris love.3MS soul=his

'Faris loves himself'.

(13 NOV 2010, SA 22e, offered freely)

b. \*نفسه يحب أمه.\*

\*nafs=hu yHebb ʔumm=hu

soul=his love.3MS mother=his

\*Himself loves his mother.

(13 NOV 2010, SA 22a, elicited)

c. أم فارس تحب نفسها.

ʔumm Faris tHebb nafs=ha

mother Faris love.3FS soul=her

Faris' mother loves herself.

(13 NOV 2010, SA 22d, offered freely)

d. \*أم سامر تحب نفسه.\*

\*ʔumm Samer tHebb nafs=hu

mother Samer love.3FS soul=his

\*Samer's mother loves himself.

(13 NOV 2010, SA 22c, elicited)

Now consider binding reconstruction with a referential antecedent. Let us first consider the optional resumption context illustrated in (84).

(84) *condition A with referential antecedent - optional resumption context*

**a. the gap strategy**

يا صورة لنفسه سامر شقق ؟

ya: Su:ra.F li-nafs=hu Samer jaggag\_\_\_\_\_

which picture.F of-soul=3MS Samer tore.3MS\_\_\_\_\_

'Which photo of himself did Samer tear \_\_\_\_ ?'

(13 NOV 2010, SA 20aI, elicited)

**b. the resumptive strategy**

يا صورة لنفسه سامر شققها ؟

ya: Su:ra.F li-nafs=hu Samer jaggag=**ha**

which picture.F of-soul=3MS Samer tore.3MS=**3FS**

'Which photo of himself did Samer tear [**it**] ?'

(13 NOV 2010, SA 20aII, elicited)

Considering that Condition A holds for Iraqi Arabic and therefore reflexive pronouns must be locally bound, it follows that the grammaticality of (84a) and (84b) indicates that the reflexive pronoun *nafshu* "himself" in (84) is bound by its antecedent *Samer*. This is possible if the interrogative constituent *Su:ra li-nafs=hu* "picture of himself" is reconstructed.

Let us look at how reconstruction works with the gap strategy in (84a). The representation of reconstruction is given below in (85).

(85) **a. reconstruction applied to example in (84a)**

ya: Su:ra<sub>1</sub> li-nafs=hu<sub>2</sub> Samer<sub>2</sub> jaggag ~~Su:ra<sub>1</sub>—li-nafs=hu<sub>2</sub>~~

which picture.F of-soul=3MS Samer tore.3MS ~~Su:ra<sub>1</sub>—li-nafs=hu<sub>2</sub>~~

'Which photo of himself did Samer tear ~~photo of himself~~ ?'

**b. abstract representation of (84a)**

[<sub>DP</sub> ya: Sura<sub>1</sub> li-nafs=[hu]<sub>2</sub>] .... Samer<sub>2</sub>.... [<sub>VP</sub> [<sub>V</sub> jagagat] [<sub>NP</sub> ~~Sura<sub>4</sub> li-nafs=[hu]<sub>2</sub>]]]~~

As seen in (85), *Su:ra li-nafs=hu* 'photo of himself' reconstructs to its thematic position as complement of the verb *fagagat* 'he tore', where the reflexive pronoun *nafshu* "himself" is c-commanded by its antecedent *Samer*. Reconstruction thus allows for the bound variable reading in which Samer tore a different picture of himself (i.e. the photo of his wedding, the photo of himself at the graduation party, etc).

In (86) below, reconstruction applies to (84b) where the resumptive strategy is employed. If we reconstruct *Su:ra li-nafs=hu* 'photo of himself' in its thematic position, we notice that the position in which there was a gap in (84a) is now occupied by the resumptive pronoun *-ha* 'it' in (84b). We now reconstruct *Su:ra li-nafs=hu* 'photo of himself' in its base position as the NP-complement of the resumptive pronoun *-ha* 'it'.

**(86) reconstruction applied to example in (84b)**

ya: Su:ra<sub>1</sub> li-nafs=hu<sub>2</sub> Samer<sub>2</sub> jagagat=[<sub>DP</sub> ~~ya:~~ [<sub>CP</sub> ~~ha~~<sub>1</sub> [<sub>NP</sub> ~~Su:ra<sub>4</sub> li-nafs=hu<sub>2</sub>]]]~~

which picture.F of-soul=3MS Samer tore.3MS=[<sub>DP</sub> which [<sub>CP</sub> ~~it~~<sub>1</sub> [<sub>NP</sub> ~~picture<sub>4</sub> of himself<sub>2</sub>]]]~~

'Which photo of himself did Samer tear [<sub>DP</sub> ~~which~~ [<sub>CP</sub> ~~it~~<sub>1</sub> [<sub>NP</sub> ~~picture<sub>4</sub> of himself<sub>2</sub>]]]?'~~

Let us now move on to see how binding reconstruction with a referential antecedent works in contexts of obligatory resumption. Consider the example in (87) showing a context of obligatory resumption. The example in (87a) where the gap strategy is employed is ungrammatical, while the example in (87b) where the gap strategy is employed is grammatical.

**(87) condition A with referential antecedent - obligatory resumption context**

**a. the gap strategy**

يا صورة لنفسه إللي سامر شقق ؟\*

\*ya: Su:ra.F li-nafs=hu illyi Samer jagagat\_\_\_\_\_

which picture.F of-soul=his which Samer tore.3MS\_\_\_\_\_

\*'Which photo of himself was the one that Samer tore \_\_\_\_\_ ?'

(13 NOV 2010, SA 20bI, elicited)

**b. the resumptive strategy**

يا صورة لنفسه إللي سامر شققها ؟

ya: Su:ra.F li-nafs=hu illyi Samer faggag=**ha**

which picture.F of-soul=his which Samer tore.3MS=**3FS**

'Which photo of himself was the one that Samer tore [**it**] ?'

(13 NOV 2010, SA 20bII, elicited)

Let us see how reconstruction can be applied now to the example in (87b) where the resumptive strategy is employed rendering a grammatical sentence. The representation of reconstruction with (87b) is given in (88).

**(88) a. reconstruction applied to the example in (87b)**

ya: Su:ra<sub>1</sub> li-nafs=hu<sub>2</sub> illyi Samer<sub>2</sub> faggag=[<sub>DP</sub> ya: [<sub>φ</sub> **ha**<sub>1</sub> [<sub>NP</sub> Su:ra<sub>1</sub> li-nafs=hu<sub>2</sub>]]

which picture.F of-soul=his which Samer tore.3MS=[<sub>DP</sub> ~~which~~ [<sub>φ</sub> **it**<sub>1</sub> [<sub>NP</sub> picture<sub>1</sub>-of-himself<sub>2</sub>]]

'Which photo of himself was the one that Samer tore [<sub>DP</sub> ~~which~~ [<sub>φ</sub> **it**<sub>1</sub> [<sub>NP</sub> picture<sub>1</sub>-of-himself<sub>2</sub>]]]?)'

Thus, the binding reconstruction is possible with the resumptive pronoun in contexts of optional resumption as well as in contexts of obligatory resumption. The generalization is that the binding reconstruction is always possible with the resumptive pronoun.

Table 13 below summarizes the findings regarding binding reconstruction.

	Optional resumption	Obligatory resumption (island context)
<b>Binding reconstruction</b>	√	√
<b>Condition A</b>		

**Table 13. Binding reconstruction with resumptive pronoun**

Iraqi Arabic D-linked content questions reveal that the resumptive pronoun allows

for binding reconstruction and scope reconstruction in optional contexts as well as obligatory contexts. The reconstructed bound variable reading will allow for different interpretations in the semantics, as it will be detailed in chapter 4.

# 3 The semantics of D-linked content questions in Iraqi Arabic

This chapter focuses on the fact that D-linked content questions can be interpreted in one of three ways. I begin by introducing the problem that these interpretations pose for our understanding of how the syntax of D-linked content questions is related to their semantics (§3.1). After discussing the semantic correlates of the resumption and the gap strategy (§3.2), I turn to the question of what the two strategies reveal about the syntax-semantics interface (§3.3).

## 3.1 Overview of the syntax-semantics interface problem and a possible solution

The contrast between the gap and the resumptive strategy has interpretive consequences. I introduce the problem that this raises for the syntax/semantics interface (§3.1.1) and sketch two possible solutions (§3.1.2).

### 3.1.1 The syntax-semantics interface problem

As discussed by Sharvit (1999), a D-linked content question can be answered in one of three ways. As shown in (89), the answer can consist of an individual-denoting expression (89a), a natural function (89b), or a pair-list (89c). I adopt the convention of referring to these three interpretations as *the individual reading*, *the natural function reading* and *the pair-list reading*.



Q: Which woman did every man invite?

Recall that, on independent grounds, in the previous chapter, I argued that Iraqi Arabic D-linked content questions are associated with two distinct structures: [D-N] and [D- $\phi$ -N]. These findings are given in Table 14.

**Table 14. Structural Differentiation of Extraction Sites with Iraqi Arabic D-linked content questions**

## (90) SYNTAX-SEMANTICS INTERFACE PROBLEM

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### 3.1.2 A possible solution to the syntax-semantics interface problem

A relevant observation is that, in Iraqi Arabic, while the gap strategy is three-ways ambiguous, the interpretive pattern of the resumptive strategy is more complex. This is summarized in Table 15. In some contexts — I call this context 1 — the resumptive strategy permits only the individual and the natural function reading. But in other contexts — I call this context 2 — the resumptive strategy permits all three readings.

INTERPRETATION	GAP STRATEGY	RESUMPTIVE STRATEGY	
		CONTEXT 1	CONTEXT 2
INDIVIDUAL	√	√	√
NATURAL FUNCTION	√	√	√
PAIR-LIST	√	x	√

**Table 15. Interpretations associated with Iraqi Arabic D-linked content questions**

The two contexts for the resumptive strategy are as follows:

**(91) RESUMPTIVE CONTEXTS FOR IRAQI ARABIC D-LINKED CONTENT QUESTIONS**

- a.** CONTEXT 1: both the gap and the resumptive strategy are possible; i.e. the resumptive strategy is optional
- b.** CONTEXT 2: only the resumptive strategy is possible; i.e. the resumptive strategy is obligatory

One way of approaching the syntax-semantic interface problem, as it presents itself with D-linked content questions, is to ask which syntactic structures correlate with which semantic interpretations. According to the syntactic analysis developed in Chapter 2, all D-linked content questions have a DP structure, but the internal structure of the DP can differ: it can be [D-N] or [D- $\phi$ -N]. Table 16 summarizes how the three interpretations map onto the syntax.

SYNTAX	INTERPRETATION	GAP STRATEGY	RESUMPTIVE STRATEGY	
			CONTEXT 1	CONTEXT 2
[D...]	INDIVIDUAL	√	√	√
[D-φ-N]	NATURAL FUNCTION	√	√	√
[D-N]	PAIR-LIST	√	x	√

**Table 16. Syntax-semantics mapping for Iraqi Arabic D-linked content questions**

The individual reading is sensitive to the external DP-syntax only and so is available in all contexts, with either the gap or the resumptive strategy.

The natural-function reading requires a [D-φ-N] structure (with φ covert or overt), and so is available with the gap strategy (covert φ) or with the resumptive strategy (overt φ).

The pair-list reading shows a blocking effect. In contexts where the resumptive strategy is optional, the pair-list reading is blocked; this is Context 1. In contexts where the resumptive strategy is obligatory, the pair-list reading is available; this is Context 2. I take Context 1 to indicate that the pair-list reading is available only with a [D-N] structure, which is automatically derived by the gap strategy. However, in contexts where the gap strategy isn't possible (Context 2), then the resumptive strategy can be used for the pair-list reading. I speculate that, in context 2, some additional mechanism makes the resumptive strategy behave as if it were a [D-N] structure. In other words, in contexts where resumption is obligatory, the resumptive strategy is semantically ambiguous. I speculate that this reflects whether or not the φ-element is interpreted at LF: if the φ-element is interpreted this gives a natural function reading; if the φ-element is not interpreted, this gives a pair-list reading.

From the point of view of the syntactic derivation, the resumptive strategy is potentially structurally (and therefore, semantically) ambiguous when the resumptive pronoun cliticizes, but before the DP is copied, (92a). Normally, the copy operation copies the entire labeled [D-φ-N] structure, (92b-i). But nothing prevents the copy operation from copying only the phonological string, which is a [D-N] structure, (92b-ii). Notice that this is only possible if there is early lexical insertion of the PF-formatives. I call this the copy solution to the syntax-semantics interface problem. I assume that

copying PF-formatives is a last resort option, and is only allowed in contexts where the resumptive strategy is obligatory.

**(92) COPY SOLUTION TO THE SYNTAX-SEMANTICS INTERFACE PROBLEM**

<b>a.</b>	CLITICIZATION OF $\varphi$ :	$[\varphi]$	$[D \ \varphi \ N]$
<b>b-i.</b>	COPY SYNTACTIC FORMATIVES:	$[D \ \varphi \ N]$	$[\varphi]$ $[D \ \varphi \ N]$
<b>b-ii.</b>	COPY PF-FORMATIVES:	$[D \ N]$	$[\varphi]$ $[D \ \varphi \ N]$

### 3.2 Semantic correlates of the gap and the resumptive strategy

The semantics of questions is generally assumed to be revealed by the appropriate answers that they elicit (Hamblin 1973; Karttunen 1977; Pesetsky 1987; Hornstein 2006). We have seen that a D-linked content question can be answered in one of three ways: the answer can be a single-individual, a natural function, or a paired-list. Here I discuss how these three interpretations are related to earlier observations about the semantic correlates of the gap and the resumptive strategy. I first introduce the distinction made between *de re* and *de dicto* readings in the context of relative clauses (§3.2.1). I then show how the *de re/de dicto* contrast is also found with D-linked content questions: here the relevant distinction is between a single-individual answer and a multiple-individual answer (§3.2.2). I then discuss how the *de re/de dicto* and the single-individual/multiple-individual contrasts are related to the three interpretations associated with D-linked content questions (§3.2.3).

#### 3.2.1 The distinction between *de dicto* and *de re* readings

*De dicto* (from Latin "of the word") and *de re* (from Latin "of the thing") are readings used to mark distinctions in the possible interpretation of statements. Consider the example in (93) which can have both a *de dicto* and a *de re* reading.

(93) Peter believes that someone is out to get him.

a. *de dicto* reading: *someone* is unspecific, Peter suffers a general paranoia; he truly believes that a person is out to get him, but he doesn't have any beliefs about who this person may be.

b. *de re* reading: *someone* is specific, picking out a particular person. There is some person Peter has in mind and he believes this person is out to get him.

One of the earliest semantic analyses of resumptive pronouns is Doron's (1982) *de dicto* and *de re* interpretation for Hebrew, a Semitic language.

Hebrew is a language where the resumptive strategy freely alternates with the gap strategy. Doron (1982) shows that the gap strategy has only the *de dicto* meaning and resumption has the *de re* meaning. Consider the example in (94). The Hebrew statement in (94a) uses the gap strategy and the reading is *de dicto*, while the statement in (94b) which contains a resumptive pronoun has a *de re* reading.

#### HEBREW (Doron 1982)

##### (94) *DE DICTO* AND *DE RE* READINGS IN HEBREW

###### a. *the gap strategy: de dicto reading*

Dani   ymca                et        haiSa<sub>1</sub>                Se     hu                mexapes \_\_\_\_\_<sub>1</sub>

Dani   will find                the woman.Acc                that   he                seeks \_\_\_\_\_

'Dani will find the woman whom he seeks.'

*de dicto reading:* Dani is seeking and will find a woman, whoever she may be; the woman is unspecific and Dani does not necessarily have any beliefs about who she may be.

**b. the resumptive strategy: *de re* reading**

Dani ymca et haiSa<sub>1</sub> Se hu mexapes ota<sub>1</sub>  
 Dani will find the woman.Acc that he seeks her

'Dani will find the woman whom he seeks [**her**].'

*de re* reading: Dani has a specific woman in mind. Dani seeks a particular woman and she will find her. The meaning of (94b) can only be "There is a woman that Dani is seeking and he will find this woman".

As seen from (94a), the gap strategy gives rise to a *de dicto* reading corresponding to a non-specific interpretation in which the gap acts as a bound variable. In (94b), the resumptive strategy gives rise to a *de re* reading, corresponding to a specific reading in this case, the resumptive pronoun is a definite description.

In Iraqi Arabic, resumption is obligatory with relativization, as shown in (95), so the *de dicto/de re* contrast cannot be observed in that context. However, with bare interrogatives, with extraction from an embedded clauses, *de dicto/de re* can be observed, as shown in (95).

**(95) IRAQI ARABIC RELATIVE CLAUSE**

a. راغب راح يلقي المربة اللي يدور عليها.

Ragheb ra:H yilga: il-mraya illyi yidu:r ʕale:y=ha  
 Ragheb will meet.3MS the-girl who.Rel seek.3MS for=3FS  
 Ragheb will find the girl whom he seeks [her].

(10 JUL 2011, SA 4a, offered freely)

b.\*. راغب راح يلقي المربة اللي يدور علي.

\*Ragheb ra:H yilga: il-mraya illyi yidu:r ʕalæ\_\_\_\_  
 Ragheb will meet.3MS the-girl who.Rel seek.3MS for\_\_\_\_  
 Ragheb will find the girl whom he seeks.

(10 JUL 2011, SA 4a, elicited)

In Iraqi Arabic content questions in contexts where both the gap strategy and the resumptive strategy freely alternate, the same *de dicto* and *de re* contrast can be observed (96).

**(96) a. the gap strategy - *de dicto* reading**

سها منو تعتقد راح يعزم أحمد ؟

Suha minnu: taʕatqid ra:H yaʕzim\_\_\_\_\_ Ahmad ?

Suha who think.3FS will invite.3MS \_\_\_\_\_ Ahmad

Whom does Suha think Ahmad will invite \_\_\_\_\_ ?

*de dicto reading*: Ahmad will invite people to the wedding, whoever they may be. The question being non-specific, it is implied that anybody can be invited

**b. the resumptive strategy - *de re* reading**

سها منو تعتقد راح يعزمه أحمد ؟

Suha minnu: taʕatqid ra:H yaʕzim=**hu** Ahmad ?

Suha who think.3FS will invite.3MS=**3MS** Ahmad

Whom does Suha think Ahmad will invite [**him**]?

*de re reading*: The person asking the question has somebody specific in mind.

Recall that, in contexts where both strategies are possible, the gap strategy is structurally ambiguous — it permits either [D-N] or [D- $\phi$ -N] (with covert  $\phi$ ), — while the resumptive strategy only permits a [D- $\phi$ -N] structure (with overt  $\phi$ ). I propose that the *de dicto/de re* contrast found with the gap and the resumptive strategy respectively is the semantic counterpart to this structural distinction. Thus, while the *de dicto* gap strategy has a [D-N] substructure, the *de re* resumptive strategy has a [D- $\phi$ -N] substructure. This is summarized in Table 17.

STRATEGY:	GAP	RESUMPTIVE
SYNTAX:	[D-N $\emptyset$ ]	[D- $\phi$ -N $\emptyset$ ]
INTERPRETATION"	<i>de dicto</i> : unspecific	<i>de re</i> : specific

**Table 17. *de dicto/ de re* contrast for Iraqi Arabic bare interrogatives (non D-linked content questions) using gap and resumptive strategies**

With bare interrogatives, the nominal constant is null (this is notated as N $\emptyset$  in Table 17). As we shall see when we look at D-linked content questions, a similar interpretive contrast arises when N has overt content.

### 3.2.2 The distinction between single-individual and multiple-individual readings

There is also an interpretive contrast between the gap and the resumptive strategy in sentences with quantified expressions (Sharvit 1999). Consider the examples in (97), where the gap/resumptive element in the relative clause is c-commanded by the quantified expression *kol gever* 'every man'. The gap strategy in (97a) is ambiguous between a *single-individual reading* (where the same woman is invited by every man) and a *multiple-individual reading* (where every man invites a different woman). In contrast, the resumptive strategy in (97b) is only compatible with the single-individual reading.

#### HEBREW (Sharvit 1999)

##### (97) SINGLE AND MULTIPLE INDIVIDUAL READINGS IN HEBREW

###### a. the gap strategy

ha-ifa        je    kol    gever    hizmin \_\_\_\_        hodeta    lo  
the-woman   that   every man   invited \_\_\_\_        thanked him

'The woman every man invited thanked him'.

(i) *single-individual reading*: The woman every man invited thanked him

(ii) *multiple-individual reading*: For every man x the woman that x invited thanked x



**b. the resumptive strategy**

ha-iSa      Se    kol    gever    hizmin   **ota**    hodeta    lo  
 the-woman   that   every   man    invited   **her**    thanked   him

'The woman every man invited [**her**] thanked him.'

(i) single-individual reading: The woman every man invited thanked him

For Sharvit (1999), the contrast in (97) reflects a pragmatic difference between the gap and resumptive strategies.

The interpretive pattern in (97) is consistent with the syntactic analysis developed in Chapter 2: the gap strategy, which is structurally ambiguous between [D-N] and [D- $\phi\emptyset$ -N], is also semantically ambiguous. And the resumptive strategy, which has only the [D- $\phi$ -N] structure, shows no semantic ambiguity. This is summarized in Table 18.

STRATEGY:	GAP		RESUMPTIVE
SYNTAX:	[D-N]	[D- $\phi\emptyset$ -N]	[D- $\phi$ -N]
INTERPRETATION	multiple-individual	single-individual	single-individual

**Table 18. Single-individual/ multiple-individual contrast in Modern Hebrew**

In Iraqi Arabic, resumption is obligatory with relativization, as shown in (98), so the distinction single-individual versus multiple-individual reading cannot be observed in this context; (98a) is the grammatical example employing the resumptive strategy and (98b) is the ungrammatical example employing the gap strategy.

**(98) SINGLE AND MULTIPLE INDIVIDUAL READINGS IN IRAQI ARABIC**

a. المرية اللي كل رجال عزمها شكرته.

il-mraya    illyi      kull    ridza:l    ʕazam=**ha**                      ʃakarat=hu  
 the-woman   who.Rel   every   man    invited.3MS=**3FS**    thanked.3FS=3MS

'The woman whom every man invited [**her**] thanked him.'

(10 JUL 2011, SA 5a, offered freely)

b.\*. المریة اللی کل رجال عزم شکرتہ.

\*il-mraya illyi kull ridza:l ʕazam\_\_\_\_\_ ʃakarat=hu  
the-woman who.Rel every man invited.3MS\_\_\_\_\_ thanked.3FS=3MS  
'The woman whom every man invited thanked him.'

(10 JUL 2011, SA 5b, offered freely)

### 3.2.3 The distinction between individual, natural function and paired-list readings

Sharvit (1999) observes that another way in which the gap and the resumptive strategy differ from one another concerns the possible answers that can be given to a D-linked content question. This can be seen with content questions that also contain a quantificational expression, as in (99). D-linked questions with quantifiers can have three possible answers: an expression denoting an individual as in (99a); an expression denoting a natural function (where the "natural function" names a salient function), as in (99b), or a list of pairs, as in (99c).

**ENGLISH** (Sharvit 1999)

(99) Q: Which woman did every man invite ?

A: **a.** *individual denoting expression*: Mary

**b.** *natural function*: His mother.

**c.** *pair-list answer*: John invited Mary; Bill invited Sally.

Sharvit (1999) shows that, in Modern Hebrew, if D-linked questions use the gap strategy, as in (100), then all three answers are possible: the individual reading (100a), the natural functional reading (100b) and the pair-list reading (100c). However, with the resumptive strategy, only the individual and natural function readings are possible (101-ab); the pair-list reading isn't possible (101c).

**HEBREW** (Sharvit 1999)

**(100)** POSSIBLE ANSWERS TO QUESTIONS WITH QUANTIFIERS - *GAP STRATEGY*

ezyo ifa kol ge'ver hizmin\_\_\_\_\_

which woman every man invited\_\_\_\_\_

'Which woman did every man invite\_\_\_\_\_?'

**a.** *individual denoting expression:* et Gilla

Acc Gilla

'Gilla'

**b.** *natural function:* et im-o

Acc mother-his

'his mother'

**c.** *pair-list answer:* Yosi et Gilla; Rami et Rina.

Yosi Acc Gilla Rami Acc Rina

'Yosi, Gilla; Rami, Rina'.

**(101)** POSSIBLE ANSWERS TO QUESTIONS WITH QUANTIFIERS - *RESUMPTIVE STRATEGY*

ezyo ifa kol ge'ver hizmin **ota**

which woman every man invited **her**

'Which woman did every man invite [**her**] ?'

**a.** *individual denoting expression:* et Gilla

Acc Gilla

'Gilla'

**b.** *natural function:* et im-o

Acc mother-his

'his mother'

**\*c.** *pair-list answer:* Yosi et Gilla; Rami et Rina.

Yosi Acc Gilla Rami Acc Rina

'Yosi, Gilla; Rami, Rina'.

In contexts where both the gap and the resumptive strategy are possible, the same interpretive contrast is found in Iraqi Arabic. Thus, as shown in (102), with the gap strategy all three readings are possible: individual (102a), natural function (102b), and pair-list (102c). But with the resumptive strategy, as shown in (103), only the individual and natural function readings are possible, (103a-b); the pair-list reading isn't available (103c).

**(102) POSSIBLE ANSWERS TO QUESTIONS WITH QUANTIFIERS - THE GAP STRATEGY**

يا مربية كل رجال عزم ؟

ya: mraya kull ridʒa:l ʕazam\_\_\_\_\_

which woman every man invited.3MS

'Which woman did every man invite \_\_\_\_ ?'

**a. Individual denoting expression:** Suha

**b. Natural function answer:** his sister

**c. Pair-list answer:** Samer, Suha; Ahmad, Najwa; etc

**(103) POSSIBLE ANSWERS TO QUESTIONS WITH QUANTIFIERS - THE RESUMPTIVE STRATEGY**

يا مربية كل رجال عزمها ؟

ya: mraya kull ridʒa:l ʕazam=**ha**

which woman every man invited.3MS=**3FS**

'Which woman did every man invite [**her**] ?'

**a. Individual denoting expression:** Suha

**b. Natural function answer:** his sister

**\*c. Pair-list answer:** Samer, Suha; Ahmad, Najwa; etc

A question that arises is whether resumption is always incompatible with the pair-list reading. The answer is no. This can be seen by looking at contexts where resumption is obligatory. For example, extraction from an island is only possible if there is resumption: thus the gap strategy is ungrammatical (104) and the resumptive strategy is

obligatory (105). Observe that in contexts of obligatory resumption, the resumptive strategy is compatible with all three readings: the individual reading (105a), the natural function readings (105b) and the pair-list reading (105c).

#### (104) THE GAP STRATEGY

\* يا مريّة سامر يسأل إذا كل رجال سلم على ؟ \*

\*ya: mraya Samer ysʔal iða kull riðʒa:l sallæm ʕalæ\_\_\_\_

which woman Samer ask.3MS if every man greeted.3MS for\_\_\_\_

‘Which woman did Samer wonder if every man greeted \_\_\_\_?’

(10 JUL 2011, SA 6a, elicited)

#### (105) THE RESUMPTIVE STRATEGY

يا مريّة سامر يسأل إذا كل رجال سلم عليها ؟

ya: mraya Samer ysʔal iða kull riðʒa:l sallæm ʕalæ=**ha**

which woman Samer ask.3MS if every man greeted.3MS for=**3FS**

‘Which woman did Samer wonder if every man greeted [**her**] ?’

(10 JUL 2011, SA 6a, offered freely)

**a.** *Individual reading:* Faten

**b.** *Natural function answer:* his sister

**c.** *Pair-list answer:* Behjet, Suha; Ahmad, Iman, etc.

### 3.2.4 The gap strategy competes with the resumptive strategy

Table 19 summarizes the findings for Iraqi Arabic regarding the patterning of D-linked content questions:

INTERPRETATION	GAP STRATEGY	RESUMPTIVE STRATEGY	
		CONTEXT 1 OPTIONAL RESUMPTION	CONTEXT 2 OBLIGATORY RESUMPTION
INDIVIDUAL	√	√	√
NATURAL FUNCTION	√	√	√
PAIR-LIST	√	x	√

**Table 19. Interpretations associated with Iraqi Arabic D-linked content questions**

The range of interpretations associated with Iraqi D-linked content questions indicate that, in contexts where resumption is optional (context 1), the pair-list reading is blocked with the resumptive strategy. This indicates that the two strategies compete with one another. That this is the effect of competition is confirmed by the fact that, when resumption is obligatory (context 2), all three readings are possible.

This competition effect is also observed by Malkawi (2009) for Jordanian Arabic, who proposes the economy hierarchy in Table 20. The hierarchy ranks zero variables higher than pronominal variables. Moreover, in Malkawi's analysis, pronominal variables are of two types: simple versus complex. This reflects that fact that Jordanian has two distinct resumptive strategies: resumption with a weak (clitic) pronoun versus resumptive with a strong pronoun. If we combine Malkawi's economy hierarchy with the syntactic structures argued for in Chapter 2, we see that the zero variable is structurally ambiguous: it can be [D-N] or [D- $\phi$ -N]. In contrast, the pronominal variables are not structurally ambiguous: they are always [D- $\phi$ -N].

	FORMAL STATUS	STRATEGY	SYNTAX	ATTESTED IN IRAQI ARABIC	ATTESTED IN JORDANIAN ARABIC
MOST ECONOMICAL	zero variable	gap	[D-N] [D- $\phi$ -N]	✓	✓
	simple pronominal variable	weak resumptive	[D- $\phi$ -N]	✓	✓
LEAST ECONOMICAL	complex pronominal variable	weak resumptive pronoun doubled by strong pronoun	[D- $\phi$ -N]	x	✓

**Table 20. Economy hierarchy for gap and resumptive pronouns in Iraqi Arabic and Jordanian Arabic (adapted from Malkawi 2009)**

### **3.3 What competition reveals about the syntax-semantics interface**

We have seen that, in contexts where both the gap and the resumptive strategy are possible (context 1), there is a blocking effect. In context 1, the gap strategy is compatible with both the natural function and pair-list readings, but the resumptive strategy is only compatible with the natural function reading. But in contexts where resumption is obligatory (context 2), it is compatible with both readings. In light of these findings, I assess Chierchia's (1993) proposal that the pair-list reading is a special case of the natural function reading (§3.3.1) and show how this approach accounts for the ambiguity of both the gap and the resumptive strategy in Iraqi Arabic (§3.3.2 - §3.3.3). A consequence of

this analysis is that, in certain marked contexts, partial copying is possible (§3.3.4).

### 3.3.1 The natural function reading subsumes the pair-list reading

Chierchia (1993) defines the distinction between natural reading and pair-list reading as follows: “*understanding a “natural function” like  $[\lambda x [\text{mother of}(x)]]$  means understanding its intension, not its extension. Lists viewed as functions are just the opposite. They cannot be characterized but in terms of the set of their inputs and outputs. They can only be grasped by scanning their graph. They are, as it were, pure extension.*” Thus Chierchia (1993) rejects the hypothesis that a question of the form “*Whom does every Italian like ?*” has three independent interpretations as in (106).

(Chierchia 1993)

(106) SEMANTIC REPRESENTATIONS OF “WHOM DOES EVERY ITALIAN LIKE?”

- (i) [p: p is true and for some x, p = every Italian likes x] ‘individual reading’
- (ii) [p: p is true and form some f, p = every Italian<sub>y</sub> likes f(y) ] ‘natural function reading’
- (iii) for every Italian y: who does y like? ‘pair list reading’

According to Chierchia (1993), the common structure of natural function and pair-list readings is the one given in (107), where *f* is a variable ranging over functions.

(107)  $Qx [x \text{ loves } f(x)]$

Chierchia (1993) concludes that: “The natural function reading subsumes as a special case the so called pair list reading, given that lists are just functions of a certain kind. Why only universal NPs support lists follows from general semantic and pragmatic considerations (namely to draw a list one needs a domain, which is naturally supplied only by universals)”.

In Chierchia’s analysis, the natural function reading is intentional, while the pair-list reading is extensional. I suggest that the intentional/ extensional distinction has a



structural counterpart: the [D-N] structure is interpreted extensionally as a pair-list, while the [D- $\phi$ -N] structure is interpreted intentionally (as a natural function). This captures the fact that the gap strategy — which is structurally ambiguous between [D-N] and [D- $\phi\emptyset$ -N] — is compatible with both the extensional pair-list reading, and the intentional natural function readings. It also accounts for the fact that, in contexts where resumption is optional (Context 1), only the intentional natural function reading is possible with the resumptive strategy. This is summarized in Table 21.

STRATEGY	GAP		RESUMPTIVE
SYNTAX	[D-N]	[D- $\phi\emptyset$ -N]	[D- $\phi$ -N]
SEMANTICS	EXTENSIONAL	INTENTIONAL	
INTERPRETATION	PAIR-LIST	NATURAL FUNCTION	

**Table 21. Extensional/ Intentional contrast and the gap/ resumptive strategy in Iraqi Arabic (Context 1: optional resumption)**

But recall that in contexts where resumption is obligatory (Context 2), the resumptive strategy is compatible with both the pair-list and the natural function reading. I now show in greater detail exactly how the interpretive difference between Context 1 (optional resumption) and Context 2 (obligatory resumption) is accounted for.

### **3.3.2 The gap strategy is always syntactically and semantically ambiguous**

Assume that the pair-list reading has a [D-N] structure and that the natural function reading has a [D- $\phi$ -N] structure. Given that the gap strategy is structurally ambiguous between a [D-N] and a [D- $\phi\emptyset$ -N] structure, this correctly predicts that the gap strategy will also be semantically ambiguous between a pair-list reading and a natural function reading. To see this, consider the partial derivations in (108a) and (108b-c):

**(108) a. OPTIONAL RESUMPTION CONTEXT – THE GAP STRATEGY**

يا صورة لابنها كل مربية شقت ؟

ya: Su:ra.F li-bni=ha kull mraya ʃagagat\_\_\_\_\_

which picture.F of-son=her every woman tore.3FS

'Which photo of her son did every woman tear\_\_\_\_ ?'<sup>6</sup>

(i) *Natural function answer*: the photo of his last passport

(ii) *Pair-list answer*: Iman tore the picture of her son Faris, Awatif the picture of her son Adel, etc

**b. D-N structure – pair-list reading**

[<sub>C</sub> [<sub>D</sub> ya:<sub>D</sub> Su:ra<sub>N</sub> li-bni=ha] [<sub>I</sub> [<sub>V</sub> [kull mraya<sub>D</sub>] [<sub>V</sub> [ʃagagt<sub>V</sub>] [<sub>D</sub> ya:<sub>D</sub> ~~Su:ra<sub>N</sub> li-bni=ha~~ <sub>N</sub>]]]]]

**c. D-φ-N reconstruction with covert φ – natural function reading**

[<sub>C</sub> [<sub>D</sub> ya:<sub>D</sub> φ<sub>φ</sub> Su:ra<sub>N</sub> li-bni=ha] [<sub>I</sub> [<sub>V</sub> [kull mraya<sub>D</sub>] [<sub>V</sub> [ʃagagt<sub>V</sub> φ<sub>φ</sub>] [<sub>D</sub> ya:<sub>D</sub> ~~φ<sub>φ</sub> Su:ra<sub>N</sub> li-bni=ha~~ <sub>N</sub>]]]]]

### 3.3.3 The weak resumptive strategy is sometimes syntactically and semantically ambiguous

If the natural function reading has a [D-φ-N] structure, then this correctly predicts that when there is an overt resumptive pronoun, only the natural function reading will be possible. This corresponds to (109-a) and the partial derivation given in (109-b).

<sup>6</sup> There is a possible reading where the pronoun "her" refers to a particular woman, let's say Mary as in "Which photo of [Mary's] son did every woman tear?". In this thesis we are not interested in this reading, but it must be mentioned that it exists.

(109) a. CONTEXT 1: OPTIONAL RESUMPTION

يا صورة لابنها كل مرية شقققتها ؟

ya: Su:ra.F li-bni=ha kull mraya ʃagagat=**ha**

which picture.F of-son=her every woman tore.3FS=**3FS**

'Which photo of her son did every woman tear [**it**] ?'

(13 NOV 2010, SA 10, elicited)

(i) *Natural function answer*: the photo of his last passport

(ii) \**Pair-list answer*: Iman tore the picture of her son Faris, Awatif the picture of her son Adel, etc

b. *D-φ-N reconstruction with overt φ* – natural function reading

[<sub>C</sub> [<sub>D</sub> ya:<sub>D</sub> ~~ha~~<sub>φ</sub> Su:ra<sub>N</sub> li-bni=ha] [<sub>I</sub> [<sub>V</sub> [kull mraya<sub>D</sub>] [<sub>V</sub> [ʃagagt<sub>V</sub> **ha**<sub>φ</sub>] [<sub>D</sub> ~~ya:<sub>D</sub> ~~ha~~<sub>φ</sub> Su:ra<sub>N</sub> li-bni=ha~~<sub>N</sub>]]]]]

Now consider (110a), which is a context where the resumptive strategy is obligatory. Here we observe that both the natural function and pair-list readings are possible. By hypothesis, the natural function reading arises with the [D-φ-N] structure, (110-b). But what accounts for the availability of the pair-list reading? According to the proposed analysis, the pair-list reading arises with the [D-N] structure. I suggest that when resumption is obligatory, the pair-list reading can be forced by copying only the phonological substring that remains after cliticization has applied; this means that only [D-N] is copied, as in (110-c).

(110) a. Context 2: OBLIGATORY RESUMPTION

يا صورة لابنها سامر يسأل إذا كل مربية شققنها ؟

ya: Su:ra.F li-bni=ha Samer ysʔal iða kull mraya ʃagagat=**ha**  
which picture.F of-son=her Samer ask.3MS if every woman tore.3FS=**3F**  
Which photo of her son did Samer wonder if every woman tore [it] ?

(13 NOV 2010, SA 14a, elicited)

(i) *Natural function answer*: the picture of her son's wedding

(ii) *Pair-list answer*: Iman, the picture of her son's wedding; Awatif, the picture of her son with his girlfriend.

b. Copy [D-φ-N]: natural function reading

[<sub>C</sub> [<sub>D</sub> **ya:D** **ha**<sub>φ</sub> **Su:ra**<sub>N</sub> li-bni-ha] [<sub>I</sub> [<sub>V</sub> Samer ysʔal iða kull mraya [<sub>V</sub> ʃagagat-**ha**<sub>φ</sub> [<sub>D</sub> **ya:D** **ha**<sub>φ</sub> **Su:ra**<sub>N</sub> li-bni-ha<sub>N</sub> ] ] ] ]

c. Copy [D-N]: pair-list reading

[<sub>C</sub> [<sub>D</sub> **ya:D** **Su:ra**<sub>N</sub> li-bni-ha] [<sub>I</sub> [<sub>V</sub> Samer ysʔal iða kull mraya [<sub>V</sub> ʃagagat-**ha**<sub>φ</sub> [<sub>D</sub> **ya:D** **ha**<sub>φ</sub> **Su:ra**<sub>N</sub> li-bni-ha<sub>N</sub> ] ] ] ]

### 3.3.4 Implications of the analysis: partial copying

A consequence of this proposal is that, in contexts where resumption is obligatory, it is possible to only copy the phonological sub-string that contains [D-N]. It is this partial copy that permits the pair-list reading with the resumptive strategy. In Iraqi Arabic, such partial copying is only possible in contexts where the gap strategy is ruled out.

## **4 Genitive interrogatives as inherently D-linked content questions**

In this chapter, I document a parallel between genitive interrogatives and D-linked content questions, which to my knowledge has not been investigated before. In particular, I argue that genitive interrogatives are inherently D-linked and I explore the nature of this D-linking property. I first introduce the problem, the proposed analysis, and its consequences (§4.1). I then consider in greater detail how, on the one hand, genitive interrogatives differ from bare interrogatives, and on the other hand, how they parallel D-linked content questions (§4.2). I argue that the property that ties together genitive and D-linked interrogatives is the fact that they both have an overt domain restriction (§4.3).

### **4.1 The problem, the analysis and consequences**

I introduce the contrast between genitive and bare interrogatives (§4.1.1), I sketch an analysis that account for this contrast (§4.1.2) and I present the consequence of this analysis (§3.1.2).

#### **4.1.1 The contrast between genitive and bare interrogatives**

I start with the observation that, given the context in (111), in Iraqi Arabic a content question with a bare interrogative pronoun is not felicitous (111a). In contrast, a content question with a construct state genitive is felicitous (111b), as is a D-linked content question (111c).

**111.** Context: a class of students is defending their theses; they all have different supervisors. The secretary of the board has to talk to each student's supervisor.

**a.** *content question with bare interrogative pronoun*

ويا منو حاكت السكريتيرة ؟

wu:ya: minnu: Haʃit is-sikriti:ra  
with who spoke.3FS the-secretary.F  
#‘Whom did the secretary talk to ?’

(26 JAN 2011, SA 1, elicited)

**b.** *content question with genitive interrogative construction*

السكريتيرة ويا أستاذ منو حاكت ؟

is-sikriti:ra wu:ya: ʔusta:δ minnu: Ha:ʃit  
the-secretary.F with professor who spoke.3FS  
‘With whose professor did the secretary talk ?’

(26 JAN 2011, SA 1, offered freely)

**c.** *content question with D-linked interrogative*

السكريتيرة وية يا أستاذ حاكت ؟

is-sikriti:ra wu:ya ya: ʔusta:δ Ha:ʃit  
the-secretary with which professor talk.3FS  
‘With which professor did the secretary talk ?’

(6 JUL 2011, SA 3, offered freely)

(111) establishes that in certain contexts, a content question with a bare interrogative is not felicitous, while the same question becomes felicitous once a genitive interrogative or a D-linked interrogative is used. This is a first indication that bare and genitive interrogatives don't pattern in the same way; it also indicates that there is a parallel between genitive and D-linked interrogatives. The question that I address is the following:

- (112) What accounts for the contrast between bare interrogatives and genitive interrogatives on the one hand, and the parallel between genitive interrogatives and D-linked interrogatives on the other hand?

#### 4.1.2 The analysis: genitive interrogatives are inherently D-linked

I propose that genitive interrogatives are inherently D-linked. Specifically, I argue that what defines D-linking is the presence of an overt domain restriction in the form of an overt noun. Consider Table 22. Bare interrogatives such as *minnu*: 'who' lack an overt domain restriction. In contrast, both genitive interrogatives and D-linked content questions have an overt domain restriction. With genitive interrogatives such as *ʔustaδ minnu*: 'whose professor', the domain restriction is supplied by a head noun. With D-linked interrogatives such as *ya ʔustaδ* 'which professor', the overt domain restriction is supplied by the noun that follows the interrogative operator.

	SYNTAX	EXAMPLE	
BARE INTERROGATIVE	[ <sub>D</sub> WH [ <sub>N</sub> Ø ] ]	<i>minnu</i> :	'who'
GENITIVE INTERROGATIVE	[ <sub>D</sub> [ <sub>N</sub> N [ <sub>D</sub> WH ] ] ]	<i>ʔustaδ minnu</i> :	'whose professor'
D-LINKED INTERROGATIVE	[ <sub>D</sub> WH [ <sub>N</sub> N ] ]	<i>ya: ʔustaδ</i>	'which professor'

Table 22. Internal structure of Iraqi Arabic bare, genitive and D-linked interrogatives

#### 4.1.3 Consequence: D-linking arises whenever there is an overt domain restriction

I take the syntactic parallel between genitive and D-linked interrogatives to

indicate that D-linking arises whenever there is an overt domain restriction. This has consequences for our understanding of how D-linking interacts with the resumptive strategy. On the one hand, domain restriction is purely semantic and arises when a quantifier has an overt restriction on its domain of application. Quantifiers with no overt restriction — such as *each*, *who* and *what* in (113) — are generally taken to have a contextually defined domain restriction.

- (113) a.     *They **each** attended the lecture.*  
      b.     ***Who** attended the lecture?*  
      c.     ***What** did they attend?*

Of course, it's always possible to introduce an overt restriction: these are the underlined nouns in (114). Semantically, it's the presence of an overt domain restriction that distinguishes D-linked interrogatives (e.g. *which student*, *which lecture*) from bare interrogatives (e.g. *who*, *what*).

- (114) a.     ***Each** student attended the lecture.*  
      b.     ***Which** student attended the lecture?*  
      c.     ***Which** lecture did they attend?*

As we shall see in more detail below, the Iraqi Arabic data from genitive interrogatives indicates that the head noun of a genitive also counts as a domain restriction: these are the underlined nouns in (115). Moreover, the presence of an overt domain restriction has syntactic consequences in Iraqi Arabic. These will be discussed in more detail at the end of this chapter.

- (115) a.     ***Everyone's** student attended the lecture.*  
      b.     ***Whose** student attended the lecture?*  
      c.     ***Whose** lecture did they attend?*



## 4.2 Comparing bare, genitive and D-linked interrogatives

In this section, I compare the distribution of bare, genitive, and D-linked interrogatives with respect to three diagnostics: local extraction (§4.2.1); long-distance extraction (§4.2.2); superiority effects (§4.2.3). This comparison reveals that genitive interrogatives consistently differ from bare interrogatives, and they consistently parallel D-linked interrogatives.

### 4.2.1 The resumptive and gap strategy: local extraction

I show how the resumptive and the gap strategy pattern with local extraction (extraction from a single-clause), as concerns bare interrogatives (§4.2.1.1), genitive interrogatives (§4.2.1.2) and D-linked interrogatives (§4.2.1.3). The section closes with a summary of the findings (§4.2.1.4).

#### 4.2.1.1 Local extraction with bare interrogatives

First consider local extraction. Here bare interrogatives allow **only** the gap strategy with extracted subjects and objects, as in (116) and (117). As for extracted prepositional objects (118), they permit **neither** the gap strategy nor the resumptive strategy: this reflects the general prohibition against P-stranding in Arabic. PP-fronting allows only the gap strategy, because Arabic does not have resumptives for entire prepositional phrases (119).

**(116) SUBJECT EXTRACTION OF BARE INTERROGATIVE**

**a. Subject extraction with gap**

منو اشترى الجريدة البارحة ؟

minnu: iʃtara: il- dʒarida il-ba:riha ?

who bought. 3MS the-newspaper yesterday

'Who bought the newspaper yesterday ?'

(8 JUL 2010, SA 1, offered freely)

**b. Subject extraction with resumption**

\*منو هو اشترى الجريدة البارحة ؟

\*minnu: hwu iʃtara: il- dʒarida il-ba:riha ?

who he bought. 3MS the-newspaper yesterday

'\*Who [he] bought the newspaper yesterday ?'

(8 JUL 2010, SA 1, elicited)

**(117) DIRECT OBJECT EXTRACTION OF BARE INTERROGATIVE**

**a. Direct object extraction with gap**

إيمان منو شافت بيت عواف ؟

Iman minnu: ʃa:fat\_\_\_\_\_ bi-beyt Awatif

Iman who saw.3SF in-house Awatif

'Whom did Iman see at Awatif's house ?'

(8 JUL 2010, SA 3a, offered freely)

**b. Direct object extraction with resumption**

\*إيمان منو شافته بيت عواف ؟

\*Iman minnu: ʃa:fat=**hu** bi-beyt Awatif

Iman who saw.3SF=**3MS** in-house Awatif

'\*Whom did Iman see [**him**] at Awatif's house ?'

(8 JUL 2010, SA 3a, elicited)

### (118) PREPOSITIONAL OBJECT EXTRACTION OF BARE INTERROGATIVE

#### a. *Object of preposition extraction with gap*

راغب منو التقى بالمكتبة ويا ؟\*

\*Ragheb minnu: iltaga bi-l-maktaba wu:ya: \_\_\_\_

Ragheb who met.3MS at-the-library with\_\_\_\_

'Whom did Ragheb meet at the library with\_\_\_\_ ?'

(8 JUL 2010, SA 12, offered freely)

#### b. *Object of preposition extraction with resumption*

راغب منو التقى وياه بالمكتبة ؟\*

\*Ragheb minnu: iltaga wuya:=h bi-l-maktaba

Ragheb who met.3MS with=**him** at-the-library

'\*Whom did Ragheb meet with [**him**] at the library ?'

(8 JUL 2010, SA 12, elicited)

### (119) PP-FRONTING WITH BARE INTERROGATIVE

راغب ويا منو التقى بالمكتبة ؟

Ragheb wu:ya: minnu: iltaga bi-l-maktaba

Ragheb with who met.3MS at-the-library

'With whom did Ragheb meet at the library ?'

(8 JUL 2010, SA 12, offered freely)

#### 4.2.1.2 Local extraction with genitive interrogatives

The overall pattern with genitive interrogatives differs from that of bare interrogatives. As before, with extraction from subject position, the gap strategy but not resumption is possible, as in (120). In this respect, a genitive interrogative is like a bare interrogative. But local extraction from the direct object position, as in (121), allows both the gap strategy and the resumptive strategy. (Bare interrogatives allow only the gap strategy in this context.) As for extraction from a prepositional object position, the gap

strategy is predictably prohibited because of the impossibility of P-stranding, as in (122). Finally, with PP-fronting, the gap strategy but not resumption is possible, (123).

(120) EXTRACTION FROM SUBJECT POSITION WITH GENITIVE

a. *the gap strategy*

رجال منو شاف نجوى بالحفلة؟

riɖʒa:l minnu: ʃa:f Najwa bi-l-Hafla  
husband who saw.3MS Najwa at-the-party  
'*Whose husband* saw Najwa at the party ?'

b. *the resumptive strategy*

\*رجال منوهو شاف نجوى بالحفلة؟\*

\*[riɖʒa:l minnu:]<sub>1</sub> hwu<sub>1</sub> ʃa:f Najwa bi-l-Hafla  
husband who he saw.3MS Najwa at-the-party  
'*Whose husband*<sub>1</sub> [*he*<sub>1</sub>] saw Najwa at the party ?'

(121) OBJECT EXTRACTION OF GENITIVE INTERROGATIVE

a. *the gap strategy*

نجوى رجل منو شافت بالمكتبة ؟

Najwa riɖʒal minnu: ʃa:fat bi-l-maktaba  
Najwa man who saw:3SF in-the-library  
'Whose husband did Najwa see at the library ?'

(8 JUL 2010, SA 8a, offered freely)

b. *the resumptive strategy*

إيمان رجل منو شافته بالمكتبة ؟

Iman riɖʒal minnu: ʃa:fat=**hu** bi-l-maktaba  
Iman man who saw:3SF.3MS at-the-library  
'Whose husband did Najwa see [**him**] at the library ?'

(8 JUL 2010, SA 8b, offered freely)

## (122) PREPOSITIONAL OBJECT EXTRACTION OF GENITIVE INTERROGATIVE

### a. *the gap strategy*

نجوى صديق منو التقت وية بالحفلة؟\*

\*Najwa Sadig minnu: iltagat wu:ya: \_\_\_\_\_ bi-l-Hafla

Najwa friend who met.3FS with \_\_\_\_\_ at-the-party

‘**Whose friend** did Najwa meet with \_\_\_\_ at the party ?’

### b. *the resumptive strategy*

نجوى صديق منو التقت وياه بالحفلة؟

Najwa Sadig minnu: iltagat wu:ya:=**h** bi-l-Hafla

Najwa friend who met.3FS with=3MS at-the-party

‘**Whose friend** did Najwa meet with [him] at the party ?’

## (123) PP-FRONTING WITH GENITIVE INTERROGATIVE

نجوى وية صديق منو التقت بالحفلة؟

Najwa wu:ya: Sadi:g minnu: iltagat bi-l-Hafla

Najwa with friend who met.3FS at-the-party

‘**With whose friend** did Najwa meet at the party ?’

### 4.2.1.3 Local extraction with D-linked interrogatives

Now consider local extraction with D-linked interrogatives. (Similar data was already presented in Chapter 2, but for ease of exposition, I repeat it here.) With a D-linked interrogative, subject extraction is possible only with gap (124); direct object extraction permits gap and resumption (125), prepositional object extraction permits only resumption (126) and PP-fronting permits only the gap strategy (127).

(124) SUBJECT EXTRACTION OF D-LINKED INTERROGATIVE

*a. extraction with gap*

يا صديقة اشترت شقة ببغداد ؟

ya: Sadi:ga iʃtarat\_\_\_\_\_ ʃigga bi-Baghdad

which friend.F bought.3FS\_\_\_\_\_ apartment in-Baghdad

'Which friend bought an apartment in Baghdad ?'

(1 DEC 2010, SA, offered freely)

*b. extraction with resumption*

يا صديقة اشترت هي شقة ببغداد ؟\*

\*ya: Sadi:ga iʃtarat **hi:** ʃigga bi-Baghdad

which friend.F bought.3FS **she** apartment in-Baghdad

'Which friend [**she**] bought an apartment in Baghdad ?'

(1 DEC 2010, SA, elicited)

(125) DIRECT OBJECT EXTRACTION OF D-LINKED INTERROGATIVE

*a. extraction with gap*

إيمان يا رجال شافت بالحفلة ؟

Iman ya: riɖʒa:l ʃa:fit\_\_\_\_\_ bi-l-hafla

Iman which man saw.3FS\_\_\_\_\_ at-the-party

'Which man did Iman see\_\_\_\_\_ at the party ?'

(1 DEC 2010, SA 1I, offered freely)

*b. extraction with resumption*

إيمان يا رجال شافته بالحفلة ؟

Iman ya: riɖʒa:l ʃa:fit=**hu** bi-l-hafla

Iman which man saw.3FS=**3MS** at-the-party

'Which man did Iman see [**him**] at the party ?'

(1 DEC 2010, SA 1II, offered freely)

(126) PREPOSITIONAL OBJECT EXTRACTION OF D-LINKED INTERROGATIVE

*a. extraction with gap*

سهى يا معلم التقت بالكلية وية؟\*

\*Suha ya: muʕallim iltagat wu:ya: \_\_\_\_ bi-l-kulli:a

Suha which professor met.3FS with \_\_\_\_ at-the-faculty

'Which professor did Suha meet with \_\_\_\_ at the faculty ?'

(1 DEC 2010, SA 3I, offered freely)

*b. extraction with resumption*

سهى يا معلم التقت وياه بالكلية؟

Suha ya: muʕallim iltagat wu:ya:=h bi-l-kulli:a

Suha which professor met.3FS with=3MS at-the-faculty

'Which professor did Suha meet with [him] at the faculty ?'

(1 DEC 2010, SA 3II, offered freely)

(127) PP-FRONTING WITH D-LINKED INTERROGATIVE

سهى وية يا أستاذ التقت بالكلية؟

Suha wu:ya: ya ʔusta:δ iltagat bi-l-kullyia

Suha with which professor met.3FS at-the-faculty

'With which professor did Suha meet at the faculty?'

**4.2.1.4 Summary of the local extraction data**

Table 23 summarizes the patterning of the gap and resumptive strategy in the context of local extraction with bare, genitive interrogatives and D-linked interrogatives:

	GAP STRATEGY			RESUMPTIVE STRATEGY		
INTERROGATIVE TYPE	BARE	GENITIVE	D-LINKED	BARE	GENITIVE	D-LINKED
SUBJECT	√	√	√	x	x	x
OBJECT OF V	√	√	√	x	√	√
OBJECT OF P	x	x	x	x	√	√
PP-FRONTING	√	√	√	x	x	x

**Table 23. Comparison of bare, genitive and D-linked interrogatives with respect to local extraction (extraction from a single clause)**

Table 23 indicates the following. The resumptive strategy is always prohibited with bare interrogatives. But with genitive and D-linked interrogatives, it is permitted with direct objects and prepositional objects. More generally, we observe that, with respect to local extraction, genitive and D-linked interrogatives pattern in the same way.

## **4.2.2. The resumptive and gap strategy: long-distance extraction**

I now examine how the resumptive and the gap strategy pattern with long-distance extraction (extraction from an embedded clauses), as concerns bare interrogatives (§4.2.2.1), genitive interrogatives (§4.2.2.2), and D-linked interrogatives (§4.2.2.3). The section closes with a summary of the findings (§4.2.2.4).

### **4.2.2.1 Long-distance extraction with bare interrogatives**

With bare interrogatives, long-distance extraction from subject position only allows the gap strategy, as in (128). Long-distance extraction from the object position permits both gap and resumption, as in (129). And long-distance extraction of the prepositional object is ruled out: neither gap nor resumption are possible, as in (130). PP-fronting is also possible with long-distance extraction (131).



(128) SUBJECT EXTRACTION OF BARE INTERROGATIVE

a. *Subject extraction with gap*

إيمان منو تعتقد شاف أحمد بالحفلة ؟

Iman minnu: taʕataqid \_\_\_\_ ʃa:f Ahmad bi-l-hafla

Iman who think:2S \_\_\_\_ saw:3MS Ahmad at-the-party

'Who does Iman think \_\_\_\_ saw Ahmad at the party ?'

(8 JUL 2010, SA 9a, offered freely)

b. *Subject extraction with resumption*

\* إيمان منو تعتقد هو شاف أحمد بالحفلة ؟ \*

\*Iman minnu: taʕataqid **huwwa** ʃa:f Ahmad bi-l-hafla

Iman who think:2S **he** saw:3MS Ahmad at-the-party

'Who does Iman think [**he**] saw Ahmad at the party ?'

(8 JUL 2010, SA 9b, elicited)

(129) OBJECT EXTRACTION OF BARE INTERROGATIVE

a. *Direct object extraction with gap*

سهى منو تعتقد راح يعزم أحمد ؟

Suha minnu: taʕatagid ra:H yaʕzim \_\_\_\_ Ahmad ?

Suha who think.3FS will invite.3MS \_\_\_\_ Ahmad

'Whom does Suha think that Ahmad will invite \_\_\_\_ ?'

(8 JUL 2010, SA 10a, offered freely)

b. *Direct object extraction with resumption*

سهى منو تعتقد راح يعزمه أحمد ؟

Suha minnu: taʕatagid ra:H yaʕzim=**hu** Ahmad ?

Suha who think.3FS will invite.3MS=**3MS** Ahmad

'Whom does Suha think that Ahmad will invite [**him**] ?'

(8 JUL 2010, SA 10b, offered freely)

### (130) PREPOSITIONAL OBJECT EXTRACTION OF BARE INTERROGATIVE

#### a. *Prepositional Object extraction with gap*

إيمان من تعرف إنه بهجت كتب الرسالة إلى ؟\*

\*Iman man taʕarif ennu: Bahjat kitab ir-risala ʔila\_\_\_\_

Iman who know:3FS that Bahjat wrote.3MS the-letter to\_\_\_\_

'Whom does Iman know that Bahjat wrote the letter to ?'

(8 JUL 2010, SA 12a, offered freely)

#### b. *Prepositional Object extraction with resumption*

إيمان من تعرف إنه بهجت كتب الرسالة له ؟\*

\*Iman man taʕarif ennu: Bahjat kitab ir-risala la=**hu**

Iman who know:3FS that Bahjat wrote.3MS the-letter to=**3MS**

'Whom does Iman know that Bahjat wrote the letter to [**him**] ?'

(8 JUL 2010, SA 12b, elicited)

### (131) PP-FRONTING

إيمان لمن تعرف إنه بهجت كتب الرسالة ؟

Iman il-man taʕarif ennu: Bahjat kitab ir-risala

Iman to-who know:3FS that Bahjat wrote.3MS the-letter

'To whom does Iman know that Bahjat wrote the letter ?'

(8 JUL 2010, SA 12c, offered freely)

#### 4.2.2.2 Long-distance extraction with genitive interrogatives

Now consider long-distance extraction with genitive interrogatives. As before, with subject extraction, only the gap strategy is possible (132). With object extraction, both gap and resumption are allowed (133). The same holds of long-distance extraction of a prepositional object: both gap and resumption are allowed (134). And with PP-fronting, only the gap strategy is possible (135).

(132) SUBJECT EXTRACTION OF GENITIVE INTERROGATIVE

a. *the gap strategy*

سهی رجال منو تعتقد إنو شاف نجوى بالحفلة؟

Suha ridʒa:l minnu: taʃatagid ennu: ʃa:f Najwa bi-l-Hafla

Suha husband who think.3FS that saw.3MS Najwa at-the-party

‘Whose husband does Suha think that saw Najwa at the party ?’

b. *the resumptive strategy*

سهی رجال منو تعتقد إنو هو شاف نجوى بالحفلة؟\*

\*Suha ridʒa:l minnu: taʃatagid ennu: **hu:** ʃa:f Najwa bi-l-Hafla

Suha husband who think.3FS that **he** saw.3MS Najwa at-the-party

‘Whose husband does Suha think that [**he**] saw Najwa at the party ?’

(133) OBJECT EXTRACTION OF GENITIVE INTERROGATIVE

a. *the gap strategy*

سهی رجل منو تعتقد إنو نجوى شافت بالمكتبة ؟

Suha ridʒal minnu: taʃatagid ennu: Najwa ʃa:fat bi-l-maktaba

Suha husband who think that Najwa saw:3SF at-the-library

‘Whose husband does Suha think that Najwa saw at the library ?’

(8 JUL 2010, SA 8a, offered freely)

b. *the resumptive strategy*

سهی رجال منو تعتقد إنو نجوى شافته بالمكتبة ؟

Suha ridʒa:l minnu: taʃatagid ennu: Najwa ʃa:fat=**hu** bi-l-maktaba

Suha husband who think that Najwa saw:3SF=**3MS** at-the-library

‘Whose husband does Suha think that Najwa saw [**him**] at the library ?’

(8 JUL 2010, SA 8b, offered freely)

#### (134) PREPOSITIONAL OBJECT EXTRACTION OF GENITIVE INTERROGATIVE

##### a. the gap strategy

سهى صديق منو تعتقد إنو نجوى التقت وية بالحفلة؟\*

\*Suha Sadig minnu: taʕatagid ennu: Najwa iltagat wu:ya: \_\_\_\_\_ bi-l-Hafla

Suha friend who met.3FS with \_\_\_\_\_ at-the-party

‘**Whose friend** did Najwa meet with \_\_\_\_ at the party ?’

##### b. the resumptive strategy

نجوى صديق منو التقت وياه بالحفلة؟

Najwa Sadig minnu: iltagat wu:ya:=h bi-l-Hafla

Najwa friend who met.3FS with=3MS at-the-party

‘**Whose friend** did Najwa meet with [him] at the party ?’

#### (135) PP-FRONTING WITH GENITIVE INTERROGATIVE

سهى وية صديق منو تعتقد إنو نجوى التقت بالحفلة؟

Suha wu:ya: Sadi:g minnu: taʕatagid ennu: Najwa iltagat bi-l-Hafla

Suha with friend who think.3FS that Najwa met.3FS at-the-party

‘**With whose friend** does Suha think that Najwa meet at the party ?’

#### 4.2.2.3 Long-distance extraction with D-linked interrogatives

Long-distance extraction of D-linked interrogatives was already discussed in Chapter 2. Again for ease of exposition, I repeat the relevant data here. With subject extraction, only gapping is possible (136). With object extraction, both gapping and resumption are possible (137). With long-distance extraction of a prepositional object, only resumption is possible (138). And with PP-fronting, only the gap strategy is possible (139).

(136) SUBJECT EXTRACTION OF D-LINKED INTERROGATIVE

راغب يا صديقة يعتقد إنو اشترت شقة ببغداد ؟

Ragheb ya: Sadi:ga yaʕatagid ennu: iʕtarat\_\_\_\_\_ ʕigga bi-Baghdad

Ragheb which friend.F think.MFS that bought.3FS\_\_\_\_\_ apartment in-Baghdad

'Which friend does Ragheb think that bought an apartment in Baghdad ?'

(1 DEC 2010, SA, offered freely)

**b. extraction with resumption**

راغب يا صديقة يعتقد إنو هي اشترت شقة ببغداد ؟\*

\*Ragheb ya: Sadi:ga yaʕatagid ennu: hyi iʕtarat\_\_\_\_\_ ʕigga bi-Baghdad

Ragheb which friend.F think.MFS that she bought.3FS\_\_\_\_\_ apartment in-Baghdad

'Which friend does Ragheb think that [she] bought an apartment in Baghdad ?'

(1 DEC 2010, SA, elicited)

(137) OBJECT EXTRACTION OF D-LINKED INTERROGATIVE

**a. extraction with gap**

راغب يا رجال تعتقد إنو إيمان شافت بالحفلة ؟

Ragheb ya: ridʕa:l yaʕatagid ennu: Iman ʕa:fit \_\_\_\_\_ bi-l-Hafla

Ragheb which man think.3MS that Iman saw.3FS\_\_\_\_\_ at-the-party

'Which man does Ragheb think that Iman saw\_\_\_\_\_ at the party ?'

(1 DEC 2010, SA 1I, offered freely)

**b. extraction with resumption**

راغب يا رجال تعتقد إنو إيمان شافته بالحفلة ؟

Ragheb ya: ridʕa:l yaʕatagid ennu: Iman ʕa:fit=hu bi-l-Hafla

Ragheb which man think.3MS that Iman saw.3FS=3MS at-the-party

'Which man does Ragheb think that Iman saw [him] at the party ?'

(1 DEC 2010, SA 1II, offered freely)

(138) PREPOSITIONAL OBJECT EXTRACTION OF D-LINKED INTERROGATIVE

*a. extraction with gap*

راغب يا معلم تعتقد إنو سهى التقت وية بالكلية؟\*

\*Ragheb ya: muṣallim taṣatagid ennu: Suha iltagat wu:ya: \_\_\_\_ bi-l-kulli:a

Ragheb which professor met.3FS with \_\_\_\_ at-the-faculty

'Which professor does Ragheb think that Suha met with \_\_\_\_ at the faculty ?'

(1 DEC 2010, SA 3I, offered freely)

*b. extraction with resumption*

راغب يا معلم تعتقد إنو سهى التقت وياه بالكلية؟

\*Ragheb ya: muṣallim taṣatagid ennu: Suha iltagat wu:ya:=hu bi-l-kulli:a

Ragheb which professor met.3FS with \_\_\_\_ at-the-faculty

'Which professor does Ragheb think that Suha met with \_\_\_\_ at the faculty ?'

(1 DEC 2010, SA 3II, offered freely)

(139) PP FRONTING WITH D-LINKED INTERROGATIVE

راغب وية يا معلم يعتقد إنو سهى التقت بالكلية؟

Ragheb wu:ya ya: muṣallim yaṣatagid ennu: Suha iltagat wu:ya:=hu bi-l-kulli:a

Ragheb with which professor think.3MS that Suha met.3FS with=3MS at-the-faculty

'Which professor does Ragheb think that Suha met with \_\_\_\_ at the faculty ?'

(1 DEC 2010, SA 3II, offered freely)

#### 4.2.2.4 Summary of the long-distance extraction data

Table 24 summarizes the patterning of the gap and resumptive strategy in the context of long-distance extraction with bare, genitive interrogatives and D-linked interrogatives.

	GAP STRATEGY			RESUMPTIVE STRATEGY		
INTERROGATIVE TYPE	BARE	GENITIVE	D-LINKED	BARE	GENITIVE	D-LINKED
SUBJECT	√	√	√	x	x	x
OBJECT OF V	√	√	√	√	√	√
OBJECT OF P	x	x	x	x	√	√
PP-FRONTING	√	√	√	x	x	x

**Table 24. Comparison of bare, genitive and D-linked interrogatives with respect to long-distance extraction (extraction from an embedded clause)**

As with local extraction, with long-distance extraction we observe that genitive and D-linked interrogatives pattern in the same way with respect to whether they use the gap or the resumptive strategy. And as before, bare interrogatives are distinct from genitive/D-linked interrogatives.

### 4.2.3 Superiority effects

Superiority effects arise in contexts where two interrogative expressions are contained in the same clause. As we shall see, in Iraqi Arabic bare interrogatives show superiority effects, while genitive and D-linked interrogatives don't.

The *superiority condition* (Chomsky 1973), as stated in (140) is an attempt to account for the contrast between the well-formed (141) and ill-formed (142).

#### (140) *Superiority Condition*

No rule can involve X and Y in the structure ...X... [...Z... Y...]... where the rule could also apply to X and Z, and Z is superior to Y (Z is superior to Y if Z c-commands Y)

- (141) a. Who saw what ?  
b. I wonder who saw what.

- (142) a. \*What did who see?  
 b. \*I wonder what who saw

The superiority condition derives the fact that, in sentences where both the subject and object are interrogative expressions, only the subject (Z) can undergo movement; i.e. the movement rule involves X and Z. It correctly prohibits movement of the object over the subject, as this would be an instance of a rule involving X (the object position) and Y (the A' landing site), with Z (the subject) superior to Y (the object).

As shown in (143), Iraqi Arabic bare interrogatives obey the superiority condition:

**143. superiority effects with bare interrogative pronouns**

**a. superiority effect observed**

منو شنو قال لسامر؟

**minnu:** **jenu:** ga:l li-Samer

who what said.3MS to=Samer

Who said what to Samer ?

(10 JUL 2010, SA 1a, offered freely)

**b. superiority effect violated**

\*شنو قال منو لسامر؟

\* **jenu:** ga:l **minnu:** li-Samer

what=said.3MS who to=Samer

'\*What did who say to Samer ?'

(10 JUL 2010, SA 1b, elicited)

With genitive interrogative constructions, the superiority effect disappears. This is illustrated by the grammaticality of both multiple questions in (144), where (144a) shows SVO word order and (144b) shows OVS word order.



**(144)** *Superiority effects disappear with genitive interrogative expressions*

**a.** *SVO word order*

رجل منو شاف ولد منو ؟

riɖʒa:l minnu: ʃa:f walad minnu:

man who saw.3MS boy who

'Whose husband saw whose son ?'

(13 JAN 2011, SA 8a, offered freely)

**b.** *OVS word order*

ولد منو شافه رجل منو ؟

walad minnu: ʃa:f=hu riɖʒa:l minnu:

boy who saw.3MS=3MS husband who

'Whose son did whose husband see ?'

(13 JAN 2011, SA 9a, offered freely)

With D-linked interrogatives superiority effects also disappear. This is illustrated in the grammaticality of the D-linked questions in (145), where (145a) shows SVO word order and (145b) shows OVS word order.

**(145)** *Superiority effects disappear with D-linked interrogative expressions*

**a.** *SVO word order*

يا طالبة اشترت يا كتاب ؟

ya: Ta:liba iʃtarat ya: kita:b

which student.F bought.3FS which book

'Which student bought which book ?'

(13 JAN 2011, SA 3a, offered freely)

**b. OVS word order**

يا كتاب اشترت يا طالبة؟

ya: kita:b iʃtarat ya: Ta:liba  
which book bought.3FS which student.F

'Which book did which student buy ?'

(13 JAN 2011, SA 4a, offered freely)

### 4.3 Why genitive interrogatives are inherently D-linked

I propose that it is the syntactic structure which causes genitive and D-linked interrogatives to pattern in the same way with respect to local extraction, long-distance extraction, and superiority. In particular, I suggest that the structural parallel between genitive and D-linked interrogatives lies in the fact that they both contain an overt domain restriction (§4.3.1). I then show how the derivation of the gap and the resumptive strategy proceeds with genitive interrogatives (§4.3.1 - 4.3.2).

#### 4.3.1 D-linking arises if there is an overt domain restriction

A comparison of the syntax of bare interrogatives, D-linked interrogatives and genitive interrogatives is given in (146).

**(146) a. syntax of bare interrogatives**

$[_D \text{ wh } [_N \emptyset] ]$	the gap strategy
$[_D \text{ wh } [_\varphi \text{ hu } [_N \emptyset] ] ]$	the resumptive strategy (only long-distance)

**b. syntax of D-linked interrogatives**

$[_D \text{ wh } [_N \mathbf{N} ] ]$	the gap strategy
$[_D \text{ wh } [_\varphi \text{ hu } [_N \mathbf{N} ] ] ]$	resumption (local & long-distance)

**c. syntax of genitive interrogatives**

[<sub>D</sub> [<sub>N</sub> **N** [<sub>D</sub> wh]]]                      the gap strategy

[<sub>D</sub> [<sub>N</sub> **N** [<sub>D</sub> wh] [<sub>φ</sub> *hu* [<sub>N</sub> ]]]      resumption (local & long-distance)

There are two observations to note here. First, the structure of the genitive in Arabic and Hebrew is known as the construct state, where the head noun is left-adjacent to a noun phrase or interrogative pronoun (Borer 1999; Fehri 1988; Ritter 1988; Shlonksy 2004). Second, with both genitive and D-linked interrogatives there is an overt noun which specifies a domain restriction. It seems that the D-linked interrogative expressions and the genitive interrogative expressions are domain restricted because of the overt noun, whereas the bare interrogative expressions do not have this restriction since they do not have an overt noun. I speculate that the domain restriction is supplied by the overt noun that allows the resumption strategy to be used in a wider range of contexts that is possible with bare interrogatives. This suggests that there is a close connection between domain restriction and the presence of a resumptive pronoun, because resumption selects an element from a domain. The bare interrogative expressions do not have any such domain restriction and therefore resumption is allowed only for syntactic reasons, i.e. with long-distance extraction but not with local extraction.

The claim made here is that genitive interrogatives are inherently D-linked. Therefore, they should have a D-N structure in content questions which employ the gap strategy and a D-φ-N structure in content questions which employ the resumptive strategy. With this in mind I now look at the derivation of content questions with genitive constructions in more detail.

### **4.3.2 Derivation of the genitive interrogative with the gap strategy**

Consider (147a) which is a genitive interrogative employing the gap strategy. The numeration is given in (147b).

(147) GENITIVE INTERROGATIVE CONSTRUCTION

a. *Genitive interrogative with gap*

نجوى رجل منو شافت ؟

Najwa ridʒal minnu: ʃa:fit

Najwa man who saw:3SF

'Whose husband did Najwa see ?'

(8 JUL 2010, SA 8a, offered freely)

b. **Numeration:** {<sub>TOP</sub>∅, C∅, I∅, Najwa<sub>D</sub>, Sa:fit<sub>V</sub>, minnu:<sub>D</sub>, ridʒa:l<sub>N</sub>,}

(148) gives the derivation of (147a). At the VP phase (148b), the DP is built by (148bI) merging the interrogative pronoun *minnu:* 'who' with the noun *ridʒal* 'husband/man'; in accordance with Ritter's (1991) N-to-D raising in construct states, N raises to SpecD via a successive application of Copy and Delete (148bII-III). Then the verb *ʃa:fit* 'she saw' merges with the DP *ridʒa:l minnu:* 'whose husband' (148bIV). The subject DP *Najwa* merges with the V at SpecVP (148bV). At the IP phase (148c), the inflectional head merges with the VP (148cI), then the subject DP *Najwa* is moved to SpecIP via successive application of Copy and Delete (148cII-III). At the CP phase (148d), the DP *ridʒa:l minnu:* 'whose husband' is moved to SpecCP via successive application of Copy and Delete (148dI-II). At the TopP phase (148e), the topical head *Top* merges with the CP (148eI) and the subject DP *Najwa* is moved to SpecTopP via successive application of Copy and Delete (148eII-III).

(148) *derivational analysis of (147a)*

a. **Numeration:** {<sub>TOP</sub>∅, C∅, I∅, Najwa<sub>D</sub>, Sa:fit<sub>V</sub>, minnu:<sub>D</sub>, ridʒa:l<sub>N</sub>,}

b. VP phase

I. Merge <D, N>

[<sub>D</sub> [*minnu:*<sub>D</sub>] [*ridʒa:l*<sub>N</sub>] ]

II. Copy *ridʒa:l*<sub>N</sub> and Merge <N, D>

[<sub>D</sub> [*ridʒa:l*<sub>N</sub>] [<sub>D</sub> [*minnu:*<sub>D</sub>] [*ridʒa:l*<sub>N</sub>] ]

### III. Delete *ridʒa:l<sub>N</sub>*

[<sub>D</sub> [*ridʒa:l<sub>N</sub>*] [<sub>D</sub> [*minnu:<sub>D</sub>*] [~~*ridʒa:l<sub>N</sub>*~~]]

### IV. Merge <V, D>

[<sub>V</sub> [*Sa:fit<sub>V</sub>*] [<sub>D</sub> [*ridʒa:l<sub>N</sub>*] [<sub>D</sub> [*minnu:<sub>D</sub>*] [~~*ridʒa:l<sub>N</sub>*~~]]]

### V. Merge <D, V>

[<sub>V</sub> [*Najwa<sub>D</sub>*] [<sub>V</sub> [*Sa:fit<sub>V</sub>*] [<sub>D</sub> [*ridʒa:l<sub>N</sub>*] [<sub>D</sub> [*minnu:<sub>D</sub>*] [~~*ridʒa:l<sub>N</sub>*~~]]]

## c. IP phase

### I. Merge <I, V>

[<sub>I</sub> [<sub>V</sub> [*Najwa<sub>D</sub>*] [<sub>V</sub> [*Sa:fit<sub>V</sub>*] [<sub>D</sub> [*ridʒa:l<sub>N</sub>*] [<sub>D</sub> [*minnu:<sub>D</sub>*] [~~*ridʒa:l<sub>N</sub>*~~]]]]]

### II. Copy *Najwa<sub>D</sub>* & Merge <D, I>

[<sub>I</sub> [*Najwa<sub>D</sub>*] [<sub>I</sub> [<sub>V</sub> [*Najwa<sub>D</sub>*] [<sub>V</sub> [*Sa:fit<sub>V</sub>*] [<sub>D</sub> [*ridʒa:l<sub>N</sub>*] [<sub>D</sub> [*minnu:<sub>D</sub>*] [~~*ridʒa:l<sub>N</sub>*~~]]]]]

### III. Delete *Najwa<sub>D</sub>*

[<sub>I</sub> [*Najwa<sub>D</sub>*] [<sub>I</sub> [<sub>V</sub> [~~*Najwa<sub>D</sub>*~~] [<sub>V</sub> [*Sa:fit<sub>V</sub>*] [<sub>D</sub> [*ridʒa:l<sub>N</sub>*] [<sub>D</sub> [*minnu:<sub>D</sub>*] [~~*ridʒa:l<sub>N</sub>*~~]]]]]

## d. CP phase

### I. Copy [<sub>D</sub> [*ridʒa:l<sub>N</sub>*] [<sub>D</sub> [*minnu:<sub>D</sub>*] [~~*ridʒa:l<sub>N</sub>*~~]] & Merge <C, I>

[<sub>C</sub> [<sub>D</sub> [*ridʒa:l<sub>N</sub>*] [<sub>D</sub> [*minnu:<sub>D</sub>*] [~~*ridʒa:l<sub>N</sub>*~~]] [<sub>I</sub> [*Najwa<sub>D</sub>*] [<sub>I</sub> [<sub>V</sub> [*Najwa<sub>D</sub>*] [<sub>V</sub> [*Sa:fit<sub>V</sub>*] [<sub>D</sub> [*ridʒa:l<sub>N</sub>*] [<sub>D</sub> [*minnu:<sub>D</sub>*] [~~*ridʒa:l<sub>N</sub>*~~]]]]]

### II. Delete [<sub>D</sub> [*ridʒa:l<sub>N</sub>*] [<sub>D</sub> [*minnu:<sub>D</sub>*] [~~*ridʒa:l<sub>N</sub>*~~]]

[<sub>C</sub> [<sub>D</sub> [*ridʒa:l<sub>N</sub>*] [<sub>D</sub> [*minnu:<sub>D</sub>*] [~~*ridʒa:l<sub>N</sub>*~~]] [<sub>I</sub> [*Najwa<sub>D</sub>*] [<sub>I</sub> [<sub>V</sub> [*Najwa<sub>D</sub>*] [<sub>V</sub> [*Sa:fit<sub>V</sub>*] [<sub>D</sub> [*ridʒa:l<sub>N</sub>*] [<sub>D</sub> [*minnu:<sub>D</sub>*] [~~*ridʒa:l<sub>N</sub>*~~]]]]]

### e. TopP phase

#### I. Merge <Top, C>

[<sub>Top</sub> [C [<sub>D</sub> [*riɖʒa:l<sub>N</sub>*] [<sub>D</sub> [*minnu:<sub>D</sub>*] [*riɖʒa:l<sub>N</sub>*] ] [<sub>I</sub> [*Najwa<sub>D</sub>*] [<sub>I</sub> [<sub>V</sub> [*Najwa<sub>D</sub>*] [<sub>V</sub> [*Sa:fit<sub>V</sub>*] [<sub>D</sub> [*riɖʒa:l<sub>N</sub>*] [<sub>D</sub> [*minnu:<sub>D</sub>*] [*riɖʒa:l<sub>N</sub>*] ]]]]]

#### II. Copy *Najwa<sub>D</sub>* & Merge <Top, C>

[<sub>Top</sub> *Najwa<sub>D</sub>* [C [<sub>D</sub> [*riɖʒa:l<sub>N</sub>*] [<sub>D</sub> [*minnu:<sub>D</sub>*] [*riɖʒa:l<sub>N</sub>*] ] [<sub>I</sub> [*Najwa<sub>D</sub>*] [<sub>I</sub> [<sub>V</sub> [*Najwa<sub>D</sub>*] [<sub>V</sub> [*Sa:fit<sub>V</sub>*] [<sub>D</sub> [*riɖʒa:l<sub>N</sub>*] [<sub>D</sub> [*minnu:<sub>D</sub>*] [*riɖʒa:l<sub>N</sub>*] ]]]]]

#### III. Delete *Najwa<sub>D</sub>*

[<sub>Top</sub> *Najwa<sub>D</sub>* [C [<sub>D</sub> [*riɖʒa:l<sub>N</sub>*] [<sub>D</sub> [*minnu:<sub>D</sub>*] [*riɖʒa:l<sub>N</sub>*] ] [<sub>I</sub> [~~*Najwa<sub>D</sub>*~~] [<sub>I</sub> [<sub>V</sub> [*Najwa<sub>D</sub>*] [<sub>V</sub> [*Sa:fit<sub>V</sub>*] [<sub>D</sub> [*riɖʒa:l<sub>N</sub>*] [<sub>D</sub> [*minnu:<sub>D</sub>*] [*riɖʒa:l<sub>N</sub>*] ]]]]]

### 4.3.3 Derivation of the genitive interrogative with the resumptive strategy

Let us now look at the derivation of a genitive interrogative employing the resumptive strategy (149a). The numeration is given in (149b); notice that it contains the  $\phi$ -element *hu* ‘him’.

#### (149) GENITIVE INTERROGATIVE CONSTRUCTION

##### a. Genitive interrogative with resumption

إيمان رجل منو شافته بالمكتبة ؟

Iman riɖʒa:l minnu: ʃa:fat=**hu** bi-l-maktaba

Iman man who saw:3SF.3MS at-the-library

'Whose husband did Najwa see [**him**] at the library ?'

(8 JUL 2010, SA 8b, offered freely)

##### b. Numeration: {<sub>TOP</sub>∅, C∅, I∅, *Najwa<sub>D</sub>*, *Sa:fit<sub>V</sub>*, *minnu:<sub>D</sub>*, *riɖʒa:l<sub>N</sub>*, *hu<sub>φ</sub>*}

(150) gives the derivation of (149a). At the VP phase (150b), the DP is built by: (150bI) merging the pronoun *hu* ‘him’ with the noun *riɖʒal* ‘husband/ man’ and (150bII) merging that complex syntactic object with the interrogative pronoun *minnu*: ‘who’. In keeping with the N-to-D raising of the construct state, N raises to SpecD via a successive application of Copy and Delete (150bIII-IV). Then the verb *ʃa:fit* ‘she saw’ merges with the DP *riɖʒa:l hu minnu*: ‘whose him husband’ (150bV) and cliticization of the pronoun *hu* ‘him’ immediately takes place via successive application of Copy and Delete (150bVI-VII). The subject DP *Najwa* merges with the V at SpecVP (150bVIII). At the IP phase (150c), the inflectional head merges with the VP (150cI), then the subject DP *Najwa* is moved to SpecIP via successive application of Copy and Delete (150cII-III). At the CP phase (150d), the DP *riɖʒa:l ~~him~~ minnu*: ‘whose husband’ is moved to SpecCP via successive application of Copy and Delete (150dI-II). At the TopP phase (150e), the topical head *Top* merges with the CP (150eI) and the subject DP *Najwa* is moved to SpecTopP via successive application of Copy and Delete (150eII-III).

(150) *derivational analysis of (149a)*

**a. Numeration:** {<sub>TOP</sub>∅, C∅, I∅, *Najwa*<sub>D</sub>, *Sa:fit*<sub>V</sub>, *minnu*:<sub>D</sub>, *riɖʒa:l*<sub>N</sub>, *hu*<sub>φ</sub>}

## **b. VP phase**

**I.** Merge <φ, N>

[<sub>φ</sub> [*hu*<sub>φ</sub>] [*riɖʒa:l*<sub>N</sub>]]

**II.** Merge <D, φ>

[<sub>D</sub> [*minnu*<sub>D</sub>] [*hu*<sub>φ</sub> *riɖʒa:l*<sub>N</sub>]]

**III.** Copy *riɖʒa:l*<sub>N</sub> and Merge <N, D>

[<sub>D</sub> [*riɖʒa:l*<sub>N</sub>] [<sub>D</sub> [*minnu*<sub>D</sub>] [*hu*<sub>φ</sub> *riɖʒa:l*<sub>N</sub>]]

**IV.** Delete *riɖʒa:l*<sub>N</sub>

[<sub>D</sub> [*riɖʒa:l*<sub>N</sub>] [<sub>D</sub> [*minnu*<sub>D</sub>] [*hu*<sub>φ</sub> ~~*riɖʒa:l*~~<sub>N</sub>]]

**V. Merge <V, D>**

[<sub>V</sub> [**Sa:fit**<sub>V</sub>] [<sub>D</sub> [*ridʒa:l*<sub>N</sub>] [<sub>D</sub> [*minnu*<sub>D</sub>] [*hu*<sub>φ</sub> ~~*ridʒa:l*~~<sub>N</sub>]]]

**VI. Copy *hu*<sub>φ</sub> & Merge <V, φ>**

[<sub>V</sub> [*ʃa:fit*<sub>V</sub> ***hu***<sub>φ</sub>] [<sub>D</sub> [*ridʒa:l*<sub>N</sub>] [<sub>D</sub> [*minnu*<sub>D</sub>] [*hu*<sub>φ</sub> ~~*ridʒa:l*~~<sub>N</sub>]]]]

**VII. Delete *hu*<sub>φ</sub> & Merge <V, φ>**

[<sub>V</sub> [*ʃa:fit*<sub>V</sub> ***hu***<sub>φ</sub>] [<sub>D</sub> [*ridʒa:l*<sub>N</sub>] [<sub>D</sub> [*minnu*<sub>D</sub>] [~~*hu*~~<sub>φ</sub> ~~*ridʒa:l*~~<sub>N</sub>]]]]

**VIII. Merge <D, V>**

[<sub>V</sub> [***Najwa***<sub>D</sub>] [<sub>V</sub> [*ʃa:fit*<sub>V</sub> *hu*<sub>φ</sub>] [<sub>D</sub> [*ridʒa:l*<sub>N</sub>] [<sub>D</sub> [*minnu*<sub>D</sub>] [~~*hu*~~<sub>φ</sub> ~~*ridʒa:l*~~<sub>N</sub>]]]]]

**c. IP phase**

**I. Merge <I, V>**

[<sub>I</sub> [<sub>V</sub> [***Najwa***<sub>D</sub>] [<sub>V</sub> [*ʃa:fit*<sub>V</sub> *hu*<sub>φ</sub>] [<sub>D</sub> [*ridʒa:l*<sub>N</sub>] [<sub>D</sub> [*minnu*<sub>D</sub>] [~~*hu*~~<sub>φ</sub> ~~*ridʒa:l*~~<sub>N</sub>]]]]]]]

**II. Copy *Najwa*<sub>D</sub> & Merge <D, I>**

[<sub>I</sub> [***Najwa***<sub>D</sub>] [<sub>I</sub> [<sub>V</sub> [***Najwa***<sub>D</sub>] [<sub>V</sub> [*ʃa:fit*<sub>V</sub> *hu*<sub>φ</sub>] [<sub>D</sub> [*ridʒa:l*<sub>N</sub>] [<sub>D</sub> [*minnu*<sub>D</sub>] [~~*hu*~~<sub>φ</sub> ~~*ridʒa:l*~~<sub>N</sub>]]]]]]]]]

**III. Delete *Najwa*<sub>D</sub>**

[<sub>I</sub> [***Najwa***<sub>D</sub>] [<sub>I</sub> [<sub>V</sub> [~~*Najwa*~~<sub>D</sub>] [<sub>V</sub> [*ʃa:fit*<sub>V</sub> *hu*<sub>φ</sub>] [<sub>D</sub> [*ridʒa:l*<sub>N</sub>] [<sub>D</sub> [*minnu*<sub>D</sub>] [~~*hu*~~<sub>φ</sub> ~~*ridʒa:l*~~<sub>N</sub>]]]]]]]]]

**d. CP phase**

**I. Copy [<sub>D</sub> [*ridʒa:l*<sub>N</sub>] [<sub>D</sub> [*minnu*<sub>D</sub>] [*hu*<sub>φ</sub> ~~*ridʒa:l*~~<sub>N</sub>]]] & Merge <C, I>**

[<sub>C</sub> [<sub>D</sub> [*ridʒa:l*<sub>N</sub>] [<sub>D</sub> [*minnu*<sub>D</sub>] [*hu*<sub>φ</sub> ~~*ridʒa:l*~~<sub>N</sub>]]] [<sub>I</sub> [*Najwa*<sub>D</sub>] [<sub>I</sub> [<sub>V</sub> [~~*Najwa*~~<sub>D</sub>] [<sub>V</sub> [*ʃa:fit*<sub>V</sub> *hu*<sub>φ</sub>] [<sub>D</sub> [*ridʒa:l*<sub>N</sub>] [<sub>D</sub> [*minnu*<sub>D</sub>] [~~*hu*~~<sub>φ</sub> ~~*ridʒa:l*~~<sub>N</sub>]]]]]]]]]

**II. Delete [<sub>D</sub> [*ridʒa:l*<sub>N</sub>] [<sub>D</sub> [*minnu*<sub>D</sub>] [*hu*<sub>φ</sub> ~~*ridʒa:l*~~<sub>N</sub>]]] & Merge <C, I>**

[<sub>C</sub> [<sub>D</sub> [*ridʒa:l*<sub>N</sub>] [<sub>D</sub> [*minnu*<sub>D</sub>] [*hu*<sub>φ</sub> ~~*ridʒa:l*~~<sub>N</sub>]]] [<sub>I</sub> [*Najwa*<sub>D</sub>] [<sub>I</sub> [<sub>V</sub> [~~*Najwa*~~<sub>D</sub>] [<sub>V</sub> [*ʃa:fit*<sub>V</sub> *hu*<sub>φ</sub>] [<sub>D</sub> [~~*ridʒa:l*~~<sub>N</sub>] [<sub>D</sub> [~~*minnu*~~<sub>D</sub>] [~~*hu*~~<sub>φ</sub> ~~*ridʒa:l*~~<sub>N</sub>]]]]]]]]]



### e. TopP phase

#### I. Merge <Top, C>

[<sub>Top</sub> [C [D [ridʒa:l<sub>N</sub>] [D [minnu<sub>D</sub>] [hu<sub>φ</sub> ~~ridʒa:l<sub>N</sub>~~]]] [<sub>I</sub> [Najwa<sub>D</sub>] [<sub>I</sub> [<sub>V</sub> [~~Najwa<sub>D</sub>~~] [<sub>V</sub> [ʃa:fit<sub>V</sub> hu<sub>φ</sub>] [D [~~ridʒa:l<sub>N</sub>~~] [D [~~minnu<sub>D</sub>~~] [hu<sub>φ</sub> ~~ridʒa:l<sub>N</sub>~~]]]]]]]]

#### II. Copy Najwa<sub>D</sub> & Merge <Top, C>

[<sub>Top</sub> **Najwa<sub>D</sub>** [C [D [ridʒa:l<sub>N</sub>] [D [minnu<sub>D</sub>] [hu<sub>φ</sub> ~~ridʒa:l<sub>N</sub>~~]]] [<sub>I</sub> [Najwa<sub>D</sub>] [<sub>I</sub> [<sub>V</sub> [~~Najwa<sub>D</sub>~~] [<sub>V</sub> [ʃa:fit<sub>V</sub> hu<sub>φ</sub>] [D [~~ridʒa:l<sub>N</sub>~~] [D [~~minnu<sub>D</sub>~~] [hu<sub>φ</sub> ~~ridʒa:l<sub>N</sub>~~]]]]]]]]

#### III. Delete Najwa<sub>D</sub>

[<sub>Top</sub> **Najwa<sub>D</sub>** [C [D [ridʒa:l<sub>N</sub>] [D [minnu<sub>D</sub>] [hu<sub>φ</sub> ~~ridʒa:l<sub>N</sub>~~]]] [<sub>I</sub> [~~Najwa<sub>D</sub>~~] [<sub>I</sub> [<sub>V</sub> [~~Najwa<sub>D</sub>~~] [<sub>V</sub> [ʃa:fit<sub>V</sub> hu<sub>φ</sub>] [D [~~ridʒa:l<sub>N</sub>~~] [D [~~minnu<sub>D</sub>~~] [hu<sub>φ</sub> ~~ridʒa:l<sub>N</sub>~~]]]]]]]]

# 5 Conclusions

## 5.1 Results

In this thesis I described the resumptive strategy and the gap strategy in Iraqi Arabic content questions and I showed that the choice of either the gap or the resumptive pronoun in the syntax gives rise to different interpretations in the semantics. The theoretical devices used in this thesis are not new; rather, I argued that various proposals applied to the resumptive strategies in other Arabic dialects apply to Iraqi Arabic, as well.

In chapters 1 I gave some background on the morphology and syntax of Iraqi Arabic; I presented the morphology and syntax of interrogative expressions in Iraqi Arabic and I described the resumptive strategy in Iraqi Arabic content questions. In chapter 2, I presented a syntactic analysis of resumption in Iraqi Arabic content questions and I argued that the gap strategy is derived with full-DP deletion and the resumptive strategy with remnant-DP deletion. In chapter 3, I explored the interpretive differences associated with the gap and the resumptive strategy, and argued that the structural difference between [D-N] and [D- $\phi$ -N] correspond to the semantic difference between the (extensional) pair-list reading and the (intentional) natural function reading respectively. In chapter 4, I showed that genitive interrogatives in Iraqi Arabic are inherently D-linked in the sense of Pesetsky (1987).

## 5.2 Unsolved problems

In the course of the thesis I touched on several questions that deserve further investigation. In chapter 3 I showed that in contexts where resumption is obligatory, it is semantically ambiguous between the natural function reading and the pair-list reading. A topic for further research is to give a more precise analysis of these two interpretations.

In chapter 4 I showed that bare interrogatives are more restricted in their use of the resumptive strategy. Remains to be seen if the syntactic analysis proposed in this thesis can be extended to non-D-linked interrogative expressions.

It would also be interesting to investigate other environments where Iraqi Arabic uses resumptive strategies, such as relative clauses and dislocation structures. In addition, in this thesis, I have focused on weak resumptive pronouns; remaining to be investigated are other types of resumptive elements, such as strong pronouns and epithets. For example, in chapter 4 I showed that resumptive strategies in content questions in Iraqi Arabic do not use strong pronouns. It would be interesting to investigate whether this is a uniform phenomenon in Iraqi Arabic across all clause type environments (i.e. content questions, relative clauses, dislocation structures).

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