On Wh-Questions in Dagara

Doctoral Dissertation

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ダガラ語における wh 疑問文について

Hien Noindonmon Alain

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On *Wh*-Questions in Dagara

by

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Submitted to the Graduate School of International Cultural Studies on 25 May 2022 in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

Abstract

This dissertation investigates the syntax of *wh*-questions in Dagara, a Mabia (ex-Gur) language in the Niger-Congo language family spoken in Burkina Faso and Ghana. The goal is to unravel how *wh*-questions are formed in the language and explore their theoretical consequences within the recent framework of generative syntax.

Chapter 1 introduces the study by showing the syntactic profile of the language, the research questions and hypotheses considered and examined in the dissertation. It also shows the organization of the entire dissertation.

Chapter 2 focuses on describing how *wh*-questions are formed in the language. I show two main strategies through which they are formed: A movement strategy and a *wh*-in-situ strategy. They are shown in (1).

(1) a. Ànú nu ka Ayuo nyɛ́?
who FOC that Ayuo saw
'Who was it that Ayuo saw?'

b. Ayuo nyɛ́-n ànú?
Ayuo saw-AFF who
'Who did Ayuo see?'

(1a) illustrates the movement strategy and (1b) illustrates the *wh*-in-situ strategy. As shown in (1a), when *wh*-phrases undergo overt movement, they must precede the focus marker, which precedes the complementizer except for moved subject *wh*-phrases. I assume that the complementizer is null when the *wh*-phrase is a subject. (1b) indicate that *wh*-phrases do not move overtly when the focus marker is absent.

The chapter also considers how multiple *wh*-questions are formed in the language. Although multiple *wh*-questions seem to be basically possible in Dagara, their acceptability varies from case to case. While many Dagara speakers accept multiple *wh*-questions and observe that they are mildly degraded, some speakers do not accept them at all. Consider the following examples:

(2) a. ? Ànú nu nyɛ́ bò?
who FOC saw what
'lit. Who was it that saw what?'

b.* Bò nu ka ànú nu nyɛ́?
what FOC that who FOC saw
'lit. What was it that WHO saw?'

In (2a), the subject *wh*-phrase is fronted and followed by the object *wh*-phrase. Some native speakers of Dagara observe that (2a) is almost acceptable. In (2b), the subject *wh*-phrase and the object *wh*-phrase are fronted but the sentence is ungrammatical. (2b) is unacceptable partially because there are two focus markers in the sentence. Based on the results of an acceptability test, I observe that the formation of the multiple *wh*-questions in Dagara is subject to restrictions on the ordering of the *wh*-phrases.

In chapter 3, I consider *wh*-questions with overtly moved *wh*-phrases. I show that overtly moved *wh*-phrases must be accompanied by a focus marker and claim that overt

movement of *wh*-phrases should be considered as focus movement as it is triggered by the focus marker. This assumption is motivated by the following observations. First, overtly moved *wh*-phrases must be accompanied by the focus marker. Second, a *wh*-question and its answer must share the same syntactic structure, and in an answer to a *wh*-question with an overtly moved *wh*-phrase, the constituent corresponding to the *wh*-phrase must be focused, as shown in (3). On the other hand, in an answer to a *wh*-question with a *wh*-phrase in situ, the constituent corresponding to the *wh*-phrase is not focused.

(3) a. Ànú nu ka Ayuo nyɛ __?
who FOC that Ayuo saw
'Who did Ayuo see?'

b. Zã nu (ka Ayuo nyɛ __).
John FOC that Ayuo saw
'It was John that Ayuo saw.'

c. ? Ayuo nyɛ na Zã.
Ayuo saw AFF John
'Ayuo saw John.'

(3a) is a question containing a focused *wh*-phrase. (3b) is a natural answer to (3a). In (3b), the phrase corresponding to *ànú* (i.e. *Zã* 'John') is focused. (3c) does not contain any focused constituent and is not a natural answer to (3a). Since a constituent is focused in Dagara by undergoing movement to the left of the focus marker, I assume that overt movement of *wh*-phrases is focus movement.

Also, I consider reduced answers to direct *wh*-questions, also known as fragment answers in the literature, providing an additional argument that the type of movement involved in *wh*-questions in Dagara is focus movement. This is shown below.

(4) a. Ànú nu ka Ayuo nyɛ́?
who FOC that Ayuo saw
'Who did Ayuo see?'

b. Zã nu ka Ayuo nyɛ́.
John FOC that Ayuo saw
'Ayuo saw JOHN.'

c. Zã nu.
John FOC
'John'

d. * Zã nu ka.
John FOC that

e. * Zã.
John

(4b-c) can be a response to (4a). (4d-e) cannot be an answer to (4a). (4c) consists of the target constituent, followed by the focus marker. The focus marker cannot be omitted. Following Merchant (2004), I assume that the derivation of reduced answers in Dagara involves focus movement of the target constituent and deletion of CP. The reason for assuming this is that a reduced answer must precede the focus marker.

The chapter also argues that overt focus movement obeys locality constraints on movement such as the Complex NP Constraint, the Coordinate Structure Constraint, the Left Branch Condition, the Adjunct Condition, and the Anti-Locality Constraint, whereby it gives further credence to their universality. Consider the following examples:

(5) a. Dar dà-n [$_{DP}$ a sɛbɛ 'lan [$_{RC}$ Zã nan ta sɛb kù Mary]].
Dar bought-AFF the book that John REL PST wrote give Mary.
'Dar bought that book John wrote for Mary.'

b.* Ànú nu ka Dar dà [$_{DP}$ a sɛbɛ 'lan [$_{RC}$ Zã
who FOC that Dar bought the book that John
nan ta sɛb kù __]]?
REL PST wrote give
'lit. *Who was it that Dar bought that book which John wrote for?'

(5a) is grammatical while (5b) is not. In (5a), the bracketed phrase is a DP modified by a relative clause. When a DP modified by a relative clause is formed, no constituent can move out of it. This is known as the Complex NP Constraint in the literature. I assume that (5b) is ungrammatical because *ànú* moves out of the DP modified by the relative clause, violating the Complex NP Constraint.

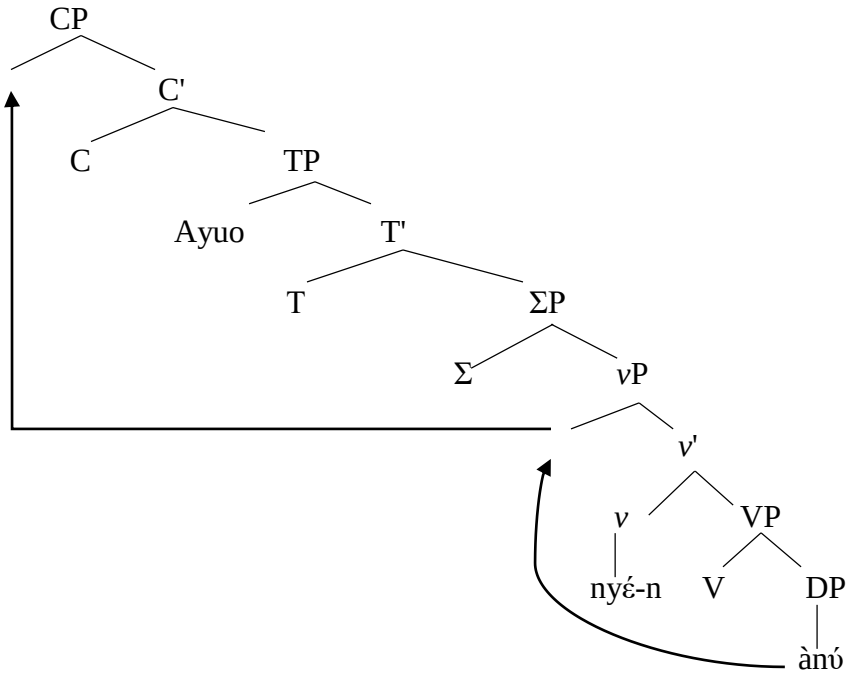
Chapter 4 focuses on *wh*-questions with *wh*-phrases in situ. I observe that when there is no focus marker in the sentence, *wh*-phrases remain in situ and undergo covert movement to the specifier position of CP to check a weak *wh*-feature, as shown in (6).

(6) a. Ayuo nyɛ́-n ànú?

Ayuo saw-AFF who

'Who did Ayuo see?'

b.



Movement of *ànú* 'who' in (6b) is covert. I argue that covert movement of *wh*-phrases is triggered by a weak *wh*-feature and that it is analogous to overt focus movement in that both instances of movement obey the same locality constraints on movement. Consider the following examples:

(7) a. Dar dà-n **a** **sɛbɛ** **'lan** [$_{CP}$ Zã nan ta

Dar bought-AFF the book that John REL PST

sɛb kù Mari].

wrote give Mary

'Dar bought that book John wrote for Mary.'

b.* Dar dà na **a** **sɛbɛ** **'lan** [$_{CP}$ Zã nan

Dar bought AFF the book that John REL

ta sɛb kù **ànú**]?

PST wrote give who

'lit. Dar bought the book which John wrote for who?'

(7a) is acceptable while (7b) is not. In (7b), the *wh*-phrase does not undergo overt movement out of the relative clause but the sentence is unacceptable. This can be explained by assuming that the *wh*-phrase in situ undergoes covert movement and that that movement is ruled out by the Complex NP Constraint, just like overt focus movement of the *wh*-phrase in (5b). The last finding is significant in that *wh*-phrases in situ in Dagara exhibit quite different behavior from those in other well-known *wh-in-situ* languages like Chinese and Japanese.

The chapter also shows that although *wh*-phrases in situ undergo covert movement in Dagara, the adjunct *wh*-phrase in situ *bònusò* 'how come/why' does not. Rather, it is licensed in its underlying position.

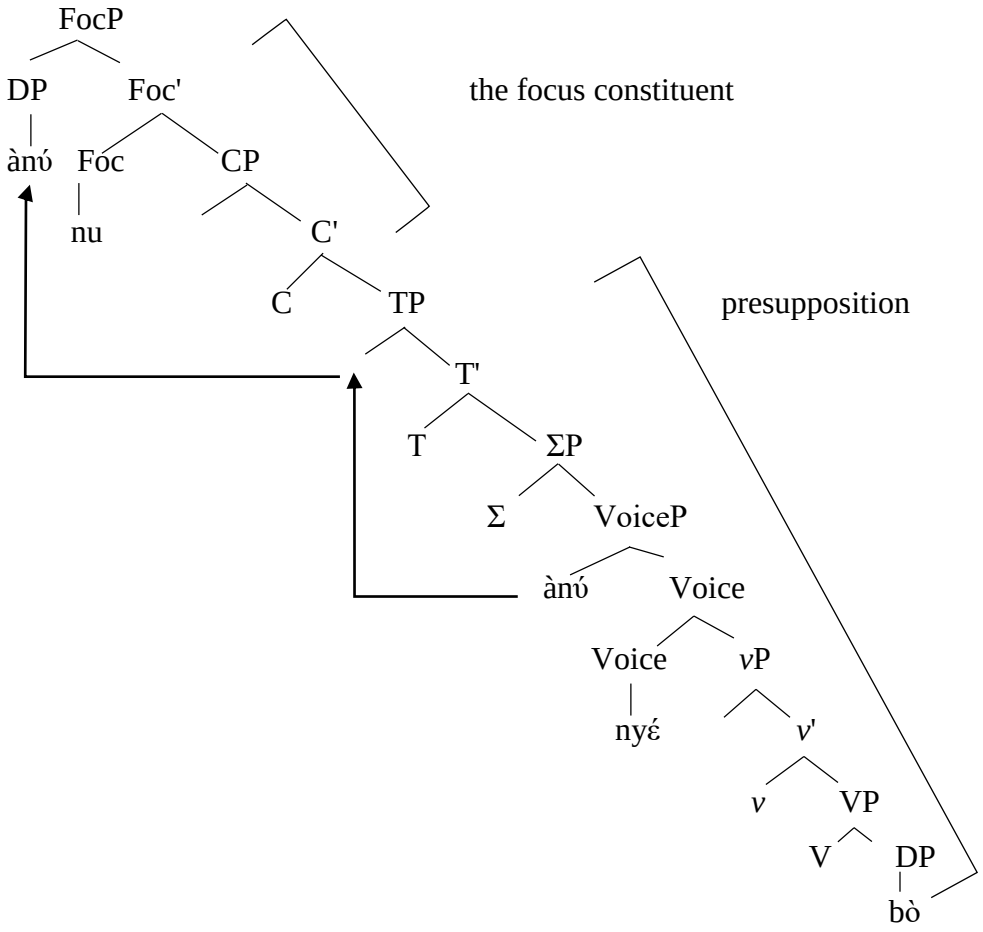
In chapter 5, I turn my attention to multiple *wh*-questions in Dagara and consider why multiple *wh*-questions are mildly degraded in the language. I assume that they are mildly degraded because they contain *wh*-phrases in situ inside presupposition, the part of the sentence that indicates background information or old information. This is shown below.

(8) a. ? Ànú nu nyɛ́ bò?

who FOC saw what

'lit. Who was it that saw what?'

b.



Let us consider (8b) as the structure of (8a). As shown in (8b), I assume that focus constructions in Dagara have a bipartite structure consisting of the part indicating focus and the part indicating presupposition and that the focus involves novelty or contrastivity while presupposition identifies old or background information. Since *wh*-phrases ask for new information, their presence in the presuppositional part of sentences makes the sentences degraded.

I also show data that indicate that two *wh*-phrases cannot occur in the same verb phrase and claim that it can be explained by assuming that those *wh*-phrases need to move

covertly to the specifier position of *v*P to satisfy the Phase Impenetrability Condition. Then, their occurrence in the same verb phrase creates a competition for the specifier position of *v*P.

In chapter 6, I summarize the entire dissertation and point out the significance of the study. The study is significant as it provides a comprehensive description of *wh*-questions in the Dagara language showing how they can be analyzed with a general theory of language. Though it is framed in terms of the generative theory, the core data are presented without any bias for particular theoretical analyses and hence can be exploited by any linguistic school. This dissertation will therefore provide an opportunity for theoretical research on *wh*-questions and related comparative studies involving Dagara.

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To my beloved late mother and all those mothers in rural areas in Africa who are fighting every single day to ensure that their children get the same education as the other children in the world

Contents

Abbreviations and Symbols

Abbreviations

AFF	Affirmative Marker
C	Complementizer
CP	Complementizer Phrase
D	Determiner
ACC	Accusative marker
ASP	Aspect
DP	Determiner Phrase
DemP	Demonstrative Phrase
FinP	Finite Phrase
FOC	Focus
FocP	Focus Phrase
NEG	Negative Marker
PART	Particle
PIC	Phase Impenetrability Condition
PL	Plural Marker
SG	Singular Marker
Q	Question marker
TOP	Topic marker
TP	Tense Phrase
VP	Verb Phrase
VoiceP	Voice Phrase

AdvP	Adverb Phrase
RC	Relative Clause

Judgements and Symbols

*	Ungrammatical
??	Very degraded
?	Mildly degraded
(…)	Optional
(*…)	Must be omitted
*(…)	Is compulsory
>	Be higher than
__	The trace of an extracted phrase

Chapter 1

Introduction

The purpose of this dissertation is to examine how *wh*-questions are formed in Dagara and to explore their theoretical consequences within the recent framework of generative syntax (Chomsky 1995, 2000, 2004, and Rizzi 1997, among others).

Dagara is a Mabia (ex-Gur) language in the Niger-Congo family, spoken in Burkina Faso, Ghana, and Cote d'Ivoire (Bodomo 1997, Some 2013, and Ali et al. 2021). According to Ali et al. (2021: 3), "it is broken down into various variants across the three countries: in Ghana, it is called Dagaare, in Burkina Faso, it is mainly called Dagara, and in Cote d'Ivoire, it is mainly called Birifor." Likewise, native speakers of Dagara are referred to as Dagara, Dagari, Dagaba, Dagarti, or Birifor depending on the countries (see also Bodomo 1997). In Burkina Faso, they are referred to as Dagara (singular) and Dagari (plural). In Ghana, native speakers of this language refer to themselves as Dagaba or Dagarti (plural) with Dagao as the singular noun (Bodomo 1997 and Kuba and Lentz 2001). In Cote D'ivoire, they are called Birifor and Dagari (singular and plural). Also note that there is no consensus on the exact number of Dagara speakers. For example, Some (2013) estimates the number of native speakers of Dagara to be between 720 000 and 840 000 while other researchers note that it is spoken by between one and three million people (see Bodomo 1997 and Ali et al. 2021).

In addition, many researchers observe that the Dagara language is divided into many dialects (e.g. Dagara Wule or Wiile, Dagara Lobr, Dagara Birifor, Dagaare, Dagari-Dioula, and Dagara Waale) (also see Bodomo 1997, Some 2013, and Eberhard et al. 2019). Dagara Wule and Dagara Lobr are also referred to as the Northern Dagara while Dagaare is also called Southern and Central Dagara. This study will focus on Dagara Wule or Wiile, one of the varieties spoken in Burkina Faso. I will also examine data in Dagaare (the dialect spoken in Ghana) to uncover differences and similarities between the two dialects (i.e. Dagara Wule and Dagaare).

The remainder of the chapter is organized as follows: In section 1, I will show some syntactic properties of Dagara, illustrating the structure of declarative sentences and nominal

phrases in the language. In section 2, I will explain how *yes/no* questions and *wh*-questions are formed in Dagara. Section 3 will be devoted to explaining the research questions and hypotheses considered and examined in the dissertation. In section 4, I will show how the data presented in this dissertation were collected. Section 5 explains how the entire dissertation is organized.

1.1. Syntactic Properties of Dagara

1.1.1. Word Order in Simple Sentences in Dagara

Dagara has a fixed Subject-Verb-Object (SVO) word order (Bodomo 1997), as shown below:

(1) a. Ayuo dà na mobiil.
Ayuo bought PART car
'Ayuo bought a car.'

b. * Ayuo mobiil dà na.
Ayuo car bought PART
'Ayuo bought a car.'

c.* Mobiil Ayuo dà na.
car Ayuo bought PART
'Ayuo bought a car.'

(1a) is a grammatical declarative sentence while (1b-c) are not. (1a) shows that the canonical word order of simple declarative sentences is SVO. This order is fixed and cannot be rearranged as in (1b-c), except for cases involving topicalization and focalization, as shown in (2).

(2) a. Ayuo dà na mobiil.
Ayuo bought PART car
'Ayuo bought a car.'

b. A mobiil, Ayuo dà na.
the car Ayuo bought PART
'lit. The car, Ayuo bought it.'

c. Mobiil nu ka Ayuo dà.
car FOC that Ayuo bought.
'It was a car that Ayuo bought.'

In (2b), the object argument *mobiil*, together with the definite article, is topicalized. Topicalization in Dagara consists in fronting a nominal phrase followed by a pause, which is shown with a comma in (2b). (2c) is a case of focalization, where the nominal phrase is fronted, followed by a peripheral particle *nu*, which I assume to be a focus marker, and a complementizer (*ka*).

Note that (1a) contains a post-verbal particle, namely *na*. This particle can be contracted to *-n* and pronounced with the verb. It cannot be omitted in affirmative sentences. These are shown below.

(3) a. Ayuo dà-n mobiil.
Ayuo bought-PART car
'Ayuo bought a car.'

b. * Ayuo dà mobiil.

Ayuo bought car

'Ayuo bought a car.'

(3a) is grammatical and (3b) is not. The omission of the post-verbal particle *na* (or *-n*) is responsible for the ungrammaticality of (3b).

Also note that in (2c), the focus marker and the complementizer cannot be omitted, as shown in (4a-b). Further, the post-verbal particle *na* cannot occur in cases of focalization as illustrated in (4c).

(4) a. * Mobiil ka Ayuo dà.

car that Ayuo bought.

'It was a car that Ayuo bought.'

b. * Mobiil Ayuo dà.

car Ayuo bought.

'It was a car that Ayuo bought.'

c. * Mobiil nu ka Ayuo dà na.

car FOC that Ayuo bought PART.

'It was a car that Ayuo bought.'

(4a-c) are ill-formed focus constructions. In (4a), the focus marker *nu* is omitted. In (4b), the focus marker *nu* and the complementizer are omitted. (4c) contains both the focus marker *nu* and the post-verbal particle *na*. This indicates that the post-verbal particle *na* cannot co-occur with the focus marker.

The post-verbal particle *na* cannot co-occur with negation either. This is shown below.

(5) a. Pol nyɛ́ na a bie.
Paul saw PART the child
'Paul saw the child.'

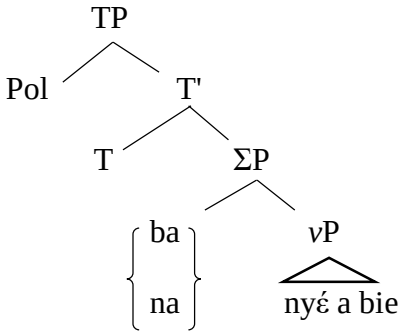
b.* Pol ba nyɛ́ na a bie ɛ.
Paul NEG saw PART the child PART
'Paul did not see the child.'

c. Pol ba nyɛ́ a bie ɛ.
Paul NEG saw the child PART
'Paul did not see the child.'

(5a) is an affirmative sentence and (5b-c) are negative sentences. While affirmative sentences must contain the post-verbal *na*, negative sentences do not allow it and instead contain the negative marker *ba* and the sentence-final particle *ɛ*.

Following Hien (2022a), I assume that the post-verbal *na* is an affirmative marker that occupies the head position of Polarity Phrase and that the fact that it cannot occur in negative sentences indicates that it competes with the negation marker for the same syntactic position, as shown below.

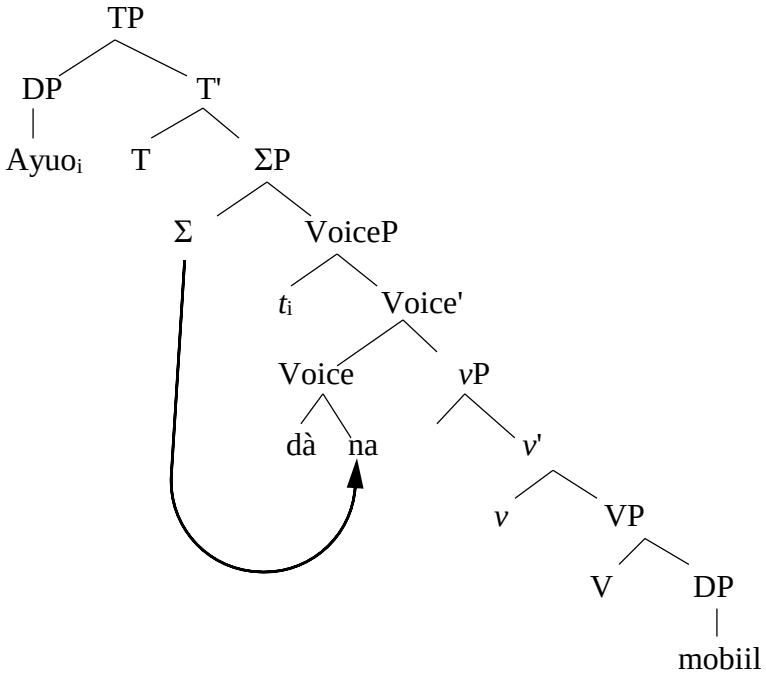
(6)



As shown in (6), I assume that the complementary distribution of the post-verbal *na* and the negative marker *ba* is attributed to the fact that they occupy the same syntactic position. (6) directly explains the fact that the negative marker *ba* precedes verbs. A question arises, however, as to why the affirmative marker (namely, the post-verbal *na*) follows verbs. Following Hien (2022a), I assume that it is a phonological clitic that is attached to the verb by a rule like affix hopping.[1] Also, I assume that basic sentences in Dagara are derived as in (7).

[1] Note that the final particle *ɛ* is used to indicate that there is a negation marker in the sentence. Some (2013) describes it as a [– assertive] marker and claims that it is the opposite of the affirmative marker *na*.

(7)



I assume that (7) is the structure of the typical transitive sentence in (1a). Following Kratzer (1996) and Harley (2013), among others, I assume that subject nominal phrases are base-generated in the specifier position of VoiceP, where they are assigned an agent theta role, and move to the specifier position of TP. The affirmative marker *na* occupies the head of Polarity Phrase (ΣP) and is attached to the verb through affix hopping. I also assume that the verb moves from V to the head of VoiceP. In what follows, I will only mention VoiceP and V-movement when they are relevant to the discussion.

Note that the fact that the post-verbal *na* cannot occur with the focus marker *nu*, as shown in (4c), leads many scholars to assume that it is a focus marker as well (*nu* as a contrastive focus marker and *na* as an information focus marker) (see Bodomo and Hiraiwa 2010, Hiraiwa et al. 2017, Bodomo 2020, Ali et al. 2021), which indicates that there is no consensus on the description of the post-verbal *na*. In this study, I will consider *nu* as a focus marker and the post-verbal *na* as an affirmative marker. In what follows, I will gloss the affirmative marker as AFF.

1.1.2. Subordinate Clauses in Dagara

Subordinate clauses are often considered to be clauses that are introduced by subordinating conjunctions, also called complementizers in the literature (Haumann 1997 and Comrie 2008). They are illustrated with the English sentences in (8).

(8) a. John does not know **that** Mary is a nurse.

b. John does not care **if** Mary is a nurse.

c. John got angry **because** Mary came late.

In (8a-c), the clauses *that Mary is a nurse*, *if Mary is a nurse*, and *because Mary came late* are subordinated clauses. They are introduced by *that*, *if*, and *because*, viewed as markers of subordination in the literature (see Haumann 1997 and Comrie 2008).

As in English, subordinate clauses are introduced by subordinating conjunctions in Dagara. This is shown below.

(9) a. Ayuo yél la [**ka** Dar dà-n mobiil].
Ayuo said AFF that Dar bought-AFF car
'Ayuo said that Dar bought a car.'

b. [A Dar **wa** dà a mobiil] ti na cen na bidja. [2]
the Dar if bought the car we will go AFF Abidjan
'We will go to Abidjan if Dar bought the car.'

[2] Note that *wa* is between the subject and the predicates. I assume that it is a C and that the subject moves to its specifier position.

c. [A bie tʊ́-n fʊ ma **alaso**] tɪ ŋmɛ ʊ.

the child insulted-AFF your mother because-of-that we beat him

'We beat the child because he insulted your mother.'

In (9a), the bracketed phrase, namely *ka Dar dà-n mobiil* 'that Dar bought a car' is an embedded clause introduced by the complementizer *ka* 'that'. In (9b), the bracketed phrase is a conditional clause that is introduced by *wa* 'if'. In (9c), the bracketed phrase is an adverbial clause of reason. It is introduced by the conjunction *alaso* 'because of that'. Note in (9a), the subordinate clause follows the matrix clause while in (9b-c) the subordinate clauses precede the matrix clauses.

1.1.3. Nominal Phrases in Dagara

In Dagara, nominal phrases consist of a noun that is overtly marked for number. It can also consist of a determiner and a noun that is overtly marked for number, or a noun and several nominal modifiers, as shown below.

(10) a. Bi-e wa na.

child-SG came AFF

'A child came.'

b. Bi-biir wa na.

child-PL came AFF

'Children came.'

c. A bi-e wa na.

the child-SG came AFF

'The child came.'

d. A bi-biir wa na.

the child-PL came AFF

'The children came.'

Let us focus on the subject nominal phrases in (10). In (10a-b), the subject nominal phrases consist of nouns that are marked for number while in (10c-d), there is a determiner. Noun phrases like the ones in (10a-b) have indefiniteness interpretation while those that are combined with the determiner *a*, as shown in (10c-d), are interpreted as definite. (10a) and (10c) are overtly marked for singular while (10b) and (10d) are marked for plural.

Note that nominal phrases can contain several nominal modifiers in Dagara. This is shown in (11).

(11) a. M nyɛ́-n bi pila.

I saw-AFF child white.SG

'I saw a white child.

b. M nyɛ́-n (a) bi pila 'lan.

I saw-AFF the child white.SG that

'I saw that white child.'

c. M nyɛ́-n (a) bi piɛ́l bala 'ha.

I saw-AFF the child white.PL those all.

'I saw all those white children.'

d. M nyɛ́-n (a) bi piɛ́l bala 'ha ata.
I saw-AFF the child white.PL those all three
'I saw all those three white children.'

Let us consider the object nominal phrases in (11a-d). In (11a), it consists of a noun and a post-nominal adjective. In (11b), the object nominal phrase contains an optional prenominal determiner, a post-nominal adjective, and a demonstrative, which occurs post-nominally. In (11c), the object nominal phrase contains an optional prenominal determiner, a post-nominal adjective, a post-nominal demonstrative, and a post-nominal quantifier. The object nominal phrase in (11d) consists of an optional prenominal determiner, a post-nominal adjective, a demonstrative, a quantifier, and a numeral that occur in the post-nominal position. Note that in (11), the number marker does not appear on the nouns but on the adjectives. This is because nouns cannot take a number marker in the presence of adjectives in the language. I assume that the fact that nouns and adjectives are not marked for number simultaneously in nominal phrases in Dagara indicates that number occupies an independent syntactic head in the structure of nominal phrases and that nouns or adjectives must pick it up through head movement (see Hien to appear for details).

Besides, the fact that the determiner and the demonstrative can co-occur in the same nominal phrase makes Dagara different from languages such as English and French. Consider the following examples:

(12) English

* The this child has come.

(13) French

* Le cet enfant est venu.

the this child is come

'This child has come.'

As shown in (12) and (13), determiners and demonstratives cannot co-occur in English and French. This may indicate that while they occupy the same head position, namely, the D head position, in English and French, DP and demonstrative phrase (DemP) are simultaneously projected in the structure of nominal phrases in Dagara.

Dagara is also different from languages such as French in that the determiner can be combined with proper names in Dagara but not in French. This is shown below.

(14) Dagara

A Dar wa na.

the Dar came AFF

'Dar has come.'

(15) French

* Le Jean est venu.

the Jean is come

'Jean has come.'

In (14), the combination of *a* 'the' and *Dar*, a proper name, is perfectly acceptable. In contrast, the determiner *le* cannot be combined with *Jean* in French, as shown in (15). The possibility

of combining *a* 'the' and proper names in Dagara is attributed to the fact that *a* is used to mark an entity previously mentioned in the context. That is, in (14), *Dar* has been mentioned implicitly or explicitly in a previous discourse.

It is also worth mentioning that a nominal phrase can contain a possessor in the prenominal position in Dagara, as shown below.

(16) a. Ayuo nyɛ́-n (a) m bie.
Ayuo saw-AFF the my child
'Ayuo saw my child.'

b. * Ayuo nyɛ́-n m a bie.
Ayuo saw-AFF my the child
'Ayuo saw my child.'

c. Ayuo nyɛ́-n (a) Dar bie.
Ayuo saw-AFF the Dar child
'Ayuo saw Dar's child.'

d. * Ayuo nyɛ́-n (a) bie Dar.
Ayuo saw-AFF the child Dar
'Ayuo saw Dar's child.'

In (16a-b), the object nominal phrases consist of an optional determiner, a possessive pronoun, and a noun. As shown in these nominal phrases, when the determiner and the possessive co-occur, the determiner must precede the possessive pronoun. In (16c-d), the object nominal phrases contain an optional determiner and a possessor noun phrase. The possessor noun phrase must occur in the same position as the possessive pronoun. Then, (16d) is unacceptable because the possessor noun phrase *Dar* appears in the post-nominal position.

1.1.4. Coordination in Dagara

Sentences and nominal phrases are coordinated with different markers in Dagara. More specifically, while sentences or verb phrases are coordinated with the coordinating conjunction *ti*, coordination of nominal phrases is done with *ni*. These are shown below.

(17) a. Ayuo dà-n mobiil ti Dar dà wùr.
Ayuo bought-AFF car and Dar bought horse
'Ayuo bought a car and Dar bought a horse.'

b. Ayuo dì-n ziɛ ti nyù dãà.
Ayuo ate-AFF sauce and drank beer
'Ayuo ate sauce and drank beer.'

(17a) is an instance of coordination of two sentences (i.e. TPs) while (17b) illustrates coordination of two verb phrases in Dagara. As can be seen in these sentences, coordination of two TPs or two VPs is marked with *ti* 'and'.

Although languages like English use the same coordinating conjunction for clauses, VPs, and DPs, the coordinating conjunction for clauses and VPs is different from that for DPs in Dagara. Consider the following examples:

(18) a. Dar ni Ayuo wa na.
Dar and Ayuo came AFF
'Dar and Ayuo have come.'

b. * Dar ti Ayuo wa na.

Dar and Ayuo came AFF

'Dar and Ayuo has come.'

(19) a. Ayuo dà-n mobiil ni wùr.

Ayuo bought-AFF car and horse

'Ayuo bought a car and a horse.'

b. * Ayuo dà-n mobiil ti wùr.

Ayuo bought-AFF car and horse

'Ayuo bought a car and a horse.'

(18a) and (19a) are well-formed while (18b) and (19b) are not. In (18a), *Dar* and *Ayuo* are coordinated with the coordinating conjunction *ni* while in (18b) *Dar* and *Ayuo* are coordinated with the conjunction *ti*. The use of *ti* in (18) makes the sentence ill-formed. In (19a), *mobiil* and *wùr* are coordinated with *ni*. In (19b) coordination of *mobiil* and *wùr* is done with *ti* but the sentence is unacceptable. (18a-b) and (19a-b) indicate that nominal phrases cannot be coordinated with the coordinating conjunction *ti*.

Also note in passing that *ni* is used as a preposition in some contexts in the language. This is illustrated below.

(20) a. Ayuo wa na ni bie.

Ayuo came AFF with child

'Ayuo came with a child.'

b. Dar cɛ̀ na tiɛ̀ ni sʊɔ.

Dar cut AFF tree with knife.

'Dar cut the tree with a knife.'

In (20a-b), *ni bie* and *ni sʊɔ* are preposition phrases (PPs) headed by *ni*. The PP in (20a) is comitative. The PP in (20b) is instrumental. Although the preposition *ni* and the coordinating conjunction *ni* are pronounced in the same way, I assume that they are different syntactically (see Hien 2022b for details).

1.1.5. Relativization in Dagara

Relative clauses are formed in Dagara by raising the head nouns to the edges of the relative clauses and inserting a marker of relativization, namely *nan*, between the embedded subjects and the predicates (cf. Hien 2022b for details and Bodomo and Hiraiwa 2010 for a similar assumption about Dagaare). This is shown below.

(21) a. Ayuo nyɛ́ na [a daba 'lan **nan** dà a mobiil].

Ayuo saw AFF the man that REL bought the car

'Ayuo saw the man who bought the car.'

b. Ayuo nyɛ́ na [a mobiil 'lan Pol **nan** dà].

Ayuo saw AFF the car that Pol REL bought

'Ayuo saw the car which Pol bought.'

Let us consider the bracketed phrases in (21). They are nominal phrases modified by relative clauses. In other words, they are complex nominal phrases. In (21a-b), the relative clauses are formed by moving *a daba 'lan* and *a mobiil 'lan* respectively to the edges of the relative

clauses, which are assumed to be the specifier position of CP (Hien 2022b). Also, as shown in (21), the marker of the relativization, namely *nan*, is inserted between the embedded subjects and the predicates.

Note that the determiner *a* cannot be omitted in relative clauses in Dagara. This is shown below.

(22) a.? Ayuo nyɛ́ na [daba 'lan nan dà a mobiil].
Ayuo saw AFF man that who bought the car
'Ayuo saw that man who bought the car.'

b. ?? Ayuo nyɛ́ na [daba nan dà a mobiil].
Ayuo saw AFF man who bought the car
'Ayuo saw a man who bought the car.'

c. Ayuo nyɛ́ na [a daba nan dà a mobiil].
Ayuo saw AFF the man who bought the car
'Ayuo saw the man who bought the car.'

d. [$_{DP}$ [$_{D}$ a] [$_{CP}$ Subject [$_{C'}$ [$_{C}$ nan] [$_{TP}$ $_{tSubject}$ [$_{T'}$…]]]]]

Let us consider (22a-c) in comparison with (21a). In (22a), the determiner is omitted in the relative clause. In (22b), the determiner and the demonstrative are omitted. In (22c), only the demonstrative is omitted. (22a-b) are somewhat degraded while (22c) is not. Also note that (22b) is more degraded than (22a). The degradedness of (22a-b) is attributed to the omission of the determiner and the demonstrative. Since (22a-b) are degraded and (22c) is perfectly acceptable, I assume that the determiner is compulsory in relative clauses in Dagara while the demonstrative is optional. Following Hien (2022b), I assume the structure in (22d) for the relative clause in Dagara (see chapter 3 for the detailed structure).

1.2. Questions in Dagara

1.2.1. *Yes/no* Questions

Yes/no questions are formed in Dagara by attaching a final particle or final rising intonation to declarative sentences. This is shown below.

(23) a. Ayuo dà na mobiil.
Ayuo bought AFF car
'Ayuo bought a car.'

b. Ayuo dà na mobiil bii?
Ayuo bought AFF car Q
'Did Ayuo buy a car?'

c. Ayuo dà na mobiil (↗) ? (with a final rising intonation)
Ayuo bought AFF car
'Did Ayuo buy a car?'

(24) a. A bibiir wa na.
the children came AFF
'The children came.'

b. A bibiir wa na bii?
the children came AFF Q
'Did the children come?'

c. A bibiir wa na (↗)? (with final rising intonation)

the children came AFF

'Did the children come?'

(23a) and (24a) are declarative sentences and (23b-c) and (24b-c) are *yes/no* questions. (23b) and (24b) are formed by adding the final question particle *bii* to (23a) and (24a), respectively. This question particle can be absent in questions, as shown in (23c) and (24c). When the question particle is absent, final rising intonation is necessary to obtain the *yes/no* interrogative interpretation.

1.2.2. *Wh*-Questions in Dagara

Wh-questions are formed in two ways in Dagara: either by fronting *wh*-phrases or by leaving them in situ. These are illustrated below.

(25) a. Bò *(nu) *(ka) Ayuo dà ?

what FOC that Ayuo bought

'What was it that Ayuo bought?'

b. Ayuo dà-n bò ?

Ayuo bought-AFF what

'What did Ayuo buy?'

(25a-b) are *wh*-questions containing object *wh*-phrases. In (25a), the object *wh*-phrase is fronted, followed by a focus marker and a complementizer. The focus marker and the

complementizer cannot be omitted. In (25b), the object *wh*-phrase is in situ and the focus marker and the complementizer are absent.

Wh-questions containing subject *wh*-phrases are formed as shown in (26).

(26) a. Ànú nu nyɛ́ a bie ?
who FOC saw the child
'Who was it that saw the child?'

b. * Ànú nu ka nyɛ́ a bie ?
who FOC that saw the child
'Who was it that saw the child?'

c. * Ànú ka nyɛ́ a bie ?
who that saw the child
'Who saw the child?'

d. * Ànú nyɛ́ a bie ?
who saw the child
'Who saw the child?'

(26a) is perfectly acceptable while (26b-d) are not acceptable. In (26a), the subject *wh*-phrase appears in the left clausal periphery, where it precedes the focus marker. In this sentence, the complementizer *ka* must be absent. In (26b), the subject *wh*-phrase occurs in the left periphery of the clause, where it precedes the focus marker and the complementizer but the sentence is unacceptable. In (26c), the moved subject *wh*-phrase only precedes the complementizer *ka* and the focus marker is absent. In (26d), the focus marker and the complementizer are absent. The fact that (26a) is acceptable while (26b-d) are not indicates that moved subject *wh*-phrases must be accompanied by the focus marker but not by the

complementizer *ka*. In other words, the focus marker must be present while the complementizer *ka* must be absent in *wh*-questions with subject *wh*-phrases. (26d) indicates that *wh*-questions containing subject *wh*-phrases cannot be constructed by leaving them in situ. I will assume that the complementizer *ka* is null when the *wh*-phrase is a subject (see chapters 3 and 4 for details).

Next, *wh*-questions with adjunct *wh*-phrases are formed by fronting adjunct *wh*-phrases or leaving them in situ, as shown in (27).

(27) a. Nyinẽ na ka Ayuo cen ?
where FOC that Ayuo went
'Where was it that Ayuo went?'

b. * Nyinẽ Ayuo cen ?
where Ayuo went
'Where did Ayuo go?'

c. Ayuo cen-n nyinẽ ?
Ayuo went-AFF where
'Where did Ayuo go?'

(27a) is constructed by putting the adjunct *wh*-phrase *nyinẽ* in the initial position of the sentence, where it precedes the focus marker and the complementizer *ka*. The focus marker and the complementizer cannot be omitted, as shown in (27b). (27c), on the other hand, is formed by leaving the adjunct *wh*-phrase in situ. In (27c), the focus marker and the complementizer are absent.

1.2.3. On Sentence-Final Particles in *Wh*-Questions in Dagara

Let us consider whether *wh*-questions in Dagara can contain a final question particle. In many languages, *wh*-questions can take a question particle. This question particle is identical to the one found in *yes/no* questions in some languages but different from the *yes/no* question particle in other languages. Consider the following examples in Japanese:

(28) a. Taro-wa hon-o yomimasita ka?
Taro-TOP book-ACC read Q
'Did Taro read a book?

b. Taro-wa hon-o yonda no?
Taro-TOP book-ACC read Q
'Did Taro read a book?

(29) a. Taro-wa nani-o yomimasita ka?
Taro-TOP what-ACC read Q
'What did Taro read?'

b. Taro-wa nani-o yonda no?
Taro-TOP what-ACC read Q
'What did Taro read?

(28a-b) are *yes/no* questions and (29a-b) are *wh*-questions in Japanese. In (28a-b), the *yes/no* question interpretation is obtained due to the final particle *ka* and *no*, respectively. Interestingly, these particles occur in *wh*-questions, as shown in (29a-b).

Just like interrogative sentences in Japanese, interrogative sentences can contain a final question particle in Chinese. But unlike in Japanese, the question particle used in *yes/no* questions is different from the one used in *wh*-questions in Chinese. Consider the following examples from Cheng (1991):

(30) a. Qiaofong mai-le sheme ma
Qiaofong buy-ASP anything $Q_{Y/N}$
'Did Qiaofong buy anything?'

b. Qiaofong mai-le sheme ne
Qiaofong buy-ASP what Q_{WH}
'What did Qiaofong buy?

(30a) is a *yes/no* question and (30b) is a *wh*-question in Chinese. Cheng (1991) notes that while *yes/no* interrogative interpretation is obtained with *ma*, *wh*-question interpretation is obtained with *ne*.

Based on data like (29) and (30b), Cheng (1991) argues that the presence of question particles in Japanese and Chinese is responsible for the fact that their *wh*-phrases are in situ and that languages with *wh*-question particles are *wh-in-situ* languages. This assumption is framed in terms of the *clausal typing* hypothesis, as stated in (31).

(31) *Clausal typing* hypothesis (Cheng 1991: 29)

> Every clause needs to be typed. In the case of typing a *wh*-question, either a *wh*-particle in C^o is used or else fronting of a *wh*-word to the Spec of C^o is used, thereby typing a clause through C^o by Spec-Head agreement.

According to the *clausal typing* hypothesis, languages with *wh*-phrases in situ have a *wh*-question particle that contributes to the construction of the sentence. In languages without *wh*-question particles, *wh*-phrases must undergo movement to the left periphery of the sentence to derive the *wh*-question interpretation.

Though it seems to be intuitively appealing, the *clausal typing* hypothesis has been debated in the literature. Many scholars mention that languages with *wh*-question particles can also have *wh*-movement (e.g. Takahashi 1993, Lasnik and Saito 1992, Pesetsky 2000, Sulemana 2019, and Bruening and Tran 2006). Likewise, Dagara is a language without a *wh*-question particle that nonetheless can have *wh*-phrases in situ. Consider the following sentences:

(32) a. Ayuo dà-n bò (*bii)?
Ayuo bought-AFF what Q
'What did Ayuo buy?'

b. Ayuo cen-n nyinẽ (*bii)?
Ayuo went-AFF where Q
'Where did Ayuo go?'

(32a-b) are *wh*-questions with *wh*-phrases in situ in Dagara. These *wh*-questions cannot contain the question particle *bii*. If *bii* is added to these sentences, they become ungrammatical. This indicates that *bii* does not participate in the construction of *wh*-questions with *wh*-phrases in situ.

It is important to mention that Dagara has a question particle, namely *ya*, that can occur in yes/no questions and *wh*-questions. However, when this question particle occurs in a sentence, the sentence is interpreted as an echo question. This is shown below.

(33) a. Ka Ayuo nyɛ́ na a bie *(ya)?
that Ayuo saw AFF the child Q
'lit. Ayuo saw the child?'

b. Ka Ayuo nyɛ́-n ànú *(ya).
that Ayuo saw-AFF who Q
'Ayuo saw who?

(33a) is an echo *yes/no* question and (33b) is an echo-*wh*-question in Dagara. These questions contain a complementizer in the initial positions and a final question particle. The final question particle *ya* assigns the echo-question reading to (33a-b). Note that while an ordinary *wh*-question asks for new information, an echo question does not. Rather, it asks for confirmation of the information previously mentioned in the discourse. Then, echo-questions are different from ordinary *wh*-questions in that they contain an initial complementizer and the final question particle *ya*. I assume that *ya* should be considered as an echo-question particle. In this dissertation, I will not consider this echo-question particle unless it is relevant.

Finally, let us note that argument *wh*-phrases in Dagara are different from those in languages such as English, French, or Japanese in that they are marked for plural, just like usual nouns. Consider the following examples:

(34) a. sàn (father.SG) 'a father' b. sàn-minɛ (father-PL) 'fathers'
c. bò (what.SG) 'what' d. bina (what.PL) 'what'
e. ànú (who.SG) 'who' f. àn-minɛ (who-PL) 'who'

(34a-b) are usual nouns and (34c-f) are argument *wh*-phrases. As shown in (34c-f), the *wh*-phrases *bò* 'what' and *ànú* 'who' take a plural marker just as nouns do. In this study, I will

only use the singular argument *wh*-phrases unless their plural counterparts are relevant to the discussion.

1.3. The Research Questions and the Main Hypotheses

Four main research questions will be considered in this dissertation. They are shown below.

(35) a. Exactly how are *wh*-questions formed in Dagara?

b. What triggers overt movement of *wh*-phrases in *wh*-questions in this language?

c. How are *wh*-phrases in situ licensed in the language?

d. What can *wh*-questions in this language tell us about the theory of movement?

The purpose of this study is to provide answers to these questions.

To answer the research questions in (35), this study will make the following assumptions:

(36) a. *Wh*-questions are formed through a movement strategy and a *wh-in-situ* strategy in Dagara.

b. Overt movement of *wh*-phrases in Dagara is focus movement as it is triggered by the focus marker.

c. *Wh*-phrases are licensed by C via covert *wh*-movement.

d. Covert *wh*-movement and overt focus movement obey the same constraints in Dagara.

1.4. Data Collection

The data presented in this dissertation were collected in Burkina Faso (Dakoula and Ouagadougou) and Ghana (Wa and Jirapa).[3] I constructed well-formed and ill-formed Dagara sentences based on my native intuition and asked other native speakers (15 speakers) of Dagara for an acceptability judgment. The data were translated into Dagaare and judged by 20 Dagaare native speakers in Ghana. The sentences contain fronted *wh*-phrases and *wh*-phrases in situ, as illustrated below.

(37) Dagara

a. Bò nu ka Ayuo dà?
what FOC that Ayuo bought
'What was it that Ayuo bought?

b. Ayuo dà-n bò?
Ayuo bought-AFF what
'lit. Ayuo bought what?'

c. Bò ka Ayuo dà?
what that Ayuo bought
'What was it that Ayuo bought?

d. Bò nu Ayuo dà?
what FOC Ayuo bought
'What was it that Ayuo bought?

[3] The Dagara speakers in Burkina Faso I consulted were living in Ouagadougou and Dakoula (a village in the province of Ioba). As for the Dagaare speakers, I visited the places called Wa and Jirapa in the Northern part of Ghana and asked them to participate in the interview.

(38) Dagaare

a. Bong la ka Ayuo da?

what FOC that Ayuo bought

'What was it that Ayuo bought?

b. Ayuo da la bong?

Ayuo bought AFF what

'lit. Ayuo bought what?'

c. Bong ka Ayuo da?

what that Ayuo bought

'What was it that Ayuo bought?

d. Bong la Ayuo da?

what FOC Ayuo bought

'What was it that Ayuo bought?

Those native speakers of Dagara and Dagaare were asked to judge whether the sentences are perfect, acceptable, or bad. Perfect sentences received a score of 3, acceptable sentences received a score of 2, and bad sentences got a score of 1 (see chapter 2 for details).

1.5. The Outline of the Dissertation

The remainder of this dissertation is organized as follows. In chapter 2, I will describe how *wh*-questions are formed in Dagara in detail. I will show that *wh*-questions are formed through two main strategies. More specifically, I will show that they can be formed by moving *wh*-phrases to the left periphery of matrix or embedded clauses, or by leaving them in their underlying positions. Moved *wh*-phrases must be accompanied by a focus marker. In

the chapter, I will also show how multiple *wh*-questions are formed in the language. I will observe that although multiple *wh*-questions are mildly degraded in this language, their formation is subject to a constraint on the ordering of the *wh*-phrases. The chapter will end with an appendix where I will give an overview of how *wh*-questions are formed in Dagaare, the dialect of Dagara spoken in Ghana, and compare how *wh*-questions are formed in the two varieties of the language.

In chapter 3, I will closely examine *wh*-questions in Dagara with overt movement of *wh*-phrases, paying special attention to what triggers movement of those *wh*-phrases in overt syntax. In the chapter, I will argue that overt movement of *wh*-phrases is focus movement in Dagara. I will show that this instance of movement obeys locality constraints on movement such as the Complex NP Constraint, the Coordinate Structure Constraint, the Left Branch Condition, the Adjunct Condition, and the Anti-Locality Constraint.

Chapter 4 will examine *wh*-questions in the language with *wh*-phrases in situ. I will present data that indicate that *wh*-phrases undergo covert movement that obeys the same locality constraints as its overt counterpart does, and assume that covert movement of *wh*-phrases in situ is to check a *wh*-feature on C. The chapter will end with a consideration of two adjunct *wh*-phrases *bònusò* 'how come/why' and *ŋmɪn* 'where/what', which behave differently from other *wh*-phrases.

Chapter 5 will detail how multiple *wh*-questions are formed in Dagara. Based on the results of the acceptability test (shown in chapter 2), I will assume that the common strategy through which multiple *wh*-questions are formed in the language is fronting subject *wh*-phrases and leaving other *wh*-phrases in situ. Although multiple *wh*-questions can be constructed in this way, they are marginalized. I will argue that the fact that they are marginalized is attributed to the presence of *wh*-phrases in situ inside presupposition, the part of sentences following the focus marker. The chapter will also explain how multiple *wh*-questions are interpreted in the language.

Chapter 6 will conclude the study. I will summarize the entire dissertation and point out the significance of the study.

Chapter 2

Strategies for the Formation of *Wh*-Questions in Dagara

2.1. Introduction

It is standardly assumed in the literature that languages employ two main strategies to form *wh*-questions (Bruening and Tran 2006, Cheng 1991, Chepngetich et al. 2020, Muriungi 2005, Muriungi et al. 2014, Napaane 2015, and Sabel and Zeller 2006, among others). According to these researchers, a *wh*-question is formed by moving a *wh*-phrase to a certain position within the sentence or by leaving the *wh*-phrase in its underlying position. For Cheng (1991), a language cannot have both the movement strategy and the in situ strategy. Although languages such as English and Vietnamese seem to support Cheng's assumption, ones such as French and Chichuka do not. Consider the following examples:

(1) English

a. What did John buy?

b.* John bought what?[1]

(2) Vietnamese (Bruening and Tran 2006: 320)

a. Tân mua gì ?

Tan buy what

'What does Tan buy?'

b.* Gì Tân mua?

what Tan buy

'What does Tan buy?'

[1] (1b) is considered here as a direct question and not as an echo-question.

(1a) is a well-formed *wh*-question in English while (1b) is not. Likewise, (2a) is a grammatical sentence in Vietnamese while (2b) is not. As shown here, a *wh*-question is constructed in English by fronting a *wh*-phrase. On the other hand, Vietnamese leaves the *wh*-phrase in situ. A *wh*-phrase cannot be fronted in Vietnamese, as shown in (2b).

Although *wh*-questions in English and Vietnamese support Cheng's (1991) assumption that languages use either the movement strategy or the in situ strategy in the formation of *wh*-questions, French and Chichuka, as illustrated in (3a-b) and (4a-c), indicate that some languages employ both strategies to form *wh*-questions.

(3) French

a. Qui as-tu vu ? (movement strategy)
who have-you seen
'Who did you see?'

b. Tu as vu qui? (in situ strategy)
you have seen who
'Who did you see?'

(4) Chichuka (Bantu, East Africa) (Chepngetich et al. 2020: 81-82)

a. Kairitu karugire mbi? (in situ strategy)
girl cooked what
'What did the girl cook?'

b. Ni-mbi kairitu karugire? (movement strategy)
FOC-what girl cooked
'What did the girl cook?'

c. Kairitu ni-mbi karugire? (movement strategy)

girl FOC-what cooked

'What did the girl cook?'

In French, a *wh*-question is formed by moving a *wh*-phrase to the initial position of the sentence, as shown in (3a), or by leaving the *wh*-phrase in its base position as in (3b) (Bošković 1998, 2000, Chang 1997, Cheng 1991, Cheng and Rooryck 2000, Lasnik and Saito 1992, and Aoun et al. 1981, among others). Likewise, a *wh*-question can be formed in Chichuka through the movement strategy or the in situ strategy, as indicated in (4a-c). Movement of a *wh*-phrase in Chichuka can be to the initial position of the sentence, as in (4b), or to an intermediate position, as shown in (4c). The data in (1-4) indicate that languages use two strategies in one way or another to form a *wh*-question.

This chapter examines how *wh*-questions are constructed in Dagara. Indeed, it is argued by Napaane (2015) that *wh*-questions are formed by moving a *wh*-phrase to the initial position of the sentence in Dagara. This is illustrated below:

(5) a. Nyɪnɛ na fʊ zãã gã?

where FOC 2SG yesterday lie/sleep

'Where did you sleep yesterday?'

b. Bʊʊ na bɛ bʊr a be?

what FOC 3PL sow DET there

'What have they sowed there?'

c. Aa nʊ fʊ bʊɔlɛ?

who FOC 2SG call-IMPERF

'Who are you calling?'

d.* Bɛ bʊrɪ a be bʊʊ?

3PL sow-PERF DET there what

e.* Fʊ bʊɔlɛ ne aa-nʊ?

2SG call-IMPERF with who-FOC

f.* Fʊ bʊɔlɛ nɪ aa?

2SG call-IMPERF with who

(Napaane 2015:115)

According to Napaane (2015), (5a-c) are grammatical while (5d-f) are ungrammatical. (5a-c) are constructed by moving a *wh*-phrase to the clausal left-periphery. On the other hand, the *wh*-phrase is left in its underlying position in (5d-f). For Napaane, the ungrammaticality of (5d-f) is attributed to the fact that the *wh*-phrases are left in their base positions. Based on data such as (5a-f), Napaane claims that the main strategy through which *wh*-questions are constructed in the language is by moving a *wh*-phrase to the initial position of the sentence (see also Bodomo 1997, Bodomo and Hiraiwa 2010, and Hiraiwa et al. 2017 for a similar assumption about Dagaare).[2]

Although Napaane (2015) argues that a *wh*-question is formed in Dagara through a movement strategy, she also mentions that some *wh*-questions can be formed by leaving *wh*-phrases in situ, as illustrated below.

(6) a. A ŋmɛ̃n ŋmɪŋmɪn?

DET look-like how

'How is it?'

[2] As mentioned in chapter 1, Dagaare is one dialect of Dagara spoken in Ghana.

b. ŋmɪŋmɪn na a ŋmɛ̃?

how FOC DET look-like

'How is it?'

(7) a. Fʊ bɔbrɪ abobe?

2SG want which-ones

'Which ones do you want?'

b. Abobe na fʊ bɔbr?

which-ones FOC 2SG want

'Which ones do you want?'

(8) a. A dãã ɪn aŋmɪn?

DET pito be how-much

'How much is the pito?'

b. Aŋmɪn nɪ a dãã?

how-much be DET pito

'How much is the pito?'

(Napaane 2015:117)

Napaane observes that all the sentences are grammatical. As shown here, while (6a), (7a), and (8a) are formed through the in situ strategy (i.e. by leaving the *wh*-phases in situ), (6b), (7b), and (8b) are formed via the movement strategy (by moving the *wh*-phrases to the initial positions of the sentences). According to Napaane, though some *wh*-questions can be formed

by leaving *wh*-phrases in situ, moving *wh*-phrases to the left peripheries of clauses is the preferred way to form *wh*-questions in Dagara.

Note that although the data presented in Napaane (2015) are said to be from Dagara spoken in Burkina Faso (Northern Dagara), it is not clear which dialect (e.g. Dagara Wule, Lobr, Birifor, etc.) they are from. If the dialect in question is Dagara Wule, some details need to be added regarding the form of *wh*-phrases corresponding to *who* and *what* in the language. Indeed, the Dagara counterpart of *who* and *what* can change morphologically when they are accompanied by a focus marker. The changed *wh*-phrases cannot occur in situ. To the best of my knowledge, the subject and object *wh*-phrases used in Napaane (2015) undergo morphological changes after being associated with the focus marker, and hence they cannot be in situ. Accordingly, the position of the *wh*-phrases in (5d-f) has nothing to do with the ungrammaticality of the sentences. Rather, the fact that the *wh*-phrases that have undergone a morphological change in the clausal left-periphery are in situ is responsible for the ungrammaticality of those sentences.

This chapter aims to describe in detail how *wh*-questions are formed in Dagara and provide new observations by presenting new data from Dagara Wule, a dialect spoken only in Burkina Faso. I will argue that Dagara uses two main strategies (movement and in situ) to form *wh*-questions and that all *wh*-phrases can remain in situ. I will also show data that indicate that *ànʊ́* 'who' and *bò* 'what' can change to *àã̀* and *bòo*, respectively, when they are associated with a focus marker. *Wh*-phrases that undergo morphological changes cannot be in situ in Dagara.

The chapter is organized as follows: In section 2, I show that *wh*-questions can be formed through a movement strategy in Dagara. I show that *wh*-questions with subject *wh*-phrases, object *wh*-phrases, and adjunct *wh*-phrases are formed in the same way and that the movement involved in the formation of the *wh*-questions with object *wh*-phrases and adjunct *wh*-phrases can be long-distance or partial. In section 3, I present data that indicate that leaving a *wh*-phrase in its base position is another way of forming a *wh*-question in the language. Section 4 is about the morphological change of argument *wh*-phrases. Section 5

highlights two adjunct *wh*-phrases that behave differently from the other adjunct *wh*-phrases in Dagara. Section 6 considers how multiple *wh*-questions are formed in the language. In this section, I observe that multiple *wh*-questions are marginalized in Dagara and that when Dagara speakers try to construct a multiple *wh*-question, the ordering of the *wh*-phrases is fixed. Section 7 summaries the chapter. The chapter ends with an appendix, where I present data of Dagaare, the dialect of the language spoken in Ghana, and suggest that *wh*-questions are formed in the same way in the two dialects.

2.2. A Movement Strategy

2.2.1 Questions with Object *Wh*-phrases

Wh-questions can be constructed in Dagara by moving *wh*-phrases to the initial positions of sentences. Consider the following examples:

(9) a. Ànú *(nu) ka Ayuo nyέ __?[3]
who FOC that Ayuo saw
'Who was it that Ayuo saw?'

b. Bò *(nu) ka Zã dà __?
what FOC that John bought
'What was it that John bought?'

c. Ànú *(nu) ka Nancy ba nɔwnɔ __ ε?
who FOC that Nancy not love NEG.PART
'Who is it that Nancy does not love?'

[3] The underscore is used to show where the phrase is extracted from.

d. Ni-bʊor *(ru) ka a bie tʊ̀ __?

person-which FOC that the child insulted

'Which person was it that the child insulted?'

(9a-d) are questions where the objects are *wh*-phrases. In (9a-d), movement of the *wh*-phrases is local. That is, the object *wh*-phrases undergo movement to the left periphery of the clauses that they belong to. In these questions, *nu* is a focus marker and *ka* is a complementizer. Many Dagara speakers observe that the focus marker *nu* and the complementizer *ka* cannot be omitted in (9a-d).[4] I assume that (9a-d) are focus constructions in Dagara and the *wh*-phrases are focus constituents (i.e. In these *wh*-questions, the focus is put on the *wh*-phrases). Also, as shown in (9d), *nu* becomes *ru* when it follows *wh*-phrases ending in *–r*.

Besides, movement of object *wh*-phrases in Dagara can be long-distance. This is illustrated in (10a-c).

(10) a. Ànʊ́ *(nu) ka Ayuo yèl ka mobiil ŋmɛ na __?

who FOC that Ayuo said that car hit AFF

'Who was it that Ayuo said that a car hit?'

b. Bò *(nu) ka Zã sòwr ka a bie dé-n __?

what FOC that John asked that the child took-AFF

'What was it that John asked whether the child took?'

[4] Although many speakers of Dagara observe that *ka* cannot be omitted in questions with moved *wh*-phrases, some speakers claim that omitting it does not affect the grammaticality of the sentences.

c. Bi-bʊor *(ru) ka fʊ yèl ka Dar ŋmɛ na __?

child-which FOC that you said that Dar hit AFF.

'Which child was it that you said that Dar hit?'

In (10a-c), the object *wh*-phrases move from the embedded clauses to the initial positions of the matrix clauses. As shown here, object *wh*-phrases that undergo a long-distance movement is also associated with the focus marker *nu* and the complementizer *ka*. Just like (9a-d), I assume that (10a-c) are focus constructions.[5]

Note that movement of object *wh*-phrases can be partial (or *simple partial* in the sense of Fanselow (2017)). Partial movement of an object *wh*-phrase in Dagara consists in moving the object *wh*-phrase to an intermediate position of the sentence, as shown in (11a-b). It applies to *wh*-phrases in embedded clauses.

(11) a. Ayuo yèl ka ànʊ́ *(nu) ka mobiil ŋmɛ __?

Ayuo said that who FOC that car hit

'Who did Ayuo say that it was that a car hit?'

[5] As shown in chapter 1, the focus construction in Dagara consists in moving a focus constituent to the left of the focus marker *nu*. This is further illustrated in (ia-b).

(i) a. Ayuo *(nu) ka a bie tʊ̀ __.
Ayuo FOC that the child insulted
'lit. It was Ayuo that the child insulted.'

b. Dar *(nu) ka fʊ yèl ka Ayuo ŋmɛ na __.
Dar FOC that you said that Ayuo hit AFF
'lit. It was Dar that you said that Ayuo hit.'

(ia-b) are focus constructions. In these sentences, the focus is on *Ayuo* and *Dar*, the object DPs. To indicate that the focus in (ia-b) is on the object DPs, those object DPs are moved to the left of the marker *nu*.

b. Fʊ yèl ka bi-bʊor *(ru) ka Dar ŋmɛ_?

you said that child-which FOC that Dar hit

'Which child did you say that it was that Dar hit?'

In (11a-b), the *wh*-phrases are moved to intermediate positions of the clauses. In these questions, the focus marker *nu* and the complementizer *ka* must be associated with the moved *wh*-phrases as well. Thus, (9a-d), (10a-c), and (11a-b) are formed by moving object *wh*-phrases to the (matrix or embedded) clausal left-periphery, where they are accompanied by a focus marker and a complementizer. The focus marker cannot be omitted.

2.2.2. Questions with Subject *Wh*-phrases

Just like questions where the objects are *wh*-phrases, questions where the subjects are *wh*-phrases are constructed by fronting the subject *wh*-phrases to the left of a focus marker, as shown below.

(12) a. Ànú *(nu) nyɛ́ a bie?

who FOC saw the child

'Who was it that saw the child?'

b. Ànú *(nu) kòno a bè?

who FOC crying the there

'Who is it that is crying there?'

c. Bò *(nu) dʊ́n Ayuo?

what FOC bit Ayuo

'What was it that bit Ayuo?'

d. Bò *(nu) zɔrɔ a bè?

what FOC running the there

'What is it that is running there?'

e. Bi-bʊor *(ru) bɔrɔ a kʊɔn?

child-which FOC want the water

'Which child is it that wants the water?'

f. * Ànú nu ka nyɛ́ a bie?

who FOC that saw the child

'Who was it that saw the child?'

(12a-f) are questions in which the subjects are *wh*-phrases. They are formed by moving subject *wh*-phrases to the left of the focus marker. The focus marker is compulsory. Note that the complementizer *ka* is omitted in *wh*-questions with subject *wh*-phrases. As shown in (12f), if *ka* shows up in relevant *wh*-questions, the sentences become ungrammatical. I assume that the complementizer *ka* is null in (12a-e).

Also, unlike object *wh*-phrases, subject *wh*-phrases cannot move out of an embedded clause in Dagara. This is illustrated below:

(13) a. * Ànú nu Ayuo yèl ka __ dà na mobiil?

Who FOC Ayuo said that bought AFF car

'lit. Who was it that Ayuo said that bought a car?'

b. * Bò nu Ayuo yèl ka __ dù na a bie?

what FOC Ayuo said that bit AFF the child

'lit. What was it that Ayuo said that bit the child?'

c.* Bi-bʊor ru fʊ yèl ka __ tʊ̀ a Dar?
child-which FOC you said that insulted the Dar
'Which child was it that you said that insulted Dar?'

(14) a. Ayuo yèl la ka ànʊ́ *(nu) __ dà mobiil?
Ayuo said AFF that who FOC bought car
'Who did Ayuo say that it was that bought a car?'

b. Ayuo yèl la ka bò *(nu) __ dʊ̀ a bie?
Ayuo said AFF that what FOC bit the child
'What did Ayuo say that it was that bit the child?'

c. Fʊ yèl la ka bi-bʊor *(ru) __ tʊ̀ a Dar?
you said AFF that child-which FOC insulted the Dar
'lit. Which child did you say that it was that insulted Dar?'

(13a-c) are ungrammatical while (14a-c) are licit. In (13a-c), subject *wh*-phrases are moved out of embedded clauses to the left periphery of the matrix clauses, where they are associated with a focus marker. Movement of the subject *wh*-phrases out of the embedded clauses is responsible for the ungrammaticality of (13a-c). In (14a-c), the subject *wh*-phrases move to the left periphery of the embedded clauses, where they are also associated with a focus marker. Movement of subject *wh*-phrases within embedded clauses is licit. Then, (10a-c) and (13a-c) indicate that there are differences between movement of object *wh*-phrases and that of subject *wh*-phrases in Dagara.

2.2.3. Questions with Adjunct *Wh*-phrases

Questions containing adjunct *wh*-phrases can be formed by moving them to the left periphery of matrix clauses or embedded clauses, as shown below.

(15) a. Nyinẽ *(na) ka Ayuo cen?
where FOC that Ayuo went
'Where was it that Ayuo went?'

b. Dabʊor *(ra) ka Nancy wa?
when FOC that Nancy came
'When was it that Nancy came?'

c. ŋmɪŋmɪn *(na) ka fʊ máál a mobiil?
how FOC that you fixed the car
'How was it that you fixed the car?'

d. Aŋmín *(na) ka fʊ kʊ̀ a bie?[6]
How-much FOC that you gave the child
'How much was it that you gave to the child?'

(16) a. Nyinẽ *(na) ka Dar tiɛr ka ti dà na a mobiil __?
where FOC that Dar thought that we bought AFF the car
'Where was it that Dar thought that we bought the car?'

[6] Note that *aŋmín* is not an argument *wh*-phrase in Dagara. It is different from argument *wh*-phrases in that it does not take a plural marker or cannot be in the subject position.

b. Dar tiɛr ka nyinẽ *(na) ka ti dà na a mobiil __?

Dar thought that where FOC that we bought AFF the car

'Where did Dar think that it was that we bought the car?'

(17) a. Dabʊor *(ra) ka fʊ yèl ka Nancy na wa na __?

when FOC that you said that Nancy will come AFF

'When is it that you said that Nancy will come?'

b. Fʊ yèl ka dabʊor *(ra) ka Nancy na wa __ ?

you said that when FOC that Nancy will come

'When did you say that it is that Nancy will come?'

(18) a. ŋmɪŋmɪn *(na) ka fʊ yèl ka ba máál la a fʊ mobiil __ ?

how FOC that you said that they fixed AFF the your car

'How was it that you said that they fixed your car?'

b. Fʊ yèl la ka ŋmɪŋmɪn *(na) ka ba máál a fʊ mobiil __ ?

you said AFF that how FOC that they fixed the your car

'How did you say that it was that they fixed your car?'

(19) a. Aŋmín *(na) ka fʊ yèl ka ba máál la a fʊ mobiil _ ?

how-much FOC that you said that they fixed AFF the your car

'For how much did you say that they fixed your car?'

b. Fʊ yèl la ka aŋmín *(na) ka ba máál a fʊ mobiil _ ?

you said AFF that how-much FOC that they fixed the your car

'For how much did you say that it was that they fixed your car?'

In (15a-d), the adjunct *wh*-phrases are located in the initial positions of the matrix clauses. In (16a), (17a), (18a), and (19a), the adjunct *wh*-phrases undergo long-distance movement to the initial positions of the sentences. That is, the adjunct *wh*-phrases move from the embedded clauses to the initial positions of the matrix clauses. In (16b), (17b), (18b), and (19b), movement of the adjunct *wh*-phrases is partial (i.e. they only move to the periphery of the embedded clauses). Accordingly, *wh*-questions with adjunct *wh*-phrases are formed in Dagara by moving them to the left periphery of the matrix or embedded clauses.

Note that the focus marker, which is realized as *na* or *ra* depending on the preceding sounds, cannot be omitted when adjunct *wh*-phrases are moved. Thus, questions with object or adjunct *wh*-phrases in Dagara can be constructed by moving them long-distance or partially. On the other hand, questions with subject *wh*-phrases cannot be formed through long-distance movement. Thus, although movement of object *wh*-phrases and adjunct *wh*-phrases can be local or long-distance, movement of subject *wh*-phrases must be local in the language. Also, the focus marker that is associated with (singular) argument *wh*-phrases is realized as *nu* or *ru* while the one used with adjunct *wh*-phrases is *na* or *ra*. *Wh*-questions involving overt movement of *wh*-phrases will be considered in detail in chapter 3.

2.3. An In-Situ Strategy

Napaane (2015) observes that, except for some adjunct *wh*-phrases, *wh*-phrases cannot be in situ in Dagara. According to her, when *wh*-phrases are in situ, they produce ungrammatical sentences. Napaane offers the data below.

(20) a. Aa-nʊ ar a be?

who-FOC stand DET there

'Who is standing there?'

b.* Ar a be aa-nʊ?

stand DET there who-FOC

'Who is standing there?

(21) a. Bʊʊ-na bɛ bʊr a be?

what-FOC 3PL sow DET there

b.* Bɛ bʊri a be bʊʊ.

3PL sowed DET there what

'What have they sowed there?'

(Napaane 2015: 114-115)

(22) a. Nyinɛ na bɛ yi?

where FOC 3PL come-from

'Where do they come from?'

b.* Bɛ yin nyinɛ?

3SG come-from where

'You come from where?'

(Napaane 2015: 127)

The *wh*-phrases are fronted in (20a), (21a), and (22a), while they are in situ in (20b), (21b), and (22b). According to Napaane, (20b), (21b), and (22b) are ungrammatical. For her, their ungrammaticality is attributed to the fact that the *wh*-phrases are in situ.

Although Napaane (2015) mentions that object *wh*-phrases and some adjunct *wh*-phrases cannot be in situ in Dagara, more data indicate that leaving them in situ is actually possible and serves as another strategy through which *wh*-questions are formed in the language (see chapter 4 for detailed discussion about *wh-in-situ* in Dagara).

2.3.1. Object and Subject *Wh*-phrases in Situ

Wh-questions with object *wh*-phrases can also be formed in Dagara by leaving them in their underlying positions. This is illustrated below.

(23) a. Ayuo dà-n bò?
Ayuo bought-AFF what
'What did Ayuo buy?

b. Ayuo nyɛ́-n ànú?
Ayuo saw-AFF who
'Who did Ayuo see?'

c. Ayuo ŋmɛ-n bi-bʋor?
Ayuo hit-AFF child-which
'Which child did Ayuo hit?'

(23a-c) are questions where the objects are *wh*-phrases. As shown in (23a-c), questions with object *wh*-phrases can be formed by placing the object *wh*-phrases in their underlying positions. In (23a-c), though *bò* 'what', *ànú* 'who', and *bi-bʋor* 'which child' are in object

positions, many Dagara speakers observe that the sentences are licit. This indicates that leaving object *wh*-phrases in situ is another way of constructing *wh*-questions with object *wh*-phrases, unlike what is assumed by Napaane and Bodomo and Hiraiwa.

Note that object *wh*-phrases can be left in situ not only in matrix clauses but also in embedded clauses. Consider the data in (24a-c):

(24) a. Ayuo yèl la ka a bie dà-n bò?
Ayuo said AFF that the child bought-AFF what
'What did Ayuo said that the child bought.'

b. Ayuo sòwr ra ka a Dar dà-n mobiil-bʊɔ?
Ayuo asked AFF that the Dar bought-AFF car-which
'lit. Which car did Ayuo ask whether Dar bought?'

c. Ayuo sòwr ra Pol ka a bie dà-n bò ?
Ayuo asked AFF Paul that the child bought-AFF what
'Who did Ayuo ask whether the child bought what?'

In (24a-c), the object *wh*-phrases are left in their underlying positions in the embedded clauses. The fact that the object *wh*-phrases are in situ in the embedded clauses does not affect the grammaticality of the sentences.

Although object *wh*-phrases can be left in their underlying positions in Dagara *wh*-questions, subject *wh*-phrases cannot. Leaving a subject *wh*-phrase in situ in Dagara makes the sentence ungrammatical. This is shown below.

(25) a.* Bò dʊ̀n na Ayuo?

what bit AFF Ayuo

'lit. what bit Ayuo?'

b.* Ànú nyɛ́-n bie?

Who saw-AFF child

'lit. Who saw a child?'

c.* Bi-bʊor tú-n a Ayuo?

child-which insulted-AFF the Ayuo

'Which child insulted Ayuo?'

(25a-c) are questions with subject *wh*-phrases in situ. These sentences are ungrammatical. The ungrammaticality of (25a-c) indicates that questions where the subjects are *wh*-phrases cannot be formed through the in situ strategy in Dagara, unlike questions with an object *wh*-phrase.

Also, subject *wh*-phrases cannot be left in situ in embedded clauses. Leaving subject *wh*-phrases in situ makes the sentences ungrammatical. Consider the examples in (26a-c):

(26) a.* Ayuo yèl la ka ànú dà-n mobiil pálà?

Ayuo said AFF that who bought-AFF car new

'Who did Ayuo said that bought a new car?'

b.* Ayuo sòwr ra ka bò dʊ̀n-n a bie?

Ayuo asked AFF that what bit-AFF the child

'lit. What did Ayuo ask whether bit the child?'

c.?? Ayuo sòwr ra Dar ka ni-bʊɔ dà-n mobiil pálà ?

Ayuo asked AFF Dar that person-which bought-AFF car new

'lit. Ayuo ask Dar whether which person bought a new car?'

In (26a-c), *ànʊ́* 'who', *bò* 'what', and *ni-bʊɔ* 'which person' are subject *wh*-phrases. They cannot remain in their base positions in these questions. (25a-c) and (26a-c) indicate that a subject *wh*-phrase cannot remain in situ in a matrix and an embedded clause in Dagara. Thus, while object *wh*-phrases can be left in situ in Dagara, subject *wh*-phrases cannot.

2.3.2. Adjunct *Wh*-phrases in Situ

Just like questions with object *wh*-phrases, questions containing adjunct *wh*-phrases can be constructed by leaving them in situ. This is illustrated in (27a-d).

(27) a. Ayuo cen-n nyinẽ?

Ayuo went-AFF where

'Where did Ayuo go?'

b. Ayuo wa-n dabʊor?

Ayuo came-AFF when

'When did Ayuo come?'

c. Fʊ ɪ na ziɛ ŋmɪŋmɪn?

you did AFF sauce how

'What did you do with the sauce?'

(27a-d) are matrix questions containing adjunct *wh*-phrases in situ, and they are licit. This indicates that adjunct *wh*-phrases do not need to undergo movement in Dagara. That is, leaving adjunct *wh*-phrases in their base positions is also an option for forming a question in the language. Thus, questions with adjunct *wh*-phrases are formed in the same way as questions with object *wh*-phrases in Dagara.

Unlike subject *wh*-phrases and like object *wh*-phrases, adjunct *wh*-phrases can be left in situ in embedded clauses. Consider the data in (28a-c):

(28) a. Dar yèl ka Ayuo na wa-n dabʊor?
Dar said that Ayuo will come-AFF when
'When did Dar say that Ayuo will come?'

b. Ayuo sòwr ra ka a bie cen-n nyinẽ?
Ayuo asked AFF that the child went-AFF where
'Where did Ayuo asked whether the child went?'

c. Fʊ tiɛr ra ka ti mààl la a mobiil ŋmɪŋmɪn?
you thought AFF that we fixed AFF the car how
'How did you think that we fixed the car?'

(28a-d) are well-formed matrix questions. There, *dabʊor* 'when', *nyinẽ* 'where', and *ŋmɪŋmɪn* 'how' are in situ in the embedded clauses. This fact does not affect the grammaticality of the sentences. The data presented so far indicate that there is no difference between object *wh*-phrases and adjunct *wh*-phrases in this language.

It should be mentioned that a *wh*-question with a *wh*-phrase in situ is different from an echo-question in Dagara. As mentioned in chapter 1, a Dagara echo question requires the

presence of an initial complementizer and a final question particle. To understand how an echo question is formed in the language, let us consider the following data:

(29) [Context] John is in a conversation with Bill. Bill wants to report to John a piece of news according to which Ayuo bought a car and Dar went to Osaka. Bill would say:

a. Ka Ayuo dà-n mobiil.
that Ayuo bought-AFF car
'I heard that Ayuo bought a car.'

b. Ka Dar cen-n Osaka.
that Dar went-AFF Osaka
'I heard that Dar went to Osaka.'

The occurrence of *ka* in the initial position of the sentence indicates that Bill is reporting a piece of information that he got elsewhere. Suppose John could not hear well what Bill said that Ayuo bought, or where Bill said that Dar went. John would ask the following questions:

(30) a. Ka Ayuo dà-n bò ya ?
that Ayuo bought-AFF what Q
'Ayuo bought what?'

b. Ka Ayuo cen-n nyinẽ ya?
that Ayuo went-AFF where Q
'Ayuo went where?'

In (29a-b) and (30a-b), *ka* is a complementizer. This complementizer along with the question particle *ya* gives an echo-question reading. As mentioned in the previous chapter, an echo question does not ask for new information. Rather, it asks for confirmation of the information previously mentioned in the discourse. This way, echo questions are formed differently from ordinary *wh*-questions.

2.4. The Morphological Change of *Ànú* 'Who' and *Bò* 'What'

As mentioned earlier, *ànú* 'who' and *bò* 'what' can undergo a morphological change after they are moved to the initial position (or an intermediate position) of the sentence. Consider the data in (31a-b) and (32a-b):

(31) a. Ànú *(nu) ka Ayuo nyɛ́ __?
who FOC that Ayuo saw

b. Àan-nu ka Ayuo nyɛ́ __?
who-FOC that Ayuo saw
'Who was it that Ayuo saw?'

(32) a. Bò *(nu) ka Zã dà __?
what FOC that John bought
'What was it that John bought?'

b. Bòò-nu ka Zã dà __?
what-FOC that John bought
'What was it that John bought?'

(31a-b) are identical syntactically and semantically. Likewise, there is no syntactic or semantic difference between (32a) and (32b). As shown in (31a-b) and (32a-b), *ànʊ́* 'who' and *bò* 'what' can change into *àan* and *bòò*, respectively, when they are in the left periphery of a clause. Although the reason for changing *ànʊ́* and *bò* into *àan* and *bòò*, respectively, is not well known yet, I suspect that the change is a result of assimilation (also see Nerius 2013), a phonological process that is used to facilitate the pronunciation of focused argument *wh*-phrases. In other words, *ànʊ́* and *bò* are changed into *àan* and *bòò* to make their pronunciation, along with the focus marker, more rapid and effortless. Since the reason for changing *ànʊ́* and *bò* into *àan* and *bòò*, respectively, is to facilitate the pronunciation of the focused argument *wh*-phrases (i.e *ànʊ́ nu* and *bò nu*), this phonological transformation becomes unavailable when the focus marker is absent in the sentence. Consider the following examples:

(33) a.* Ayuo nyɛ́-n àan?
Ayuo saw-AFF who
b. Ayuo nyɛ́-n ànʊ́?
Ayuo saw-AFF who
'Who did Ayuo see?'

(34) a.* Zã dà-n bòò?
John bought-AFF what
b. Zã dà-n bò?
John bought-AFF what
'What did John buy?'

(33a) and (34a) are degraded in clear contrast with (33b) and (34b), respectively. In (33a) and (34a), the *wh*-phrases undergo the phonological process mentioned above. This phonological transformation is illicit since the *wh*-phrases are not associated with a focus marker. The ungrammaticality of (33a) and (34a) is then attributed to the fact that *ànʊ́* 'who' and *bò* 'what' undergo the phonological transformation illicitly. On the other hand, (33b) and (34b) are grammatical because the *wh*-phrases do not undergo the phonological transformation. I assume that the *wh*-phrases used in Napaane (2015) all undergo the phonological transformation mentioned here. Hence they cannot occur in a non-focal position (i.e. they cannot be in situ). Based on (31a-b), (32a-b), (33a-b), and (34a-b), I assume that phonology can affect the syntax of *wh*-questions in Dagara.

2.5. Two Special Adjunct *Wh*-Phrases

Two adjunct *wh*-phrases need special attention here. They are *bònusò* 'why/how-come' and *ŋmɪn* 'where/what'. Consider the following examples:

(35) a. Bònusò ka Ayuo kono?
how-come that Ayuo crying
'How come Ayuo is crying?'

b.* Ayuo kono bònusò?
Ayuo crying how-come
'How come Ayuo is crying?'

c. * Bònusò na ka Ayuo kono?
how-come FOC that Ayuo crying
'How come is it that Ayuo is crying?'

(35a) is grammatical while (35b-c) are ungrammatical sentences. The ungrammaticality of (35b) is attributed to the fact that *bònusò* is not in the initial position of the sentence. In other words, *bònusò* cannot occur inside a clause. (35c) is ungrammatical because *bònusò* and the focus marker co-occur. That is, *bònusò* cannot occur in the focus construction. Also, though many Dagara speakers consider *bònusò* to be the counterpart of *why*, I gloss it with *how come* rather than *why* for two reasons.

First, as Ochi (2004) mentions, though *how come* and *why* are both causal *wh*-phrases, they behave differently. For instance, while *why* allows local and long-distance construal, *how come* only allows local construal. This is shown in (36a-b).

(36) a. Why did John say Mary left?

b. How come John said Mary left?

(Ochi 2004: 30)

According to Ochi (2004), (36a) is ambiguous. In this sentence, the speaker asks for the reason for John's utterance or for the reason for Mary's departure according to John. On the other hand, (36b) is not ambiguous. It only asks for the reason for John's utterance (also see Collins 1991).

Besides, Ochi (2004) mentions that while *why* can participate in the construction of a multiple *wh*-question in English, *how come* cannot. Consider the following examples:

(37) a. Why did John eat what?

b.* How come John ate what?

(see Ochi 2004: 30)

According to Ochi (2004), (37a) is acceptable while (37b) is not. (37b) indicates that *how come* cannot be used in multiple *wh*-questions.

Just like *how come*, *bònusò* only allows local dependency. This is shown in (38).

(38) a. Bònusò ka Ayuo ba cen a loko-yir ι?
how-come that Ayuo not went the school NEG.PART
'How come Ayuo didn't go to school?'

b. Bònusò ka Pol yèl ka Ayuo ba cen a loko-yir ι?
how-come that Paul said that Ayuo not went the school NEG.PART
'How come Paul said that Ayuo didn't go to school?'

(38a-b) are well-formed questions. In (38a), the speaker asks for Ayuo's reason for not going to school. On the other hand, in (38b), the speaker asks for the reason why Paul said that Ayuo did not go to school. (38b) cannot mean *why did Ayuo not go to school.* I assume that *bònusò* is similar to *how come* since they do not allow long-distance dependency.

Also, *bònusò* cannot participate in the construction of a multiple *wh*-question. Consider the following examples:

(39) a. ? ànú nu kù bò?
Who FOC killed what
'Who killed what?'

b. Bònusò ka Ayuo kù a naab?
how-come that Ayuo killed the cow
How come Ayuo killed the cow?'

c.* Bònusò ka Ayuo ŋmɛ ànʊ́?

how-come that Ayuo hit who

'*How come Ayuo hit who?'

d.* Bònusò ka Ayuo kʊ̀ bò?

how-come that Ayuo killed what

'*How come Ayuo killed what?'

(39a) and (39c-d) are multiple *wh*-questions. Although there are Dagara speakers to whom (39a) is marginal, it is not completely unacceptable. (39b) is a licit single *wh*-question and (39c-d) are totally unacceptable multiple *wh*-questions. The degradedness of (39c-d) can be attributed to the fact that *bònusò* co-occurs with another *wh*-phrase. Thus, *bònusò* is always local and cannot occur in a multiple *wh*-question. This makes it similar to the English *how come*.

Besides, *ŋmɪn* 'where/what' needs special attention because it behaves differently from the other *wh*-phrases. Consider the following examples:

(40) a. Ayuo ɪ ŋmɪn?

Ayuo be where

'Where is Ayuo?'

b. Ayuo yèl la ka a bie ʊ̀ ɪ ŋmɪn?[7]

Ayuo said AFF that the child he do what

'What did Ayuo ask the child to do?'

[7] Note that the use of two subjects to refer to the same entity as shown in (40b) is only possible in embedded clauses. This indicates that *a bie ʊ̀ ɪ ŋmɪn* cannot be a matrix clause.

c.* ŋmɪn na ka Ayuo ɪ?

where FOC that Ayuo be.

d.* ŋmɪn na ka Ayuo yèl ka a bie ù ɪ ?

what FOC that Ayuo said that the child he do.

(40a-b) are grammatical while (40c-d) are not. (40c-d) are not acceptable because *ŋmɪn* is in the initial positions of the sentences. *Ŋmɪn*, which is always selected by the locative auxiliary ***ɪ*** 'to be', must occur in the final position of the sentence. Then, while *bònusò* cannot occur inside a clause, *ŋmɪn* always appears in a clause-internal position. Note that it does not have a proper English translation. It is translated into *where* in a matrix clause and when it is selected by "to be". On the other hand, when *ŋmɪn* is an embedded clause and is selected by a verb with the meaning of "to do", it is translated into *what*. Also note that (40b) is special in that two subjects occur in the embedded clause. The two subjects refer to the same entity. This is an instance of adnominal pronoun constructions, similar to the English construction ***we linguists*** *talk about languages*.

Just like *bònusò*, *ŋmɪn* is unable to occur in a multiple *wh*-question, as shown below.

(41) a.* Ànú nu ɪ ŋmɪn?

who FOC be where

'lit. Where is who?'

b. * Ànú nu yèl ka a bie ù ɪ ŋmɪn?

who FOC said that the child he do what

'who asked the child to do what?'

c.? Ayuo yèl la ka ànʊ́ ʊ̀ ɪ ŋmɪn?

Ayuo said AFF that who he do what

'Who did Ayuo ask to do what?'

(41a-b) are unacceptable. Many Dagara speakers do not accept (41c). In (41b-c), *ka* introduces the embedded clauses. The co-occurrence of *ànʊ́* 'who' and *ŋmɪn* 'where/what' affects the grammaticality of (41a-c). Based on these sentences, one can assume that if *ŋmɪn* is taken to be an argument meaning *what* and appears with a clause-mate *wh*-phrase, the sentence becomes marginally acceptable. However, if *ŋmɪn* and the clause-mate *wh*-phrase are separated by the clausal boundary, the result is worse.

The *wh*-phrases *bònusò* and *ŋmɪn* are special in that they behave differently from the other *wh*-phrases in the language: their distribution is limited. *Bònusò* must occur in the initial position of a (matrix or embedded) clause while *ŋmɪn* must be inside a clause.

2.6. Multiple *Wh*-Questions in Dagara

Although multiple *wh*-questions seem to be basically possible in Dagara, their acceptability varies from case to case. While many Dagara speakers accept multiple *wh*-questions and observe that they are mildly degraded, some speakers do not like them at all. According to many of my informants, multiple *wh*-questions containing moved subject *wh*-phrases and object or adjunct *wh*-phrases in situ, as shown in (42a), (43a), and (44a), are basically acceptable. However, multiple *wh*-questions in which all the *wh*-phrases undergo movement, as in (42b), (43b), and (44b), are ill-formed. Also, multiple *wh*-questions in which all the *wh*-phrases are in situ, as shown in (42d), are said to be unacceptable.

(42) a. ? Ànú nu nyɛ́ bò?

who FOC saw what

b.* Bò nu ka ànú nu nyɛ́?

what FOC that who FOC saw

c.?? Bò nu ka ànú nyɛ́?

what FOC that who saw

'Who saw what?

d. * Ayuo nyɛ́ bò nyinê?

Ayuo saw what where

'lit. Ayuo saw what where?'

(43) a.? Bò nu dʊn ànú?

what FOC bit who

b.* Ànú nu ka bò nu dʊn?

who FOC that what FOC bit

c.?? Ànú nu ka bò dʊn?

who FOC that what bit?

(44) a.? Ànú nu nyɛ́ Ayuo nyinê?

who FOC saw Ayuo where?

`Who was it that saw Ayuo where?'

b.* Nyinê na ka ànʊ́ nu nyɛ́ Ayuo?

where FOC that who FOC saw Ayuo

`Where was it that WHO saw Ayuo?'

c.?? Nyinê na ka ànʊ́ nyɛ́ Ayuo?

where FOC that who saw Ayuo

'Where was it that who saw Ayuo?'

In (42a), (43a), and (44a), the subject *wh*-phrases are fronted and followed by the object or adjunct *wh*-phrases in situ. This ordering of *wh*-phrases (i.e. subject *wh*-phrase > object *wh*-phrase, subject *wh*-phrase > adjunct *wh*-phrase) is the most acceptable for the construction of a multiple *wh*-question in Dagara.[8] (42b), (43b), and (44b) are unacceptable sentences. In these sentences, all the *wh*-phrases are moved to the clausal left-periphery, where they are associated with a focus marker. The ungrammaticality of (42b), (43b), and (44b) is attributed to the fact that all the *wh*-phrases are fronted and the presence of two focus markers in the clause (it is not possible to have two focus markers in a clause). (42c), (43c), and (44c)) are more degraded than (42a), (43a), and (44a). More than half of the informants found them to be more degraded. I assume that (42c), (43c), and (44c) are more degraded because of the subject *wh*-phrases in situ. As mentioned above, a subject *wh*-phrase cannot remain in situ in Dagara. Also, (42d) is ungrammatical. The ungrammaticality of (42d) indicates that questions containing object *wh*-phrases in situ and adjunct *wh*-phrases in situ are not acceptable in Dagara.

Note that the informants also observe that the ordering of *wh*-phrases where indirect object *wh*-phrases precede direct object *wh*-phrases, as shown in (45) and (46), is marginally acceptable in Dagara.

[8] The symbol > is used to indicate that the subject *wh*-phrase is higher than the object *wh*-phrase or the adjunct *wh*-phrase.

(45) a.? Ayuo kù-n ànú bò?

Ayuo gave-AFF whom what

'lit. Ayuo gave what to whom?'

b.? A daba ƴãw-n ànú bò?

the man cast-AFF whom what

'lit. The man cast which spell on whom?'

(46) a. ? Ayuo yèl la kù ànú ka Pol dà bò? [9]

Ayuo said AFF give who that Paul bought what

'lit. Ayuo said to whom that Paul bought what?'

b.? Ànú nu ka Ayuo yèl kù ka Pol dà na bò?

who FOC that Ayuo said give that Paul bought AFF what

'lit. To whom did Ayuo say that Paul bought what?'

(45a) contains a ditransitive verb corresponding to *give*. In this sentence, the two objects are *wh*-phrases. The indirect object *wh*-phrase precedes the direct object and the sentence is marginally acceptable. The same observation is made in (45b), where the verb corresponding to *cast* in Dagara means *cast a spell on someone*. (46a) contains an indirect *wh*-phrase in situ in the matrix clause and a direct object *wh*-phrase in situ in the embedded clause. (46b) contains an indirect object *wh*-phrase that is also fronted and followed by a direct object *wh*-phrase in situ. Looking at these data, one may say that the ordering where indirect object *wh*-phrases precede direct object *wh*-phrases is also marginally acceptable in this language. This

[9] In Dagara, the indirect object is marked with *kù*, which literally means 'give'.

raises the question as to why sentences like (42d) are completely ungrammatical. I will return to these data in chapter 5.

2.7. Summary

In this chapter, I have shown two main strategies through which *wh*-questions are formed in Dagara. *Wh*-questions can be formed by moving *wh*-phrases to the left periphery of matrix or embedded clauses, or by leaving them in their underlying positions. Moved *wh*-phrases must be associated with a focus marker. The focus marker is realized as *nu* when it is associated with a singular argument *wh*-phrase and as *na* when the *wh*-phrase is plural or an adjunct. The focus marker also undergoes a phonological change depending on the preceding sounds. For example, *nu* and *na* become *ru* and *ra*, respectively, when the preceding *wh*-phrase ends with /r/. This is shown below.

(47) a. Ãn **nu** wa.
Ann FOC came
'lit. It was Ann that came.'

b. Zãà **na** ka Ãn wa.
yesterday FOC that Ann came
'lit. It was yesterday that Ann came.'

c. Bi-bʊor **ru** tʊ́ a Ayuo?
child-which FOC insulted the Ayuo
'Which child was it that insulted Ayuo?'

d. Píír **ra** ka Ayuo dà.
sheep.PL FOC that Ayuo bought
'lit. It was sheep that Ayuo bought.'

The data in section 2.2. and 2.3. also indicate that there is a subject-object asymmetry in the language. While object *wh*-phrases can move out of embedded clauses, subject *wh*-phrases cannot. Also, object *wh*-phrases can be left in situ while subject *wh*-phrases cannot. Besides, while adjunct *wh*-phrases such as *dabvor* 'when', *ŋmɪnŋmɪn* 'how', *ŋyinê* 'where', and *aŋmɪn* 'how much'/ how many' can be moved or can be in situ, the position of *bònusò* 'how come' and *ŋmɪn* 'where/what' is fixed. Although *bònusò* and *ŋmɪn* have a fixed position in sentences, they also behave differently. While *bònusò* cannot occur inside a clause, *ŋmɪn* always appears in a clause-internal position.

This chapter also shows how multiple *wh*-questions are formed in the language. Although multiple *wh*-questions are mildly degraded in this language, their formation is subject to a constraint on the ordering of *wh*-phrases. Based on the data presented above, one can assume that subject *wh*-phrases must precede (in)direct object *wh*-phrases, and that indirect object *wh*-phrases precede direct object *wh*-phrases in Dagara.

Appendix: *Wh*-Questions in Dagaare

Bodomo and Hiraiwa (2010), Napaane (2015), and Hiraiwa et al. (2017) mention that Dagaare, the dialect of Dagara spoken in Ghana, is an obligatory *wh*-movement language. That is, *wh*-questions are formed in Dagaare by fronting *wh*-phrases, as illustrated in (1a).

(1) Dagaare

a.	Bong	la	ka	fo	da	nyɛ ?
	what	F	that	you	PAST	see
b.*	Fo	da		nyɛ	la	bong ?
	you	PAST		see	F	what

'What did you see?'

(Hiraiwa et al. 2017: 15)

(1a-b) are *wh*-questions in Dagaare. According to Hiraiwa et al. (2017), (1a) is grammatical while (1b) is ungrammatical**.** In (1a), *bong* 'what' undergoes movement from the object position to the initial position of the sentence while in (1b), it is left in situ. The ungrammaticality of (1b) is attributed to the fact that *bong* is in situ.

Although Bodomo and Hiraiwa (2010), Napaane (2015), and Hiraiwa et al. (2017) claim that *wh*-phrases cannot remain in situ in Dagaare, the Dagaare speakers I consulted in Wa and Jirapa in Ghana accepted *wh*-questions with *wh*-phrases in situ. Indeed, to verify the difference between Dagara (the dialect spoken in Burkina Faso) and Dagaare (the dialect in Ghana) in terms of how *wh*-questions are formed, *wh*-questions were constructed with the assistance of two native speakers of Dagaare living in Ghana and presented to 20 native

speakers of the dialect living in the same environment for an acceptability judgment.[10] As mentioned in chapter 1, I constructed *wh*-questions containing fronted *wh*-phrases and *wh*-phrases in situ, as shown below, and asked those native speakers of Dagaare whether the sentences are perfect, acceptable, or bad.

(2) a. Bong la ka Ayuo da?
what FOC that Ayuo bought
'What was it that Ayuo bought?

b. Ayuo da la bong?
Ayuo bought AFF what
'lit. Ayuo bought what?'

c. Bong ka Ayuo da?
what that Ayuo bought
'What was it that Ayuo bought?

d. Bong la Ayuo da?
what FOC Ayuo bought
'What was it that Ayuo bought?

Perfect sentences received a score of 3, acceptable sentences received a score of 2, and bad sentences got a score of 1. A t-test was conducted with Microsoft Excel 2016 to find out whether there is a significant difference between the informants' acceptability judgment of *wh*-questions with fronted *wh*-phrases and their acceptability judgment of *wh*-questions with

[10] I would like to thank Mr. Anthony Gyerch and Mr. Sampson Dogmalkuu for helping me to construct the Dagaare sentences used for the acceptability judgment in Ghana and especially for gathering the Dagaare speakers for me. Without their support, the data collection in Ghana would not have been possible.

wh-phrases in situ. The result indicates that there is no significant difference between the informants' judgment of *wh*-questions with fronted *wh*-phrases (M= 3; SD= 0) and their acceptability judgment of *wh*-questions with *wh*-phrases in situ (M= 2.48; 0.14); p= 2.18. Although the average score indicates that *wh-in-situ* ranks slightly lower, the p-value (p= 2.18) suggests that the difference is not significant at all. This is shown in table 1.

	Average	Standard Deviation	T-test
Fronted *wh*-phrases (Overall)	3	0	
Wh-phrases in situ (Overall)	2.48	0.14	2.18

Table 1: Summary of the result of informants' judgment of *wh*-question in Dagaare

As shown in Table 1, the *p*-value is bigger than 0.05 (p = 2.18), which means the informants considered *wh*-questions with *wh*-phrases in situ in Dagaare to be as acceptable as *wh*-questions with fronted *wh*-phrases. In fact, the Dagaare speakers we consulted considered *wh*-questions with *wh*-phrases in situ to be perfect or acceptable, but not bad.

A similar result was found in Dagara. The Dagara speakers I interviewed considered *wh*-questions with *wh*-phrases in situ to be as licit as *wh*-questions with fronted *wh*-phrases. This is shown by the result of the statistical analysis conducted with the Dagara data. A t-test indicates that there was no significant difference between the Dagara speakers' judgement of *wh*-question with fronted *wh*-phrases (M= 2.55, SD= 0.03) and their judgement of *wh*-questions with *wh*-phrases in situ (M= 2.52, SD = 0.18); p = 0.5. This is indicated in table 2.

	Average	Standard Deviation	T-test
Fronted *wh*-phrases (Overall)	2.55	0.03	
Wh-phrases in situ (Overall)	2.52	0.18	0.5

Table 2: Summary of the result of informants' judgment of *wh*-question in Dagara

The Dagara speakers judged *wh*-questions with *wh*-phrases in situ in Dagara as perfect or acceptable, but not bad.

Based on these results, I assume that there is no difference between Dagara and Dagaare in terms of how *wh*-questions are formed.[11] As in Dagara, *wh*-questions are formed in Dagaare by fronting a *wh*-phrase or by leaving the *wh*-phrase in its underlying position. This is illustrated below:

(3) a. Bong la ka Ayuo da?
what FOC that Ayuo bought
'What was it that Ayuo bought?'

b. Ayuo da la bong?
Ayuo bought AFF what
'What did Ayuo buy?'

(4) a. Ang la ka Ayuo nyɛ?
who FOC that Ayuo saw
'Who was it that Ayuo saw?'

[11] Bodomo and Hiraiwa's observation that sentences like (1b) are ungrammatical needs to be reconsidered since relevant sentences are judged acceptable by native speakers of Dagaare.

b. ?? Ayuo nyɛ la ang?

Ayuo saw AFF who

'Who did Ayuo see?'

(5) a. Yeng la ka Ayuo gaa?

where FOC that Ayuo went

'Where was it that Ayuo went?'

b. Ayuo gaa la yeng

Ayuo went AFF where

'Where did Ayuo go?'

(6) a. Dabʊɔ la ka Ayuo gaa?

when FOC that Ayuo left

'When was it that Ayuo left?'

b. Ayuo gaa la dabʊɔ

Ayuo left AFF when

'When did Ayuo leave?'

(7) a. ŋmɪnŋmɪn la ka Ayuo ŋmaa a yir?

how FOC that Ayuo built the house

'How was it that Ayuo built the house?'

b. Ayuo ŋmaa la a yir ŋmɪnŋmɪn?

Ayuo built AFF the house how

'How did Ayuo built the house?'

According to many native speakers of Dagaare, (3a-b), (4a-b) (5a-b), (6a-b), and (7a-b) are licit sentences. (3a), (4a), (5a), (6a), and (7a) are constructed by fronting *wh*-phrases. On the other hand, (3b), (4b), (5b), (7b), and (7b) are formed by leaving the *wh*-phrases in situ.

The object *wh*-phrase *what* can be translated into *bong* or *boɔlʊ* in Dagaare. Both of them can remain in situ, as shown in (8a-b).

(8) a. Ayuo nyɛ la bong?

Ayuo saw AFF what

'lit. Ayuo saw what?'

b. Ayuo nyɛ la boɔlʊ?

Ayuo saw AFF what

'lit. Ayuo saw what?'

According to the informants, (8a-b) have the same meaning. Although the nuance between *bong* and *boɔlʊ* is not known yet, I suspect that they may be from different sub-dialects of Dagaare. As Bodomo (1997) notes, the Dagaare Language Committee's report (1982) says that Dagaare is divided into sub-dialects: Northern, Central, Mid-Central, and Southern Dagaare. These sub-dialects show different pronunciations of lexical items. Then, it may be that the informants speak two sub-dialects that show lexical variations and use them interchangeably.

It should be mentioned that some informants, especially those who speak Dagara and Dagaare rejected (4b), repeated in (9), and said that *ang* cannot be inside clauses.[12]

(9) a. Ang la ka Ayuo nyɛ?
who FOC that Ayuo saw
'Who was it that Ayuo saw?'

b. ?? Ayuo nyɛ la ang?
Ayuo saw AFF who
'Who did Ayuo see?'

Informants with knowledge of Dagara (the dialect spoken in Burkina Faso) and Dagaare (the one spoken in Ghana) observe that (9b) is more degraded than (9a). As mentioned earlier, *àan* cannot stay in situ in Dagara because it has undergone a morphological change. Just like *àan* in Dagara, *ang* in (9b) seems to have undergone a morphological change, which I assume to be assimilation with the focus marker. This may indicate that *wh*-phrases can undergo a morphological change in Dagara and Dagaare and *wh*-phrases which have undergone a morphological change cannot stay in situ. The degradedness of (9b) may also indicate that some informants' acceptability judgment is influenced by their knowledge of Dagara. Since (9b) is not perfectly acceptable in Dagara, it may be that they transfer that knowledge to Dagaare.

Returning to the formation of *wh*-questions in Dagaare, informants also mention that *wh*-questions can be formed in Dagaare by moving *wh*-phrases from embedded clauses to the initial positions or intermediate positions of the sentences, or by leaving the *wh*-phrases in situ in the embedded clauses, as shown in (10a-c).

[12] I met those informants in Hamile (the border between Burkina Faso and Ghana).

(10) a. bong la ka Ayuo tiɛri ka fu da la?

what FOC that Ayuo thought that you bought AFF

'What was it that Ayuo thought that you bought?'

b. Ayuo tiɛri ka bong la ka fu da?

Ayuo thought that what FOC that you bought

'What was it that Ayuo thought that you bought?'

c. Ayuo tiɛri ka fu da la bong?

Ayuo thought that you bought AFF what

'What did Ayuo think that you bought?'

In (10a), *bong* undergoes long-distance movement to the initial position of the sentence. In (10b), movement of *bong* is partial. In (10c), *bong* is left in situ. Although *bong* is in situ in (10c), the sentence is grammatical. Then, Dagaare forms *wh*-questions through long-distance or partial movement of a *wh*-phrase, or by leaving a *wh*-phrase in its underlying position.

In addition, questions containing causal adjunct *wh*-phrases are constructed by placing them in the initial positions of the sentences. The counterpart of *why* or *how come* in Dagaare cannot appear inside a sentence. Consider the following examples:

(11) a. Bongso ka Ayuo ba wa?

why that Ayuo not came

'Why didn't Ayuo come?'

b.* Ayuo ba wa bongso?

Ayuo not came why

'Why didn't Ayuo come?'

(11a) is licit while (11b) is unacceptable in Dagaare. In (11a), *bongso* is placed in the initial position of the clause, where it is accompanied by the complementizer *ka*. In (11b), *bongso* is clause-internal but the sentence is unacceptable. This indicates that just like *bònusò* in Dagara, *bongso* cannot occur inside a clause in Dagaare.

Thus, though Dagaare and Dagara are argued to show phonological, syntactic, and lexical variations (Bodomo 1997:5, Some 2004, P. Some 2007, Napaane 2015, among others), I assume that there is no significant syntactic difference between the two dialects in terms of how *wh*-questions are formed and that the syntactic analysis proposed for Dagara *wh*-questions applies to *wh*-questions in Dagaare.

Chapter 3

Overt Movement of *Wh*-phases in Dagara

3.1. Introduction

In chapter 2, I have shown that *wh*-questions in Dagara are formed through two main strategies: *wh*-questions can be constructed by moving *wh*-phrases to the initial positions of the sentences, or by leaving them in their underlying positions (see also Napaane 2015). In the present chapter, I will argue that movement of *wh*-phrases in Dagara is focus movement and that the language should be regarded as a *wh-in-situ* language.

As mentioned in chapter 2, Bodomo and Hiraiwa (2004, 2010), Napaane (2015), and Hiraiwa et al. (2017) observe that Dagaare, the dialect of Dagara spoken in Ghana, is an obligatory *wh*-movement language. That is, in Dagaare, a *wh*-phrase must undergo movement to the initial position of the sentence for that sentence to be considered as a *wh*-question. This is illustrated in (1a).

(1) Dagaare

a. Bong la ka fo da nyɛ ?
what F that you PAST see

b. * Fo da nyɛ la bong ?
you PAST see F what
'What did you see?'
(Hiraiwa et al. 2017: 15)

In (1a), *bong* 'what' undergoes movement from the object position to the initial position of the sentence and it is a well-formed sentence. On the other hand, in (1b), the *wh*-phrase is left in situ. The ungrammaticality of (1b) can be attributed to the fact that *bong* is in situ.[1]

Although (1b) is said to be ungrammatical in Dagaare, its Dagara equivalent is acceptable. Consider the Dagara equivalents of (1a-b) in (2a-b):

(2) a. Bò nu ka fʊ ta nyɛ́ ?
what FOC that you PST see

b. Fʊ ta nyɛ́-n bò?
you PAST see-AFF what
'What did you see?'

While *bò* 'what' is dislocated and placed in the initial position of the sentence in (2a), it is in situ in (2b). Note that (2b) is still acceptable.

In this chapter, I argue that apparent *wh*-movement in Dagara should be viewed as focus movement and that this language should be regarded as a *wh-in-situ* language. More specifically, I argue that overt movement of *wh*-phrases in Dagara is an instance of focus movement that is triggered by the focus head (FOC^o) and obeys locality constraints on movement.

The chapter is organized as follows: In section 2, I will provide evidence that overt movement of *wh*-phrases in Dagara is focus movement. I will take the fact that a moved constituent is associated with a focus marker in the language to indicate that the focus marker is a functional head that attracts a *wh*-phrase and a non-*wh*-phrase to its specifier position in

[1]As mentioned in chapter 2, though Bodomo and Hiraiwa (2010), Hiraiwa et al. (2017), and Napaane (2015) claim that *wh*-phrases cannot remain in situ in Dagaare, many Dagaare speakers accepted all *wh*-questions with *wh*-phrases in situ during the sentence acceptability judgment test I administered in Wa and Jirapa in Ghana.

overt syntax. I will show that question-answers pairs and reduced answers (known as fragment answers in the literature) support this claim. The section will end with a consideration of *wh*-questions in other African languages with a morphological focus marker that behave like Dagara in terms of how *wh*-questions are formed. Section 3 will be devoted to the previous studies on the locality of *wh*-movement. Section 4 accounts for the locality of focus movement in Dagara. I will show that focus movement of *wh*-phrases obeys conditions on movement such as the Complex NP Constraint, the Adjunct Condition, the Coordinate Structure Constraint, and the Anti-Locality Constraint. Section 5 summarizes the chapter.

3.2. Overt *Wh*-Movement is Focus Movement in Dagara

As shown in chapter 2, *wh*-phrases can undergo movement in Dagara. Although this movement appears to be similar to *wh*-movement, I assume that it is an operation different from *wh*-movement. Consider (3):

(3) a. Ànú nu ka Ayuo nyɛ́?
who FOC that Ayuo saw

b. * Ànú ka Ayuo nyɛ́?
who that Ayuo saw

c. * Nu ka Ayuo nyɛ́ ànú?
FOC that Ayuo saw who
'Who was it that Ayuo saw?'

d. Ayuo nyɛ́-n ànú?
Ayuo saw-AFF who
'Who did Ayuo see?'

In (3a), *ànú* 'who' moves to the initial position of the sentence, where it precedes what we call a focus marker. The focus marker cannot be omitted, as shown in (3b). In (3c), *ànú* is left in situ but the sentence is ungrammatical. Based on Hiraiwa et al.'s (2017) assumption, one could argue that the ungrammaticality of (3c) is attributed to the fact that *ànú* is in situ. However, the position of *ànú* in (3c) does not have anything to do with the ungrammaticality of the sentence. Rather, (3c) is ungrammatical because of the focus marker in the initial position. In fact, when the focus marker appears in a sentence, a focused element must appear in the initial position of the clause, where it precedes the focus marker. In (3d), the *wh*-phrase remains in situ and the focus marker and the complementizer *ka* are omitted. The example is perfectly acceptable. Since the focus marker *nu* cannot be omitted from (3a), as shown in (3b), one can assume that movement of *ànú* 'who' in (3a) is triggered by the focus marker and that when it does not enter the derivation, the *wh*-phrase (*ànú*) remains in situ. Following this, I claim that overt movement of *wh*-phrases is focus movement in Dagara. The following observations support this claim.

3.2.1. The Presence of a Focus Marker

As mentioned above, a fronted *wh*-phrase must precede a focus marker in the language. That is, when a *wh*-phrase undergoes overt movement to the initial position of a sentence, it must be followed by a focus marker, as shown below:

(4) a. Ànú nu ka Ayuo nyɛ́?
who FOC that Ayuo saw
'Who was it that Ayuo saw?'

b. * Ànú ka Ayuo nyɛ́?
who that Ayuo saw
'Who did Ayuo see?'

(5) a. Bò nu ka Zã dà?

what FOC that John bought

'What was it that John bought?'

b. * Bò ka Zã dà?

what that John bought

'What did John buy?'

(6) a. Ànú nu ka Nancy ba nɔwnɔ ɛ?

who FOC that Nancy not love NEG.PART

'Who is it that Nancy does not love?'

b. * Ànú ka Nancy ba nɔwnɔ ɛ?

who that Nancy not love NEG.PART

'Who does Nancy not love?'

(7) a. Ni-bʋor ru ka a bie tʊ̀?

person-which FOC that the child insulted

Which person was it that the child insulted?'

b. * Ni-bʋor ka a bie tʊ̀?

person-which that the child insulted

'Which person did the child insult?'

While (4a), (5a), (6a), and (7a) are grammatical, (4b), (5b), (6b), and (7b) are ungrammatical. In these examples, *ànú* 'who', *bò* 'what', and *ni bʋor* 'which person' are object *wh*-phrases. As

indicated in (4a), (5a), (6a), and (7a), the moved object *wh*-phrases are accompanied by the focus marker. (4b), (5b), (6b), and (7b) are then ungrammatical because of the omission of the focus marker.

Just like object *wh*-phrases, a moved subject *wh*-phrase must be accompanied by a focus marker, as illustrated below:

(8) a. Ànú nu nyɛ́ a bie?
who FOC saw the child
'Who was it that saw the child?'

b. * Ànú nyɛ́ a bie?
who saw the child
'Who saw the child?'

(9) a. Ànú nu kòno a be?
who FOC crying the there
'Who is it that is crying there?'

b. * Ànú kòno a be?
who crying the there
'Who is crying there?'

(10) a. Ànú nu ba wa ɛ?
who FOC not came NEG.PART
'Who was it that did not come?'

b.* Ànú ba wa ɛ?

who not came NEG.PART

'Who did not come?'

(11) a. Bò nu dún Ayuo?

what FOC bit Ayuo

'What was it that bit Ayuo?'

b. * Bò dún Ayuo?

what bit Ayuo

'What bit Ayuo?'

(12) a. Bò nu zɔrɔ a be?

what FOC running the there

'What is it that is running there?'

b. * Bò zɔrɔ a be?

what running the there

'What is running there?'

(13) a. Bi-bʊor ru bɔrɔ a kʊɔn?

child-which FOC want the water

'Which child is it that wants the water?'

b. * Bi-bʊor bɔrɔ a kʊɔn?

child-which want the water

'Which child wants the water?'

(8a), (9a), (10a), (11a), (12a), and (13a) are well-formed sentences while (8b), (9b), (10b), (11b), (12b), and (13b) are unacceptable. As shown here, a moved subject *wh*-phrase is associated with a focus marker as well. The absence of the focus marker is responsible for the ungrammaticality of (8b), (9b), (10b), (11b), (12b), and (13b). I will return to the ungrammaticality of these sentences in the next section. Also note that *ka* is absent when a subject *wh*-phrase undergoes movement. I claim that it is null in this context.[2]

Not only must moved object *wh*-phrases and subject *wh*-phrases be associated with the focus marker, but adjunct *wh*-phrases must also be associated with the focus marker when they occur in the initial positions. This is shown below.

(14) a. Nyinẽ na ka Ayuo cen?

where FOC that Ayuo went

'Where was it that Ayuo went?'

[2] I assume that *ka* is similar to the English complementizer *that*, as shown below.

(i) a. Who did he say (*that) _ saw John?
b. Who did he say that John saw _?
c. Who did he say John saw_?

In English, *that* can be overt or null (Stowell 1981, Rizzi 1990, among others). As indicated in (ia), *that* must be null when an embedded subject *wh*-phrase undergoes movement to the left periphery of the sentence. On the other hand, it can be overt or null when an object *wh*-phrase is fronted, as shown in (ib-c). I assume that *ka* behaves in the same way as *that* in that it must be null when a subject *wh*-phrase is fronted.

b. * Nyinẽ ka Ayuo cen?

where that Ayuo went

'Where did Ayuo go?'

(15) a. Dabʊor ra ka Nancy wa?

when FOC that Nancy came

'When was it that Nancy came?'

b. * Dabʊor ka Nancy wa?

when that Nancy came

'When did Nancy come?'

(16) a. ŋmɪŋmɪn na ka fʊ máál a mobiil?

how FOC that you fixed the car

'How was it that you fixed the car?'

b. * ŋmɪŋmɪn ka fʊ máál a mobiil?

how that you fixed the car

'How did you fix the car?'

Again, while (14a), (15a), and (16a) are acceptable, (14b), (15b), and (16b) are unacceptable. The unacceptability of these examples can be attributed to the absence of the focus marker.

Also note that *wh*-phrases can move from embedded clauses to the initial positions of matrix clauses. This is illustrated below (The underlying positions of the *wh*-phrases are indicated with underscores).

(17) a. Ànú nu ka Ayuo yèl ka mobiil ŋmɛ na __?

who FOC that Ayuo said that car hit AFF

'Who was it that Ayuo said that a car hit?'

b.* Ànú ka Ayuo yèl ka mobiil ŋmɛ na __?

who that Ayuo said that car hit AFF

'Who did Ayuo say that a car hit?'

(18) a. Bò nu ka Zã sòwr ka a bie dé-n __?

what FOC that John asked that the child took-AFF

'What was it that John asked whether the child took?'

b.* Bò ka Zã sòwr ka a bie dé-n __?

what that John asked that the child took-AFF

'What did John ask whether the child took?'

(19) a.* Ànú nu ka Ayuo yèl ka __ dà na mobiil?

Who FOC that Ayuo said that bought AFF car

'lit. Who was it that Ayuo said that bought a car?'

b.* Bò nu ka Ayuo yèl ka __ dù na a bie?

what FOC that Ayuo said that bit AFF the child

'What was it that Ayuo said that bit the child?'

(20) a. Nyinê na ka Dar tiɛr ka ti dà na a mobiil _?
where FOC that Dar thought that we bought AFF the car
'Where was it that Dar thought that we bought the car?'

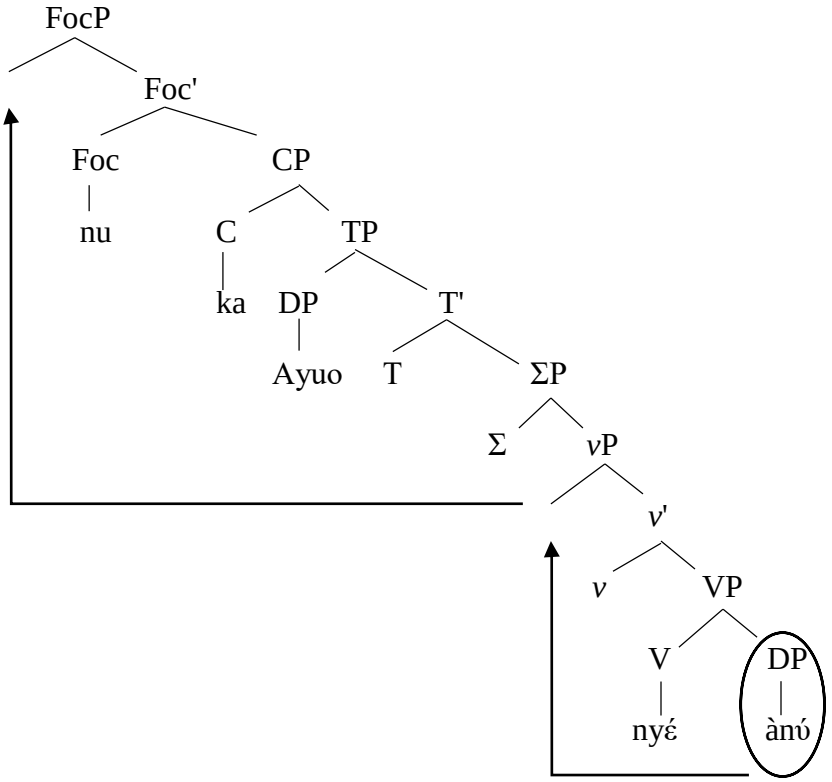
b.* Nyinê ka Dar tiɛr ka ti dà na a mobiil _?
where that Dar thought that we bought AFF the car
'Where did Dar think that we bought the car?'

(17a), (18a), and (20a) are acceptable sentences while (17b), (18b), (19a-b), and (20b) are unacceptable sentences. In (17a), (18a), and (20a), the *wh*-phrases undergo movement from the embedded clauses to the initial positions of the sentences, where they are associated with the focus marker. The focus marker cannot be omitted as shown in (17b), (18b), and (20b). While the *wh*-phrases in (17a-b) and (18a-b) are object *wh*-phrases, the ones in (20a-b) are adjunct *wh*-phrases. Note that the *wh*-phrases in (19a-b) are subject *wh*-phrases. The ungrammaticality of (19a-b) indicates that subject *wh*-phrases cannot undergo movement out of embedded clauses in Dagara. I will return to this later.

Thus, *wh*-phrases must precede the focus marker when they undergo movement in *wh*-questions. Also, while movement of object *wh*-phrases and adjunct *wh*-phrases can be local or long-distance, movement of subject *wh*-phrases must be local.

A moved *wh*-phrase must be accompanied by the focus marker in Dagara. I assume that the focus marker is a functional head that attracts focused elements including *wh*-phrases to its specifier position, as indicated in (21), which shows how (3a) is analyzed.

(21)



As shown in (21), I assume that the presence of the focus marker *nu* triggers overt movement of the DP *ànú*. According to many studies (e.g. Chomsky 1995, 2000, 2001, Alexiadou 2001, Carstens 2000, 2001, Danon 2011, Bošković 1998, 2000), some functional heads have uninterpretable and unvalued features that need to be checked. For Bošković (1998, 2000), strong uninterpretable and unvalued features trigger overt movement while weak features cause covert movement. Following this assumption, I assume that the focus head has a strong unvalued focus feature in Dagara that needs to be checked in overt syntax. Then, movement of the *wh*-phrase *ànú* in (21) is driven by the need for checking the strong unvalued focus feature of the focus head. I also assume that movement of *wh*-phrases to the specifier of FocP in Dagara drops by the specifier position of *v*P to satisfy the Phase Impenetrability Condition (Chomsky 2001). (3c), repeated in (22a), is then ruled out because the unvalued focus feature fails to be checked. As for sentences such as (4b), (5b), (6b), (7b), (14b), (15b), and (16b), repeated in (22b-h), I assume that the interrogative complementizer in Dagara does not have

a strong *wh*-feature and hence that it does not trigger overt *wh*-movement, as shown in (23), which indicates the structure of (22b).

(22) a. * Nu ka Ayuo nyɛ́ ànú?
FOC that Ayuo saw who
'Who did Ayuo see?'

b. * Ànú ka Ayuo nyɛ́?
who that Ayuo saw
'Who did Ayuo see?'

c.* Bò ka Zã dà?
what that John bought
'What did John buy?'

d. * Ànú ka Nancy ba nɔwnɔ ɛ?
who that Nancy not love NEG.PART
'Who does not Nancy love?'

e. * Ni-bʊor ka a bie tù?
person-which that the child insulted
'Which person did the child insult?'

f. * Nyinẽ ka Ayuo cen?
where that Ayuo went
'Where did Ayuo go?'

g. * Dabʊor ka Nancy wa?

when that Nancy came

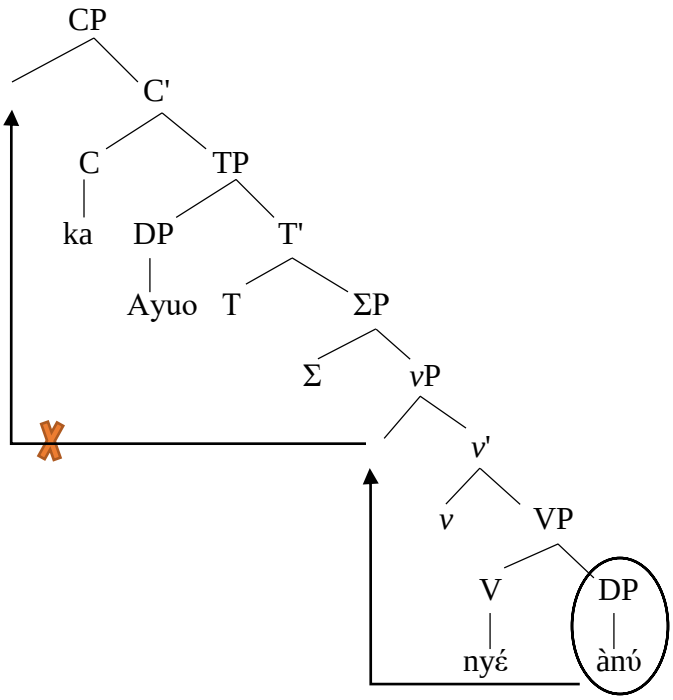
'When did Nancy come?'

h. * ŋmɪŋmɪn ka fʊ máál a mobiil?

how that you fixed the car

'How did you fix the car?'

(23)



When the focus marker is not in the derivation, as shown in (23), *wh*-phrases cannot undergo overt movement because the complementizer *ka* does not have a strong *wh*-feature. Then, I assume that the ungrammaticality of (22b-h) is attributed to the fact that the *wh*-phrases undergo overt movement.

Also, note that the head of FocP does not attract only *wh*-phrases. It attracts non-*wh*-phrases as well. Consider the sentence in (24a-d):

(24) a. Mobiil nu ka Ayuo dà.

car FOC that Ayuo bought

'It was a car that Ayou bought.'

b. Ayuo nu ka Zã nyɛ́.

Ayuo FOC that John saw

'It was Ayuo that John saw.'

c. Ayuo nu dà mobiil.

Ayuo FOC bought car

'It was Ayuo that bought a car.'

d. Zã nu nyɛ́ Ayuo.

John FOC saw Ayuo

'It was John that saw Ayuo.'

In (24a-d), *mobiil*, *Ayuo*, and *Zã*, all non-*wh*-phrases, undergo focus movement. This indicates that whenever the focus head is merged with CP in Dagara, its specifier position must be filled in. This is why, when it is present in the clausal structure, a DP (i.e. a *wh*-phrase or a non-*wh*-phrase) always moves to its specifier position. Accordingly, the fact that a focus marker is compulsory in sentences with a moved DP suggests that the movement in question is an instance of focus movement.

3.2.2. Question-Answer Pairs

A confirmation that movement of *wh*-phrases is focus movement comes from question-answer pairs. A *wh*-question and its answer must share the same syntactic structure in Dagara. That is, when a *wh*-phrase is focused in a question, the constituent corresponding to it in the answer must also be focused. This is illustrated below:

(25) a. Ànʊ́ nu ka Ayuo nyɛ́ __?

who FOC that Ayuo saw

'Who was it that Ayuo saw?'

b. Zã nu (ka Ayuo nyɛ́ __).

John FOC that Ayuo saw

'It was John that Ayuo saw.'

c. ? Ayuo nyɛ́ na Zã.

Ayuo saw AFF John

'Ayuo saw John.'

d. * Zã.

'John'

(26) a. Dabʊor ra ka Ayuo wa __?

when FOC that Ayuo came

'When was it that Ayuo came?'

b. Zãá na (ka Ayuo wa __).

yesterday FOC that Ayuo came

'It was yesterday that Ayuo came.'

c. ? Ayuo wa na zãá.

Ayuo came AFF yesterday

'Ayuo came yesterday.'

d. * Zãá.

'Yesterday'

(27) a. Ayuo nyɛ́-n ànú?

Ayuo saw-AFF who

'Who did Ayuo see?'

b. Ayuo nyɛ́-n Pol.

Ayuo saw-AFF Paul

'Ayuo saw Paul.'

c. ? Pol nu (ka Ayuo nyɛ́ __).

Paul FOC that Ayuo saw

'It was Paul that Ayuo saw.'

d. * Pol.

'PAUL'

(25a) is a question containing a focused *wh*-phrase. (25b) is a natural answer to (25a). In (25b), the phrase corresponding to *ànú* (i.e. *Zã̀* 'John') is focused. (25c-d) do not contain any focused constituent. Note that (25c-d) are not felicitous answers to (25a). Also, (26a) is a question that contains a focused *wh*-phrase and can be answered as in (26b). In (26b), the constituent corresponding to the focused *wh*-phrase is also focused. (26c-d) are not felicitous answers to (26a). In these answers, the target constituent is not focused. (27a) is a question with a *wh*-phrase in situ. This question can be answered as in (27b), but not as in (27c-d). In (27b), the constituent corresponding to the *wh*-phrase does not undergo focus movement. In (27c), however, the constituent corresponding to the *wh*-phrase is focused. (27d) is a reduced sentence (i.e. it consists of the constituent corresponding to the *wh*-phrase in (27a)) and is not felicitous as an answer to (27a). The data above can be explained by assuming that in the answer to a *wh*-question, the constituent corresponding to a focused *wh*-phrase must also undergo focus movement while the one corresponding to an in-situ *wh*-phrase must not undergo focus movement.

The parallelism between a *wh*-question and its answer is also observed in some other African languages. Consider the following examples:

(28) a. Eeňňu duf-e? (Oromo, Crushitic language)

Who come-3SG-PST

'Who came?'

b. Túrlluu (duf-e)

Tulluu come-3SG-PST

'Tulluu (came).'

c. Eeňňu-tu duf-e

Who-FOC come-3SG-PST

'Who was it that came?'

d. Fayyisaa-tu duf-e

Fayyisaa-FOC come-3SG-PST

'It was Fayyisaa who came?'

(Aboh 2007: 300-301)

In (28a), *Eeňňu*' who' is not focused while in (28c) it bears a focus marker and can be assumed to be focused. (28b) and (28d) are natural answers to (28a) and (28c), respectively. In (28b), *Túrlluu*, the target constituent of (28a), is not focused. On the other hand, *Túrlluu* is associated with a focus marker in (28d). *Túrlluu* is not focused in (28b) because *Eeňňu* is not focused in (28a). On the other hand, *Túrlluu* is focused in (28d) because *Eeňňu* is focused in (28c). Then, in a direct question in Oromo (a Cushitic language in the Afroasiatic language family), a focused *wh*-phrase requires a focused constituent (i.e. a constituent associated with a focus marker) in the answer while a non-focused *wh*-phrase does not (see Aboh 2007). I assume

that the answer to a *wh*-question containing a moved *wh*-phrase gives us a clue about the type of movement involved in the *wh*-question. For Dagara and Oromo *wh*-questions, since the constituent corresponding to a moved *wh*-phrase must be associated with a focus marker in the answer, I assume that the movement involved is focus movement.

Besides, reduced answers to direct *wh*-questions in Dagara, also known as fragment answers in the literature (Merchant 2004, Lipták and Aboh 2013), clearly indicate that overt movement of *wh*-phrases in Dagara is focus movement. Indeed, reduced answers to questions are answers to direct questions that consist of only the target constituents, as shown in (29c).

(29) a. Ànú nu ka Ayuo nyɛ́?
who FOC that Ayuo saw
'Who was it that Ayuo saw?'

b. Zã nu ka Ayuo nyɛ́.
John FOC that Ayuo saw
'It was John that Ayuo saw.'

c. Zã nu.
John FOC
'It was John.'

d. * Zã nu ka.
John FOC that

e. * Zã.
John

(29b-c) can be a response to (29a). (29d-e) cannot be an answer to (29a). (29c) consists of the target constituent, followed by the focus marker. The focus marker cannot be omitted. The omission of the focus marker is then responsible for the ungrammaticality of (29e). As for the ungrammaticality of (29d), it is attributed to the presence of the complementizer *ka*.

Note that a reduced answer to a *wh*-question is also possible in many languages. In English, for example, a reduced answer to a *wh*-question is assumed to derive from a full sentence. Consider the example in (30):

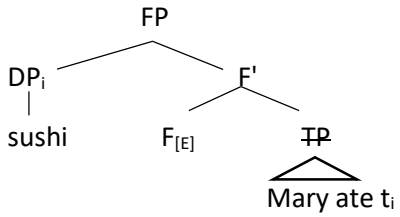
(30) a. What did Mary eat?

b. Mary ate sushi.

c. Sushi.

(30b-c) can be answers to (30a). It is assumed in the literature that (30c) derives from (30b) (Merchant 2004, Lipták and Aboh 2013, among others). According to Merchant (2004), the derivation of (30c) involves movement of *sushi* to the specifier position of a functional projection that he assumes to be FocP, followed by the deletion of TP. This is illustrated in (31).

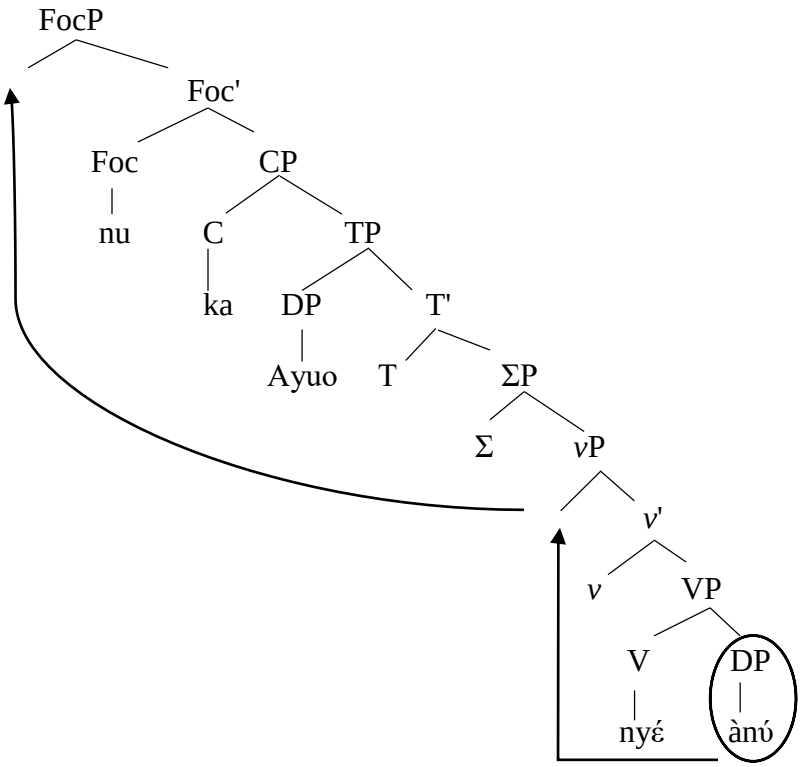
(31) Merchant's 2004 analysis of reduced answers



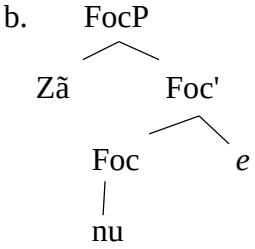
According to Merchant (2004), the pronounced DP moves to the left periphery of a functional projection above TP, and TP is elided.

Agreeing with Merchant's analysis, I assume that the derivation of reduced answers in Dagara involves focus movement of the target constituent and deletion of CP, as illustrated below. The reason for assuming this is that a reduced answer must precede the focus marker, as shown in (32b).

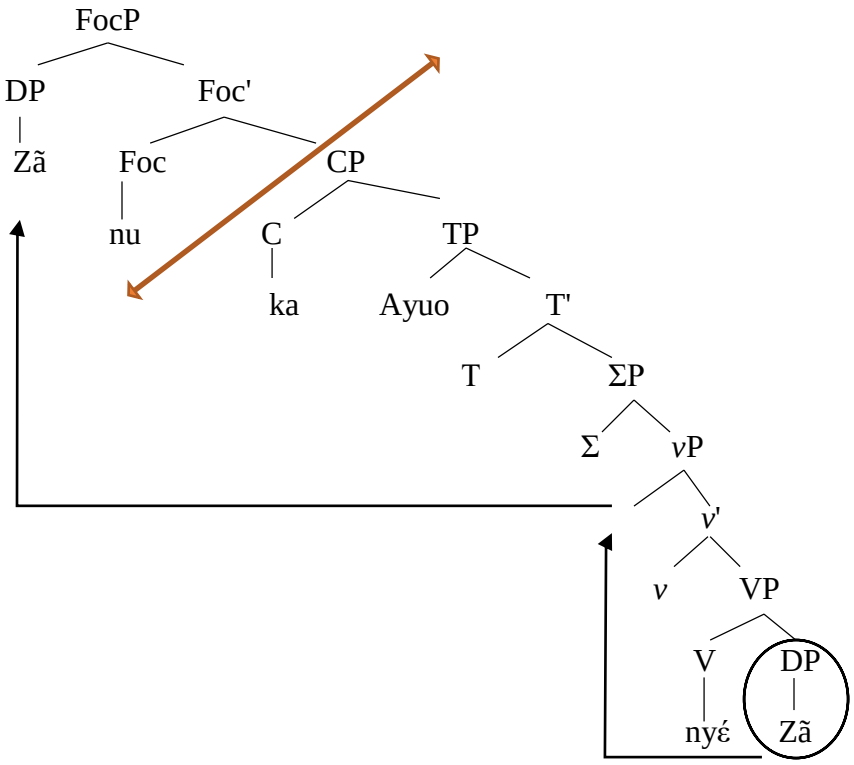
(32) a.



b.



c.



(32a-b) represent the structures of (29a) and (29c), respectively. I assume that the structure in (32b) derives from a focus construction parallel to (32a) and that the derivation involves movement of DP and ellipsis of CP, as shown in (32c). That is, to derive the structure in (32b), DP moves to the specifier position of FocP, where it checks the unvalued focus feature of FOC. After DP moves to [Spec, FocP], CP can be deleted. Ellipsis, such as sluicing, VP-ellipsis, and NP-ellipsis, is said to be licensed by a functional head that agrees with a phrase in its specifier position (Lobeck 1995, Saito and Murasugi 1990, Takahashi 1994, 2008, Johnson 2013, Murphy 2016). Then, since FOC is a functional head, it licenses the deletion of CP after its specifier position is filled in. I then claim that the Dagara data corroborate Merchant's analysis of reduced answers to direct questions and suggest that overt movement involved in *wh*-questions is indeed focus movement.

3.2.3. Cross-Linguistic Confirmation

As in Dagara, movement of *wh*-phrases occurs in many African languages only when a focus marker enters the derivation. However, when it is absent in the derivation, *wh*-phrases remain in situ. Consider the following data:

(33) Oromo (Cushitic language spoken in Ethiopia and Kenya, SOV)

a. **Eeňňu** duf-e?

Who come-3SG-PST

'Who came?'

b. **Eeňňu**-tu duf-e

Who-FOC come-3SG-PST

'Who was it that came?'

(Aboh 2007:300-301)

(34) Kitharaka (Bantu language spoken in Kenya, SVO)

a. N-**uu** John a-ring-ir-e ?

FOC-who John SP-Beat-T-FV

'Who did John beat?'

b. John a-ring- ir-e **uu**?

John SP-beat-T-FV who

'Who did John eat?'

(Muriungi 2004:10)

(35) Kinyarwanda (Bantu, Rwanda, Uganda, DR Congo, and Tanzania, SVO)

a. Umugore jiše **nde**?

woman killed who

'Who did the woman kill?'

b. Ni-**nde** umugore jiše ?

FOC-who woman kill

'Who did the woman kill?'

(Sabel and Zeller 2006: 173)

(36) Lele (Chadic, Chad, SVO)

a. Mè ày **wéy** gà?

2.SG marry who INTER

'Who did you marry?'

b. **Me** ba gol di gà?

what FOC see 3.SG INTER

'What did he see?'

(Aboh and Pfau 2010:103)

(37) Tuki (Bantu, Cameroon, SVO)

a. **Ane** odzu Puta a-nu-banam?

Who FOC Puta SM-F1-marry

'Who will Puta marry?'

b. Puta a-dingam **ane**?

Puta SM-loves who

'Who does Puta love?'

(Aboh 2007: 88-89)

In Oromo, Kitharaka, Kinyarwanda, Lele, and Tuki *wh*-questions, *wh*-phrases remain in situ in the absence of a focus marker. However, when there is a focus marker in the sentence, the *wh*-phrases must move to the clausal left periphery. Then, one can assume that the focus marker in these languages is a functional head that attracts a *wh*-phrase to its specifier position, as in Dagara, and that *wh*-phrases only undergo focus movement in overt syntax in those languages with a morphological focus marker.

3.3. The Locality of *Wh*-Movement

It is standardly assumed in the literature in generative syntax that movement of *wh*-phrases is subject to some locality constraints (e.g. Boeckx 2008a, b, 2012, Lasnik 1999, Sabel 2002, Takahashi 1994, Sulemana 2019, Ross 1967, Pesetsky 2000, Watanabe 2001, Huang 1982, among others). According to these researchers, there are structural configurations, called islands in the literature, out of which movement cannot take place. Since Ross (1967), syntacticians have enumerated several islands which ban extraction in natural languages. Some of them are shown below.

3.3.1. The Complex NP Constraint

A complex NP is an NP that consists of a noun head and a modifying relative clause or an appositive clause. According to Ross (1967) and subsequent studies, no element contained in a complex NP can be moved out of it. This is shown in (38a-b).

(38) a. I read [$_{DP}$ a statement [$_{RC}$ which was about that man]].

b. * The man who I read [$_{DP}$ a statement [$_{RC}$ which was about __]] is sick.

(Ross 1967: 119)

(38a-b) contain relative clauses. In English, relative clauses are considered as islands. Since relative clauses are islands, movement of *the man* out of the relative clause in (38b) is responsible for the ungrammaticality of the sentence.

3.3.2. The Coordinate Structure Constraint

Coordinate structures interfere with extraction, as illustrated below.

(39) a. He will put the chair between [$_{DP}$ some table and the big sofa].

b. * What sofa will he put the chair between [$_{DP}$ some table and __]?

(Ross 1967: 158)

According to Ross (1967) and related studies, a conjunct of a coordinate phrase cannot undergo movement. This, known as the Coordinate Structure Constraint, is responsible for the ungrammaticality of (39b).

3.3.3. The Left Branch Condition

The Left Branch Condition is a constraint that bans extraction of possessors in languages like English. This is shown below.

(40) a. * Whose did you buy __ book?

b. Whose book did you buy__?

(Boeckx 2008: 155)

Ross (1967) argues that the left-most constituent NP of a larger NP cannot be moved out of that larger NP. This condition, called the Left Branch Condition, explains why (40a) is not allowed. In (40b), the entire object NP is moved so as not to violate the condition.

3.3.4. The Adjunct Condition

Another constraint on movement discussed in the literature is the Adjunct Condition (Huang 1982). Consider the following example:

(41) ?? Who did you get jealous [because I talked to __]?

(41) is taken from Bayer and Cheng (2017:6). The bracketed *because*-clause is an adjunct. The *wh*-phrase *who* is extracted out of the adjunct in (41), which is degraded. The Adjunct Condition is a condition that prohibits extraction out of adjuncts.

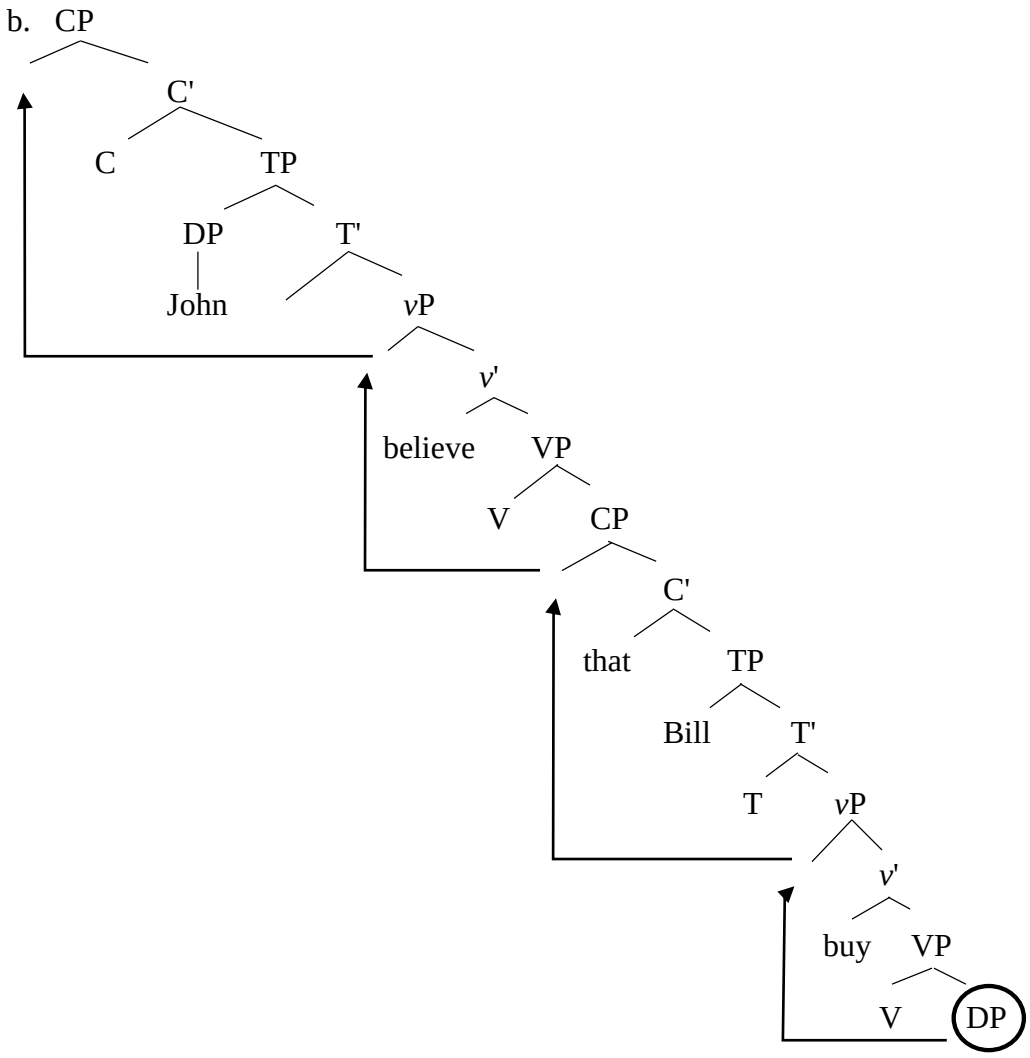
3.3.5. The Phase Impenetrability Condition

Many scholars also argue that movement of *wh*-phrases to the specifier position of C must step by the edge of phase heads (*v* and C), in accordance with the Phase Impenetrability Condition (PIC) (Chomsky 2000, 2001, Legate 2003, Sportiche et al. 2014, among others). According to them, "in a phase α with H, the domain of H is not accessible to operations outside α, only H and its edge are accessible to such operations, where the edge includes any specifiers of H and any adjunct to H" (see Chomsky 2000: 108 and Legate 2003: 503).

Following the Phase Impenetrability Condition, long-distance movement of *wh*-phrases is explained by assuming that the movement occurs successive-cyclically, as shown below.

(42) a. [$_{CP}$ Which book did John believe [$_{CP}$ that Bill bought __]]]?

b.



(42b) represents the structure of (42a). As shown in (42b), movement of *which book* to the initial position of the sentence stops at the specifier position of *v*P and each CP, which does not violate the Phase Impenetrability Condition.

3.3.6. The Anti-Locality Constraint

Following the idea that long-distance movement proceeds stepwise due to the PIC, Erlewine (2016, 2020) and Deal (2019) claim that sentences that used to be considered as exhibiting *that*-trace effects in English should be reanalyzed as violating a condition on movement called the Anti-Locality Constraint, defined in (43).

(43) Erlewine's (2016, 2020) Anti-Locality Constraint:

a. Movement of a phrase from the specifier of XP must cross a maximal projection other than XP.

b. Movement from position α to β crosses γ if and only if γ dominates α but does not dominates β.

(Erlewine 2020: 2)

The condition in (43) is responsible for the ungrammaticality of the sentence in (44a).

(44) a. * Who did he say that __ bought a car?

b. Who did he say __ bought a car?

c. What did he say that John bought __ ?

d. What did he say John bought __ ?

(44a) is ungrammatical while (44b-c) are grammatical. In (44a-b), the subjects of the embedded clauses are moved into the matrix clauses. Likewise, in (44c), the object of the embedded clause is moved into the matrix clause. Note that the embedded clauses are introduced by the complementizer *that* in (44a) and (44c). The complementizer is null in (44b) and (44d). Initially, (44a) was analyzed as exhibiting the effect of the *that*-trace filter

(Chomsky and Lasnik 1977). However, Erlewine (2020) claims that the complementizer trace effect in (44a) is due to the Anti-Locality Constraint. For him, when the complementizer is overt, movement of the subject from the specifier position of TP lands in the specifier position of the lower C, realized as *that*. This movement is too short and is banned by the Anti-Locality Constraints. Movement of subject *wh*-phrases from the specifier position of TP to the specifier position of the lower C is too short because it does not cross a maximal projection other than TP. On the other hand, when the complementizer is null, movement of the subject of the embedded clause lands in the specifier position of the higher C (i.e. at the edge of the matrix clause). This movement is licit vis-à-vis the condition stated in (43). Also, movement of the object of an embedded clause to the specifier position of the lower C is possible as it does not violate the Anti-Locality Constraint. This seems plausible when we consider the sentences in (45a-d).

(45) a. * [$_{CP}$ What [$_{TP}$ do you think [$_{CP}$ __ that [$_{TP}$ __ is [$_{PRED}$ __ in the box]]]]]?

b. [$_{CP}$ What [$_{TP}$ do you think [$_{CP}$ __ that [$_{TP}$ there is [$_{PRED}$ __ in the box]]]]]?

c. * [$_{CP}$ Who [$_{TP}$ did she say [$_{CP}$ __ that [$_{TP}$ __ would regret his word?

d. [$_{CP}$ Who [$_{TP}$ did she say [$_{CP}$ _that [$_{AdvP}$ tomorrow [$_{TP}$ _ would regret his word?

(after Erlewine 2020:6)

(45a) and (45c) are ungrammatical while (45b) and (45d) are acceptable. According to Erlewine, the presence of *there* and *tomorrow* in (45b) and (45d), respectively, makes the distance of movement of the embedded subjects as long as it should be. In contrast, (45a) and (45c) are ungrammatical because the distance of movement of the embedded subjects from the specifier positions of TP to the edges of the embedded clauses is too short and disallowed. Overt movement of *wh*-phrases needs to obey the PIC and the Anti-Locality Constraint. That is, it should be local but not too short. Long-distance movement, whether out of an island or not, is argued to proceed successive cyclicly through the intermediate phasal edges to the

edges of the matrix clauses. However, when one step is too short, it is ruled out by the Anti-Locality Constraint resulting in an ungrammatical sentence.

In what follows, I will show that overt focus movement in Dagara is subject to these conditions on movement as well.

3.4. On the Locality of Focus Movement in Dagara

3.4.1. The Complex NP Constraint Effects

Focus movement in Dagara is sensitive to the Complex NP Constraint. That is, a *wh*-phrase cannot move out of a complex NP (i.e. an NP modified by a relative clause), as shown below.

(46) a. Dar dà-n [$_{DP}$ a sɛbɛ 'lan [$_{RC}$ Zã nan ta sɛb kù Mary]].
Dar bought-AFF the book that John REL PST wrote give Mary.
'Dar bought that book John wrote for Mary.'

b.* Ànú nu ka Dar dà [$_{DP}$ a sɛbɛ 'lan [$_{RC}$ Zã
who FOC that Dar bought the book that John
nan ta sɛb kù __]]?
REL PST wrote give
'lit. *Who was it that Dar bought that book which John wrote__ for __?'

c. * Mary nu ka Dar dà [$_{DP}$ a sɛbɛ 'lan [$_{RC}$ Zã
Mary FOC that Dar bought the book that John
nan ta sɛb kù __]].
REL PST wrote give
'lit. *It was Mary that Ayuo bought that book which John wrote __ for __.'

(47) a. Dar nyɛ́ na [$_{DP}$ a daba 'lan [$_{RC}$ nan ta tʊ̀ Ayuo]].
Dar saw AFF the man that REL PST insulted Ayuo
'Dar saw that man who insulted Ayuo.'

b.* Ànú nu ka Dar nyɛ́ [$_{DP}$ a daba 'lan [$_{RC}$ nan ta tʊ̀ __]]?
who FOC that Dar saw the man that REL PST insulted
'*Who was it Dar saw the man who insulted?

c.* Ayuo nu ka Dar nyɛ́ [$_{DP}$ a daba 'lan [$_{RC}$ nan ta tʊ̀ __]].
Ayuo FOC that Dar saw the man that REL PST insulted
'*It was Ayuo that Dar saw the man who insulted.'

In (46) and (47), the bracketed phrases are DPs modified by relative clauses. In these sentences, *a sɛbɛ 'lan* and *a daba 'lan* are moved to the edges of the embedded clauses, which I assume to be the specifier position of CP, to form the relative clauses. Following Bodomo and Hiraiwa (2010), I assume that relative clauses are formed in Dagara by raising the head nouns to the edges of the embedded clauses and inserting a marker of relativization, namely *nan*, between the embedded subjects and the predicates (also see Hien 2022b), as shown in (48).[3]

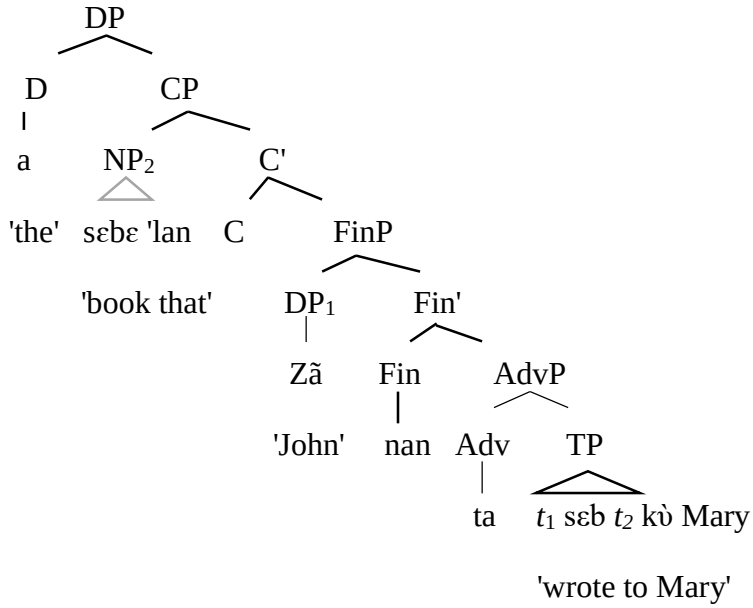
[3] I assume that there is a functional projection, referred to as AdvP in (48a-b), between between the embedded subjects and the predicates and that it is occupied by *ta* or adverbs, as shown below.

(i) a. Dar dà-n [$_{DP}$ a sɛbɛ 'lan [$_{RC}$ Zã nan **cãà** sɛɔrɔ]].
Dar bought-AFF the book that John REL still write.
'Dar bought that book John is still writing.'

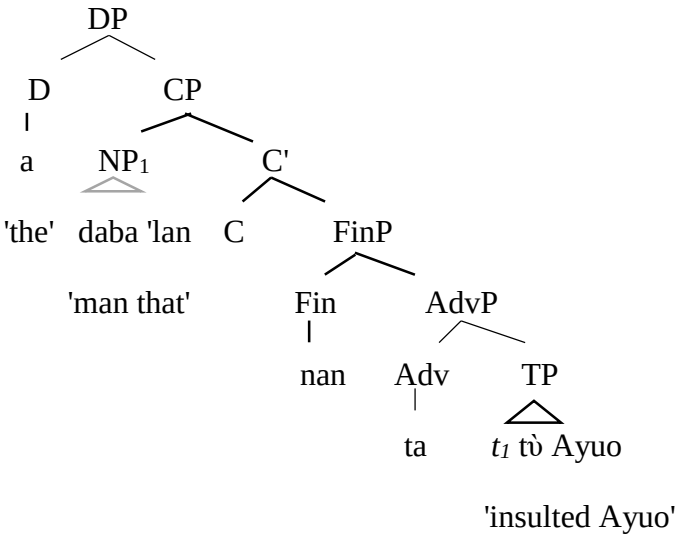
b. Dar dà-n [$_{DP}$ a sɛbɛ 'lan [$_{RC}$ Zã nan **zãà** sɛɔrɔ]].
Dar bought-AFF the book that John REL yesterday write.
'Dar bought that book John was writing yesterday.'

As shown in (ia-b), the adverbial phrases ***cãà*** 'still' and ***zãà*** 'yesterday' can occur inside relative clauses, namely between the embedded subjects and the the predicates (also see Bodomo and Hiraiwa 2010 for a similar observation in Dagaare).

(48) a.



b.



In (48a-b), which are the structures of (46a) and (47a), respectively, the marker of relativization, namely *nan*, is considered to occupy the head of Finite Phase. In (48a), the subject moves from the specifier position of TP to the specifier position of FinP. Also, the head noun undergoes movement from the object position to the specifier position of CP, which is selected by D. In (48b), the subject moves from the specifier position of TP to the specifier position of CP, which is also selected by D. (48a) is the structure of a relative clause

construction whose head noun is an object and (48b) represents the structure of a relative clause construction with a subject noun phrase as the head noun. When DPs modified by relative clauses are formed, no constituent can move out of them. (46b-c) and (47b-c) are ungrammatical because *ànú, Mary, ànú,* and *Ayuo* move out of the relative clauses in violation of the Complex NP Constraint.

3.4.2. The Coordinate Structure Constraint

Overt focus movement of *wh*-phrases in Dagara also obeys the Coordinate Structure Constraint. Consider the following examples:

(49) a. A bie 'lan tú na [$_{DP}$ Ayuo ni Pol] zãa.
the child that insulted AFF Ayuo and Paul yesterday
'That child insulted Ayuo and Paul yesterday.'

b.* Ànú nu ka a bie 'lan tú [$_{DP}$ Ayuo ni __] zãa?
who FOC that the child that insulted Ayuo and yesterday
'Who was it that that child insulted [Ayuo and__] yesterday?

c. * Pol nu ka a bie 'lan tú [$_{DP}$ Ayuo ni __] zãa.
Paul FOC that the child that insulted Ayuo and yesterday
'lit. *It was Paul that that child insulted [Ayuo and__] yesterday.'

In (49a-c), the bracketed phrases are coordinated nominal phrases. As shown in (49b-c), a conjunct of the coordinated phrase cannot undergo movement out of the coordinate structure in conformity to the Coordinate Structure Constraint.

3.4.3. The Left Branch Condition

As in English, a noun phrase functioning the possessor of a nominal phrase cannot undergo focus movement in Dagara. That is, possessors cannot be extracted in this language. This is illustrated below.

(50) a. Dar nyɛ́ na Ayuo ma.
Dar saw AFF Ayuo mother
'Dar saw Ayuo's mother.'

b. * Ànú nu ka Dar nyɛ́ __ ma?
who FOC that Dar saw mother
'*Whose was it that Dar saw __ mother?'

c.* Ayuo nu ka Dar nyɛ́ __ ma.
Ayuo FOC that Dar saw mother
'It was Ayuo that Dar saw __ mother.'

d. Ànú ma nu ka Dar nyɛ́ __?
who mother FOC that Dar saw
'Whose mother was it that Dar saw __?'

e. Ayuo ma nu ka Dar nyɛ́ __.
Ayuo mother FOC that Dar saw
'It was Ayuo's mother that Dar saw __.'

In (50a), the object nominal phrase is comprised of the possessor *Ayuo* and the head noun *ma*. In (50b), the possessor is changed into the interrogative expression *Ànú* 'who' and is dislocated at the edge of the clause through focus movement. In (50c), the possessor *Ayuo* is

also focused and moved to the edge of the clause by focus movement. Both (50b) and (50c) are unacceptable. Thus, the Left Branch Condition is operative in Dagara. Note that if the possessor is moved along with the head noun, as shown in (50d-e), the sentences become acceptable. This is because pied-piping of the possessor and the head noun does not violate the LBC.

3.4.4. The Adjunct Condition

A *wh*-phrase cannot undergo focus movement out of conditional, reason, or temporal adjunct clauses in Dagara. This is shown below.

(51) a. [A Dar wá dà a núǒ] tì na máál la a bǒdìr.
the Dar if buy the chicken, we will cook AFF the food
'We will cook if Dar buys the chicken.'

b.* Bó nu ka [a Dar wá dà __], tì na máál la a bǒdìr ?
what FOC that the Dar if buy we will cook AFF the food
'*What is it that we will cook if Dar buys?

c.* Núǒ nu ka [a Dar wá dà __], tì na máál la a bǒdìr.
chicken FOC that the Dar if buy we will cook AFF the food
'*It is chicken that we will cook if Dar buys.'

(52) a. [A bie tú-n fʊ ma alaso] tɪ ŋmɛ ʊ.
the child insulted-AFF your mother because-of-that we beat him
'We beat the child because he insulted your mother.'

b.* Ànʊ́ nu ka [a bie tʊ́ __ alaso] tɪ ŋmɛ ʊ?

who FOC that the child insulted because-of-that we beat him

'*Who did we beat the child because he insulted_?

c. * Fʊ ma nu ka [a bie tʊ́ __ alaso] tɪ ŋmɛ ʊ.

your mother FOC that the child insulted because we beat him

'*It was your mother that we beat the child because he insulted.'

(53) a. Dar kan na a sɛbɛ baar [tí-ka a bie do a taw zu].

Dar read AFF the book finished before the child go the mountain top.

'Dar finished reading the book before the child went onto the mountain.'

b. * Nyinɛ na ka Dar kan a sɛbɛ baar [tí-ka a bie do __]?

Where FOC that Dar read the book finish before the child went

'lit. Where was it that Dar finished reading the book before the child went ?'

c. * Taw zu na ka Dar kan a sɛbɛ baar [tí-ka a bie do __].

mountain top FOC that Dar read the book finish before the child went

'* lit. It was the top of the mountain that Dar finished reading the book before the child went to?'

(51a), (52a), and (53a) are grammatical while (51b-c), (52b-c), and (53b-c) are ill-formed. In (51), (52), and (53), the bracketed phrases are conditional adjunct clauses, reason adjunct clauses, and temporal adjunct clauses, respectively.

3.4.5. The Anti-Locality Constraint

As mentioned in the previous chapter, subject *wh*-phrases cannot undergo focus movement out of embedded clauses in Dagara. Relevant examples are shown below.

(54) a * Ànú nu ka Ayuo yèl [*(ka) __ dà na mobiil]?
Who FOC that Ayuo said that bought AFF car
'lit. Who was it that Ayuo said that bought a car?'

b. * Bò nu ka Dar yèl [ka __ dùn a bie]?
what FOC that Dar said that bit the child
'What was it that Dar said that bit the child?'

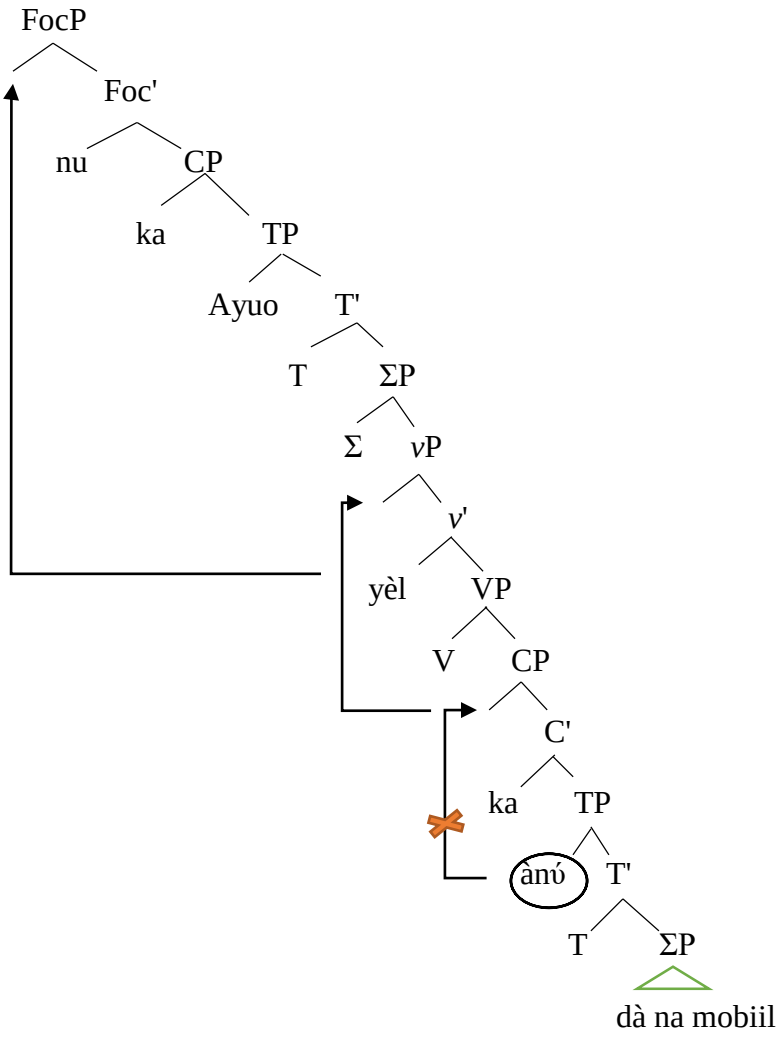
c. * Dar ru ka Ayuo yèl [ka __ dà na mobiil].
Dar FOC that Ayuo said that bought AFF car
'lit. It was Dar that Ayuo said that bought a car?'

d. * Baa nu ka Dar yèl [ka __ dùn a bie].
dog FOC that Dar said that bit the child
'It was a dog that Dar said that bit the child.'

All the examples are unacceptable in (54), where subject *wh*-phrases and non-*wh*-phrases undergo focus movement out of the embedded clauses. Also note that in (54a), the lower *ka*, which introduces the embedded clause, cannot be omitted.[4] I assume the structure in (55) for (54a).

[4] The fact that the lower *ka* cannot be omitted can also be assumed to be one difference between Dagara and English. This is shown below.

(55)



(i) a. Ayuo yèl la **ka** Dar dà-n mobiil pálà
Ayuo said AFF that Dar bought-AFF car new
'Ayuo said that Dar bought a new car.'

b. * Ayuo yèl la Dar dà-n mobiil pálà
Ayuo said AFF Dar bought-AFF car new
'Ayuo said Dar bought a new car.'

(ii) a. John said (that) Bill would come.
b. John thinks (that) Bill will come.

(ia) is grammatical while (ib) is not. In (ib), *ka* 'that', which introduces the subordinate clause, is omitted. Its omission is responsible for the ungrammaticality of the sentence. On the other hand, in English, the complementizer *that*, which introduces subordinate clauses, can be omitted, as indicated in (iia-b).

Following Chomsky (2000), I assume that the embedded CP, headed by the complementizer *ka*, is a phase boundary. Since the embedded CP is a phase boundary, the *wh*-phrase cannot move directly to the specifier position of FOC^{o}. Its movement from the specifier position of the embedded TP to the specifier position of FocP should violate the Phase Impenetrability Condition. I assume that the *wh*-phrase moves to FocP successive-cyclically. That is, it first moves from the specifier position of the embedded TP to the specifier position of the embedded CP (i.e. to the edge of the phase head), and then from there, it moves to the specifier position of FocP via the specifier position of the higher *v*P, as indicated in (55).[5] Notice that the first movement (i.e. movement from the specifier position of the embedded TP to the specifier position of the embedded CP) is too short and violates the Anti-Locality Constraint. According to Erlewine (2020: 9), "movement of subjects from [Spec, TP] across an overt complementizer to [Spec, CP] is banned by the Anti-Locality Constraint" in English. This restriction on subject movement is not found only in English, but in Dagara as well.

Note that overt focus movement of object *wh*-phrases and adjunct *wh*-phrases do not violate the Anti-Locality Constraint. This is illustrated below.

(56) a Ànú nu ka Ayuo yèl [ka fʊ nyɛ́ na __]?

who FOC that Ayuo said that you saw AFF

'Who was it that Ayuo said that you saw?'

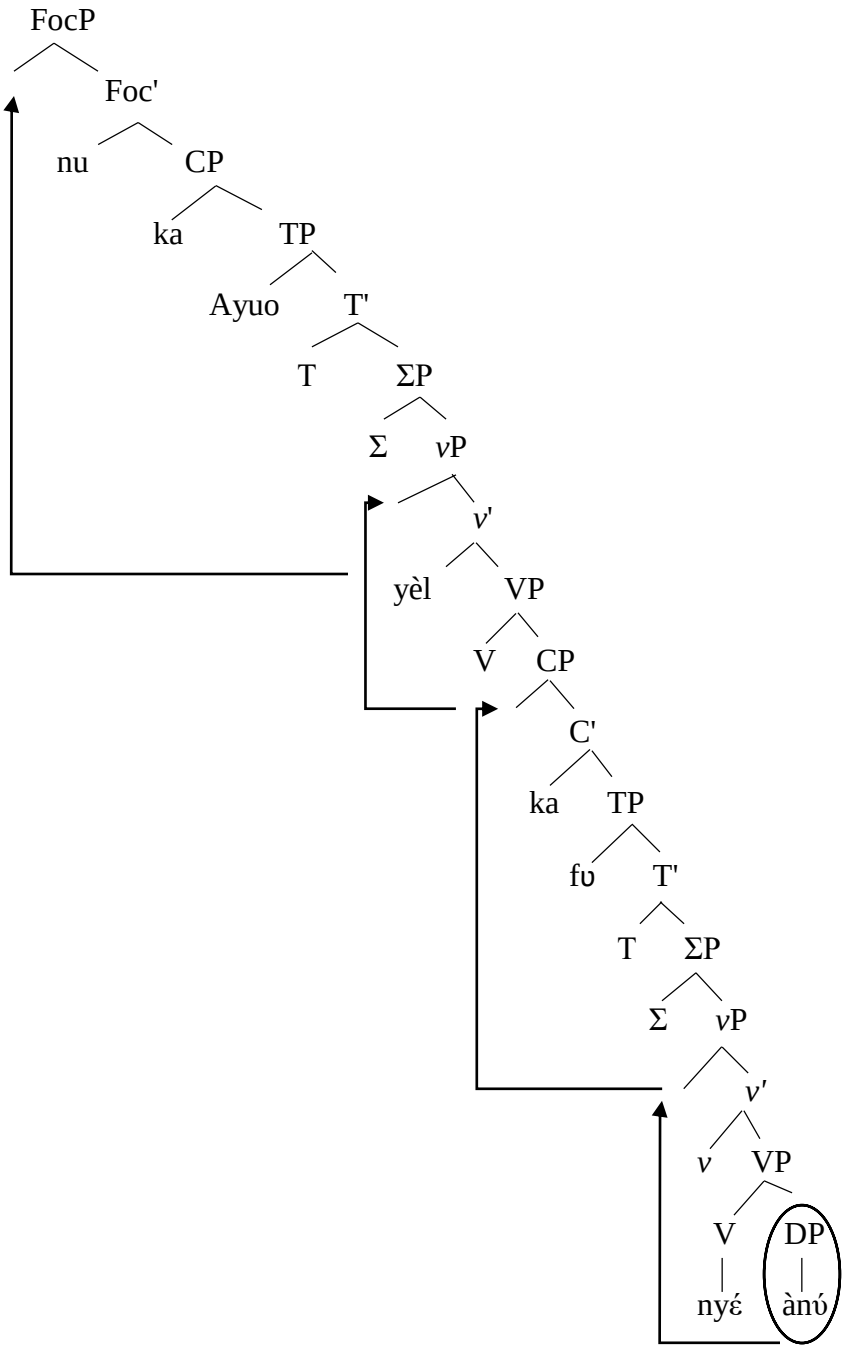
b. Nyinẽ na ka Ayuo yèl [ka Pol cen na __]?

where FOC that Ayuo said that Paul went AFF

'Where was it that Ayuo said that Paul went?'

[5] I assume that the *phasehood* of the matrix CP is voided by the head of FocP making it possible for the *wh*-phrase to move directly to the specifier position of FocP. Following the claim that "phases are propositional" (Chomsky 2000: 107), I assume, based on Den Dikken (2007) and Bošković (2014), that the occurrence of the head of FocP on the top of CP extends the phase boundary of that CP and that when the phase boundary is extended, the *phasehood* of CP is voided. This explains why *wh*-phrases do not land in the specifier position of C when CP is immediately dominated by FocP.

(57)



In (56a-b), the object *wh*-phrase and the adjunct *wh*-phrase, respectively, are extracted out of the embedded clauses and the sentences are acceptable. (57) is the structure of (56a). In (57), the embedded object *wh*-phrase moves to the specifier position of FOC^{o} successive-cyclically.

Movement of the *wh*-phrases from the specifier position of *v*P to the specifier position of the embedded CP does not violate the Anti-Locality Constraint because it crosses ΣP and TP.

3.5. Summary

In this chapter, I have argued that overt movement of *wh*-phrases is focus movement. Evidence for this comes from the following observations. First, overtly moved *wh*-phrases must be accompanied by a focus marker. I assume that the focus head attracts *wh*-phrases to its specifier position for a strong unvalued focus feature checking. Second, a *wh*-question and its answer must share the same syntactic structure. That is, a constituent corresponding to a focused *wh*-phrase must be focused while the one corresponding to an in-situ *wh*-phrase is not focused in Dagara. Since a constituent is focused in this language by undergoing movement to the left of a focus marker, I assume that such movement is triggered by the focus marker and should be considered as focus movement. In addition, I have argued that reduced answers to direct *wh*-questions, also known as fragment answers in the literature, gives us a clue about the type of movement involved in *wh*-questions in Dagara as well. Based on Merchant (2004), I claim that the derivation of reduced answers in Dagara involves focus movement of the target constituent and deletion of CP. The reason for assuming this is that a target constituent must precede the focus marker.

I have also shown in this chapter that focus movement of *wh*-phrases in Dagara obeys locality conditions on movement such as the Complex NP Constraint, the Coordinate Structure Constraint, the Left Branch Condition, and the Adjunct Condition. The data also suggest that focus movement of *wh*-phrases in Dagara obeys the Anti-Locality Constraint and that this constraint is responsible for the subject-object asymmetries observed in chapter 2. The fact that focus movement of *wh*-phrases in Dagara obeys these locality conditions on movement gives further credence to their universality.

Chapter 4

Wh-in-Situ in Dagara

4.1. Introduction

In chapter 2, I have shown that *wh*-questions can also be formed in Dagara by leaving *wh*-phrases in their underlying positions as in (1a), (2a), (3a), and (4a-c). However, when *wh*-phrases are subjects, as in (1b), (2b), and (3b), they cannot be left in their underlying positions.

(1) a. Ayuo dà-n bò?
Ayuo bought-AFF what
'What did you buy?'

b.* Bò dùn na Ayuo?
what bit AFF Ayuo
'What bit Ayuo?'

(2) a. Dar yèl la ka Ayuo nyɛ́-n ànú?
Dar said AFF that Ayuo saw-AFF who
'Who did Dar say that Ayuo saw?'

b.* Dar yèl la ka ànú nyɛ́-n bie?
Dar said AFF that who saw-AFF child
'Who did Dar say saw a child?'

(3) a. Ayuo ŋmɛ-n bi-bʊor?

Ayuo hit-AFF child-which

'Which child did Ayuo hit?'

b.* Bi-bʊor tʊ́-n a Ayuo?

child.which insulted-AFF the Ayuo

'Which child insulted Ayuo?'

(4) a. Ayuo cen-n nyinẽ?

Ayuo went-AFF where

'Where did Ayuo go?'

b. Dar yèl la ka Ayuo wa-n dabʊor?

Dar said AFF that Ayuo came-AFF when

'When did Dar say that Ayuo came?'

c. Fʊ ɪ na zɪɛ ŋmɪŋmɪn?

you did AFF sauce how

'What did you do with the sauce?'

The *wh*-phrases are in situ in (1a), (2a), (3a), and (4a-c), and the sentences are acceptable. The *wh*-phrases in (1a), (2a), and (3a) are objects, and those in (4a-c) are adjuncts. In contrast, (1b), (2b), and (3b) are unacceptable. Note that they involve subject *wh*-phrases. This indicates that while object *wh*-phrases and adjunct *wh*-phrases can remain in situ in Dagara, subject *wh*-phrases cannot.

The purpose of this chapter is to explain how *wh*-phrases in situ are licensed in the language. I will argue that in Dagara, when the head of Focus Phrase is not merged with CP,

wh-phrases (except for subject *wh*-phrases) stay in their underlying positions in overt syntax and undergo movement covertly.

The chapter will be organized as follows: In section 2, I will review the literature on the licensing of *wh*-phrases in situ. In section 3, I will explain how *wh*-phrases in situ are licensed in Dagara. I will argue that they are licensed by C through covert *wh*-movement. Section 4 will be devoted to the syntax of *bònusò* 'how come/ why' and *ŋmɪn* 'where/what'. I will argue that while *ŋmɪn* undergoes covert *wh*-movement, *bònusò*' does not. Section 5 summarizes the chapter.

4.2. Licensing *Wh*-phrases in Situ

It has been debated how *wh*-phrases in situ are licensed in *wh*-in-situ languages. Many researchers argue that *wh*-phrases are licensed by C by being moved to its specifier position in all languages (Cheng 2003, 2009, Sulemana 2019, Huang 1982, Pesetsky 1987, 2000, Ko 2005, and Nissenbaum 2000, among others). According to these researchers, *wh*-phrases in situ undergo covert movement to the specifier position of CP, where they are licensed. Covert *wh*-movement is argued to be analogous to overt *wh*-movement except that the former is insensitive to locality conditions (see Huang 1982 and Cheng 2009, among others). Consider the following English examples, cited from Carnie (2013):

(5) a. You saw [$_{NP}$ the man [$_{CP}$ who baked the lemon cake]].

b.* **Which cake** did you see [$_{DP}$ the man [$_{CP}$ who baked __]]?

c. Who saw [$_{NP}$ the man [$_{CP}$ who baked **which cake**]]?

In English, for example, *wh*-phrases move to the specifier position of CP in overt syntax to check a strong *wh*-feature on C, as shown in (5b).[1] This movement is argued to abide by some conditions on movement (see Boeckx 2008a, b, 2012, Carnie 2013, Huang 1982, Lasnik 1999, Pesetsky 2000, Sabel 2002, Sulemana 2019, Ross 1967, Takahashi 1994, and Watanabe 2001, among others). For instance, overt movement of *wh*-phrases in English is assumed to obey the Complex NP Constraint, defined in (6).

(6) The Complex NP Constraint (Ross 1967: 127)

> No element contained in a sentence dominated by a noun phrase with a lexical head noun may be moved out of that noun phrase by a transformation.

In (5a), *the man who baked the lemon cake* is a complex NP. According to the condition in (6), a constituent cannot overtly move out of it. Since *which cake* in (5b) undergoes overt movement out of the complex NP, the sentence is ruled out. On the other hand, in (5c), *which cake* is assumed to move out of the complex NP covertly to the specifier position of CP to check a weak *wh*-feature of C. Importantly, such movement does not violate the Complex NP Constraint. Some researchers (e.g. Huang 1982, and related studies) argue that covert *wh*-movement is insensitive to the Complex NP Constraint. This is why (5c) is ruled in.

Just like the *wh*-phrase in (5c), *wh*-phrases in situ can stay inside complex NP islands in languages like Japanese and Chinese. Following the claim that *wh*-phrases in situ undergo covert movement to the specifier position of CP where they are licensed in all languages, many studies argue for the existence of covert *wh*-movement in Japanese and Chinese and claim that it does not obey the Complex NP Constraint. Consider the following examples:

[1] Strong features are features that must be checked in overt syntax through overt movement. On the other hand, weak features are invisible in overt syntax and do not trigger overt movement (See Chomsky 1995 and Lasnik 1999).

(7) Japanese (Richards 2008:350)

John-wa [$_{NP}$ [$_{CP}$ nani-o katta] hito]-o sagasiteiru no?

John-TOP what-ACC bought person-ACC is.looking.for Q

'*What is John looking for the person who bought?'

(8) Chinese (Tsai 1997: 127)

Ni mai-le [$_{NP}$ [$_{CP}$ shei xie e_j] de shu$_j$]?

you buy-PRF who write PNM book

'Who is the person x such that you bought [books [that x wrote]]?

According to Richards (2008) and Tsai (1997), (7) and (8) are acceptable sentences in Japanese and Chinese, respectively. In (7) and (8), the bracketed nominal phrases (i.e. *nani-o katta hito* in Japanese and *shei xie de shu* in Chinese) are complex NPs. Following the claim that *wh*-phrases in situ move covertly to the specifier position of CP, *nani* 'what' and *shei* 'who' are assumed to undergo covert movement in (7) and (8), respectively. Covert movement of *nani* and *shei* is argued to be insensitive to the Complex NP Constraint.

Researchers such as Nishigauchi (1990), Pesetsky (1987), Richards (2008), and Watanabe (1992, 2001), among others, claim that the lack of island effects with *wh*-phrases in situ in English, Japanese, and Chinese is attributed to the presence of pied-piping of islands. According to them, what moves in sentences such as (5c), (7), and (8) is not only *which cake*, *nani*, and *shei*. Rather, the entire islands (i.e. the bracketed phrases) undergo covert movement. These researchers argue that movement of the entire islands, referred to as large-scale pied piping, is responsible for the absence of the island effects in (5c), (7), and (8) and conclude that covert movement obeys the conditions on movement, just like its overt counterpart.

One piece of evidence for large-scale pied piping comes from the cleft construction in Japanese. Consider the following sentences:

(9) a. Ken-wa [$_{NP}$ [$_{RC}$ **dare-kara** meeru-o moratta] hito]-ni sittositeiru no?
Ken-TOP who-from e-mail-ACC received person-DAT envy Q
'lit. Ken envies the person who received e-mail from whom?'

b. * [Ken-ga [$_{NP}$ [$_{RC}$ __ meeru-o moratta] hito]-ni sittositeiru no]-wa **dare-kara** desu ka?
Ken-NOM e-mail-ACC received person-DAT envy that-TOP who-from be Q
'lit. From whom is it that Ken envies the person who received e-mail?'

c. [Ken-ga __ sittositeiru no]-wa [$_{NP}$ [$_{RC}$ **dare-kara** meeru-o moratta] hito]-ni desu ka?
Ken-NOM envy that-TOP who-from e-mail-ACC received person-DAT be Q
'lit. The person who received e-mail from whom is it that Ken envies?'

(9a-c) are supplied by Daiko Takahashi (personal communication). In these sentences, the *wh*-phrase is not an object but a source argument PP. Also note that RC in these data stands for relative clauses. In (9a), the bracketed phrase is a complex NP that contains a *wh*-phrase. If the *wh*-phrase undergoes cleft movement out of the complex NP, as shown in (9b), the sentence becomes ungrammatical. However, if the entire complex NP undergoes cleft

movement, as shown in (9c), the sentence becomes acceptable. Nishigauchi (1990), Pesetsky (1987), Richards (2008), and Watanabe (1992, 2001), among others, mention that a *wh*-phrase that is inside an island (i.e. a complex NP like the one in (9a)) in Japanese cannot undergo movement by itself. Rather, it must be moved along with the other elements of the island. Cleft movement of *wh*-phrases in Japanese is then taken to be a piece of evidence that what moves in (5c), (7), and (8) could be the entire complex NPs.

The second piece of evidence that what undergoes covert *wh*-movement in (5c), (7), and (8) is the entire islands comes from the intervention effect. Kotek and Erlewine (2016), based on the intervention effect in some English multiple *wh*-questions, argue that covert movement of *wh*-phrases is an instance of pied-piping. According to them, movement of a *wh*-phrase is an instance of question phrase (QP) movement. That is, a *wh*-phrase does not undergo movement by itself. Rather, it moves along with a question marker which can be overt or covert depending on the language to the specifier position of CP. Following this assumption, they claim that the size of the moved constituent depends on where the question marker occurs. This is illustrated in (10).

(10) Different sizes of pied-piping correspond to different positions of Q-adjunction.

Base Structure: C Jim owns (Q) a picture (Q) of (Q) which president.

a. ? [$_{QP}$ Q A picture of which president] does Jim own __?

b. [$_{QP}$ Q Of which president] does Jim own a picture __?

c. [$_{QP}$ Q which president] does Jim own a picture of __?

(Kotek and Erlewine 2016: 676)

As shown in the base structure of (10), there are three possible positions where the question marker can occur in English nominal phrases such as *a picture of which president*. (i) Q can be adjoined to the entire nominal phrase. (ii) It can adjoin to the prepositional phrase *of which*

president. (iii) It can adjoin to the lower DP *which president*. For Kotek and Erlewine, if Q is attached to *a picture of which president*, the entire DP undergoes movement, as shown in (10a). On the other hand, if Q is adjoined to the prepositional phrase *of which president* or to the lower DP *which president*, it is the PP or the lower DP that undergoes movement as shown in (10b-c). (10a) is argued to be mildly degraded, according to Kotek and Erlewine. They mention that the fact that (10a) is mildly degraded while (10b-c) are well-formed indicates that overt pied-piping is preferably applied to a smaller constituent.

Based on these options for overt pied-piping, Kotek and Erlewine claim that the size of what undergoes covert movement in English can also be detected. To do so, they use interveners whose position is argued to give a clue about the size of the constituent that undergoes covert movement. More specifically, they place an intervener inside the part of the *wh*-questions suspected of undergoing covert movement and claim that if the presence of the intervener causes an intervention effect, the intervener is inside the covertly moved constituent. However, if the presence of the intervener does not cause an intervention effect, the intervener is outside the covertly moved constituent.

Their assumption is buttressed by the data in (11).

(11) No intervention if the intervener is not inside the overt pied-piped constituent:

a. * [$_{QP}$ Q **No** pictures of *which* president] does Jim own__ ?

b. [$_{QP}$ Q Of *which* president] does Jim own **no** pictures__?

c. [$_{QP}$ Q *Which* president] does Jim own **no** pictures of__?

(Kotek and Erlewine 2016: 685)

As shown in (11), when there is an intervener inside an overtly pied-piped constituent, the sentence shows an intervention effect. However, when the intervener is outside the overtly moved constituent, the intervention effect is avoided. Following this observation, Kotek and

Erlewine claim that the presence of the intervention effect in (12) indicates that what undergoes covert movement is the entire DP (i.e. *no book from which library*).

(12) Different covert pied-piping options predict different intervenable regions:

*Which student read no book from which library?

a. [$_{QP}$ Q *Which* student] read [$_{QP}$ Q **no** book from *which* library].

b. [$_{QP}$ Q *Which* student] read **no** book [$_{QP}$ Q from *which* library].

c. [$_{QP}$ Q *Which* student] read **no** book from [$_{QP}$ Q *which* library].

(Kotek and Erlewine 2016: 685)

Kotek and Erlewine observe that the occurrence of *no* in (12) causes an intervention effect. They explain the intervention effect by assuming that *no* is between Q and the *wh*-phrase in the object position and that what undergoes covert movement in (12) is *no book from which library*. For them, if *from which library* or *which library* could undergo covert movement, the intervention effect would be avoided as the intervener is outside Q and the *wh*-phrase and does not block the interpretation of the *wh*-phrase. They then claim that the presence of the intervention effect in (12) is attributed to the fact that the intervener occurs inside the covertly moved phrase. Based on these data, Kotek and Erlewine claim that while overt pied-piping prefers smaller constituents, larger constituents are preferred for covert pied-piping. This also supports the assumption that what undergoes covert movement in sentences like (5c), (7), and (8) is not the *wh*-phrases. Rather, the entire islands undergo movement.

It is important to note that some researchers argue against the assumption that *wh*-phrases in situ undergo covert movement to the specifier position of CP and claim that *wh*-phrases in situ can be licensed by C in their underlying position, even at LF (see Pesetsky 1987, Tsai 1994, 2008, Cheng 1991, 2003, 2009, Cheng and Rooryck 2000, and Bruening and Tran 2006, *etc.*). According to these scholars, *wh*-phrases can be licensed in their

underlying position through unselective binding. They assume that *wh*-phrases are variables that are bound by a Question morpheme (i.e. Q), a morpheme that functions as an operator in the specifier position of CP.

Based on this assumption, Bruening and Tran (2006), for example, claim that when there is a question particle in *wh*-questions with *wh*-phrases in situ in Vietnamese, as shown in (13a), the *wh*-phrases are interpreted through unselective binding. On the other hand, when the question particle is absent as in (13b), *wh*-phrases are interpreted through covert *wh*-movement.

(13) a. Trân mua gì thế?
Tran buy what PRT
'What did Tran buy?'

b. Trân mua gì ?
Tran buy what
'What does/will Tran buy?'
(Bruening and Tran 2006: 321)

According to Bruening and Tran, the *wh*-phrase in situ in (13a) is bound by the question particle *thế* and is interpreted in its underlying position by unselective binding. On the other hand, in (13b), the *wh*-phrase undergoes covert *wh*-movement to the specifier position of CP, where it is interpreted. Note that Bruening and Tran mention that the difference between (13a) and (13b) is the presence and the absence of the final question particle. This difference is taken to indicate that the *wh*-phrase is bound in situ by the question particle in (13a). However, in (13b), the *wh*-phrase undergoes covert movement.

Likewise, some researchers claim that the fact that *wh*-phrases can be in situ in Japanese and Chinese has to do with the presence of an overt (or covert) question morpheme

(see Baker 1970, Cheng 1991, Aoun and Li 1993, and Cheng and Rooryck 2000). Consider the following examples:

(14) a. Japanese (Richards 2008:348)

Taroo-wa	Hanako-ga	nani-o	katta	to	omoimasita	**ka**?
Taro-TOP	Hanako-NOM	what-ACC	bought	that	thought	Q

'What did Taro think that Hanako bought__?'

b. Chinese (Cheng 1991: 112)

Hufei	chi-le	shenme	**ne**?
Hufei	eat-ASP	what	Q

'What did Hufei eat?'

In (14a), *ka* is a question particle in Japanese. In (14b), *ne* is a *wh*-question particle in Chinese. According to Baker (1970) and Cheng (1991), the presence of the question marker in Japanese and Chinese is responsible for the fact that *wh*-phrases remain in situ in these languages. The question that is raised here is how a question particle licenses *wh*-phrases in situ in these languages. This question receives the following answers: As mentioned in chapter 1, according to Cheng's (1991) *Clause Typing* Hypothesis, "every clause must be typed" (p.25). In languages with an overt question particle (e.g. Japanese, Chinese), a *wh*-question is typed by that question particle allowing *wh*-phrases to stay in situ.[2] On the other hand, in languages without a question particle (e.g. English), a *wh*-phrase must undergo *wh*-movement to the specifier position of CP to type the sentence as a *wh*-question. The second reason why languages with a question particle have their *wh*-phrases in situ is attributed to

[2]Cheng (1991) argues that a language can have either *wh-in-situ* or *wh*-movement but not both. However, as mentioned in chapter 1, it is widely assumed in the literature that some languages, including Japanese, have both options (see Takahashi 1993, Lasnik and Saito 1992, Pesetsky 2000, Sulemana 2019, Bruening and Tran 2006).

Kayne (1994). Kayne (1994) argues that all languages are head initial and that in languages such as Japanese and Chinese, the final position of the heads of phrases is the result of movement. For him, C (i.e. where the question particle is generated) always attracts TP to its specifier position in languages such as Japanese and Chinese. Movement of TP to [Spec, CP] is responsible for the final position of the question particle in those languages. Since the specifier position of CP is always occupied by TP in those languages, movement of a *wh*-phrases is not possible.

To sum up, there seems to be a consensus that *wh*-phrases in-situ are licensed by C. The contention lies in how C licenses *wh*-phrases in situ. In one analysis, C is argued to license *wh*-phrases in situ through covert *wh*-movement. That is, *wh*-phrases undergo movement covertly to the specifier position of CP, where they check the *wh*-feature on C. Alternatively, *wh*-phrases in situ are claimed to be licensed by C without movement. This can be done through unselective binding.

4.3. The Licensing of *Wh*-phrases in Situ in Dagara

Following researchers such as Huang (1982), Ko (2005), Nissenbaum (2000), Pesetsky (1987, 2000), Sulemana (2019), etc., I argue that *wh*-phrases in situ are licensed by C through covert *wh*-movement in Dagara. I show data in Dagara indicating that when there is no focus marker in *wh*-questions, the *wh*-phrases remain in situ in overt syntax and undergo movement covertly, by which they check a *wh*-feature on C. Consider the following examples:

(15) a. * [$_{FocP}$ Nu [$_{CP}$ ka [$_{TP}$ Dar dà bò]]]?

Foc that Dar bought what

'What did Dar buy?'

b.* [$_{CP}$ Bò ka [$_{TP}$ Dar dà _]]?

what that Dar bought

'What did Dar buy?'

c. [$_{CP}$ [$_{TP}$ Dar dà-n bò]]?

Dar bought-AFF what

'lit. Dar bought what?'

d. [$_{FocP}$ Bò nu [$_{CP}$ ka [$_{TP}$ Dar dà _]]]?

what FOC that Dar bought

'lit. What was it that Dar bought?'

(15a-b) are unacceptable sentences while (15c-d) are perfectly acceptable. In (15a), the *wh*-phrase *bò* is in situ, though there is a focus marker in the sentence. Note that *wh*-phrases do not remain in situ when there is a focus marker in *wh*-questions. Rather, as (15d) shows, they undergo overt movement to the specifier position of FOC (i.e. to the left of the focus marker), where they check the focus feature on the head of FocP. I assume that the ungrammaticality of (15a) is attributed to the fact that *bò* does not undergo overt movement to the specifier position of *nu*. In (15b), *bò* is intended to undergo movement to the specifier position of the complementizer *ka* (i.e. C) but the sentence is unacceptable. The unacceptability of (15b) indicates that the *wh*-feature on *ka* (i.e. C) does not attract *wh*-phrases in overt syntax (*ka* can occur in clauses without *nu).*[3] (15c) does not contain the focus marker or the complementizer.

[3] The following data indicate that the complementizer *ka* 'that' does not attract phrases in overt syntax.

(i) a. Ayuo yèl la ka Pol dè-n sɛbɛ.
Ayuo said AFF that Paul took-AFF book
'Ayuo said that Paul took a book.'

b. Ka Pol dè-n bò?
that Paul took-AFF what
'Paul took what?'

In this sentence, the *wh*-phrase *bò* is in situ. I assume that the complementizer is null. In (15d), *bò* occurs in the specifier position of the focus marker *nu* and the sentence is acceptable. As argued in chapter 3, the focus feature on *nu* (i.e. FOC) is strong and triggers overt focus movement of *wh*-phrases. As for the grammaticality of (15c), it can be explained by assuming that the null C has a weak *wh*-feature that triggers covert movement of *wh*-phrases to the specifier position of C. In other words, I claim that in sentences like (15c), *wh*-phrases undergo covert movement to the specifier position of C for the weak *wh*-feature checking. The following observations support this claim.

4.3.1. The Adjunct Condition

A piece of evidence that *wh*-phrases in situ undergo covert movement in Dagara comes from the sensitivity to the Adjunct Condition (i.e. adjuncts block extraction (Huang 1982, Bošković 2016, 2020, Sulemana 2019, and Bruening and Tran 2006, among others)). In fact, a *wh*-phrase in situ cannot occur inside an adjunct in Dagara. This is illustrated below.

(16) a. [$_{CP}$ A Dar wá dà a nʊ́ʊ́], tì na máál la a bʊ́dìr.
the Dar if buy the chicken, we will cook AFF the food
'We will cook if Dar buys the chicken.'

b.* **Bó** nu ka [$_{CP}$ a Dar wá dà _], tì na máál la a bʊ́dìr ?
what FOC that the Dar if buy we will cook AFF the food
'*What is it that we will cook if Dar bought __?

(ia) is a declarative sentence and (ib) is an echo-question in the language. In (ia), *ka* 'that' is placed at the edge of the embedded clause. In (ib), *ka* 'that' is in the initial position of the clause. (ia-b) do not contain a moved constituent. I assume that (ia-b) do not contain a moved constituent because the feature on *ka* is weak and cannot attract a constituent in overt syntax. Besides, I assume that there is no functional head with strong features that trigger overt movement of constituent in these sentences.

c.*[$_{CP}$ A Dar wá dà **bò**], tì na máál la a bɔ́dìr?

the Dar if buy what, we will cook AFF the food

'lit. We will cook if Dar buys what?'

(17) a. [$_{CP}$ A bie tʊ̀ na tɪ ma alasó ka] tɪ ŋmɛ ʊ.

the child insulted AFF our mother because-of that we beat him.

'Because the child insulted our mother, we beat him.'

b. * **Ànʊ́** nu ka [$_{CP}$ a bie tʊ̀ __ alasó ka] tɪ ŋmɛ ʊ?

who FOC that the child insulted __ because-of that we beat him

'*Who was it that we beat the child because he insulted_?'

c.*[$_{CP}$ A bie tʊ̀ na **ànʊ́** alasó ka] tɪ ŋmɛ ʊ?

the child insulted AFF who because-of that we beat him.

'lit. We beat the child because he insulted who?'

(16a-c) and (17a-c) contain conditional and reason adjunct clauses, respectively. (16a) and (17a) are acceptable declarative sentences while (16b-c) and (17b-c) are unacceptable *wh*-questions. In (16a-c) and (17a-c), the clauses in brackets are adjunct islands. Assuming that a constituent cannot move out of an adjunct island (Huang 1982, Bošković 2016, 2020, Sulemana 2019, among others), I take the ungrammaticality of (16b) and (17b) to be attributed to the fact that *bò* and *ànʊ́* undergo focus movement out of the islands. In (16c) and (17c), *bò* and *ànʊ́* remain inside the islands but the sentences are still degraded. The degradedness of (16c) and (17c) can be explained if we assume that *bò* and *ànʊ́*, respectively, undergo movement, albeit covertly, out of the islands, just like the *wh*-phrases in (16b) and (17b). The fact that a *wh*-phrase cannot occur inside an island in Dagara can be taken to be a piece of evidence that *wh*-phrases in situ must undergo covert movement in the language.

4.3.2 The Coordinate Structure Constraint

Coordinate structures provide us with additional evidence that covert *wh*-movement exists in Dagara. In Dagara a conjunct of a coordinate structure cannot move out of the coordinate structure, nor can the conjunct be replaced by a *wh*-phrase. Consider the following examples:

(18) a. A bie 'lan tó na [$_{DP}$ Ayuo nɩ Pol] zãa.
the child that insulted AFF Ayuo and Paul yesterday
'That child insulted Ayuo and Paul yesterday.'

b.* **Pol** nu ka a bie 'lan tó [$_{DP}$ Ayuo nɩ __] zãa.
Paul FOC that the child that insulted Ayuo and yesterday
'lit. It was Paul that child insulted Ayuo and__ yesterday?'

c.* **Àní** nu ka a bie 'lan tó [$_{DP}$ Ayuo nɩ __] zãa.
who FOC that the child that insulted Ayuo and yesterday
'lit. *Who was it that that child insulted Ayuo with__ yesterday?'

d.* A bie 'lan tó na [$_{DP}$ Ayuo nɩ **àní**] zãa?
the child that insulted AFF Ayuo and who yesterday
'lit. That child insulted Ayuo and who yesterday?'

Let us consider the DPs in brackets in (18a-d). In (18a), *Ayuo ni Pol* is a coordinate phrase. In Dagara, if a conjunct of a coordinate phrase is moved out of the coordinate structure, the sentence becomes ungrammatical, as shown in (18b-c). Also, if we replace one conjunct of the coordinate phrase with a *wh*-phrase in situ, as in (18d), the resulting sentence is unacceptable. Note that in (18d), if *Ayuo* is also replaced by a *wh*-phrase, the resulting

sentences is unacceptable. Following Ross (1967) and related studies, I assume that (18b-c) are ruled out by the Coordinate Structure Constraint, defined in (19).

(19) The Coordinate Structure Constraint (Ross (1967: 161)

> In a coordinate structure, no conjunct may be moved, nor may any element contained in a conjunct be moved out of that conjunct.

I assume that (18b-d) is ruled out by (19). That is, I assume that the ungrammaticality of (18d) can be accounted for if we assume that there is covert *wh*-movement in the language. That is, if we assume that there is covert *wh*-movement in Dagara, the ungrammaticality of (18d) can be explained by assuming that *ànʊ́* 'who' undergoes movement covertly and that that movement is ruled out by the Coordinate Structure Constraint. The fact that (19) rules out sentences like (18d) in Dagara clearly indicates that covert *wh*-movement is analogous to its overt counterpart.

Note that some researchers argue that *wh*-phrases in situ are licensed by C through covert *wh*-movement in other West African languages. For example, Sulemana (2019) argues that some *wh*-phrases in situ are licensed through covert *wh*-movement in Buli (a Mabia language spoken in Ghana) and that that movement is subject to constraints such as the Adjunct Condition and the Coordinate Structure Constraint. Consider the following sentences in Buli:

(20) a. Bíːká dìg *(ká) **b^{w}ā**?
child.DEF cook Q what
'What did the child cook?'

b. (Ká) wānā ālì dìg **b^{w}ā**?

Q who ali cook what

'Who cooked what?'

(Cf. Sulemana 2019:2)

According to Sulemana (2019), *wh*-questions can be formed in Buli by leaving a *wh*-phrase in situ, as shown in (20a-b). A *wh*-phrase in situ can be accompanied by a particle (*ká*), as indicated in (20a). Sulemana assumes that when a *wh*-phrase in situ is combined with *ká*, it is licensed by C through covert *wh*-movement. But, when the *wh*-phrase in situ does not have *ká*, as shown in (20b), it is licensed by C via unselective binding without movement. Sulemana's reasons for assuming that (20a) is licensed by C via covert *wh*-movement include the fact that *ká b^{w}ā* cannot occur inside an adjunct island or a coordinate structure (see Sulemana 2019 for details). This is illustrated in (21a-b).

(21) a.* Asouk lí dígí lām ās Apita dīn wéːní āyīn Azuma dà **ká b^{w}ā**?

Asouk FUT cook meat if Peter PRT say C Azuma bought Q what

'What is it that Asouk will cook meat if Peter says Azuma bought?'

b.* Azuma dà [gbáŋ ālī **ká bwā]**?

Azuma buy book CONJ Q what

'Azuma bought a book and what?'

(Sulemana 2019:9)

According to Sulemana (2019), (21a-b) are ungrammatical sentences in Buli. (21a) contains a conditional clause and (21b) has a coordinate structure. In (21a), *ká b^{w}ā* occurs inside the adjunct clause (i.e. the embedded clause introduced by *ās* 'if'). In (21b), *ká b^{w}ā* is a conjunct

of the coordinate phrase. Since adjunct clauses and coordinate structures are islands for movement, Sulemana argues that the badness of (21a-b) indicates that *ká* $b^{w}\bar{a}$ undergoes covert *wh*-movement. I assume that *wh*-phrases in situ in Dagara behave like Buli *wh*-phrases in situ that are associated with the particle *ká* in that they are all licensed through covert *wh*-movement, which is subject to the Adjunct Condition and the Coordinate Structure Constraint.

4.3.3. The Complex NP Constraint

Another piece of evidence for covert movement of *wh*-phrases in Dagara comes from the Complex NP Constraint, defined in (6) and repeated in (22).

(22) The Complex NP Constraint (Ross 1967: 127)

> No element contained in a sentence dominated by a noun phrase with a lexical head noun may be moved out of that noun phrase by a transformation.

The Complex NP Constraint bans extraction out of a relative clause. In Dagara, overt movement of a *wh*-phrase out of a complex NP makes the sentence unacceptable. Also, a *wh*-phrase in situ cannot occur inside a relative clause. These are illustrated below.

(23) a. Dar dà-n **a** **sɛbɛ** **'lan** [$_{CP}$ Zã nan ta
Dar bought-AFF the book that John REL PST
sɛb kὺ Mari].
wrote give Mary
'Dar bought that book John wrote for Mary.'

b.* **Ànú** nu ka Dar dà **a** **sɛbɛ** **'lan** [$_{CP}$ Zã nan ta

who FOC that Dar bought the book that John REL PST

sɛb kù __].

wrote give

'lit. Who was it that Dar bought that book which John wrote for__?'

c.* Dar dà na **a** **sɛbɛ** **'lan** [$_{CP}$ Zã nan

Dar bought AFF the book that John REL

ta sɛb kù **ànú**]?

PST wrote give who

'lit. Dar bought the book which John wrote for who?'

(24) a. Dar nyɛ́ na **a** **daba** **'lan** [$_{CP}$ nan ta tù Ayuo]?

Dar saw AFF the man that REL PST insulted Ayuo

'Dar saw that man who insulted Ayuo.'

b. * **Ànú** nu ka Dar nyɛ́ **a** **daba** **'lan** [$_{CP}$ nan ta tù **__**]?

who FOC that Dar saw the man that REL PST insulted

'*WHO did Dar see the man who insulted __?

c. * Dar nyɛ́ na **a** **daba** **'lan** [$_{CP}$ nan ta tù **ànú**]?

Dar saw AFF the man that REL PST insulted who

'lit. Dar saw that man who insulted who.'

(25) a. Zã nõnõ na nibɛ [$_{CP}$ nan wònò Japonɛ].

John like AFF people REL understand Japanese

'John like people who can understand Japanese.'

b.* kɔkɔr bùór ru ka Zã nõnõ nibɛ [$_{CP}$ nan wònò __?

language which FOC that John like people REL understand

'*WHICH LANGUAGE does John like people who understand __?'

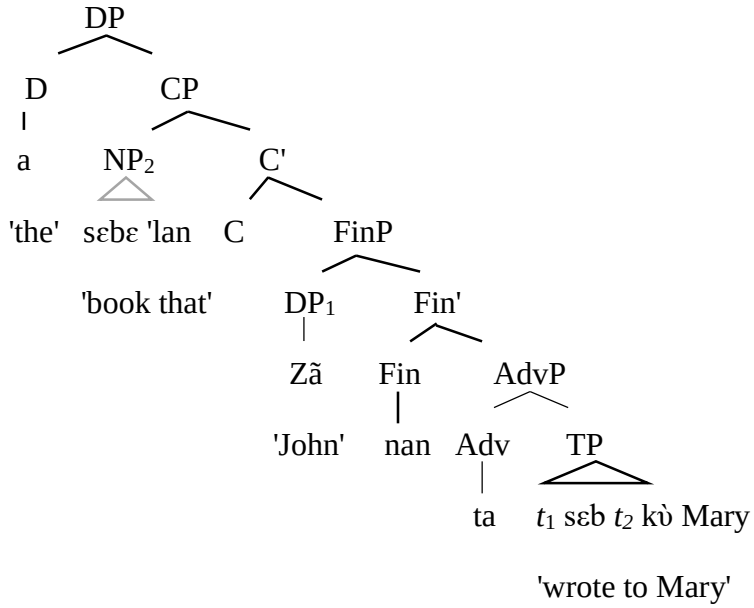
c. * Zã nõnõ na nibɛ [$_{CP}$ nan wònò kɔkɔr bùór]?

John like AFF people REL understand language which

'lit. John like people who understand which language?'

In (23), (24), and (25), the bracketed phrases are relative clauses. Bodomo and Hiraiwa (2010) argue that relative clauses are formed in Dagaare by raising the head nouns to the edges of the clauses. In (23), (24), and (25), the modified nouns are followed by relative clauses, which contain a marker of relativization, namely *nan*, between the subjects and the predicates and gaps corresponding to the nouns indicated with underscores. As mentioned in chapter 3, I follow Bodomo and Hiraiwa's (2010) analysis of relative clauses in Dagaare and assume that relativization in Dagara also involves movement of head nouns to the edges of the clauses, as shown in (26).

(26) a.



(26) is mentioned in chapter 3 and repeated here. In (26), which is the structure of the relative clause in (23a), the marker of relativization, namely *nan*, is considered to be the Finite head and the subject is moved to the specifier position of Finite Phrase, shown as FinP. Also, the head noun undergoes movement from the object position to the specifier position of CP, which is selected by D (also see Bodomo and Hiraiwa (2010) and Hiraiwa et al. 2017). When a relative clause is formed in Dagara, as shown in (26), nothing can move out of it. (23b), (24b), and (25b) are unacceptable because the *wh*-phrases move out of the relative clauses. I assume that (23b), (24b), and (25b) are ruled out by the Complex NP Constraint. In (23c), (24c), and (25c), the *wh*-phrases do not undergo overt movement out of the relative clauses but the sentences are still unacceptable. This is naturally explained if we assume that the *wh*-phrases in situ undergo covert movement and that that movement is ruled out by the Complex NP Constraint.

Note that Dagara is different from Japanese and Chinese concerning island sensitivity. That is, while *wh*-phrases in situ are sensitive to the Complex NP Constraint in Dagara, this island effect is not observed in Japanese and Chinese. Consider the following examples:

(27) Japanese (Richards 2008: 350).

a. Mary-wa [$_{NP}$ John-ga nani-o ageta hito]-ni atta no?
Mary-TOP John-NOM what-ACC gave person-DAT met Q
'What did Mary meet [the person that John gave to]?'

b. John-wa [$_{NP}$ nani-o katta hito]-o sagasiteiru no?
John-TOP what-ACC bought person-ACC looking.for Q
'What is John looking for [the person who bought]? '

(28) Chinese (Tsai 1997 : 127)

Ni mai-le [$_{NP}$ [$_{CP}$ shei xie e_j] de shu$_j$]?
you buy-PRF who write PNM book
'Who is the person x such that you bought [books [that x wrote]]?'

As shown in (27a-b) and (28), *wh*-phrases in situ can occur inside complex NPs in Japanese and Chinese. This is explained in the literature by assuming that covert movement of *wh*-phrases is insensitive to the Complex NP Constraint (Huang 1982). As mentioned above, many researchers argue that covert movement of the entire complex NP is responsible for the fact that *wh*-phrases in situ do not show the Complex NP Island effect in Japanese and Chinese.

In Dagara, there are data indicating that the presence of island effects with *wh*-phrases in situ is due to the lack of large-scale pied-piping of islands. Consider the following examples:

(29) a. Dar dà-n [$_{DP}$ **a** **sɛbɛ** **'lan** [$_{RC}$ Zã nan ta sɛb
Dar bought-AFF the book that John REL PST wrote
kù Mari]].
give Mary
'Dar bought that book John wrote for Mary.'

b. [$_{DP}$ **A** **sɛbɛ** **'lan** [$_{RC}$ Zã nan ta sɛb kù Mari]]
the book that John REL PST wrote give Mary
nu ka Dar dà ___.
FOC that Dar bought
'lit. It was that book that John wrote for Mary that Dar bought.'

c.* Dar dà-n [$_{DP}$ **a** **sɛbɛ** **'lan** [$_{RC}$ Zã nan ta sɛb
Dar bought-AFF the book that John REL PST wrote
kù **ànú**]]?
give who
'Dar bought that book John wrote for who.'

d.*[$_{DP}$ **A** **sɛbɛ** **'lan** [$_{RC}$ Zã nan ta sɛb kù **ànú**]] nu ka Dar dà __?
the book that John REL PST wrote give who FOC that Dar bought
'lit. It was that book that John wrote for who that Dar bought?'

(30) a. Dar nyɛ́ na [$_{DP}$ **a** **daba** **'lan** [$_{RC}$ nan ta tù Ayuo]]?
Dar saw AFF the man that REL PST insulted Ayuo
'Dar saw that man who insulted Ayuo.'

b. [$_{DP}$ **A daba 'lan** [$_{RC}$ nan ta tù Ayuo]] nu ka Dar nyé __.

the man that REL PST insulted Ayuo FOC that Dar saw.

'lit. It was that man who insulted Ayuo that Dar saw.'

c. * Dar nyé na [$_{DP}$ **a daba 'lan** [$_{RC}$ nan ta tù **ànú**]]?

Dar saw AFF the man that REL PST insulted who

'Dar saw that man who insulted who.'

d.*[$_{DP}$ **A daba 'lan** [$_{RC}$ nan ta tù **ànú**]] nu ka Dar nyé __?

the man that REL PST insulted who FOC that Dar saw.

'lit. It was that man who insulted who that Dar saw?'

(31) a. Ayuo dà-n [$_{DP}$ **a sɛbɛ 'lan** [$_{RC}$ Pol nan yèl ka

Ayuo bought-AFF the book that Paul REL said that

Dar sɛb ba kù Mari]].

Dar wrote AFF give Mary

'Ayuo bought that book which Paul said that Dar wrote for Mary.'

b. [$_{DP}$ **A sɛbɛ 'lan** [$_{RC}$ Pol nan yèl ka Dar sɛb ba kù

the book that Paul REL said that Dar wrote AFF give

Mari nu ka Ayuo dà __]].

Mary FOC that Ayuo bought

'lit. It was that book Paul said that Dar wrote for Mary that Ayuo bought?'

c. * Ayuo dà-n [$_{DP}$ **a sɛbɛ 'lan** [$_{RC}$ Pol nan yèl ka

Ayuo bought-AFF the book that Paul REL said that

Dar sɛb ba kù **ànú]]**?

Dar wrote AFF give who

'Ayuo bought that book which Paul said that Dar wrote for whom.'

d.*[$_{DP}$ **A sɛbɛ 'lan** [$_{RC}$ Pol nan yèl ka Dar sɛb ba kù

the book that Paul REL said that Dar wrote AFF give

ànú nu ka Ayuo dà __]]?

who FOC that Ayuo bought

'lit. It was that book that Paul said that Dar wrote for who that Ayuo bought?'

Let us consider the object DPs in (29), (30), and (31). They contain relative clauses. More specifically, in these sentences, the object noun phrases are modified by relative clauses containing the marker of relativization *nan* between the subjects and the predicates and gaps corresponding to the noun phrases. The modified noun phrases along with the relative clauses are referred to as complex NPs. In (29b), (30b), and (31b), the complex NPs undergo focus movement to the initial positions of the sentences. In (29c), (30c), and (31c), the complex NPs contain *wh*-phrases in situ and are placed in their underlying positions but the sentences are unacceptable. In (29d), (30d), and (31d), the complex NPs in which the *wh*-phrases occur undergo focus movement to the clausal periphery but the sentences are unacceptable. Since movement of the complex NPs that contain *wh*-phrases is analyzed as instances of large-scale pied piping, I assume that the fact that the complex NPs containing *wh*-phrases in (29d), (30d), and (31d) cannot undergo focus movement indicates that large-scale pied-piping of islands is disallowed in the language.

It is important to note that complex NPs containing *wh*-phrases can undergo movement in languages such as Japanese. This is shown in (9) and repeated in (32).

(32) a. Ken-wa [$_{NP}$ [$_{RC}$ **dare-kara** meeru-o moratta] hito]-ni
Ken-TOP who-from e-mail-ACC received person-DAT
sittositeiru no?
envy Q
'lit. Ken envies the person who received e-mail from whom?'

b. * [Ken-ga [$_{NP}$ [$_{RC}$ __ meeru-o moratta] hito]-ni sittositeiru
Ken-NOM e-mail-ACC received person-DAT envy
no]-wa **dare-kara** desu ka?
that-TOP who-from be Q
'lit. From whom is it that Ken envies the person who received e-mail?'

c. [Ken-ga __ sittositeiru no]-wa [$_{NP}$ [$_{RC}$ **dare-kara** meeru-o
Ken-NOM envy that-TOP who-from e-mail-ACC
moratta] hito]-ni desu ka?
received person-DAT be Q
'lit. The person who received e-mail from whom is it that Ken envies?'

In (32a-c), the bracketed phrases are complex NPs containing *wh*-phrases in Japanese. In (32a), the complex NP containing the *wh*-phrase, which is the source argument PP, is in its underlying position. In (32a), though a *wh*-phrase is inside the complex NP, an island for *wh*-movement, the sentence does not exhibit an island effect. (32b-c) are cleft constructions in Japanese in which the complex NPs contain *wh*-phrases. In (32b), the *wh*-phrase undergoes cleft movement out of the complex NP and the sentence is unacceptable. In (32c), the entire complex NP containing the *wh*-phrase undergoes cleft movement. Movement of the entire complex NP containing the *wh*-phrase in (32c) does not affect the grammaticality of the sentence. According to many scholars (e.g. Nishigauchi 1986, 1990 and Richards 2000, 2008,

among others), the lack of the island effects in sentences like (32a) is attributed to the fact the entire complex NP undergoes large-scale pied piping covertly. In other words, *wh*-phrases pied-pipe the entire islands covertly in Japanese to avoid island effects. This is based on data like (32b-c).[4]

It is also important to mention that complex NPs undergo overt large-scale pied piping in languages like Basque to circumvent island effects (Richards 2000, 2008). This is shown in (33).

(33) Basque (Richards 2008: 352)

a. [Nork idatzi zuen liburua] irakurri du Peruk?
who-ERG write AUX book read AUX Peter-ERG
'Who did Peter read the book that wrote?'

b. * Nork irakurri du Peruk [__ idatsi zuen liburua]?
who-ERG read AUX Peter-ERG write AUX book
'Who did Peter read the book that wrote?'

[4] Note that it has been known in the literature that adjunct *wh*-phrases in situ in Japanese do exhibit island effects. This is shown below.

(i) a. John-ga [nani-o katta] hito]-ni atta no?
John-NOM what-ACC bought person-DAT met Q?
'?? What did John meet a person [who bought t]'

b. * John-ga [naze hon-o katta] hitto]-ni atta no?
John-NOM why book-ACC bought person-DAT met Q
'*Why did John meet a person [who bought a book]?'
(Ochi and Hsin 1999: 324)

According to Ochi and Hsin (1999), (ia) is acceptable while (ib) is not. In (ia) *nani* 'what' occurs inside a complex NP. In (ib), *naze* 'why' is also inside the complex NP but the sentence is degraded. The ungrammaticality of (ib) indicates *naze* cannot occur inside islands. In this dissertation I only focus on argument *wh*-phrases in Japanese. See Nishigauchi (1990) for related discussions.

In (33a-b), the bracketed phrases are complex NPs in Basque. Richards (2008) observes that movement of *nork* 'who' in (33b) violates the Complex NP Constraint and that the violation of the Complex NP Constraint is avoided if the entire complex NP undergoes overt large-scale pied piping as in (33a).

Thus, I assume that the presence of island effects in (29c), (30c), (31c), and the relevant examples above in Dagara can be explained by assuming that the *wh*-phrases in situ inside the islands undergo covert movement. Also, I claim that Dagara lacks large-scale pied-piping of islands and that this fact is responsible for the presence of the island effect in those Dagara sentences. The difference between Japanese and Dagara with respect to the presence/absence of large-scale pied-piping may be attributed to the morphological makeup of the *wh*-phrases. According to Watanabe (1992, 2001, 2003), *wh*-phrases in Japanese are associated with an invisible operator which makes them *wh*-phrases. In other words, Watanabe (1992, 2001, 2003) assumes that *wh*-phrases in Japanese are associated with particles that are not visible. This claim is based on the fact that *wh*-expressions are interpreted as quantificational expressions when a particle is attached to them. This is shown below:

(34) quantificational expressions

dare 'who'	dare-mo 'no one',	dareka 'someone'	
nani 'what'	nani-mo 'nothing',	nanika 'something'	
doko 'where'	doko-mo 'nowhere',	doko-ka 'somewhere'	

As shown in (34), quantificational expressions are formed from *wh*-phrases in Japanese. Based on this observation, Watanabe (1992, 2003) argues that *wh*-phrases in Japanese are DPs containing an invisible operator in their specifier position. The invisible operator overtly moves to the specifier position of CP. Under Watanabe's assumption, the head of DP, which is occupied by a particle, determines whether the visible part of the *wh*-phrase (e.g. *dare*,

nani) is interpreted as a *wh*-expression or a quantificational expression (also see Takahashi 2002). When D is occupied by a null question particle, DP is considered as a *wh*-phrase. But when it is occupied by the particle *mo* or *ka*, DP is considered as a universal quantifier or an existential quantifier, respectively.

In Dagara, quantificational expressions are different from *wh*-expressions. This is illustrated below:

(35). *Wh*-phrases and their corresponding quantificational expressions in Dagara

ànú 'who'	nir-kõw 'someone'	nir-ha 'no one'	nibɛ-ha 'everyone'
bò 'what'	bóo-kõw 'something'	bóo-ha 'nothing'	bómo-ha 'everything'
nyinẽ 'where	zié- kõw 'somewhere'	zié-ha 'nowhere'	ziri-ha 'everywhere'

Unlike quantificational expressions in Japanese, quantificational expressions in Dagara are not formed from *wh*-expressions.[5] I assume that Dagara *wh*-phrases are not associated with an operator like *wh*-phrases in Japanese and that what undergoes movement is the entire *wh*-phrase. This difference may be responsible for the difference observed above (i.e. the fact that Japanese has large-scale pied piping while Dagara does not).

[5] Note that *bò* 'what' and *bóo* in *bóo-kõw* 'something' and *bóo-ha* 'nothing' are not related. *Bò* is a *wh*-phrase meaning 'what' while *bóo* is a noun meaning 'thing'.

(i) a. bóo	b. bómo
thing.SG	thing.PL
'a thing'	'things'
(ii) a. bò	b. bina
what.SG'	what.PL
'what'	'what'

As (i) and (ii) show, the plural form of *bóo* is *bómo* while that of *bò* is *bina*. *Wh*-phrases in Dagara are different from those of English in that they can be marked for plural.

4.3.4. The Intervention Effects

Beck (1996), Beck and Kim (1997), and Ko (2005), among others, argue that covert *wh*-movement is blocked by an intervening quantified expression. That is, when a quantified element such as negation intervenes between C and a *wh*-phrase in situ that must undergo movement covertly, the movement is blocked, making the sentence ungrammatical. For example, a negative particle cannot occur between C and a *wh*-phrase in German (also see Ko 2005, Beck and Kim 2006, Kim 2006, Tomioka 2007, and Kotek 2018, among others, for similar assumptions about the distribution of *wh*-phrases in situ in other languages).

(36) German

a.* Was glaubt Hans **nicht**, wer da war?
what believes Hans not who there was
'Who does Hans not believe was there?'

b.* Wen hat **niemand** wo gesehen?
whom has nobody where seen
'Where did nobody see whom?'

c. * […X_i…[Q…[….t_i ^{LF}…]]]
(Beck 1996: 1)

According to Beck (1996), (36a-b) are ungrammatical sentences in German. In (36a-b), Beck claims that *wer* and *wo* undergo *wh*-movement covertly, as schematically shown in (36c), and that that movement is blocked by *nicht* and *niemand*.

Beck's idea is directly applied to Dagara. As we can see in (37a-c), negation cannot occur between C and a *wh*-phrase in situ.

(37) a.*[$_{CP}$ Ayuo **ba** dà bò ɪ]?

Ayuo not bought what NEG.PART

'What did Ayuo not buy?'

b.*[$_{CP}$ Ayuo **ba** cen nyinê ɛ]?

Ayuo not went where NEG.PART

'lit. Where did Ayuo not went?'

c.*[$_{CP}$ A bie **ba** wa dabʊor ɛ]?

the child not came when NEG.PART

'lit. When did the child not come?'

(37a-c) are unacceptable. In these sentences, a negative particle (i.e. *ba*) occurs between C and a *wh*-phrase. The occurrence of the negative particle between C and the *wh*-phrase is responsible for the ungrammaticality of (37a-c). Following Beck (1996), one can assume that *wh*-phrases in situ undergo covert *wh*-movement, which is blocked by negation in Dagara.

Note that (37a-c) become acceptable if the *wh*-phrases undergo overt focus movement. This is shown below.

(38) a. Bò nu ka Ayuo **ba** dà ɪ]?

what FOC that Ayuo not bought NEG.PART

'What was it that Ayuo did not buy?'

b. Nyinê na ka Ayuo **ba** cen ɛ]?

where FOC that Ayuo not went NEG.PART

'Where was it that Ayuo did not go?'

c. Dabʊor ra ka a bie **ba** wa ɛ]?

when FOC that the child not came NEG.PART

'When was it that the child did not come?'

In (38a-c), the *wh*-phrases undergo overt focus movement to the edges of the sentences. Overt movement of the *wh*-phrases in these sentences is not blocked by negation. This explains why the sentences are acceptable.

4.3.5 The Anti-Locality Constraint

An additional piece of evidence that there is covert *wh*-movement in Dagara comes from the Anti-Locality Constraint. As mentioned in chapter 3, Erlewine (2016, 2020) argues that overt movement of *wh*-phrases obeys the so-called Anti-Locality Constraint. This constraint is defined in chapter 3 and repeated in (39).

(39) Erlewine's (2016, 2020: 2) Anti-Locality Constraint:

a. Movement of a phrase from the specifier of XP must cross a maximal projection other than XP.

b. Movement from position α to β crosses γ if and only if γ dominates α but does not dominates β.

(39a) is argued to ban any movement that is too short, especially movement of a phrase from the specifier of TP to the specifier of CP (see Erlewine 2016, 2020, Bošković 2016). Erlewine (2020) argues that the condition in (39) is responsible for the ungrammaticality of sentences such as (40a).

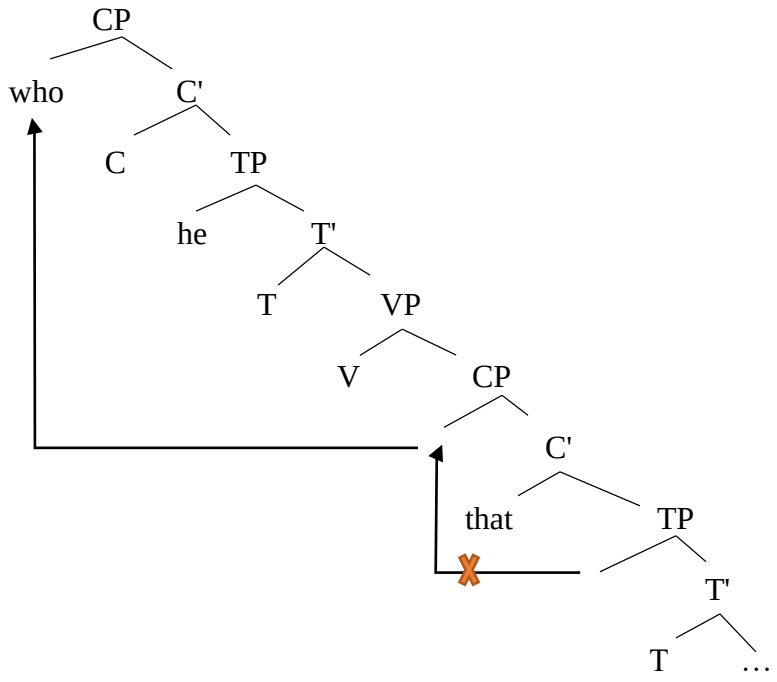
(40) a. * Who did he say that __ bought a car?

b. Who did he say __ bought a car?

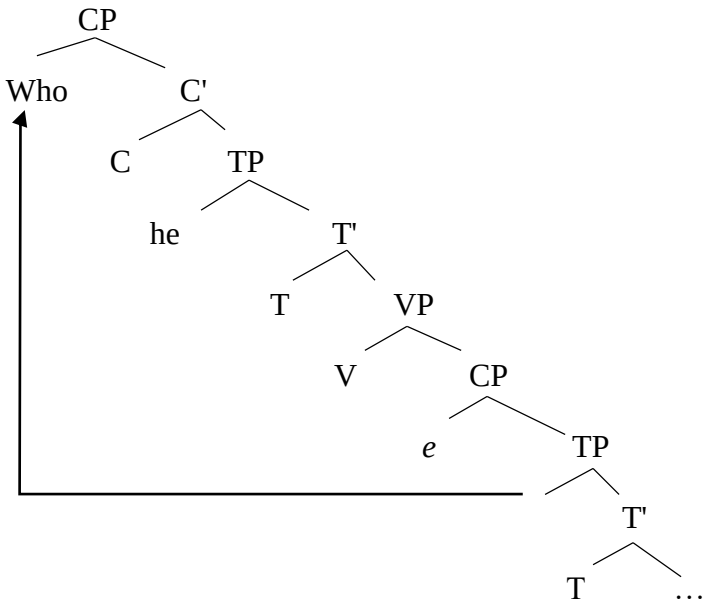
c. What did he say (that) John bought _?

In (40a-b), the subject of the embedded clause is moved to the edge of the matrix clause. In (40c), the object of the embedded clause is moved to the edge of the matrix clause. In (40a), the embedded clause contains the complementizer *that*. In (40b), the embedded clause contains a null complementizer. In (40c), the complementizer may be overt or null. Initially, (40a) was analyzed in terms of the *that*-trace filter (Chomsky and Lasnik 1975). However, Douglas (2017) and Erlewine (2020), among others, claim that the movement involved in (40a) occurs successive-cyclically through the edge of the embedded clause, as shown in (40a), and that the *that*-trace effect is due to the Anti-Locality Constraint.

(41) a.



b.



Erlewine (2020) argues that when the complementizer is overt, movement of the subject from the specifier position of TP lands in the specifier position of the lower CP, as shown in (41a). This movement is too short and is banned by the condition in (39). On the other hand, when the complementizer is null, movement of the subject of the embedded clause lands in the specifier position of the higher CP (i.e. it skips the specifier position of the lower CP), as shown in (41b).[6] Movement of the subject from the specifier position of the embedded clause to the edge of the matrix clause is licit vis-à-vis the condition stated in (39).

I assume that *wh*-phrases in situ in Dagara undergo covert movement, which is subject to the Anti-Locality Constraint, and that the existence of covert movement of *wh*-phrases is

[6] As mentioned previously, the head of CP in English is argued to be a phase head in the literature (Chomsky 2000, 2001, Bošković 2014, 2016, and Erlewine 2020, among others). Following the Phase Impenetrability Condition, the subject of the embedded clause must first move to the specifier position of the lower CP. However, when the complementizer is null, the *phasehood* of C is voided making it possible for movement of the subject of the embedded clause to skip the specifier position of the lower CP (Bošković 2015, 2016, Vera 2020). Bošković (2015, 2016) and Vera (2020) explain this fact in terms of *Phase Collapsing*, a mechanism whereby two phasal heads are merged into one, which voids the *phasehood* of the lower phase (see also Erlewine 2020).

responsible for the subject-object asymmetry observed in the language. Consider the following examples:

(42) a * Ànú nu ka Ayuo yèl ka __ dà na mobiil?
who FOC that Ayuo said that bought AFF car
'lit. Who was it that Ayuo said that bought a car?'

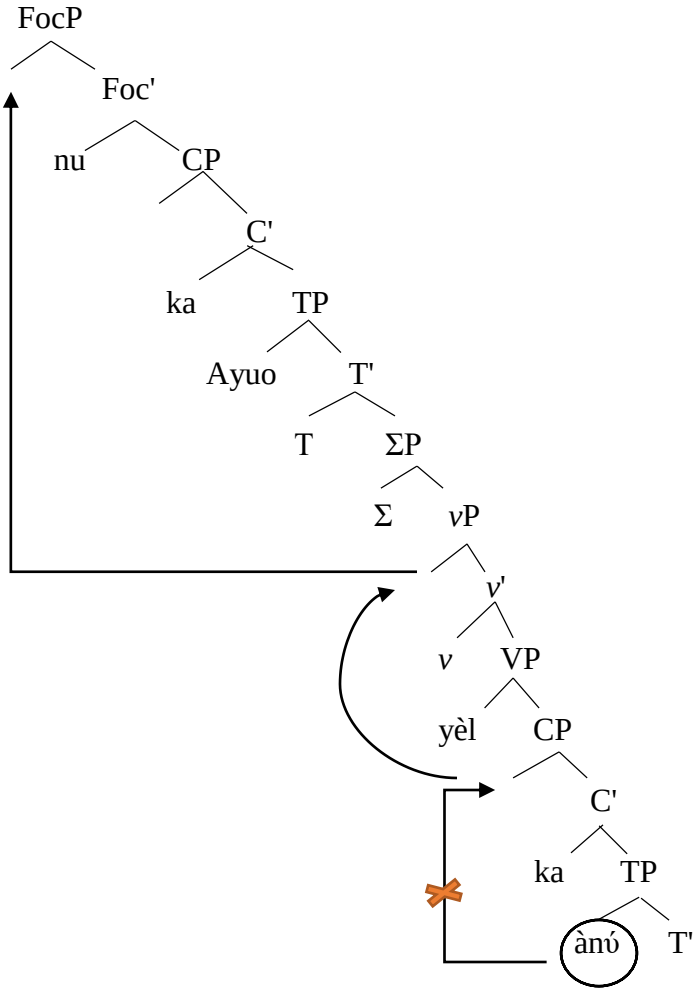
b.* Ànú dà-n mobiil?
who bought-AFF car
'Who bought a car?'

(43) a. * Bò nu ka Dar yèl ka __ dùn a bie?
what FOC that Dar said that bit the child
'What was it that Dar said that bit the child?'

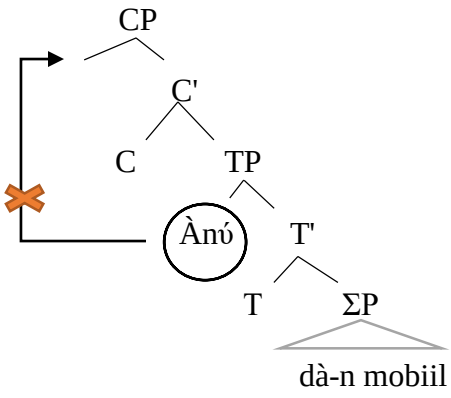
b. * Bò dùn a bie.
what bit the child
'What bit the child?'

As shown in (42a-b) and (43a-b), subject *wh*-phrases cannot move out of embedded clauses, nor can they remain in situ. For (42a-b), I assume the structure in (44a-b), respectively.

(44) a.


FocP
Foc'
nu
CP
C'
ka
TP
Ayuo
T'
T
ΣP
Σ
vP
v'
v
VP
yèl
CP
C'
ka
TP
ànú
T'

b.


CP
C'
C
TP
Ànú
T'
T
ΣP
dà-n mobiil

(44a) indicates the structure of the sentences in (42a) while (44b) indicates the structure of (42b). In (44a), the lower CP is a phase boundary as the complementizer *ka* is a phase head. Since the lower CP is a phase boundary, the *wh*-phrase cannot move directly to the specifier of Foc^{o}. Its movement from the specifier position of the lower TP to the specifier position of FocP violates the PIC, a locality constraint on movement (Chomsky 2000, 2001,Takahashi 1994, Ishii 2000, Bošković 2007, and Erlewine 2020, among others).[7] Then, I assume that *ànú* 'who' moves to FocP in overt syntax successive-cyclically. That is, it first moves from the specifier position of the lower TP to the specifier position of the lower CP (i.e. to the edge of the phase head), and then from there, it moves to the specifier position of FocP via the specifier position of the higher *v*P, as indicated in (44a). The first movement (i.e. movement of *ànú* 'who' from the specifier position of the lower TP to the specifier position of the lower CP, the edge of the phase head) is too short and violates the Anti-Locality Constraint. According to Erlewine (2020: 9), "movement of subjects from the specifier position of TP across an overt complementizer to the specifier position of CP is banned by the Anti-Locality Constraint" in English. This restriction on subject movement is not only operative in English, but also in Dagara. In (44b), on the other hand, I assume that the *wh*-phrase undergoes covert movement to the specifier position of CP. Covert movement of the *wh*-phrases to the specifier position of CP in (44b) is too short and violates the Anti-Locality Constraint.

Note that overt focus movement and covert movement of object *wh*-phrases and adjunct *wh*-phrases do not violate the Anti-Locality Constraint in Dagara. This is illustrated below.

(45) a Ànú nu ka Ayuo nyɛ́?
who FOC that Ayuo saw
'Who was it that Ayuo saw?'

[7]Movement must be local but not too local. Also note again that the fact that movement of *ànú 'who'* does not drop by the specifier position of the higher C indicates that the *phasehood* of C is voided whenever it is immediately dominated by the head of FocP. I assume that Foc voids the *phasehood* of C in Dagara.

b. Ayuo nyɛ́-n ànú?

Ayuo saw-AFF who

'Who did Ayuo see?'

c. Nyinẽ na ka Ayuo cen?

where FOC that Ayuo went

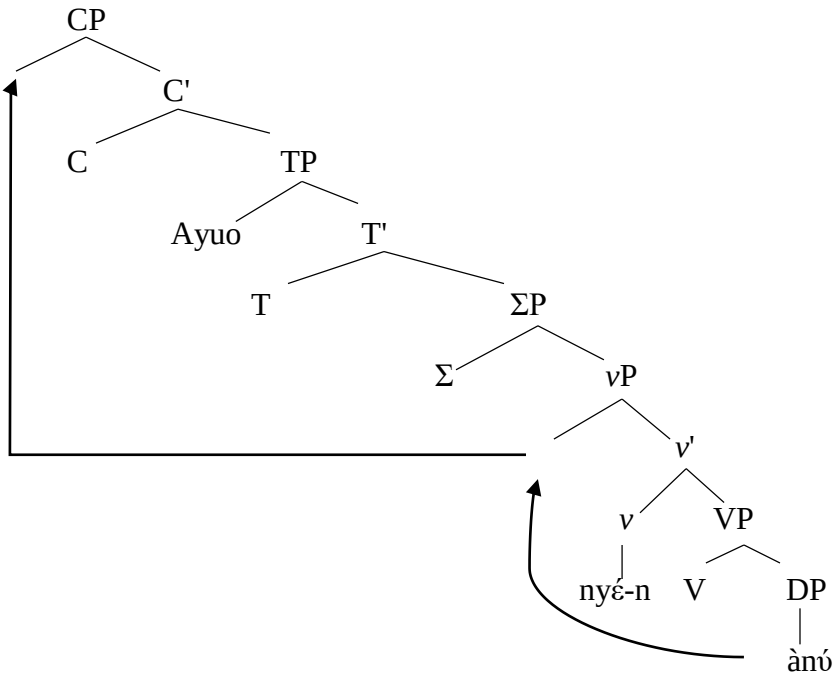
'Where was it that Ayuo went?'

d. Ayuo cen na nyinẽ?

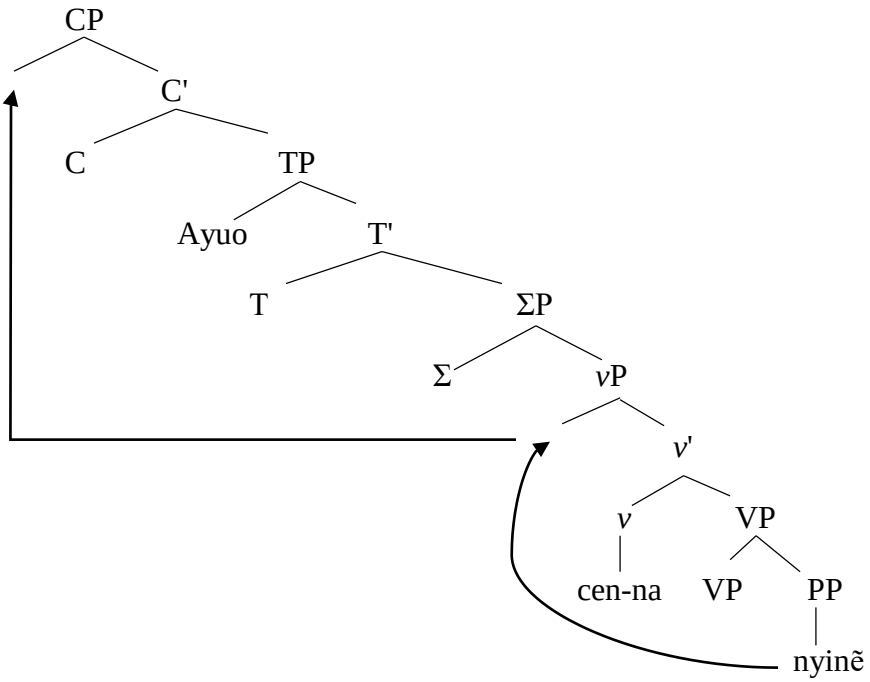
Ayuo went AFF where

'Where did Ayuo go?'

(46) a. Covert movement of the object *wh*-phrase in (45b)



b. Covert movement of the adjunct *wh*-phrase in (45d)



Let us consider the object *wh*-phrases and the adjunct *wh*-phrases in these sentences. In (45a), the object *wh*-phrase *ànú* undergoes focus movement to the edge of the sentence while in (45b) it remains in situ. Likewise, in (45c), the adjunct *wh*-phrase is focused while in (45d) it is in situ. For (45b) and (45d), I assume the structures in (46). As shown in (46a), movement of the object *wh*-phrase drops by the specifier position of *v*P to satisfy the PIC before moving to the specifier position of CP, which does not violate the Anti-Locality Constraint. Likewise, the adjunct *wh*-phrase moves successive-cyclically to the specifier position of CP, as shown in (46b). Just like movement of the object *wh*-phrase, movement of the adjunct *wh*-phrase does not violate the Anti-Locality Constraint. I claim that the subject-object asymmetry in Dagara can be explained by assuming that *wh*-phrases (except for *bònusó* 'how come') undergo movement (overt or covert) that is subject to the Anti-Locality Constraint.[8]

[8] I assume that *bònusó* 'how come' does not undergo focus movement or covert *wh*-movement. I will return to this later.

It should also be mentioned that the subject-object asymmetry mentioned above is typical to *wh*-in-situ African languages whose *wh*-phrases can undergo overt focus movement. Consider the data below:

(47) Kinyarwanda (SVO, Bantu) (Sabel and Zeller 2006: 173)

a. Umugore jiše nde?
   Woman killed who
   'Who did the woman kill?'

b. Ni-nde umugore jiše_?
   FOC-who woman kill
   'Who did the woman kill?'

c.* Nde jiše umunhu?
   Who killed man
   'Who killed the man?'

(48) Kitharaka (SVO, Bantu) (Muriungi 2004: 10, 12)

a. N-uu John a-ring-ir-e __?
   FOC-who John SP-beat-T-FV
   'Who did John beat?'

b. John a-ring-ir-e uu?
   John SP-beat-T-FV who
   'Who did John beat?'

c. N-uu a-kis-ir-e Karimi?

FOC-who SP-kiss-T-FV Karimi

'Who kissed Karimi?'

d. * Un a-kis-ir-e Karimi?

who SP-kiss- T- FV Karimi

'Who kissed Karimi?'

(49) Lele (SVO, Chadic) (Aboh and Pfau 2010:103)

a. Wéy ba é gà?

who FOC go INTER

'Who went away?'

b. * Wéy é gà?

who go INTER

'Who went away?'

c. Mè ày wéy gà?

2.SG marry who INTER

'Who did you marry?'

d. Me ba gol di __ gà?

What FOC see 3.SG INTER

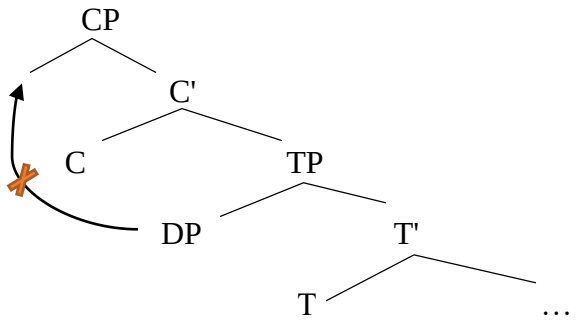
'What did he see?'

While object *wh*-phrases can remain in situ in Kinyarwanda, Kitharaka, and Lele, subject *wh*-phrases cannot. In these languages, subject *wh*-phrases must undergo overt movement to the

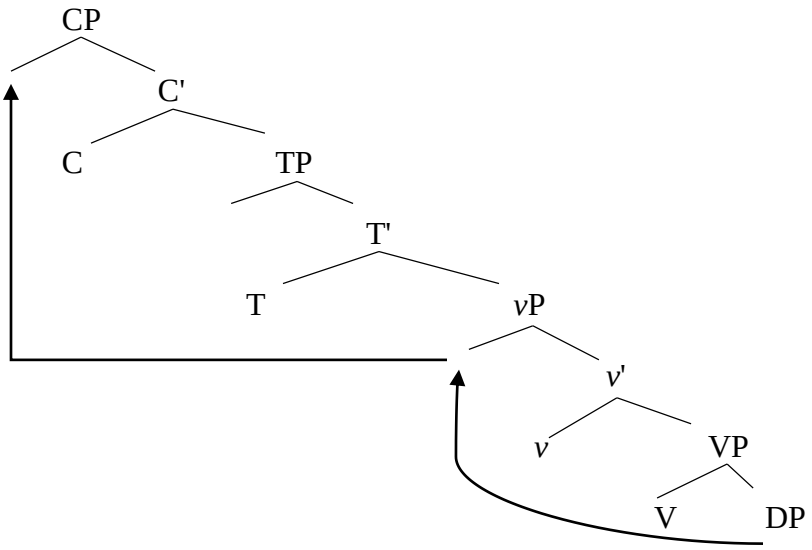
clausal left periphery, where they are associated with a focus marker. I assume that overt movement of *wh*-phrases in these languages should be regarded as an instance of focus movement since the relevant examples are all focus constructions (Muriungi 2004, Aboh and Pfau 2010). Dagara is similar to the aforementioned languages in terms of how *wh*-questions are formed. They can be regarded as *wh*-in-situ languages even though their *wh*-phrases can undergo overt focus movement. A question that arises is why subject *wh*-phrases cannot stay in situ in these languages.

I assume that *wh*-phrases in situ undergo covert movement, which is subject to the Anti-Locality Constraint. In other words, the Anti-Locality Constraint is responsible for the fact that subject *wh*-phrases cannot stay in situ in Dagara and the other African languages mentioned above. This is illustrated in (50a-b).

(50) a. Covert movement of subject *wh*-phrases



b. Covert movement of object *wh*-phrases



I claim that (50a-b) are the structures for *wh*-questions containing subject *wh*-phrases in situ and object *wh*-phrases in situ, respectively. In (50a-b), let us consider DP as a subject *wh*-phrase and an object *wh*-phrase, respectively. In (50a), the subject moves covertly from the specifier position of TP to the specifier of CP. This movement does not cross any maximal projection other than TP. According to Erlewine (2016, 2020), such movement is too short and is ruled out by the Anti-Locality Constraint. On the other hand, movement of the object *wh*-phrase to the specifier position of CP does not violate the Anti-Locality Constraint as it crosses *v*P and TP. Then, the distance of movement of subject *wh*-phrases and object *wh*-phrases is responsible for the subject-object contrast observed in Dagara and the other African languages mentioned above.

One piece of evidence for this claim comes from Kipsigis, a Nilotic VSO language spoken in East Africa. In Kipsigis, it is argued that the subject is base-generated in the specifier position of VP (see Chepngetich et al. 2020). Importantly, subject *wh*-phrases can remain in situ just like object *wh*-phrases. According to Chepngetich et al. (2020), the initial position of the verb in Kipsigis sentences is attributed to the presence of verb movement to T. Consider the following illustrations:

(51) Kipsigis

a. Koip **ng'oo** kilamit nyuun?

took who pen mine

'Who took my pen?'

b. **Ng'oo** ne-koip kilamit nyuun?

who F-took pen mine

'Who was it that took my pen?'

c. Kaam John **nee**?

Ate John what

'What did John eat?'

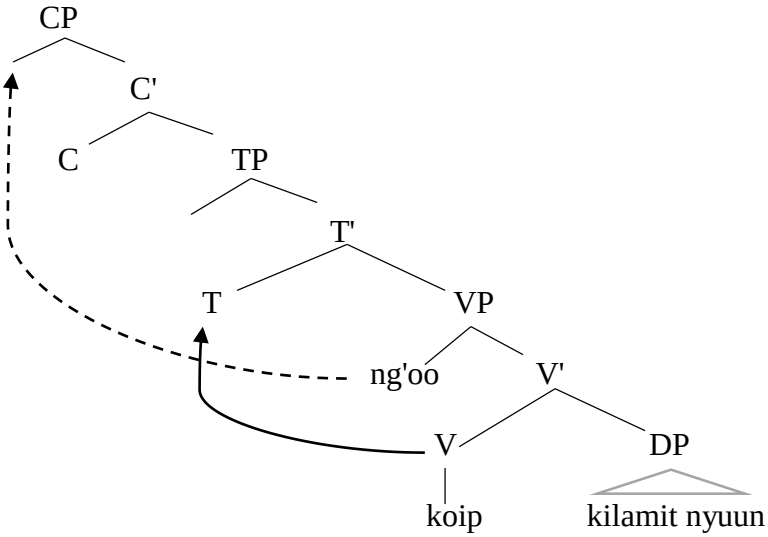
d. **Nee** ne-kaam John?

what F-ate John

'What was it that John ate?'

In (51a-b), *ng'oo* is a subject *wh*-phrase. In (51c-d), *nee* is an object *wh*-phrase. According to Chepngetich et al. (2020), *wh*-questions are formed in Kipsigis by moving the *wh*-phrases to the edges of the clauses or by leaving the *wh*-phrases in their underlying positions. For Chepngetich et al. (2020), overt movement of *wh*-phrases in this language is triggered by a focus marker. Following this claim, Kipsigis can be assumed to be similar to Dagara, Kitharaka, Lele, and Kenyarwanda in terms of how a *wh*-question is formed. But, unlike these languages, subject *wh*-phrases can remain in situ in Kipsigis. I claim that since the subject *wh*-phrase is base-generated in the specifier of VP and can stay there in overt syntax, its covert movement to the specifier position of CP does not violate the Anti-Locality Constraint. For (51a), I assume the structure in (52).

(52)



V undergoes movement to T in overt syntax in Kipsigis (Chepngetich et al. 2020). This explains the VSO word order in the language. Since *wh*-phrases must be interpreted in the specifier position of CP at LF (see Cheng 2003, 2009, Kotek 2018, Kotek and Erlewine 2016, etc.), I assume that the subject *wh*-phrase also undergoes covert movement to the specifier position of CP, as shown in (52). Covert movement of the subject *wh*-phrase does not violate the Anti-Locality Constraint since it crosses TP.

Also, if there is a projection between CP and TP, a subject *wh*-phrase should be able to undergo covert *wh*-movement without violating the Anti-Locality Constraint. This implies that a subject *wh*-phrase can remain in situ if there is a projection between CP and TP. Consider the following data in Oromo, a Cushitic language in the Afro-Asiatic language family spoken Ethiopia and Kenya:

(53) a. Eeňňu duf-**e**?

Who come-3sg-Past

'Who came?'

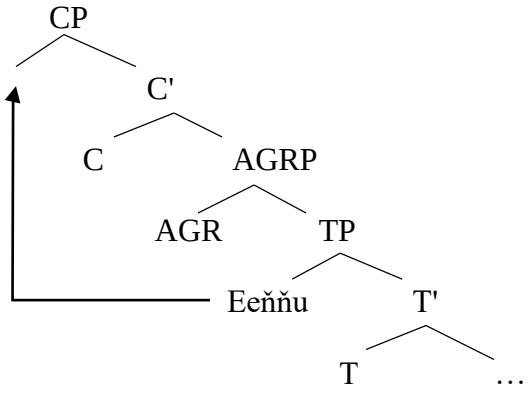
b. Eeňňu-tu duf-**e**

Who-FOC come-3sg-Past

'Who was it that came?'

(Aboh 2007:300-301)

c.



As shown in (53a-b), in Oromo, a subject *wh*-phrase can remain in situ in the absence of a focus marker but undergoes focus movement when there is a focus marker in the structure. Unlike in Dagara and the other African languages mentioned above, the fact that the subject *wh*-phrase is in situ in Omoro in (53a) does not affect the grammaticality of the sentence. Also note that Oromo has overt morphological agreement, realized as *–e* in (53a-b). On the other hand, Dagara and the other African languages do not possess such an overt morphological agreement marker. Then, the difference between Dagara (including the other languages whose subject *wh*-phrase cannot remain in situ) and Oromo may be that Oromo has a functional projection, which can be dubbed as Agreement Phrase (AgrP), between CP and TP while Dagara and the other languages do not. The existence of AgrP between CP and TP in Oromo makes covert movement of a subject *wh*-phrase from the specifier position of TP to the specifier position of CP licit vis-à-vis of the Anti-Locality Constraint.[9]

[9] Note that the agreement marker in Oromo is a suffix that is attached to the verb. One can assume that the occurrence of the agreement marker on the verb is the result of V-movement. That is, verbs move to T and from T to the head of the function projection between TP and CP for agreement.

Thus, the fact that a subject *wh*-phrase cannot remain in situ in some SVO African languages (e.g. Dagara, Lele, Kitharaka, Kynarwanda) but can remain in situ in Kipsigis (a VSO language) and languages with overt morphological agreement such as Oromo can be taken to indicate that *wh*-phrases in situ undergo covert movement which obeys the Anti-Locality Constraint.

4.4. The Syntax of *Bònusò* and *ŋmin*

As mentioned in the previous chapters, *bònusò* 'how come/why' and *ŋmin* 'where/what' behave differently from the other adjunct *wh*-phrases in the language. While the position of adjunct *wh*-phrases such as *nyinê* 'where', *ŋmɪŋmɪn* 'how', *etc.* is flexible, the position of *bònusò* and *ŋmin* is fixed. Consider the following examples:

(54) a. Ayuo cen-n nyinê?
Ayuo went-AFF where
'Where did Ayuo go?'

b. Nyinê na ka Ayuo cen?
where FOC that Ayuo went
'Where was it that Ayuo went?'

(55) a. Ayuo mɛ na a dio ŋmɪŋmɪn?
Ayuo built AFF the house how
'How did Ayuo build the house?'

b. ŋmɪŋmɪn na ka Ayuo mɛ a dio?

how FOC that Ayuo built the house

'How was it that Ayuo built the house?'

(56) a.* A bie kòno na bònusò?

the child crying AFF how-come

'How come the child is crying?'

b. Bònusò ka a bie kòno?

how-come that the child crying

'How come the child is crying?'

(57) a. A sɪmɪe ɪ ŋmɪn?

the peanuts be where

'Where are the peanuts?'

b.* ŋmɪn na ka a sɪmɪe ɪ?

where FOC that the peanuts be

'Where are the peanuts?'

(54a-b), (55a-b), (56a-b), and (57a-b) are *wh*-questions with adjunct interrogative phrases. While (54a-b), (55a-b), (56b), and (57a) are acceptable, (56a) and (57b) are unacceptable. The unacceptability of (56a) is attributed to the fact that *bònusò* is inside of the clause. As for the ungrammaticality of (57b), it is caused by the fact that *ŋmɪn* is in the left periphery of the sentence.

In this section, I will propose a syntactic analysis for these two special adjunct *wh*-phrases in Dagara. More specifically, following researchers such as Ko (2005) and Ochi (2004), I will argue that *bònusò* is directly merged in [Spec, CP] of the clause in which it occurs and that *ŋmɪn* is merged with VP in overt syntax.

4.4.1. The Syntax of *bònusò*

There are two reasons for assuming that *bònusò* is directly merged in the specifier position of CP. First, as mentioned in chapter 3, *bònusò* does not allow long-distance dependency. That is, it is interpreted with the clause in which it occurs. Consider the following examples:

(58) a. Bònusò ka fʊ yèl ka a Dar ba wa ɪ?
how-come that you said that the Dar not came NEG.PART
'How come you said that Dar did not come?'

b. What is the reason x, such that for x, you said that Dar did not come?

c.* What is the reason x, such that you said that for x, Dar did not come?

(59) a. Fʊ yèl la ka bònusò ka a Dar ba wa ɪ?
you said AFF that how-come that the Dar not came NEG.PART
'Why did you say that Dar did not come?'

b. What is the reason x, such that you said that for x, Dar did not come?

c.* What is the reason x, such that for x, you said that Dar did not come?

(58a) is interpreted as in (58b) but not (58c). Similarly, (59a) means (59b) but not (59c). In (58a), *bònusò* is placed in the initial position of the matrix clause while in (59a) it is inside

an embedded clause. In these sentences, *bònusò* is interpreted in the clause where it occurs. That is, in (58a), the speaker wants to know the hearer's reason for saying that Dar did not come. On the other hand, in (59a), the speaker wants to know the reason for Dar not coming. This indicates that *bònusò* only allows local interpretation, which makes it different from the English *why*, as illustrated in (60).

(60) Why did you say that John is mad?

a. What is the reason x, such that for x, you said that John is mad?

b. What is the reason x, such that you said that for x, John is mad?

(Ochi 2004:32)

According to Ochi (2004), (60) is ambiguous between (60a-b). That is, *why* can be interpreted with the matrix clause, as shown in (60a), or with the embedded clause, as in (60b). Researchers such as Ochi (2004), Ko (2005), Slonsky and Soare (2011), and Miyagawa (2017) argue that *why* may be base-generated in the embedded clause (i.e. the lower CP) and move to the edge of the matrix clause (i.e. the higher CP), which allows long-distance interpretation. This is responsible for the ambiguity of the sentence. The fact that *why* is base-generated inside the lower CP and moves to the higher CP (i.e. to the edge of the matrix clause) makes it different from the Dagara *bònusò*, which is directly merged at the edge of the clause it modifies.

The second reason for assuming that *bònusò* is merged in the specifier position of the CP it modifies comes from the lack of the intervention effect. As mentioned earlier, repeated in (61), a Dagara *wh*-phrase cannot follow "interveners" such as negation.

(61) *[$_{CP}$ Ayuo ba cen nyinê ɛ]?

Ayuo not went where NEG.PART

'lit. Where did Ayuo not went?'

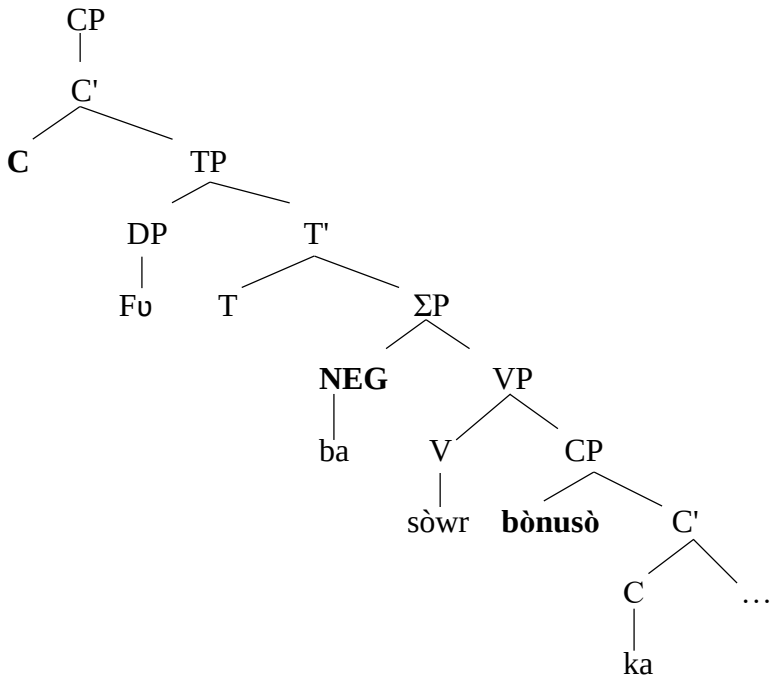
(61) is an unacceptable sentence in Dagara because of the presence of negation. Although *wh*-questions exhibit intervention effects in Dagara, the *bònusò*-construction (i.e. *why*-construction in Dagara) does not. Consider the following examples in (62a-b):

(62) a. Fʊ **ba** sòwr ka **bònusò** ka a bie bàr a lokoli ɛ?

you not asked that how-come that the child quit the school NEG.PART

'Didn't you asked why the child dropped out of chool?'

b.



(62) is an acceptable yes/no question with an indirect *wh*-question. In this sentence, *bònusò* occurs inside an embedded clause. In (62), the matrix clause contains a negative particle. As shown in (62b), the negative particle occurs between C and *bònusò*. Although the negative particle occurs between C and *bònusò*, the sentence is acceptable. The fact that (62) does not show intervention effects indicates that *bònusò* is licensed in the specifier position of the lower CP. One can also say that because (62a) is a *yes/no*-question, the *wh*-phrase does not have to move to the specifier position of the matrix CP.

Note that indirect questions do not exhibit intervention effects in Dagara as well. This is shown below.

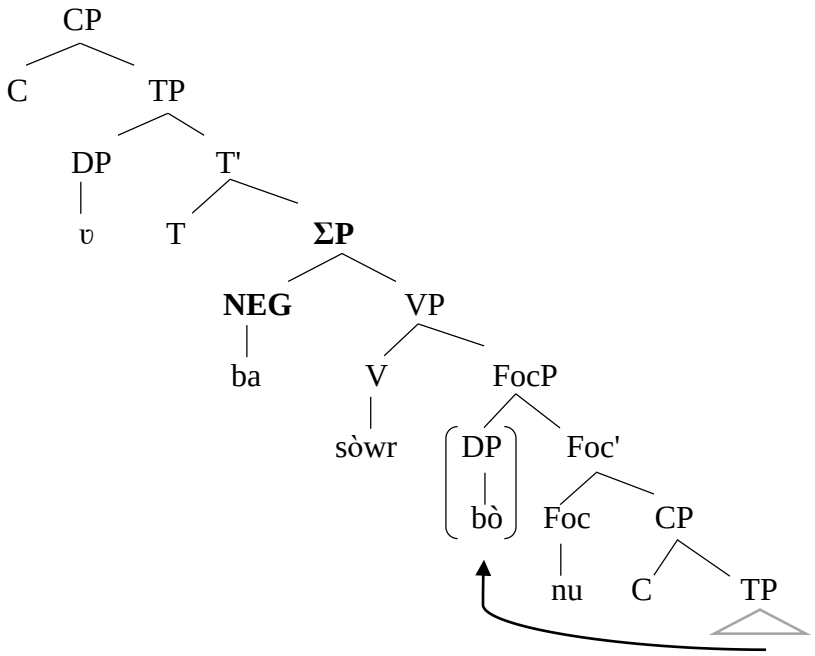
(63) ʊ **ba** sòwr ka **bò** **nu** ka Ayuo dà __ ɛ.

he not asked that what FOC that Ayuo bought NEG.PART

'He did not ask what Ayuo bought.'

(63) has an indirect question reading. In (63), *bò* 'what' undergoes overt focus movement to the edge of the embedded clause. In this sentence, the matrix clause contains the negative particle *ba*. The negative particle *ba* c-commands the *wh*-phrase and the sentence is still acceptable. I assume that the negative particle *ba* does not interrupt the interpretation of the *wh*-phrase *bò* in (63) because *bò* is licensed at the edge of the embedded clause. This is shown below.

(64) The indirect question reading



(64) shows the structure of (63). As shown in this structure, the *wh*-phrases *bò* move to the edges of the embedded clauses. I assume that the *wh*-phrase is licensed in the specifier position of FocP, which explains the absence of the intervention effects.

Note that (63) is unacceptable with a matrix question reading. This is shown below.

(65) * υ **ba** sòwr ka **bò** **nu** ka Ayuo dà __ ɛ?

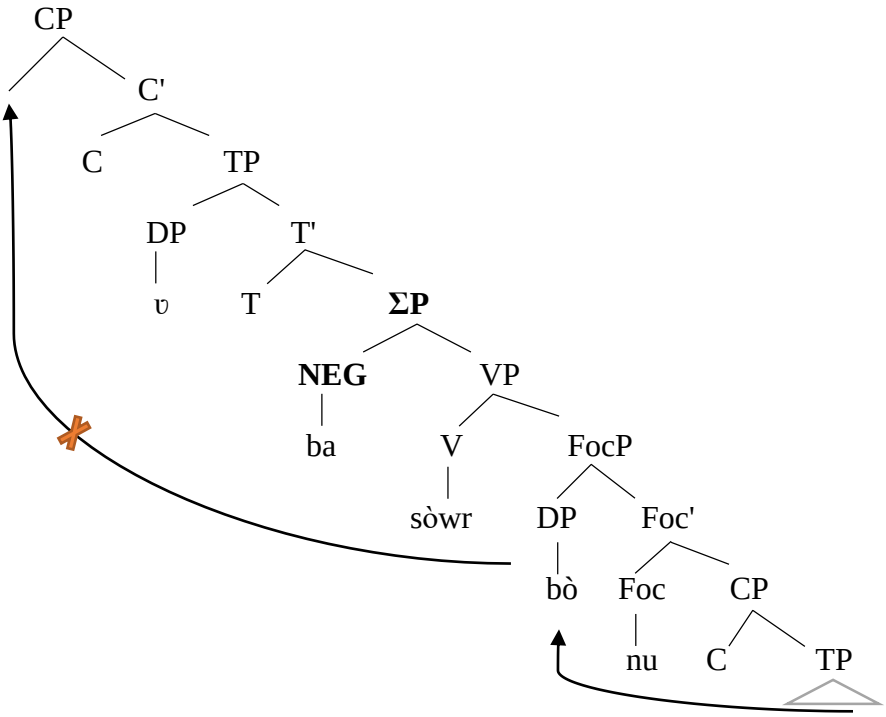
he not asked that what FOC that Ayuo bought NEG.PART

'What didn't he ask whether Ayuo bought?'

(65) has a matrix direct question reading. In this sentence, the *wh*-phrase undergoes focus movement to the edge of the embedded clause. Also, the matrix clause contains the negative particle *ba* that c-commands the *wh*-phrase. Unlike (63), the occurrence of the negative *ba* in (65) makes the sentence ungrammatical. I argue that the *wh*-phrase *bò* 'what' in (65) is

licensed in the specifier position of the higher CP (i.e. the edge of the matrix clause) at LF. That is, *bò* 'what' undergoes covert *wh*-movement from the specifier position of FocP to the specifier position of the higher CP, the edge of the matrix clause, where it is licensed. Covert *wh*-movement of *bò* 'what' from the specifier position of FocP to the specifier position of the higher CP is blocked by negation. This is illustrated below.

(66) The indirect question reading



(66) shows the structure of (65). In this sentence, I assume that the *wh*-phrase must undergo covert movement to the specifier position of CP to license the matrix question interpretation. Covert movement of the *wh*-phrase from the specifier position of FocP to the specifier position of the higher CP is blocked by the negation.

Thus, the lack of intervention effects in (63) can be explained by assuming that the *wh*-phrase is licensed in the embedded clause, just like *bònusò*. On the other hand, the

presence of the intervention effects in (65) indicates that the *wh*-phrase *bò* 'what' is licensed in the matrix clause (i.e. in the specifier position of the higher C).

4.4.2. The Syntax of *ŋmɪn*

As shown earlier, *ŋmɪn* always occurs inside of a clause and its meaning varies depending on whether it occurs in a matrix clause or an embedded clause. In what follows, I argue that *ŋmɪn* is merged with VP and that when it occurs in an embedded clause, it can move to the specifier position of the lower CP. One piece of evidence that *ŋmɪn* is merged with VP is the presence of the intervention effect. Consider the sentences in (67) and (68):

(67) a. A bie ɪ ŋmɪn?
the child is where
'Where is the child.'

b. Ayuo yèl ka a bie ʊ ɪ ŋmɪn ?
Ayuo asked that the child he do what
'What did Ayuo ask the child to do?'

(68) a.* A bie **ba** ɪ ŋmɪn ɛ?
the child not is where NEG.PART
'lit. Where isn't the child?'

b.* Ayuo **ba** yèl ka a bie ʊ ɪ ŋmɪn ɛ?
Ayuo not asked that the child he do what NEG.PART
'What didn't Ayuo ask the child to do?'

c.* Ayuo yèl la ka a bie ʊ **ba** ɩ ŋmɩn ɛ?

Ayuo said AFF that the child he not do what NEG.PART

'What did Ayuo ask the child not to do?'

(67a-b) are grammatical sentences. Note that in (67a), *ŋmɩn* is translated into 'where' while in (67b) it is translated into 'what'. As mentioned in the previous chapters, the translation of *ŋmɩn* varies depending on the context. (68a-c) are unacceptable sentences. In these sentences, there is a negative particle. The occurrence of the negative particle between C and *ŋmɩn* is responsible for the unacceptability of the sentences. The presence of the intervention effects in (68a-c) clearly indicates that *ŋmɩn* is merged in a position lower than negation. I assume that it is merged with VP.

4.4.3. On Covert Movement of *Bònusò* and *ŋmɩn*

Based on the distribution of *bònusò* 'how come/why' and *ŋmɩn* 'where/what', shown above, I claim that *bònusò* is licensed in its underlying position even at LF. On the other hand, *ŋmɩn* undergoes covert *wh*-movement to the specifier position of CP, where it is licensed. Evidence for this claim comes from the following observations:

(69) The lack of intervention effects in *bònusò*-constructions

a. [$_{CP}$ Fʊ **ba** sòwr ka **bònusò** ka a bie bàr a lokoli ɛ]?

you not asked that how-come that the child quit the school NEG.PART

'Didn't you asked why the child dropped out of chool?'

b.*[$_{CP}$ Ayuo **ba** sòwr ka a bie ɩ ŋmɯn ɛ]?

Ayuo not asked that the child is where NEG.PART

'Where didn't asked whether the child is?'

(69a) is acceptable while (69b) is not. In these sentences, there is a negative particle in the matrix clauses. In (69a), despite the occurrence of the negative particle between the higher C and *bònusò*, the sentence is acceptable. In (69b), the occurrence of the negative particle in the matrix clause is responsible for the ungrammaticality of the sentence. Recall the claim that covert *wh*-movement is blocked by negation in the language. The fact that (69a) does not exhibit intervention effects at all indicates that *bònusò* does not undergo covert *wh*-movement. In contrast, I assume that (69b) exhibits intervention effects because *ŋmɯn* 'where' undergoes covert *wh*-movement to the specifier position of CP.

Additional evidence that *bònusò* is licensed in its underlying position while *ŋmɯn* undergoes covert movement to the specifier position of CP, where it is licensed, comes from the Adjunct Condition. Consider the following sentences:

(70) The Adjunct Condition

a. [$_{CP}$ A Dar nan sòwr ka **bònusò** ka a bie wa yàwna]

the Dar who asked that why that the child came because

ka Pol jɛ́.

that Paul got.angry

'Paul got angry because Dar asked why the child came.'

b.* [$_{CP}$ A Dar nan sòwr ka a bie ɩ **ŋmɯn** yàwna] ka Pol jɛ́.

the Dar who asked that the child is where because that Paul got.angry

'Paul got angry because Dar asked where the child is.'

(70a) is perfectly acceptable while (70b) is ungrammatical. In these sentences, the bracketed clauses are reason adjunct clauses. In (70a), *bònusò* occurs inside the adjunct clause and the sentence is still acceptable. Likewise, in (70b), *ŋmɪn* occurs inside the adjunct clause but the sentence is degraded. The occurrence of *ŋmɪn* is responsible for the degradedness of the sentence. I assume that in (70a), *bònusò* does not undergo covert *wh*-movement at all (the lack of the intervention effect in (69a) supports this assumption). The fact that *bònusò* does not undergo movement at all in (70a) is responsible for the absence of the island effects. In contrast, in (70b), *ŋmɪn* must undergo covert movement out of the reason adjunct clause. Covert movement of *ŋmɪn* violates the Adjunct Condition.

Thus, while *wh*-phrases in situ undergo covert *wh*-movement to the specifier position of C in Dagara, *bònusò* does not. Rather, *bònusò* is licensed in its underlying position. Since *bònusò* is licensed in its underlying position, it can be c-commanded by interveners, unlike other *wh*-phrases in the language.

4.5. Summary

In this chapter, I have argued that *wh*-phrases in situ are licensed by C via covert *wh*-movement in Dagara. More specifically, I have claimed that when the head of Focus Phrase is not merged with CP, *wh*-phrases (except for subject *wh*-phrases) stay in their underlying positions in overt syntax and undergo movement covertly, whereby they are licensed by C. Covert *wh*-movement is analogous to overt focus movement in Dagara in that both instances of movement obey conditions on movement such as the Adjunct Condition, the Coordinate Structure Constraint, the Complex NP Constraint, and the Anti-Locality Constraint. Although languages such as Japanese and Chinese are argued to lack island effects with *wh*-phrases in situ, I have shown that Dagara *wh*-phrases in situ exhibit island effects and claim that this asymmetry is due to the presence/absence of large-scale pied-piping of islands. In languages like Japanese and Chinese, the presence of large-scale pied-piping of islands allows *wh*-phrases in situ to occur inside islands. In contrast, the absence of large-scale pied-piping of islands prevents *wh*-phrases from occurring inside islands in Dagara.

I have also considered the two adjunct *wh*-phrases *bònusò* and *ŋmɪn*, which need special attention. I have argued that while *ŋmɪn* undergoes covert *wh*-movement, *bònusò* does not. This claim is based on the fact that *wh*-questions containing *ŋmɪn* show intervention effects and adjunct island effects while *wh*-questions with *bònusò* do not.

Chapter 5

On Multiple *Wh*-Questions in Dagara

5.1. Introduction

It is observed that languages differ in how they form multiple *wh*-questions. In some languages, multiple *wh*-questions are formed by fronting one *wh*-phrase and leaving the other *wh*-phrases in situ, as shown below.

(1) Who bought what?

Let us first consider (1), a very simple example in English. Sentences like (1) are mentioned by many linguists (see Kuno and Robinson 1972, Dayal 2017, and many others). Note that for (1) to be natural, we need a context where there is a group of people and each of them bought something. To find out what each member of the group purchased, the speaker can ask a question like (1). This is further illustrated below:

(2) Context: To foster an atmosphere in our Linguistics Unit, every day one syntactician and one phonologist go out to lunch together, at the department's expense. You know who went out to lunch together this week, so tell me:

> Which syntactician took which phonologist to lunch today?
>
> (Dayal 2017: 45)

As (1) and (2) show, English constructs multiple *wh*-questions by placing one *wh*-phrase in the left periphery of the clause and leaving the other *wh*-phrase in situ.

Unlike in English, multiple *wh*-questions are formed by fronting all the *wh*-phrases in languages like Bulgarian. In yet another type of language, they are constructed by leaving all the *wh*-phrases in situ (e.g. Japanese). These are shown in (3).

(3) a. Koj kakvo e kupil? (Bulgarian)
who what is bought
'Who bought what?'

b. John-wa dare-ni nani-o ageta no? (Japanese)
John-TOP who-DAT what-ACC gave Q
'Who did John give what?'
(cf. Bošković 2000: 53)

In (3a), which is an example from Bulgarian, both the subject and the object *wh*-phrases are fronted. On the other hand, in (3b), the subject and the object *wh*-phrases are in situ.

Besides, some languages mix the English pattern and the Japanese pattern in the formation of their multiple *wh*-questions. In other words, in those languages, multiple *wh*-questions are formed by moving only one *wh*-phrase to the left periphery of the clause or by leaving all the *wh*-phrases in situ. Examples of languages of this kind include French. Consider the following examples:

(4) French (Bošković 2000 : 53)

a. Qu' a-t-il donné à qui?
what has-he given to whom
'What did he give to whom?'

b. Il a donné quoi à qui ?
he has given what to whom
'What did he give to whom?'

c. * Qu' à qui a-t-il donné?
what to whom has-he given
'What did he give to whom?'

In (4a), the object *wh*-phrase is fronted and the PP *wh*-phrase is left in situ. In (4b), both of them are in situ. (4c) is unacceptable in French, where the two *wh*-phrases are fronted. The fact that the two *wh*-phrases are fronted in (4c) is responsible for the ungrammaticality of the sentence.

Although there are studies about multiple *wh*-questions in many languages, including the ones mentioned above, there is no study about multiple *wh*-questions in Dagara and other West African languages, to the best of my knowledge. In this chapter, I show how multiple *wh*-questions are formed in Dagara and propose an analysis for them. The aim of this chapter is also to highlight the complexity of the formation of multiple *wh*-questions in Dagara and give a direction for future research. Although I will propose an analysis of multiple *wh*-questions in this language, I have to admit that more studies are necessary to fully understand them.

The remainder of the chapter is organized as follows: In section 2, I will explain some restrictions on the ordering of *wh*-phrases in multiple *wh*-questions in Dagara. In this section, I will show acceptable orders of *wh*-phrases and unacceptable ones and provide an analysis of them. Section 3 will be devoted to the interpretation of multiple *wh*-questions in the language. Section 4 summarizes the chapter.

5.2. Restrictions on the Ordering of *Wh*-phrases in Multiple *Wh*-Questions

As pointed out in chapter 2, multiple *wh*-questions are marginalized in Dagara and are subject to a restriction on the ordering of *wh*-phrases. According to many of my informants, multiple *wh*-questions in which *wh*-phrases follow the order in (5) are quite acceptable. However, multiple *wh*-questions where *wh*-phrases follow the order in (6) are unacceptable.

(5) a. ? Subject *wh*-phrase > Direct object *wh*-phrase

b. ? Subject *wh*-phrase > Adjunct *wh*-phrase

c. ? Indirect object wh-phrase > direct object wh-phrase

(6) a. * Direct object *wh*-phrase > Adjunct *wh*-phrase

b. * Adjunct *wh*-phrase > Direct object *wh*-phrase

c. * Subject *wh*-phrase > Indirect object *wh*-phrase

d. * Direct object *wh*-phrase > Indirect object *wh*-phrase

e. * Subject *wh*-phrase > Direct object *wh*-phrase > Indirect object *wh*-phrase

(5a-c) are possible orders of *wh*-phrases in multiple *wh*-questions in Dagara while (6a-e) are not. In what follows, I will explain why (5a-b) are marginally allowed while (6a-b) are disallowed. I will put aside (5c) (i.e. questions containing indirect object *wh*-phrases and direct object *wh*-phrases) for future studies because it is not clear why those questions are marginally acceptable. Also, those questions are similar to serial verb constructions which have special characteristics in the language (see Ali et al. 2021). Then, there is uncertainty about whether the effects observed are due to *wh*-questions.

5.2.1. Multiple *Wh*-Questions with Moved *Wh*-phrases and *Wh*-phrases in Situ

Multiple *wh*-questions containing moved *wh*-phrases and *wh*-phrases in situ, as shown in (7), are marginally permitted, according to some Dagara speakers.

(7) a. ? Ànú nu dà bò?
who FOC bought what
'Who bought what?

b. ? Ànú nu cen nyinê?
who FOC went where
'Who went where?'

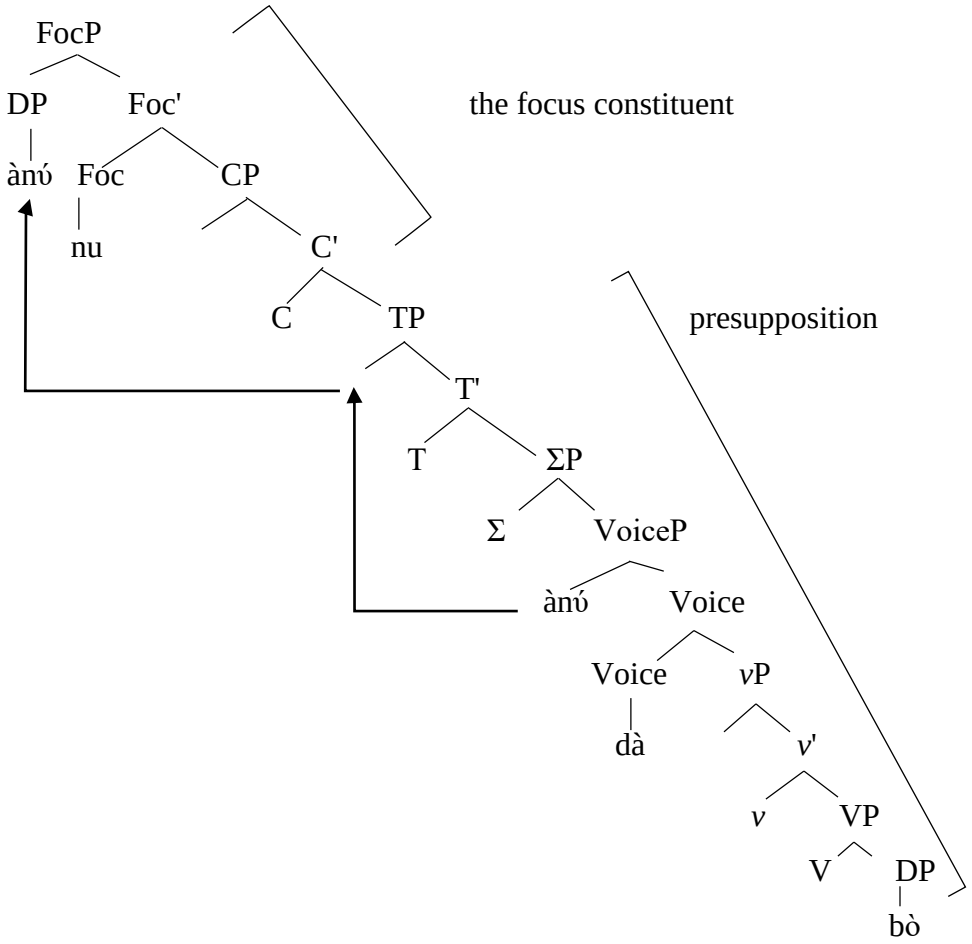
c. ? Ànú nu dà mobiil dabʊor ?
who FOC bought car when
'Who bought a car when?'

(7a) contains a moved subject *wh*-phrase and a direct object *wh*-phrase in situ. In this sentence, the moved subject *wh*-phrase is higher than the direct object *wh*-phrase in situ. (7b-c) contain moved subject *wh*-phrases and adjunct *wh*-phrases in situ. The moved subject *wh*-phrases are also higher than the adjunct *wh*-phrases in situ. Native speakers of Dagara I consulted observed that (7a-c) are mildly degraded. The question that is raised here is why (7a-c) are marginalized.

I claim that multiple *wh*-questions are a bit degraded in Dagara because the *wh*-phrases in situ occur in the presuppositional parts of the sentences in overt syntax, as illustrated in (8).[1]

[1] I assume that there are two projections, namely VoiceP and *v*P, on top of VP such as the one shown in (8). These projections are mentioned only when they are relevant for the discussion.

(8)

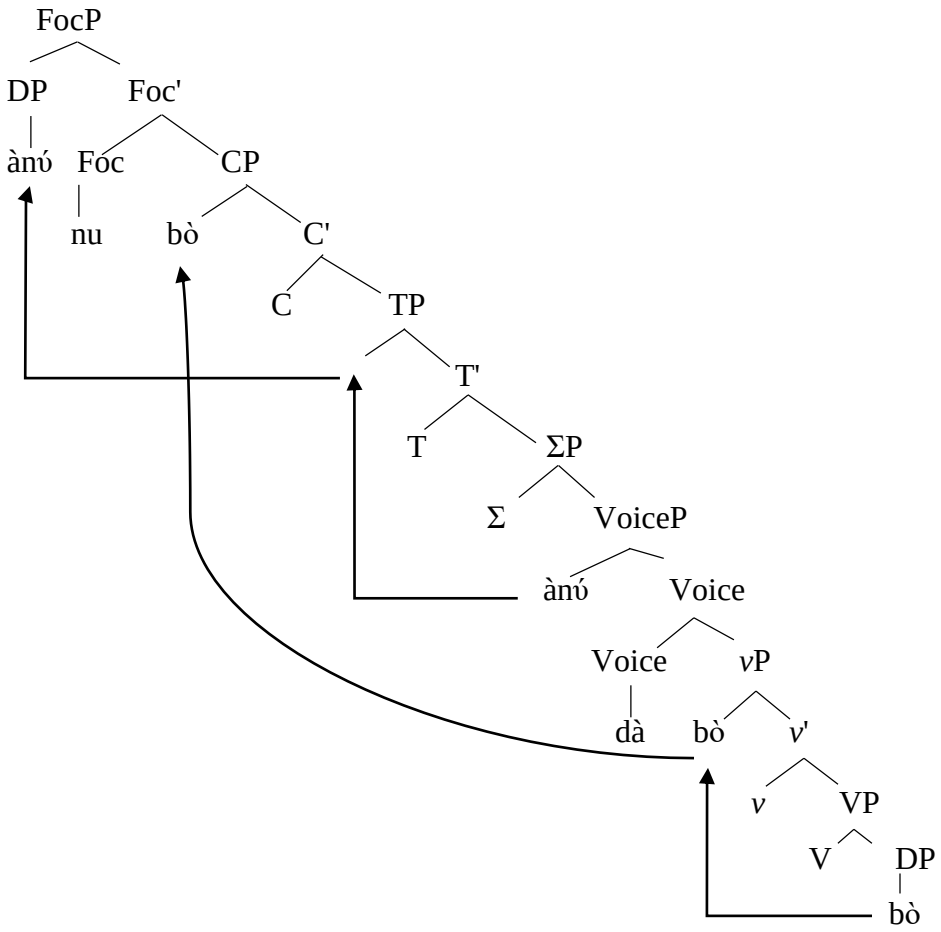


Note that subjects are assumed to be base-generated in the specifier position of VoiceP, where they are assigned an agent theta role (Kratzer 1996 and Harley 2013, among others). I then assume that *ànú* first occurs in the specifier position of VoiceP and moves to the specifier position of FocP via the specifier of TP.

In general, focus constructions have a bipartite structure: a part indicating focus and a part indicating presupposition (see Aboh 2007, Bocci et al. 2018, and Szendroi 2017, among others). The focus involves novelty or contrastivity while presupposition identifies old or background information. Since *wh*-phrases are used to identify new information, they cannot occur in the presupposition, the part of the sentence that gives background information (see also Aboh 2007 and Bocci et al. 2018). In Dagara, I assume that the part of the sentence

preceding *nu* (*ka*) is the focus and the part following it (i.e. TP) is the presupposition. If a *wh*-phrase is in the presupposition part of a sentence at LF, the interpretation of that sentence crashes. I assume that the *wh*-phrases in situ in (7a-c) are inside the constituents indicating presupposition and that covert movement of those *wh*-phrases to the specifier position of CP, as shown in (9), helps them avoid being trapped in the presupposition.

(9)



In (9), movement of the subject *wh*-phrase (i.e. *àńú* 'who') from the specifier position of VoiceP to the specifier position of FocP via TP is overt while movement of the object *wh*-phrase (i.e. *bò* 'what') to the specifier position of CP via the specifier position of *v*P is covert.

Covert movement of *bò* is due to the weak *wh*-feature on C and also to the incompatibility of a *wh*-phrase occurring inside a constituent indicating presupposition.

Overt movement and covert movement are assumed to be distinguished by which copy of the *wh*-phrase (i.e. the higher copy or the lower copy) is pronounced in the chain (see Bobaljik 2002). If the higher copy of the *wh*-phrase is pronounced, the movement involved is considered to be overt. On the other hand, if the lower copy is pronounced, the movement involved is called covert movement. In (8) and (9), movement of *ànú* is overt because it is its higher copy that is pronounced. On the other hand, I assume that movement of *bò* is covert since it is pronounced in the lower position.

Evidence that the *wh*-phrases in situ in (7a-c) undergo covert *wh*-movement comes from the following data:

(10) a. * Ànú nu nyɛ́ a nir 'lan nan dà bò?
who FOC saw the person that REL bought what
'lit. WHO saw that person who bought what?

b. * Ànú nu nyɛ́ a nir 'lan nan cen nyinê?
who FOC saw the person that REL went where
'lit. WHO saw that person who went where?'

c. * Ànú nu nyɛ́ a nir 'lan nan dà mobiil dabʋor?
who FOC saw the person that REL bought car when
'lit. WHO saw that person who bought a car when?'

(10a-c) are unacceptable. Although they contain moved subject *wh*-phrases and *wh*-phrases in situ, they are degraded. In these sentences, the *wh*-phrases in situ are inside complex NPs.

The fact can be explained if the *wh*-phrases in situ need to move to the specifier position of CP in violation of the Complex NP Constraint.

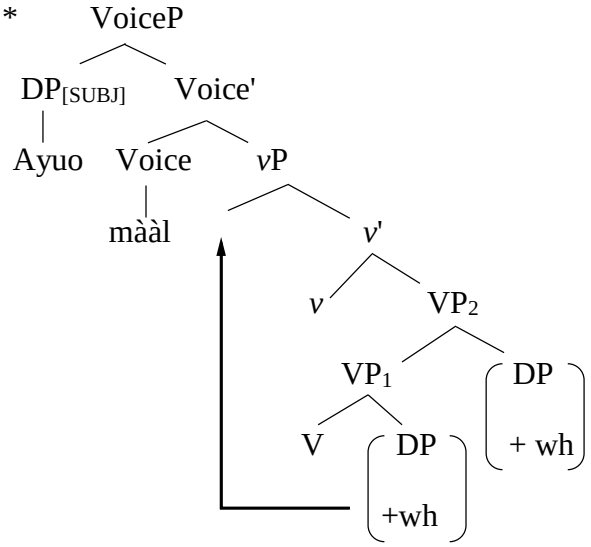
Note that multiple *wh*-questions that contain moved direct object *wh*-phrases and adjunct *wh*-phrases in situ and ones that contain moved adjunct *wh*-phrases and direct object *wh*-phrases in situ are judged to be unacceptable. These are illustrated below.

(11) a. * Bò nu ka Ayuo mààl ŋmɩnŋmɩn?
what FOC that Ayuo fixed how
'lit. What did Ayuo fix how?'

b. * ŋmɩnŋmɩn na ka Ayuo mààl bò?
how FOC that Ayuo fixed what
'lit. What did Ayuo fix how?'

(11a) contains a moved direct object *wh*-phrase and an adjunct *wh*-phrase in situ and (11b) contains a moved adjunct *wh*-phrase and a direct object *wh*-phrase in situ. As shown here, multiple *wh*-questions cannot contain object *wh*-phrases and adjunct *wh*-phrases in Dagara. I assume that the ungrammaticality of (11a-b) indicates that two *wh*-phrases cannot occur in a verb phrase in Dagara. This is illustrated below.

(12) *



Let us consider (12) as the structure of the verb phrases in (11a-b). As shown in this structure, the two *wh*-phrases first occur inside VP. Then, the *wh*-phrase with a strong focus feature must first move overtly to the specifier positon of *v*P. From there, it moves to the specifier positon of FocP.

The question that should be raised is why two *wh*-phrases cannot occur in VP in this language. I assume that the PIC, defined in (13), may be responsible for this fact.

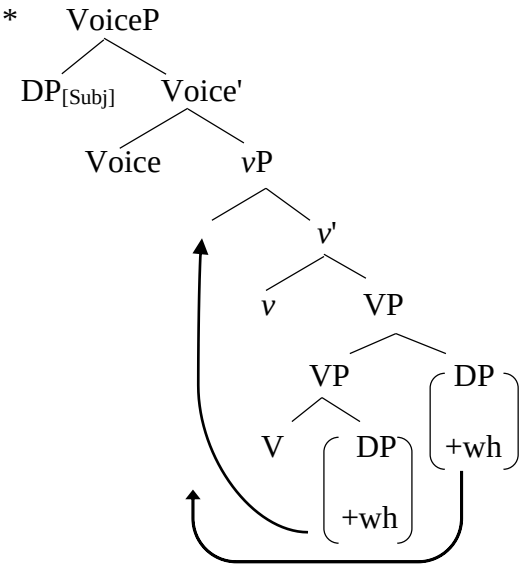
(13) The Phase Impenetrability Condition (Chomsky 2000: 108)

> In a phase α with H, the domain of H is not accessible to operations outside α, only H and its edge are accessible to such operations, where the edge includes any specifiers of H and any adjunct to H.

Chomsky (2000) argues that *v* is a phase head and that when *v*P is constructed, its complement becomes opaque and invisible for further computation. If Chomsky's assumption is correct, it is applicable to Dagara as well. I assume that since *wh*-phrases in situ in Dagara have a *wh*-feature that needs to be checked in the specifier position of CP, they

must covertly move out of VP before *v*P is constructed. The fact that two *wh*-phrases cannot merge inside VP in the language can be explained if they need to move to the specifier position of *v*P. Then, when there are two *wh*-phrases (or more) inside VP, they compete for the specifier position of *v*P. This is shown in (14).

(14) *



Since *wh*-phrases in situ must move to the specifier position of CP to check the *wh*-feature, they must first move covertly to the specifier position of *v*P to satisfy the PIC. From there, they undergo covert movement to the specifier position of CP. Thus, the competition of the two *wh*-phrases inside the verb phrase, triggered by the PIC, is responsible for the ungrammaticality of (11a-b).

5.2.2. Multiple *Wh*-Questions with Two Moved *Wh*-phrases

A multiple *wh*-question containing two moved *wh*-phrases, as shown in (15a-b), (16a-b), and (17a-b), is unacceptable.

(15) a. * Bò nu ka ànú nu dà?

what FOC that who FOC bought

'lit. WHO bought WHAT?'

b. * Nyinê na ka ànú nu cen?

where FOC that who FOC went

'Who was it that went WHERE?'

(16) a. * Nyinê na ka bò nu dù Ayuo?

where FOC that what FOC bit Ayuo

'What bit Ayuo where?'

b. * Bò nu ka ànú nu dà?

what FOC that who FOC bought

'Who bought WHAT'?

(17) a. * Bò nu ka nyinê nu ka Ayuo dà?

what FOC that when FOC that Ayuo bought

'lit. What was it that WHO bought?'

b. * Nyinê na ka bò nu ka Ayuo dà?

where FOC that what FOC that Ayuo bought

'Where was it that Ayuo bought WHAT?'

In (15a-b), (16a-b), and (17a-b), all the *wh*-phrases undergo focus movement. The fact that all the *wh*-phrases undergo focus movement is partially responsible for the ungrammaticality

of the sentences. In fact, the presence of two focus markers in a sentence is not allowed in Dagara. In (15a-b), (16a-b), and (17a-b), *nu* and *na* are focus markers that attract phrases in their specifier positions. Following Stoyanova (2004, 2008), I claim that Dagara is a language with a unique focus position and that this fact is responsible for why two focus constituents cannot co-occur in a clause. This is further illustrated below:

(18) a.* Ayuo nu ka Dar nu tὺ.
Ayuo FOC that Dar FOC insulted
'It was Ayuo that DAR insulted.'
b.* Sɛbɛ nu ka Dar nu dè.
book FOC that Dar FOC took
'It was a book that DAR took.'

(18a-b) are unacceptable declarative sentences. In these sentences, the subject DPs and the object DPs are focused. Since Dagara is a language with a unique focus position, focalization of the object DPs and the subject DPs makes the sentences ungrammatical.

Also note that a multiple *wh*-question containing two *wh*-phrases, moved to the positions preceding a single focus marker, as shown in (19), is not acceptable in Dagara.

(19) a. * Bò ànύ nu dà?
what who FOC bought
'lit. Who was it that bought WHAT?'

b. * Nyinê ànʊ́ nu cen?

where who FOC went

'Who was it that went WHERE?'

c. * Nyinê bò nu dʊ̀ Ayuo?

where what FOC bit Ayuo

'What was it that bit Ayuo WHERE?'

In (19a-c), two *wh*-phrases move to the specifier position of FocP but the sentences are ungrammatical. The ungrammaticality of (19a-c) indicates that only one *wh*-phrase is allowed in the specifier position of FocP in Dagara.

The impossibility of having double or more focus constituents in the same sentence is Dagara is congruent with what is observed in the literature with many languages (Bocci et al. 2018). Indeed, it is observed that languages such as Italian cannot have two focus constituents in one clause. Consider the following sentences from Bocci et al. 2018: 36):

(20) a. [A GIANNI] [dovresti dare il libro __], non a Piero.

to Gianni you should give the book not to Piero

'You should give the book TO GIANNI, not to Piero.'

b.* [[A GIANNO] [[IL LIBRO] [dovresti dare…]]]

to Gianni the book you should give…

'You should give [THE BOOK [TO GIANNO]]…'

According to Bocci et al. (2018), (20a) is acceptable and (20b) is not in Italian. In (20a), the preposition phrase *a Gianni* 'to Gianni' is focused by being moved to the left-peripheral

position of the sentence. In (20b), *a Gianni* 'to Gianni' and *il libro* 'the book' are intended to be focused but the sentence is ungrammatical. The fact that the two constituents are focused in (20b) is said to be responsible for the ungrammaticality of the sentence. Following this fact, Bocci et al. (2018) argue that there is only one left-peripheral focus position in a clause, which makes it impossible for two constituents with focus features to co-occur, and that the uniqueness follows from the fact that focus constructions have a bipartite structure, as shown above, and repeated in (21).

(21) a. […] Foc […].

Focus Presupposition

b. *[[A GIANNI] [[IL LIBRO] [dovresti dare…]]

Focus Presupposition

(Bocci et al. 2018 : 36).

Recall that focus indicates new information while presupposition indicates background information or old information. As shown in (21), (20b) is ungrammatical because a focused constituent, which indicates new information, occurs inside presupposition.

Thus, the fact that two focus constituents cannot occur in the same clause in Dagara can be explained by assuming that sentences only have one focus position, just like in Italian.

5.2.3. Multiple *Wh*-Questions with Two *Wh*-phrases in Situ

A question cannot contain more than one *wh*-phrase in situ in Dagara. That is, multiple *wh*-phrases in situ are disallowed. This is shown below.

(22) a. * Ayuo dà-n bò dabʋor?

Ayuo bought-AFF what when

'lit. Ayuo bought what when?'

b.* Dar dè-n bò nyinê?

Dar took-AFF what where

'lit. Dar took what where?'

(22a-b) contain two *wh*-phrases in situ. These sentences are unacceptable. I assume that two *wh*-phrases cannot remain in situ in this language because they compete for the specifier position of CP at LF. This is shown again below.

(23) a. * Ànú nu nyɛ́ a nir 'lan nan dà mobiil dabʋor?

who FOC saw the person that REL bought car when

'lit. Who was it that saw that person who bought a car when?

b. * Ànú nu nyɛ́ a nir 'lan nan dè bò ?

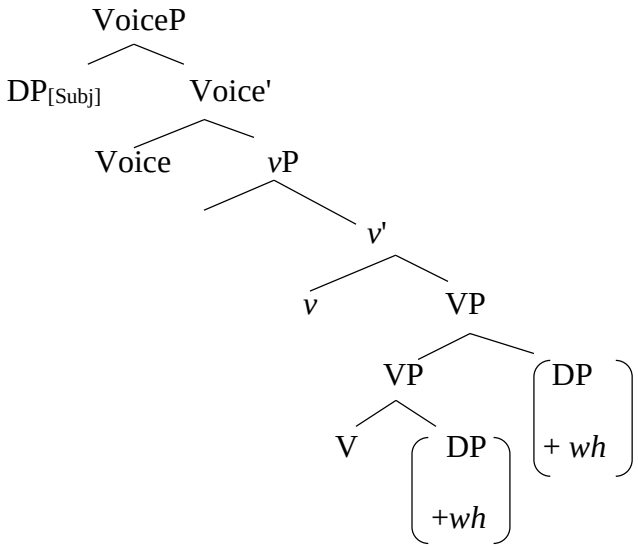
who FOC saw the person that REL took what

'lit. Who was it that saw that person who took what?'

(23a-b) contain moved subject *wh*-phrases and *wh*-phrases in situ. In (23a-b), the *wh*-phrases in situ are inside complex NPs. As mentioned earlier, *wh*-phrases cannot remain inside a complex NP because they must undergo covert *wh*-movement to the specifier position of CP. Accordingly, I assume that covert movement of multiple *wh*-phrases in situ triggers a competition for the specifier position of CP.

The ungrammaticality of (22a-b) can be explained also because two *wh*-phrases cannot merge in a VP in the language. This is illustrated above and repeated in (24).

(24) *



I assume that the PIC prevents more than one *wh*-phrase to be merged inside VP in this language. As argued above, since *wh*-phrases in situ in Dagara have a *wh*-feature that needs to be checked in the specifier position of CP, they must covertly move out of VP before *v*P is constructed. Then, when there is more than one *wh*-phrase inside VP, they compete for the specifier position of *v*P.

Following this assumption, a question arises as to why sentences like (25a-b) are not completely ungrammatical.

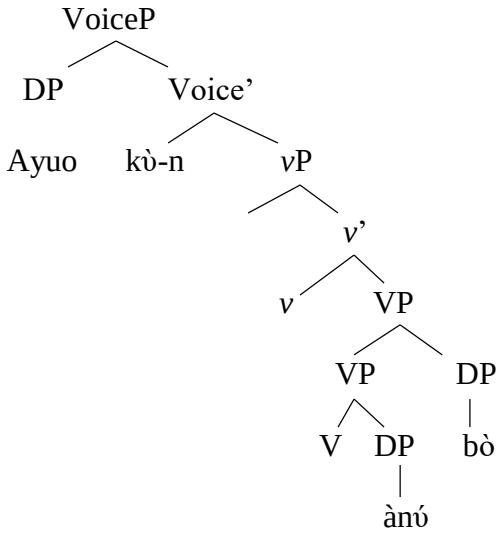
(25) a. ? Ayuo kù-n ànú bò?
Ayuo gave-AFF whom what
'lit. Ayuo gave whom what?'

b. ? A daba ɣãw-n ànú bò?

the man cast-AFF whom what

'The man cast whom what'

c.



I assume that (25c) is the structure of (25a). As shown in this structure, (25a) contains two *wh*-phrases in situ and the sentence is marginally acceptable. Likewise, (26b) is marginally acceptable although it contains two *wh*-phrases in situ. The analysis proposed to explain why two *wh*-phrases cannot occur inside the same VP does not explain why (25a-b) are not completely ungrammatical since *ànú* and *bò* are supposed to compete for the specifier position of *v*P. I will leave these data for future studies because more studies are needed fully understand sentences like (25a-b).

It should be mentioned that multiple *wh*-questions are not allowed at all in some languages. For example, Irish, Italian, and Somali are said to lack multiple *wh*-questions (Cf. Dayal 2017, Stoyanova 2008, 2004, among others). This is illustrated below:

(26) Irish (Dayal 2017:17)

a. * Cé aL rinne caidé?
who COMP did what
'Who did what?'

b. * Caidé aL thug sé do cé?
who COMP gave he to who
'What did he give to whom?'

(27) Italian (Dayal 2017:17)

a. * Chi ha scritto checosa?
who has written what
'Who has written what?'

b. * Chi èpartito quando?
who left when
'Who left when?'

c.* Quale ragazza ha-dato un bacio a quale ragazzo?
which girl gave a kiss to which boy
'Which girl gave a kiss to which boy?'

(28) Somali (Stoyanova 2004: 179)

a. Yaa Maryan arkay?
who-FM Maryan saw
'Who saw Maryan?'

b. * Yaa yimid goorma?

who-FM came time-which

'Who came when?'

The absence of multiple *wh*-questions in Irish, Italian, and Somali has received various accounts in the literature. According to many scholars, the lack of multiple *wh*-questions in these languages has to do with the fact that *wh*-phrases must be marked with a focus feature (Calabrese 1984, Stoyanova 2008, Dayal 2017). These researchers assume that only one focus feature is available in a clause in these languages and that the presence of more than one *wh*-phrase triggers a competition for the focus feature. Based on this assumption, Stoyanoya (2008) and Bocci et al. (2018) define Italian as a language with a unique focus and argue that the presence of two *wh*-phrases in a sentence in Italian triggers competition between them to get to the unique focus position.

Thus, languages can be classified in four groups in terms of how multiple *wh*-questions are formed: (1) languages that front all *wh*-phrases, (2) those that leave all *wh*-phrases in situ, (3) languages that front one *wh*-phrase and leave the other *wh*-phrases in situ, and (4) those that lack multiple *wh*-questions. This is shown in the table below.

Strategy	Example
1. Fronting all *wh*-phrases	Bulgarian
2. Leaving all *wh*-phrases in situ	Japanese, French
3. Fronting one *wh*-phrase and leaving the other *wh*-phrases in situ	English, Dagara, French
4. None	Italian, Irish, Somali

Table 1: Strategies through which multiple *wh*-questions are formed

As shown in this table, French uses two strategies to form multiple questions while languages such as Italian, Irish, and Somali have no strategy to form multiple *wh*-questions. Dagara and English use the same strategy to construct multiple *wh*-questions. They front one *wh*-phrase and leave the other *wh*-phrases in situ. Although they use the same strategy to form multiple *wh*-questions, they are different in the type of movement that is involved. *Wh*-phrases are fronted in Dagara through focus movement while in English, they are fronted through *wh*-movement.

5.3. The Interpretation of Multiple *Wh*-phrases

A property of multiple *wh*-questions that is also discussed in the literature is that they offer two ways of interpretation: pair-list interpretation and single-pair interpretation. These are illustrated below.

(29) English

a. Which student read which book?

b. John read *Thing Fall Apart*, Mary read *Crucial Conversation*, and Bill read *Harry Potter*.

c. # John read *Thing Fall Apart*.

As shown in (29b), multiple *wh*-questions like (29a) have only pair-list readings.

Unlike in English, multiple *wh*-questions in languages like Hungarian are said to have either pair-list readings or single-pair readings. This is illustrated below.

(30) Hungarian (Surányi 2006: 10)

a. Malyik lány hasontít melyik színésznőre?
which girl-NOM resemble-3SG which actress-to
'Which girl resembles which actress?'

b. Éva hasontít Nicole Kidmanre.
Eve resemble-3SG Nicole Kidman
'Eve resembles Nicole Kidman.'

c. Éva hasontít Nicole Kidmanre, Anna hasontít
Eve resemble-3SG Nicole Kidman, Ann resemble-3SG
Julianne Moore-ra…
Julianne Moore, …
'Eve resembles Nicole Kidman, Ann resembles Julianne Moore, …'

(30a) is a multiple *wh*-question in Hungarian. Surányi (2006) notes that Hungarian multiple *wh*-questions like (30a) are ambiguous between single-pair interpretation and pair-list interpretation, as shown by the fact that (30a) can be answered with (30b) or (30c). Many researchers (e.g. Bošković 2000, Boeckx 2003, Dayal 2006, and Surányi 2006) argue that multiple fronting of *wh*-phrases to the specifier position of CP is a condition for pair-list interpretation.

In Dagara, although multiple *wh*-questions are not perfectly felicitous, they are ambiguous between pair-list interpretation and single-pair interpretation. Consider the following examples:

(31) a ? Bi-buor ru dà sɛb-buor?

child-which FOC bought book-which

'WHICH CHILD bought which book?'

b. Ayuo nu dà a sɛb pla 'lan.

Ayuo FOC bought the book white that

'AYUO bought that white book.'

c. Ayuo dà-n sɛb pla, Pol dà-n sɛb zìɛ,

Ayuo bought-AFF book white, Paul bought-AFF book red,

Zã dà-n sɛb sɔla.

John bought-AFF book black

'Ayuo bought a white book, Paul bought red book, John bought a black book.'

(32) a. ? Ànύ nu dè bò?

who FOC took what

'WHO took what?'

b. Dar nu dè sɛbɛ.

Dar FOC took book

'DAR took a book.'

c. Dar dè-n sɛbɛ, Ayuo dè-n sɛbdele, ti Pol dè-n sʋɔ.

Dar took-AFF book, Ayuo took-AFF pen, and Paul took-AFF knife

'Dar took a book, Ayuo took a pen, and Paul took a knife.'

(31a) can be answered either with (31b) or (31c). Likewise, (32a) can be answered with (32b) or (32c). (31b) and (32b) are single-pair answers and (31c) and (32c) are pair-list answers. I assume that focus interferes with the interpretation of multiple *wh*-questions in the language. That is, when the *wh*-phrases in situ are attracted by the head of FocP (even if no movement occurs), we obtain single-pair interpretation. On the other hand, when they remain in situ in overt syntax, we obtain pair-list interpretation. This is illustrated below.

(33) a. Kʋon na ka Ayuo nyú __ zãà.
water FOC that Ayuo drank yesterday
'It was water that Ayuo drank yesterday.' (not anything else)

b. Ayuo nyú-n kʋon zãà.
Ayuo drank-AFF water yesterday
'Ayuo drank water yesterday.' (maybe including something else)

In (33a), *kʋon* 'water' is extracted from the object position to the left peripheral focus position, which I assume to be the specifier position of FocP. When *kʋon* is in the specifier position of FocP, there is exclusivity that is implied (i.e. *Ayuo drank exclusively water and not anything else*). In (33), *kʋon* is in the object position. In this position, no exclusivity is implied, which means that Ayuo may have also drunk beer, whisky, or something else. Then, (33a) is different from (33b) in that in (33a), Ayuo drank only water whereas in (33b) Ayuo may have drunk something in addition to water. Keeping this difference in mind, let us consider the sentences in (34a-b).

(34) a.? Ànʊ́ nu nyú bina zãà?

Who FOC drank what yesterday

'Who was it that drank what yesterday?'

b. Ayuo nu nyú-n kʊon zãà.

Ayuo FOC drank-AFF water yesterday

'It was Ayuo who drank water yesterday'

c. Ayuo nyú-n kʊon, Pol nyú-n dãá, ti Dar nyú-n búlʊ.

Ayuo drank-AFF water Pol drank-AFF beer, and Dar drank-AFF porridge

'Ayuo drank water, Pol drank beer, and Dar drank porridge.'

In (34a), the *wh*-phrase *bina* is the plural form of *bò*. (34a) is ambiguous between single-pair interpretation and pair-list interpretation, as shown by the fact that it can be answered with (34b) or with (34c). I assume that the single-pair interpretation is observed when *bina* is attracted by Foc, though its movement to the specifier position of FocP is impossible due to the fact that the position is already occupied by *ànʊ́*. This is because Foc assigns exclusivity interpretation to *kʊon* 'water'. On the other hand, the fact that *bina* remains in situ in overt syntax yields pair-list interpretation since no exclusivity is implied.

It should be mentioned that these data pose a problem to Bošković's assumption that overt syntactic movement of a *wh*-phrase to the specifier position of CP forces pair-list interpretation. According to Bošković (1998: 3), "the availability of single-pair interpretation correlates with the possibility of not moving any *wh*-phrase to the specifier position of CP". Consider the following examples:

(35) French (Bošković 1998: 3)

a. Il a donné quoi à qui ?
   he has given what to whom
   'What did he give to whom?'

b. Qu'a-t-il donné à qui ?
   what-has-he given to whom
   'What did he give to whom?'

In (35a), the object *wh*-phrase and the indirect object *wh*-phrase are in situ. In (35b), the object *wh*-phrase is moved to the left periphery of the sentence and the indirect object *wh*-phrase is left in situ. Bošković notes that (35a) has single-pair interpretation while (35b) has pair-list interpretation and that *wh-in-situ* in (35a) is responsible for the single-pair interpretation. On the other hand, movement of the object *wh*-phrase to the left periphery of the sentence forces pair-list interpretation. I assume that Dagara is different from French in that the lack of overt movement of *wh*-phrases forces pair-list interpretation.

5.4. Summary

The present chapter argues that the acceptability of multiple *wh*-questions in Dagara is variable and that their formation is subject to restrictions on the ordering of the *wh*-phrases. According to the native speakers of Dagara I consulted for this study, a multiple *wh*-question containing a moved subject *wh*-phrase and an object *wh*-phrase or an adjunct *wh*-phrase in situ is almost acceptable. Also, multiple *wh*-questions containing a moved indirect object *wh*-phrase and a direct object *wh*-phrase in situ were judged to be acceptable. However, they observe that a multiple *wh*-question containing an object *wh*-phrase and an adjunct *wh*-phrase is not acceptable. In this chapter, I have argued that the first type of multiple *wh*-questions is mildly degraded because the *wh*-phrases in situ occur inside presupposition, the part of a

sentence that identifies background information or old information. Since *wh*-phrases ask for new information, their presence in the presuppositional part of sentences makes the sentences mildly degraded. However, the problem is resolved after *wh*-phrases in situ undergo covert movement to the specifier position of CP. In addition, I assume that the fact that a *wh*-question containing an object *wh*-phrase and an adjunct *wh*-phrase is ungrammatical is attributed to the Phase Impenetrability Condition, which requires *wh*-phrases with features that need to be checked at LF to covertly move to the specifier position of *v* before *v*P is constructed. Then, the Phase Impenetrability Condition prevents two *wh*-phrases from occurring in the same VP in Dagara since those *wh*-phrases compete for the specifier position of *v*P.

Chapter 6

Conclusion

This dissertation has aimed at describing how *wh*-questions are formed in Dagara and exploring their theoretical consequences within the recent framework of generative syntax. To achieve this goal, the following four research questions have been raised in chapter 1:

(1) a. Exactly how are *wh*-questions formed in Dagara?

b. What triggers movement of *wh*-phrases in *wh*-questions in this language?

c. How are *wh*-phrases in situ licensed in the language?

d. What can *wh*-questions in Dagara tell us about the theory of movement?

In chapter 2, I have shown that *wh*-questions are formed in two ways in Dagara. They are formed either by moving *wh*-phrases overtly to the left periphery of matrix or embedded clauses, as shown in (2), or by leaving them in their underlying positions, as in (3).

(2) a. Ànú *(nu) ka Ayuo nyɛ́ __?
who FOC that Ayuo saw
'Who was it that Ayuo saw?'

b. Ànú *(nu) nyɛ́ a bie?
who FOC saw the child
'Who was it that saw the child?'

c. Nyinẽ *(na) ka Ayuo cen?
where FOC that Ayuo went
'Where was it that Ayuo went?'

(3) a. Ayuo nyɛ́-n ànú?

Ayuo saw-AFF who

'Who did Ayuo see?'

b. Ayuo cen-n nyinẽ?

Ayuo went-AFF where

'Where did Ayuo go?'

(2a-c) illustrate the movement strategy through which *wh*-questions are formed in Dagara. As shown in (2a-c), when *wh*-phrases undergo overt movement, they must precede the focus marker, which precedes the complementizer except in (2b). I have assumed that the complementizer is null when the *wh*-phrase is a subject (see (2b)). (3a-b) illustrate the *wh-in-situ* strategy. *Wh*-phrases do not move overtly when the focus marker is absent.

I have also presented data showing subject-object asymmetries in the language. Specifically, while object *wh*-phrases can move out of embedded clauses, subject *wh*-phrases cannot. Also, object *wh*-phrases can be left in situ while subject *wh*-phrases cannot (see (4) and (5)).

(4) a. Bò nu ka Ayuo yèl [ka Dar dà na __?

what FOC that Ayuo said that Dar bought AFF

'What was it that Ayuo said that Dar bought?'

b * Ànú nu ka Ayuo yèl [ka __ dà na mobiil]?

Who FOC that Ayuo said that bought AFF car

'lit. Who was it that Ayuo said that bought a car?'

(5) a. Ayuo dà-n bò?

Ayuo bought-AFF what

‘What did you buy?'

b.* Bò dʊ̀n na Ayuo?

what bit AFF Ayuo

'What bit Ayuo?'

In (4a), the object *wh*-phrase is extracted out of the embedded clause and the sentence is still acceptable. In (4b), the subject *wh*-phrase is extracted out of the embedded clause and the sentence is ungrammatical. Likewise, in (5a), the object *wh*-phrase is in situ. In (5b), the subject *wh*-phrase is also left in situ but the sentence is unacceptable. This indicates that subject *wh*-phrases cannot remain in situ in the language.

Besides, I have shown that while adjunct *wh*-phrases such as *dabvor* 'when', *ŋmɪnŋmɪn* 'how', and *nyinɛ̂* 'where' can be moved or be in situ, the positions of *bònusò* 'how come/why' and *ŋmɪn* 'where/what' are fixed, as illustrated below.

(6) a. Nyinɛ̃ *(na) ka Ayuo cen?

where FOC that Ayuo went

'Where was it that Ayuo went?'

b. Ayuo cen-n nyinɛ̃?

Ayuo went-AFF where

'Where did Ayuo go?'

(7) a. Bònusò ka Ayuo kono?

how-come that Ayuo crying

b.* Ayuo kono bònusò?

Ayuo crying how-come

'How come Ayuo is crying?'

(8) a. Ayuo ɩ ŋmɪn?

Ayuo be where

'Where is Ayuo?'

b.* ŋmɪn na ka Ayuo ɩ?

where FOC that Ayuo be.

(6a-b) show that *nyinẽ* 'where' can occur in the left periphery or inside clauses. On the other hand, (7) and (8) show that the positions of *bònusò* and *ŋmɪn* are fixed. Although *bònusò* and *ŋmɪn* have a fixed position in sentences, they also behave differently. While *bònusò* cannot occur inside clauses, *ŋmɪn* always appears in a clause-internal position.

In addition, I have shown how multiple *wh*-questions are formed in Dagara. I have observed that although there is a strategy to form multiple *wh*-questions in the language, those multiple *wh*-questions are marginalized by Dagara speakers. Consider the following examples:

(9) a. ? Ànú nu nyɛ́ bò?

who FOC saw what

'Who was it that saw what?'

b.* Bò nu ka ànʊ́ nu nyɛ́?

what FOC that who FOC saw

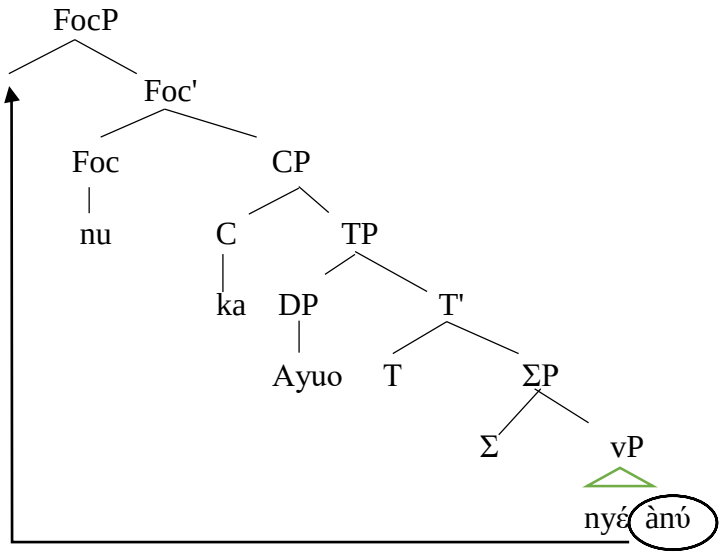
'What was it that WHO saw?'

In (9a), the subject *wh*-phrase is focused by being moved to the left periphery of the sentence and followed by the object *wh*-phrase in situ. (9a) is almost acceptable. In (9b), the subject *wh*-phrase and the object *wh*-phrase are focused by being moved to focus positions but the sentence is ungrammatical. This indicates that the formation of multiple *wh*-questions in Dagara is subject to restrictions.

In the last section of the chapter, I have provided an overview of how *wh*-questions are formed in Dagaare, the dialect of Dagara spoken in Ghana, and argued that they are formed in the same way as in Dagara.

In chapter 3, I have considered *wh*-questions with overtly moved *wh*-phrases. As mentioned in chapter 2, moved *wh*-phrases must be accompanied by the focus marker. I have argued that the focus marker is a functional head with a strong focus feature (in the sense of Chomsky (1995)) that attracts focused elements, which include *wh*-phrases and non-*wh*-phrases, to its specifier position in overt syntax, as shown in (10), and claimed that overt movement of *wh*-phrases in Dagara should be considered as focus movement.

(10)



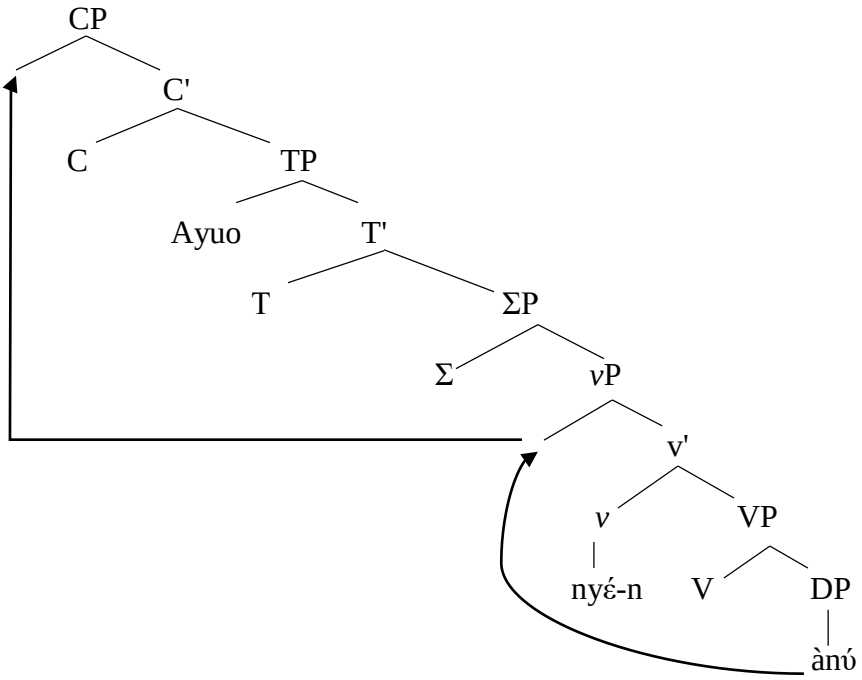
What triggers overt movement of the DP *ànú* in (10) is the focus particle *nu*. The assumption that overt movement of *wh*-phrases is focus movement is motivated by the following observations. First, overtly moved *wh*-phrases must be accompanied by the focus marker. Second, a *wh*-question and its answer must share the same syntactic structure, and in an answer to a *wh*-question with an overtly moved *wh*-phrase, the constituent corresponding to the *wh*-phrase must be focused. On the other hand, in an answer to a *wh*-question with a *wh*-phrase in situ, the constituent corresponding to the *wh*-phrase is not focused. Since a constituent is focused in Dagara by undergoing movement to the left of the focus marker, I have assumed that overt movement of *wh*-phrases is focus movement. Also, I have considered reduced answers to direct *wh*-questions, also known as fragment answers in the literature, providing an additional argument that the type of movement involved in *wh*-questions in Dagara is focus movement.

The chapter has also shown that focus movement of *wh*-phrases in Dagara obeys locality constraints such as the Complex NP Constraint, the Coordinate Structure Constraint, the Left Branch Condition, the Adjunct Condition, and the Anti-Locality Constraint. These

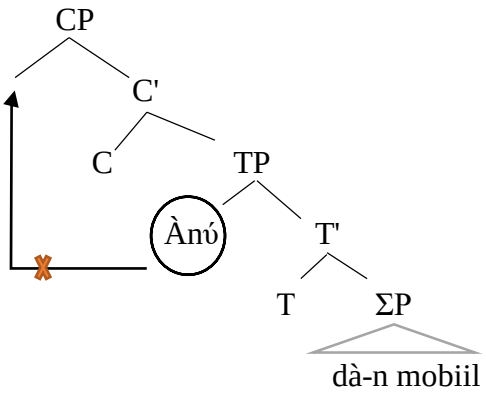
considerations give further credence to the idea that those constraints are universal applying to any language that has movement operations.

Chapter 4 has examined *wh*-questions with *wh*-phrases in situ. The chapter has argued that when the focus marker is absent, *wh*-phrases remain in their underlying positions in overt syntax and undergo covert movement, as shown in (11), whereby they are licensed by C.

(11) a.



b.

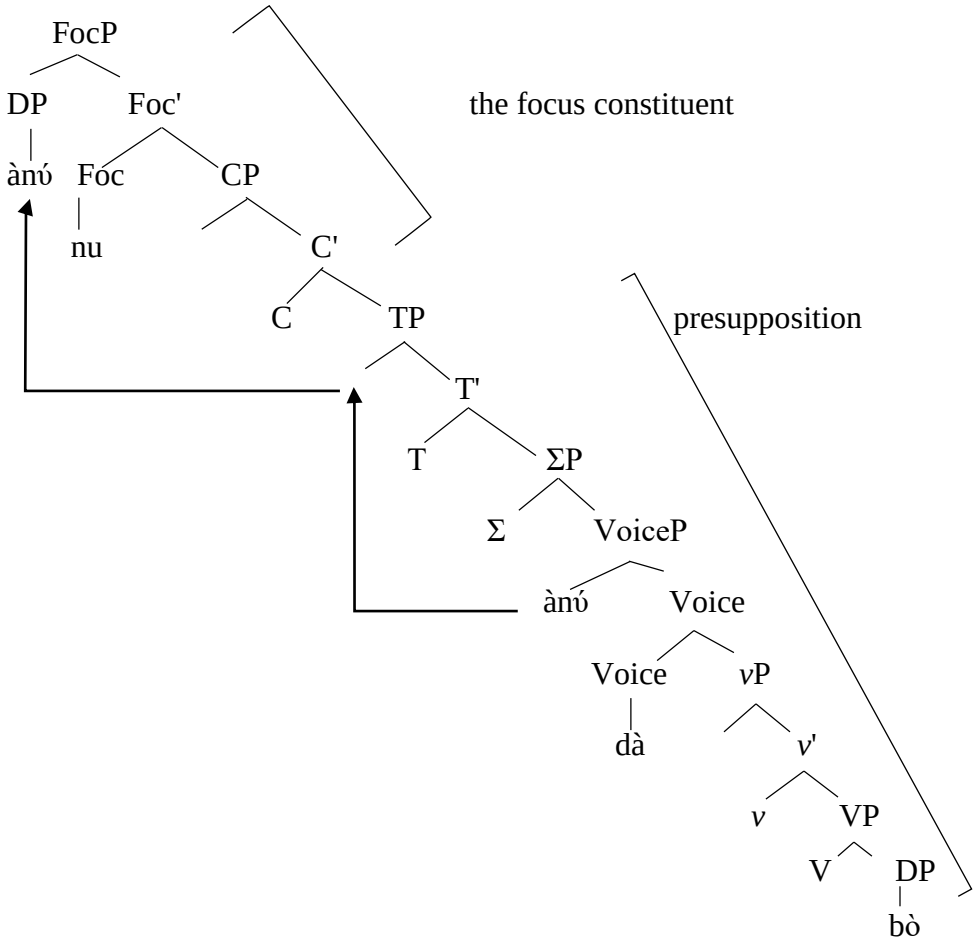


Movement of *ànʊ́* 'who' in (11a-b) is covert. I have argued that covert movement of *wh*-phrases from VP (i.e. the object position and the adjunct position) to the specifier position of CP is permitted. On the other hand, as shown in (11b), movement of *wh*-phrases from the specifier position of TP to the specifier position of CP is not possible. I have assumed that *wh*-phrases cannot move covertly from the specifier position of TP to the specifier position of CP because of the Anti-Locality Constraint, which bans movement that is too short. The chapter has also shown that covert *wh*-movement is analogous to overt focus movement in Dagara in that both instances of movement obey conditions on movement such as the Adjunct Condition, the Coordinate Structure Constraint, and the Complex NP Constraint.

I have also considered the two adjunct *wh*-phrases *bònusò* and *ŋmɪn*, which need special attention. I have argued that while *ŋmɪn* 'where/what' undergoes covert *wh*-movement, *bònusò* 'how come/why' does not. This claim is based on the fact that *wh*-questions with *ŋmɪn* show intervention effects and adjunct island effects while *wh*-questions with *bònusò* do not.

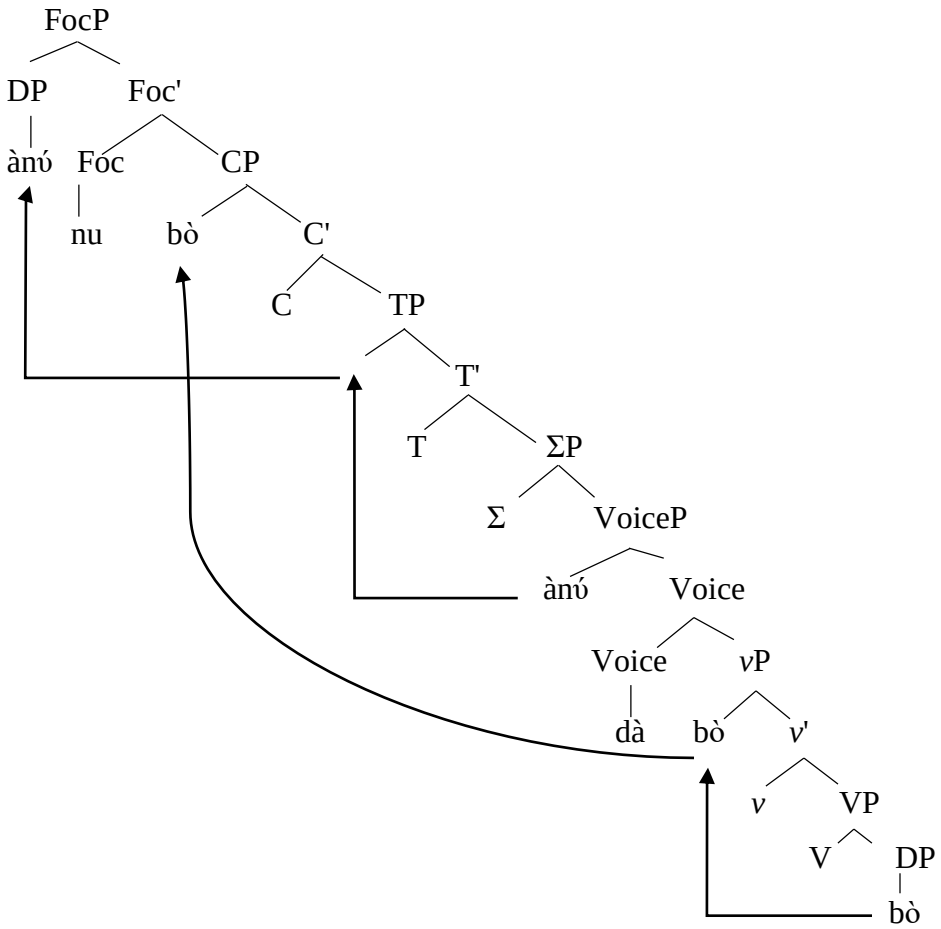
In chapter 5, I have turned my attention to multiple *wh*-questions in Dagara and considered why multiple *wh*-questions are mildly degraded in the language. As shown in (12), I have assumed that they are mildly degraded because they contain *wh*-phrases in situ inside the presupposition, the part of the sentence that indicates background information or old information.

(12)



I have assumed that focus constructions in Dagara have a bipartite structure consisting of a part indicating focus and a part indicating presupposition and that the focus involves novelty or contrastivity while presupposition identifies old or background information. Since *wh*-phrases ask for new information, their presence in the presuppositional part of sentences makes the sentences degraded. However, the problem is resolved after *wh*-phrases in situ have undergone covert movement to the specifier position of CP escaping out of the presuppositional part, as shown in (13).

(13)



In (13), movement of the subject *wh*-phrase (i.e. *ànú* 'who') from the specifier position of TP to the specifier position of FocP is overt while movement of the object *wh*-phrase to the specifier position of CP is covert. Covert movement of the *wh*-phrase *bò* to the specifier position of CP helps it avoid being trapped in the presupposition. In addition, I have shown that an object *wh*-phrase and an adjunct *wh*-phrase cannot co-occur in multiple *wh*-question in Dagara and claimed that this fact is attributed to the Phase Impenetrability Condition, which requires *wh*-phrases in situ inside VP to covertly move to the specifier position of *v*. This requirement prevents two *wh*-phrases from occurring in the same verb phrase in Dagara since those *wh*-phrases should compete for the specifier position of *v*P.

To summarize, I have provided the following answers to the research questions listed in (1):

(14) a. *Wh*-questions are formed in Dagara either by moving *wh*-phrases to the left periphery of matrix or embedded clauses or by leaving them in situ.

b. Overt movement of *wh*-phrases in Dagara is focus movement as it is triggered by the focus marker.

c. *Wh*-phrases in situ are licensed by C via covert *wh*-movement.

d. Covert *wh*-movement and overt focus movement obey the same constraints in Dagara.

Although there are many studies on Dagara in the literature, very few are on *wh*-questions. To the best of my knowledge, a major study that looks at the formation of *wh*-questions in Dagara is Napaane (2015). While the study provides a fairly comprehensive description of *wh*-questions in the languages, many important details are left out. For example, in Naapane (2015), *wh*-questions with subject *wh*-phrases in situ and object *wh*-phrases in situ are said to be unacceptable. Multiple *wh*-questions are not mentioned at all. Also, in Naapane (2015), no theoretical analysis is proposed for *wh*-questions in the language. Besides, while the dialect spoken in Ghana, namely Dagaare, is widely described, *wh*-questions are only briefly mentioned in the relevant works (see Bodomo 1997, Bodomo and Hiraiwa 2008, 2010, Hiraiwa et al. 2017, Ali et al. 2021).

I hope that this dissertation has provided a comprehensive description of *wh*-questions in the Dagara language showing how they can be analyzed with a general theory of language. Though this study is framed in terms of the generative theory, the core data have been presented without any theoretical analysis and hence can be exploited by any linguistic school. This dissertation will therefore provide an opportunity for theoretical research on *wh*-questions and related comparative studies involving Dagara.

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