THE SYNTAX OF A’-DEPENDENCIES IN BAMILEKE MEDUMBA

by

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Abstract

In this dissertation, I investigate the syntax of A’-dependencies (wh-movement, focus movement, relativization and topicalization) in Bamileke Medumba, a Grassfields Bantu language spoken in the Western Region of Cameroon.

I first examine the in-situ/ex-situ partition with Medumba wh-/focus construals and propose an analysis in which the necessity of movement is driven by interpretation. This approach correctly predicts structural and semantic differences between in-situ and ex-situ wh-questions and foci in Medumba. Thus, they differ in Medumba with regard to: (i) exhaustivity — in that in-situ wh-questions and foci are non-exhaustive whereas their ex-situ counterparts are exhaustive — (ii) question-answer pairs — in that the information-theoretic structure of the answer must match the information-theoretic structure of the question — and (iii) fragment answers — in that fragment answers to in-situ wh-questions are not focus-marked whereas fragment answers to ex-situ wh-questions are focus-marked.

I also examine A’-agreement, analyzed as the reflex of Phasal-Agree. I show that A’-agreement is not only a crucial diagnostic for A’-movement, for Phasal-Agree and for the locality of movement (cyclic phase-by-phase movement (Biberauer and D’Alessandro 2006; Chomsky 2000, 2001; van Urk 2015; van Urk and Richards 2015)) but also a diagnostic for intermediate phases.

Finally, I examine resumption in Medumba A’-construals. Resumptive pronouns in Medumba surface both in island violation contexts (including apparent complement CPs analyzed as disguised adjunct clauses) as well as in contexts where there is absolutely no island violation (root clauses), where they alternate with gaps. I argue that resumptive structures are derived in
Medumba via the economy principle of Last Resort (Koopman and Sportiche 1986; Rizzi 1990; Chomsky 1991, 1998; Shlonsky 1992; Bobaljik 1995, Lasnik 1995; Ura 1996; Pesetsky 1997; Collins 2001; Boščović 2011). To get a unified account of resumptive structures in Medumba, I propose that Last Resort is conditioned by syntactic and semantic constraints. Syntactic Last Resort derives resumptive pronouns in Medumba island violation contexts, to salvage A'-dependencies that would otherwise result in ungrammaticality. Semantic Last Resort is a condition on interpretation that derives resumption in configurations that would otherwise result in ambiguity.
Lay Summary

Every language has a way of asking a content question. However, strategies used in forming content questions vary from one language to another. In this dissertation, I look at the properties of Medumba content questions, including other related constructions such as focus constructions and relative clauses. The findings show that: (i) Medumba speakers, when asking a content question, can leave the question word in its original position or move it to the clause initial position. I propose that the use of either strategy depends on the interpretation of the question; (ii) in questions where the question word is in initial position, there is a change in the tonal melody of verbal heads and auxiliaries; (iii) in questions where the question word is in clause initial position, there is either a gap or a pronoun in the original position of the question word depending on the type of clause.
Preface

This dissertation is an original intellectual product of the author, Hermann S. Keupdjio.
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List of Abbreviations

-Q: Non-interrogative
1: 1st person
2: 2nd person
3: 3rd person

ACC: Accusative
ADJ: Adjective
AGR: Agreement
APL: Associative plural
ASP: Aspect
ASSC: Associative
AUX: Auxiliary
C: Complementizer
CL: Class
D: Determiner
DEM: Demonstrative
DIM: Diminutive
ECP: Empty Category Principle
EF: Edge feature
EM: External merge
EPP: Extended Projection Principle
EXH.: Exhaustive
<table>
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<td>Focus marker</td>
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<td>Serial verb construction</td>
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<td>V</td>
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<td>WH</td>
<td>Wh-word</td>
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Acknowledgements

“bʰúú ṣgmú kúú mū kʃuːt bʰúú?”
“One hand cannot tie up a packet/it takes more than one hand to tie up a packet”

This Medumba saying summarizes my journey through this process of dissertation-writing. It is usually said “It takes the village to raise a child”, and indeed it took the whole village to raise the linguist I am becoming. It is in this spirit of the village that I am very grateful to the whole village, the amazing people without whom this journey would not have started and without whom this dissertation would not exist or exist in the form it is. I just want to say mû lâbtɔ̀, ‘thank you’.

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cheering me up, for keeping telling me it is possible, I can do it. I finally finally did it ‘lovy lovy’.

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À mes parents

et

Pour toi, Madouce.
Chapter 1: Introduction

1.1 Why wh-movement?

Wh-movement has been a subject of inquiry in modern generative linguistic theory since Chomsky’s 1977 “On wh movement”. What has been fascinating about the phenomenon of displacement in natural languages is that some items can be pronounced in one position but interpreted in other positions. In the English example in (1) and the Medumba example in (2), although the wh-XP who or á wú is pronounced in clause-initial position, it is understood that the wh-XP is introduced as the complement of the verb betray\(n\)-s\(v\)é\(ê\)n. Thus, wh-questions instantiate a non-local dependency, where the wh-XP is associated with a position from which, by hypothesis, it originates.

(1) Who did Watat betray?

(2) á wú Wàtêt nôô? n-s\(v\)é\(ê\)n á
FOC who Watat.H AGR.AUX.T2 N-AGR.sell C.Q.H
‘Who did Watat betray?’

One reason why it is important to investigate wh-movement in natural languages lies in the fact that it has led to the identification of configurations that serve as diagnostics for non-local dependencies, which in turn raises the question of how to model these non-local dependencies, and what the underlying mechanism is. The key diagnostic properties of wh-movement are in (3)\(^1\).

(3) General characteristics of wh-movement (Chomsky 1977:86, (49))

(a) Wh-movement leaves a gap.

---

\(^1\) I only list here the diagnostics given in Chomsky’s 1977. See chapter 2 for the complete list of the diagnostic properties of wh-movement.
(b) Where there is a bridge, there is an apparent violation of Subjacency
(c) Wh-movement observes the Complex NP Constraint (CNPC).
(d) Wh-movement observes the Wh-Island Constraint.

These properties all pertain to the relation between the moved element and its extraction site. The cluster of properties in (3) follows from the assumption that wh-movement moves an XP, which in turn leaves behind at the extraction site a category with phonological null content called a gap (3a). Wh-movement in some contexts can circumvent island violations (3b). This implies that wh- movement can proceed in a stepwise fashion in successive cycles through all the intermediate CPs that separate the launching site from the ultimate landing site. Finally, wh-movement is sensitive to islands (3c&d).

The Minimalist Program (Chomsky 1995 and subsequent work) explores the idea that human language may be a "perfect system" optimally designed to meet certain interface conditions imposed by other cognitive systems that the language faculty interacts with. In such a system, the question of how to develop a general theory of movement (reduced to internal Merge) — and more particularly how to analyze wh-movement — remains a puzzle. Specifically, investigating wh-movement within the Minimalist framework raises the question of how the properties of wh-movement can be explained in terms of principles of the interface systems and what principles of efficient computation underlie the derivation of non-local dependencies.

Some questions that arise when investigating wh-movement in natural languages are: (i) What is moved? (ii) Where does it move to? (iii) How local is the movement operation? and (iv) What is left behind after movement? To this list is added one of the biggest questions — which still remains an unresolved puzzle — what forces movement and why is movement required at all?
1.2 Why wh-movement in Medumba?

Wh-movement in Medumba seems to be a perfect test case for theories of wh-movement because wh-question formation in Medumba involves both the in-situ (i.e. leaving the wh-XP in place) and the ex-situ (i.e. moving the wh-XP to the clause-initial position) strategies. The examples from (4) to (7) provide a synopsis of the major properties of wh-questions in Medumba. The clauses (4&5) contain one main verb each and are called root clauses. (6&7) are non-root clauses embedded within another clause.

(4) Root-clause wh-in-situ

\[
\text{Wàtèt nò? s̀èn á wú á} \\
\text{Watat AUX.T2 sell FOC who C.Q.H} \\
\text{T.H V.L}
\]

Lit.: Watat betrayed who?

(5) Root-clause wh-ex-situ

a. á wú Wàtèt nòò? ṉs̀èṉ́ á
b. á wú Wàtèt nòò? ṉs̀èṉ́ i á

\[
\text{FOC who Watat AGR.AUX.T2 N-AGR.sell 3SG.H C.Q.H} \\
\text{T.H V.H V.HL}
\]

‘Who did Watat betray (him/her)?'

(6) Non-root clauses wh-in-situ

\[
\text{Nùmí nò? tfúp ṉbù Wàtèt nò? s̀èn á wú á} \\
\text{Numi AUX.T2 say C.L Watat AUX.T2x sell FOC who C.Q.H} \\
\text{T.H V.H T.H V.L}
\]

Lit.: Numi said that Watat betrayed who?

(7) Non-root clauses wh-ex-situ

\[
\text{á wú Nùmí nòò? ṉtʃúp ṉbù Wàtèt nòò? ṉs̀èṉ́ i á} \\
\text{FOC who Numi AGR.AUX.T2 N-say C.L Watat.H AGR.AUX.T2 N-AGR.sell 3SG.H C.Q.H} \\
\text{T.HL V.H T.HL V.HL}
\]

‘Who did Numi say that Watat betrayed [him/her]?'

The color coding used in the examples highlights the properties of Medumba wh-questions which constitute the focus of this dissertation as follows:
(i) **Red**: a wh-XP in Medumba can stay in its canonical position — whether in a root clause (4) or in a non-root clause (6) — or can move to the clause-initial position as in (5) and (7); this property is discussed in chapter 2. When a wh-XP moves, if it occurs in a root clause, then its extraction site is left empty (a gap) as in (5a) or filled by a pronoun, usually called a resumptive pronoun in this context as in (5b). However, if movement occurs in a non-root clause, then the extraction site of the moved wh-XP is always filled by a resumptive pronoun as shown in (7). This property is discussed in chapter 5.

(ii) **Blue**: in a sentence where there is movement of the wh-XP, there is a change in the tonal melody of verbal heads and temporal auxiliaries. (4) and (6) show that in sentences where the wh-XP is in its canonical position, the temporal auxiliary \( n\ddot{o} \) surfaces with a high tone (H) and the verb \( s\ddot{\text{wen}} \) ‘sell’ with a low tone (L). In contexts where there is movement of the wh-XP to the clause-initial position, the auxiliary \( n\ddot{o} \) and the verb \( s\ddot{\text{wen}} \) ‘sell’ surface with an HL tone melody (see 5&7). I develop an analysis which treats this perturbation of tone melody as an instance of A’-agreement. In non-root clauses, the verb (**boldface**) that introduces the embedded clause (matrix verb) never shows A’-agreement as shown in (7) where \( t\ddot{f\ddot{u}}p \) ‘say’ keeps its H-tone. The phenomenon of A’-agreement is investigated in chapter 3 and 4.

It is to be noted that the above properties are attested not only in the context of content questions (i.e. wh-movement in the narrow sense), but are also found with focus movement, relativization and topic-movement. These are all instances of A’-movement. Using less Anglo-centric terminology, wh-words in Medumba could be called **ú-words**. An ú-word in Medumba contrasts a \( w\)-form used only for human, and a \( k\)-form used elsewhere as shown in table 1.1.
<table>
<thead>
<tr>
<th>Base</th>
<th>Animacy Feature</th>
<th>Form</th>
<th>Gloss</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>DP [w- + WH]</td>
<td>Human</td>
<td>w-ú</td>
<td>who</td>
<td>(8a)</td>
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<tr>
<td></td>
<td></td>
<td>HMN-WH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DP [k- + WH]</td>
<td></td>
<td>k-ú</td>
<td>what</td>
<td>(8b)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>UNMKD-WH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PP [*džú- DP]</td>
<td>Unmarked</td>
<td>[p džú-[DP k-ú]]</td>
<td>how</td>
<td>(9a)</td>
</tr>
<tr>
<td>[nùúm-DP]</td>
<td></td>
<td>way UNMKD-WH</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[p nùúm-[DP k-ú]]</td>
<td>why</td>
<td>(9b)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PREP UNMKD-WH</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADV</td>
<td>Other</td>
<td>s-ú</td>
<td>when</td>
<td>(10a)</td>
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<td></td>
<td></td>
<td>TEMP-WH</td>
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<td></td>
<td></td>
<td>já</td>
<td>where</td>
<td>(10b)</td>
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<tr>
<td></td>
<td></td>
<td>LOC.WH</td>
<td></td>
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</tbody>
</table>

Table 1.1: The internal structure of ú-words (wh-words) in Medumba

The forms given in table 1.1 are illustrated in the following examples. For simplicity, I will be glossing wh-XPs in the remainder of the dissertation as just wh.

(8) Wh-DP

a. Watet ná? ké á w-ú á
Watat AUX.T2 choose FOC HMN-WH C.Q.H
T.H V.L
Lit.: Watat chose who?

b. Watet ná? ké á k-ú á
Watat AUX.T2 choose FOC UNMKD-WH C.Q.H
T.H V.L
Lit.: Watat chose what?

(9) Wh-PP

a. Watet ná? ké Númí á *džú-k-ú á
Watat AUX.T2 choose Numi FOC WAY-UNMKD-WH C.Q.H
T.H V.LH
Lit.: Watat chose Numi how?

b. Watet ná? ké Númí á nùúm-k-ú á
Watat AUX.T2 choose Numi FOC PREP-UNMKD-WH C.Q.H
T.H V.LH
Lit.: Watat chose Numi why?
1.3 Medumba: the language and the people

Medumba (Mɔðiulations; Mɔjjulations) is a Grassfields Bantu language spoken in Cameroon. Medumba speakers originate from the Ndé division of the West Region of Cameroon (figure 1), with their main settlements in Bangangté, Bakong, Bangoulap, Bahouoc, and Tonga. However, there is also an important number of Medumba speakers settled in Bazou (in the neighborhoods of Plateau, Carrière, Coteau, Tergal, Femtchouet, and Comfort) and in the neighboring villages; namely, Bafetba, Bamaha, Nsiteun, Kouba and Bassamba (Keupdjio 2011).
Figure 1.1: Geographical location of the Medumba people

Medumba is a major language of the Bamileke cluster and is part of its Eastern Group (figure 2). The Bamileke cluster is a cluster of eleven languages including Fe’fe’, Ghomala, Kwa’, Medumba, Nda’nda’ (Eastern Bamileke); Mengaka, Ngombale, Ngemboon, Ngomba, Nwe, Yemba (Western Bamileke). The Bamileke cluster — along with Ngemba, Nkambe and Nun —
is part of the Eastern Grassfields subgroup which, together with the Ring, the Momo languages and the Southwest Grassfields languages, constitute the Grassfields grouping (Watters 2003).

Figure 1.2: Bamileke Medumba, the language
Medumba people are located in an area where sacred kingship played a pivotal role in government, justice, and diplomacy (Feldman-Savelsberg 1995; Warnier 2015). The modern history of the Bamileke area, which was a German colony placed under French trusteeship after World War I by the League of Nations in 1919, is closely associated with the nationalist movement² of the ‘Union des populations du Cameroun’ (UPC), which developed primarily in the coastal hinterland (Basaá) and the western highlands (Bamileke). From 1956 to the late 1960s, this area of Cameroon experienced a period of unrest (Meredith 2014), which resulted in a brutal repression³ by the colonial army and the Cameroonian neocolonial army. This episode of the history of the Bamileke people — which to date is still an untold history — continues to shape the Bamileke political culture and has an impact on language identity (Bandia 1993) and the linguistic landscape (Ndjio 2009).

1.4 Previous work on Medumba

Medumba is relatively well described for a Grassfields Bamileke Bantu language. This is due to the work done in the 1960s and 1970s by Jan Voorhoeve on (i) morpheme structure constraints (Voorhoeve 1965); (ii) personal pronouns (Voorhoeve 1967); (iii) noun classes (Voorhoeve 1967 and 1969); (iv) tone of nouns (Voorhoeve 1971); (v) traditional Bamileke narratives (Voorhoeve 1976); (vi) general linguistic description of the Bangangte dialect (Voorhoeve 1977). This work laid the foundations for research conducted by L. Hyman, on the closely related Bamileke language Fe’fe’ (Hyman1970).

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² The Nationalist movement advocated for freedom and the right of the people of Cameroon to self determination
³ There is a locality in the Ndé division called *tɔɔ-łu* which literally means ‘blood-covered market’. My parents told me when I was growing up that the locality got this name in the aftermath of a massive repression, a massacre by the colonial army where many were reported dead. The use of the compound *tɔɔ* ‘market’ and *łu* ‘blood’ depicts the gruesomeness of the atrocities.
Research on Medumba was re-invigorated in the early 2010s by a research group at Boston University (lead by C. O’Connor), at the University of British Columbia (lead by R.-M. Déchaine) and at the University of Delaware by K. Franich. Some of these publications include: Danis et al. 2012, on a prosodic account of downstep and contour formation in Medumba; Franich et al. 2012, on tonal merger in Medumba nouns; Goldman et al. 2014, on interspeaker variation in noun class realization in Medumba; Franich 2016a on internal and contextual cues to tone perception in Medumba; Franich 2016b, on the perception of tonal contours in Medumba; Franich 2017, on evidence for metrical prominence asymmetries in Medumba; and Franich 2018, on tonal and morphophonological effects on the location of perceptual centers (p-centers). Also relevant are the notable scholarly contribution of Medumba speaker-linguists listed here in chronological order: (i) Tondji 1979 D.E.S (MA) thesis (University of Yaoundé) on phonetic variation in Medumba (ii) Nganmou 1991, doctoral dissertation (University of Yaoundé) on tense and aspect; (iii) Wandji 1993, MA thesis (University of Yaoundé 1) on the Medumba noun phrase; (iv) Njike 2010, MA thesis (University of Yaoundé 1) on the syntax of adverbs; (v) Kouankem 2011, PhD dissertation (University of Yaoundé 1) on DP syntax; (vi) Keupdjio 2011, MA thesis (University of Yaoundé 1) on wh-movement and clause structure; (vii) Kouankem 2013, an article on DP concord.

Current work on Medumba is part of a more general effort towards describing, analyzing and documenting the languages of Africa, in the face of rising levels of language endangerment (Kandybowicz and Torrence 2017) and language death. According to Opala 2002 and Okol 2014, Cameroon — along with Nigeria, Sudan, and Ethiopia — is reported to have one of the highest language mortality rates in Africa. Given the wide range of research topics on Medumba, it is almost impossible to do a summary of previous work done on the language. In appendix B, I describe one aspect of Medumba which has not been previously investigated systematically,
namely stem allomorphy, which is a core diagnostic for A’-agreement. Unless cited otherwise, the data in this dissertation are based on my introspection as a Medumba speaker-linguist.

1.5 Preview of the dissertation

This dissertation is organized as follows:

- A’-movement and the in-situ/ex-situ partition (Ch. 2);
- A’-movement and A’-agreement (Ch. 3);
- A’-movement and the tense/aspect system (Ch. 4);
- A’-movement and resumption (Ch. 5); and
- Prospects for future research (Ch. 6).

These chapters are self-contained, so it is possible to read them independently. In the following subsections, I give a preview for each of the chapters, the main theoretical problem and my proposal to solve it.

1.5.1 A’-movement and the in-situ/ex-situ partition in Medumba

Chapter 2 examines the in-situ/ex-situ partition in Medumba with regard to wh- and focus construals. The main problem addressed in this chapter is illustrated in (11) whereby a wh-XP or a focus XP can be construed in-situ (11a) or can be moved to the clause-initial position (11b).

(11) a. (i) Wàtèt nò?  ké á wù á [in-situ wh-question]
    (ii) Wàtèt nò?  ké á ṉùmí [in-situ focus]
    — Watat AUX.T2 choose FOC DP C.Q.H
    T.H V.L

    Lit.: Watat chose who? /Numi.

a. (i) á wù Wàtèt nò?  ⁹-kèè á [ex-situ wh-question]
    (ii) á ṉùmí Wàtèt nò?  ⁹-kèè lá [ex-situ focus]
    — FOC DP Watat AGR.AUX.T2 N-AGR.sell C
    T.HL V.HL

    ‘Who did Watat choose? / NumiFOC Watat chose’
Given (11), there arises the question of how in-situ and ex-situ wh-/focus construals are derived in Medumba. More specifically, why do wh-/focus construals involve displacement of the wh-XP or focus XP in some contexts and no displacement in others? In other words, if movement is possible in Medumba, why isn’t it obligatory? To these questions is also added the question of whether in-situ and ex-situ wh-questions and foci are derived by the same mechanism in the language or by two different mechanisms; and what implications this has for current theories of A’-movement.

To answer these questions I adopt the hypothesis that the necessity of movement is driven by interpretation. On this view, movement in Medumba wh-questions and focus construals is driven by interpretation. I propose that there is a covert exhaustive operator at C which marks any wh-/focus XP within its vicinity as exhaustive. This proposal aims at an account of the properties of in-situ and ex-situ wh-/focus construals in Medumba. As such, ex-situ wh-/focus XPs are exhaustive while their in-situ counterparts are predictably non-exhaustive.

1.5.2 A’-movement and A’-agreement in Medumba

Chapter 3 examines A’-movement and A’-agreement. The latter is realized in Medumba as an HL tone melody that overwrites the lexical tone of verbal heads, as well as that of temporal and aspectual auxiliaries. As shown in (12), when there is A’-movement form a non-root clauses, there is A’-agreement in the form of an HL overwrite tone melody with the embedded CP on V and T. With the matrix CP, A’-agreement is only on the matrix T and not on the matrix V as in (12a).

Absence of A’-agreement when there is movement leads to ungrammaticality (see (12b)).

(12) a. á wù Númí nòò? n-tsúp mbù Wàtèêt nòò? n-svēen i á
FOC WH Numí AGR.AUX.T2 N-say C.L Watat.H AGR.AUX.T2 N-AGR.sell 3SG.H C.Q.H
T.HL V.H T.HL V.HL
‘Who did Numi say that Watat betrayed [him/her]?’
The data in (12) raise several questions, among which are the following:

(i) What is the formal mechanism for deriving A’-agreement in Medumba? In other words, what determines when A’-agreement surfaces on a head or not? And why those heads?

(ii) What accounts for the absence of A’-agreement with matrix V in non-root clauses?

(iii) Is A’-agreement an idiosyncratic property of Medumba? If not, are there parallels in the literature to phenomena in other languages that bear similarity to the form of A’-agreement found in Medumba? And to what degree and with what implications for both existing analyses of other forms of A’-agreement and the analysis proposed for A’-agreement in Medumba?

A’-agreement (depending on its form) has previously been analyzed and referred to in the literature as wh-agreement, wh-copying, extraction morphology or complementizer agreement (see a.o. Kinyalolo 1991; Carstens 2005; Chung 1994; Reintges, LeSourd and Chung 2006; Hedinger 2008; Lochbihler and Mathieu 2010; Felser 2004). I propose in chapter 3 that all instances of A’-agreement reflect the activity of the same underlying formal mechanism, namely Phasal-Agree. A phase-bound operation (OP) between a probe (P) and a goal (G), where P is a phase-head and G an A’-bound XP; applies in such a way that the reflex of OP is either on P or on the complement of P. In other words, A’-agreement is the reflex of cyclic phase-by-phase movement, with agreement surfacing within the phase domain each time an A’-bound XP reaches a phase edge. With regard to the absence of A’-agreement with a matrix V in extraction from a
non-root CP, I propose that apparent complement CPs are disguised adjunct clauses in Medumba. Thus, movement from apparent complement CPs does not go through the matrix VP edge.

1.5.3 A’-movement and the tense/aspect system in Medumba

Chapter 4 focuses on A’-agreement and the tense/aspect system in Medumba. More specifically, I look at the distribution of A’-agreement in aux-stacking contexts. As shown in (13), in aux-stacking contexts, only some auxes get A’-agreement. In (13b) there is A’-agreement with Aux.T₂, Aux.T₃ but not with Aux.β.

(13)  a. Númí nɔ́ʔ fɔ̀ n-tʃɔk n-kɛ̀ ndʒʷɛ̀n
      Numi   AUX.T₂  AUX.T₃   N-AUX.β   N-fry chips
      T.H    T.L     T.H     V.H
      ‘Numi fried the chips (long ago in the morning of the day before)’

     b. á kú Númí nɔ̀ʔ m-fɔ́ʔ n-tʃɔk n-kɛ̀ á
        FOC   WH Numi  AGR.AUX.T₂   AGR.AUX.T₃   N-AUX.β   N-AGR.fry C.Q.H
        T.HL  T.LH   V.H    V.HL
        ‘What did Numi fry (long ago in the morning of the day before)’

The question that arises from this data is what conditions the locus of A’-agreement in Medumba? That is, why does A’-agreement not surface on every auxiliary, and why is the locus of A’-agreement only on the auxiliaries it is on? To answer these questions, I use the mechanism that was proposed in chapter 3; that is, Phasal-Agree derives A’-movement in aux-stacking contexts. More precisely, I propose that there is an intermediate phase between vP and CP. Thus, absence of A’-agreement with Aux.β. is because Aux.β. is not a phase.

1.5.4 A’-movement and resumption in Medumba

Chapter 5 examines resumption in A’-construals. The problems addressed in this chapter are illustrated in (14) where a resumptive pronoun is obligatory in island violation contexts as in (14a-ii) and optional in contexts in which there is no island violation, specifically in root clauses where resumption alternates with a gap, as in (14b).
The data in (14) raise the following questions:

(i) Which mechanism regulates resumption in island contexts?

(ii) Which mechanism regulates resumption in non-root clauses?

The overarching question addressed in this chapter is the theory of resumption in Medumba and the implications it has for the syntax and semantics of A′-movement. I propose that the economy principle of Last Resort drives resumption in Medumba (see a.o. Koopman and Sportiche 1986; Rizzi 1990; Chomsky 1991, 1998; Shlonsky 1992; Bobaljik 1995, Lasnik 1995; Ura 1996; Pesetsky 1997; Collins 2001; Bošcović 2011). In proposing a unified account of resumptive strategies in Medumba, this chapter argues that Last Resort conditions can be syntactically or semantically conditioned. Syntactic Last Resort derives resumptive pronouns in island violation contexts to salvage A′-dependencies that would otherwise result in ungrammaticality. Semantic Last Resort is a condition on interpretation that derives resumption in configurations that would otherwise result in ambiguity.

In the next chapter, I focus on A′-movement and the in-situ/ex-situ partition in Medumba.
Chapter 2: A’-movement and the in-situ/ex-situ partition in Medumba

2.1 The ex-situ/in-situ paradox: if movement is possible, why isn’t it obligatory?

In many languages, forming a wh-question⁴ consists either of moving the wh-word to the clause left-peripheral position (ex-situ) or leaving the wh-word in place at its base-generated position (in-situ). Generative theories of wh-question formation have mostly focused on languages that exhibit only one of the facets of wh-question formation, and more specifically on languages that use the ex-situ (movement) strategy. Less attention has been given to languages that use both the in-situ and the ex-situ strategies. However, there are some puzzles with regard to why (i) wh-question formation in some languages involves movement of the wh-phrase but in others it does not and (ii) why movement is even required to start with. For instance, while approximately 240 languages found in the World Atlas of Language Structures (WALS) show obligatory movement of wh-words to the clause-initial position, in approximately 540 languages wh-words are not “obligatorily” clause-initial (Dryer 2008, Déprez et al. 2013). Though it is unclear what is meant by “not obligatorily” initial in that it could either mean non-displacement of wh-words at all or the possibility of having both displacement and non-displacement of wh-words, it is clear that for languages that allow both the in-situ and the ex-situ strategy, things are a bit fuzzy. The examples in below illustrate wh-questions in English-type systems where the wh-word surfaces in clause-initial position (ex-situ) (1) and in Mandarin-type systems where the wh-word surfaces in its base-generated position (in-situ) (2).

⁴ Wh-questions are also known as ‘content questions’ or ‘information seeking questions.’ They are characterized by a dedicated wh-word and require an answer that replaces or otherwise responds to this wh-word.
(1) **Who** did you see ___?  

(2) Qiaofeng mai-le  **shenme**  ne  
    Qiaofeng buy-ASP what QWH  
    ‘What did Qiaofeng buy?’  

**Mandarin**  

(3) a. **In-situ wh-question**  

    Wâ’té t nò?  s̀ëñ  á  wù  á?  
    Watat  AUX.T2 sell  FOC  WH  C.Q.H  
    T.H  V.L  
    Lit.: ‘Watat betray who?’

    b. **Ex-situ wh-question**  

    á  wù  Wâ’té t nò?  n-s̀ëñ  á?  
    FOC  WH  Watat  AGR.AUX.T2  N-AGR.sell  C.Q.H  
    T.HL  V.HL  
    ‘Who did Watat betray?’

(4) a. **In-situ focus**  

    Wâ’té t nò?  s̀ëñ  á  Nùgè  
    Watat  AUX.T2 sell  FOC  Nuga  
    T.H  V.L  
    ‘Watat betrayed NügaFOC’

---

In some dialects, subject wh-/focus XPs can surface without the focus particle.

The Q-particle \([a]\) surfaces as H when the preceding syllable carries an H-tone and L when it carries an L-tone.
b. *Ex-situ focus*

á Nùŋgé Wàtät nɔ̀ʔ n-sʷéén lá
FOC Nuga Watat AGR.AUX.T2 N-AGR.sell C.-Q
T.HL V.HL

‘NugaFOC Watat betrayed’

The preceding data sets show that there are at least three types of systems\(^7\) to keep in mind while investigating wh-questions as listed below.

(5)  

a. *Lg 1: wh-ex-situ languages*

b. *Lg 2: wh-in-situ languages*

c. *Lg 3: in-situ and ex-situ-wh languages*

2.1.2 A possible (but non-viable) solution: feature-driven movement

Wh-questions are generally viewed as involving movement of the wh-XP to the clause left-peripheral position. Movement is usually motivated the presence of some *wh/Q-feature* at C that drives movement of the wh-phrase from its base position to Spec-C. This can be implemented in two ways. Implementation 1 consists of whether the moved wh-XP checks the relevant feature overtly or covertly (Chomsky 1977, 1986, 1998; Huang 1982; Aoun and Li 1993; Cheng 2009).

As for implementation 2, it consists of whether the head or tail of the chain is deleted (Chomsky 1995; Bobaljik 2002; Bošković and Nunes 2007; Nunes 2011, 2017).

2.1.2.1 Implementation 1: overt versus covert movement

Implementation 1 of feature-driven movement involves movement of the wh-phrase to the left periphery. For languages where wh-question formation involves fronting of the wh-XP, the surface configuration is derived by overt movement of the wh-XP at S-structure to check the *wh/Q-feature* at C whereas in languages where the wh-phrase surfaces in-situ in wh-question formation, the

\(^7\) I abstract away from multiple wh-questions here (see chapter 3, section 3.2.2 for details).
surface configuration is derived by covert movement of the wh-phrase at LF (Huang 1982, Aoun and Li 1993, Pesetsky 2000, Cheng 2009).

(6) \[ \text{a. Overt movement at S-structure} \quad \text{b. Covert movement at LF} \]

For Medumba-type languages, where both wh-ex-situ and wh-in-situ are possible, it is unresolved how this analysis would apply. We must first determine under which conditions overt and covert movement have applied, and secondly, why they need to be applied at all in a single system.

2.1.2.2 Implementation 2: deletion of head versus tail

Implementation 2 of feature-driven movement involves the copy theory of movement (Chomsky 1995). It stipulates that movement in overt syntax creates a chain with two or more copies which are then interpreted at the PF and LF interfaces (see also Bobaljik 2002, Bošković and Nunes 2007; Nunes 2011, 2017). With this implementation, wh-ex-situ and wh-in-situ are derived by the same movement operation. Their surface realization depends on which copy the two interfaces interpret. If the head of the chain (i.e. the upper copy) is interpreted by both interfaces, it creates the typical movement operation in which movement is visible as the upper copy of the moved XP is pronounced and is also the one interpreted by LF. This derives wh-questions in wh-ex-situ languages. However, the tail of the chain (i.e. the lower copy) can be pronounced by PF while LF
interprets the upper copy; in such a derivation, the lower copy looks as if it has not been moved. This derives wh-questions in wh-in-situ languages.

(7) a. Copy + deletion of the tail of the chain b. Copy + deletion of the head of the chain

As for Medumba-type languages, where both wh-fronting and wh-in-situ are possible, this leaves unresolved exactly the nature of the mechanism that determines whether the lower copy or the upper copy is deleted.

Under a feature-driven account, wh-questions are derived by movement of the wh-XP regardless of their surface configurations. This predicts no difference — be it structural or semantic — between in-situ and ex-situ wh-questions. This approach faces two problems:

(i) The first problem is theory internal and arises from Spec-to-Spec movement in long-distance wh-extraction. If movement of the wh-XP to Spec-C is triggered by the need to check some wh/Q-feature at C, there arises a question as to what triggers movement through the intermediate CPs in long-distance movement given that in those cases only the highest C bears the wh/Q-features as shown in (8).

(8) \[ wh \quad C_{w\!w/Q} \quad [ \quad \text{wh} \quad C \quad \text{wh} \quad ] \]

Several proposals have been made to regulate movement through intermediate CPs.
Collins (1997) proposes that movement through intermediate CPs is triggered by *uninterpretable, non-interrogative wh-features* in intermediate C-heads.

McCloskey (2002) working with the phase-based derivation, proposes that *spurious features* on intermediate C-heads are triggers for movement of a wh-XP to the phase-edge.

Felser (2004) similarly argues that movement through intermediate CPs are triggered by *pseudo-interrogative or other ‘peripheral’ (force, focus, or similar) features* in intervening phase heads.

While it is clear from the different analyses that the motivation of movement through the intermediate CPs is an outstanding question for theoretical syntacticians, things become unclear when phases are invoked. All of these proposals focus only on the intermediate CP phase and none address the question of how movement proceeds through intermediate vP phases.

(ii) The second problem faced by the feature-driven movement approach to wh-questions come from languages like Medumba where in-situ and ex-situ wh-questions are not equivalent to each other. In fact, feature-driven movement cannot account for languages like Medumba where there is a structural and semantic difference between in-situ and ex-situ wh-questions.

In sum, although feature-driven movement remains a powerful tool in deriving wh-questions in wh-ex-situ and wh-in-situ languages, the structural and semantic differences between in-situ and ex-situ questions in Medumba are challenges for this approach.

2.1.3 **Another possible (but non-viable) solution: Agree**

With the advent of the operation *Agree* (Chomsky 2000, 2001, 2007, 2008 and others), feature checking does not necessarily require movement. It is taken care of by *Agree*, a feature-checking operation between a probe and a goal. The operation *Agree* takes place only if the probe and the goal both bear uninterpretable features, which make them active. After the operation *Agree* applies,
the uninterpretable features of the probe and the goal are checked, making them inactive or invisible for further Agree operations. This is schematized in (9) with $\alpha$ serving as a probe and $\beta$ as a goal.

(9) a. Feature matching phase  

```
      ...  
  \(\alpha\cdot F\)  \(\beta\cdot F\)  
      ...  
```

b. Agree phase  

```
      ...  
  \(\alpha+F\)  \(\beta+F\)  
      ...  
```

With regard to wh-movement, Agree predicts a configuration where the features of the probe $C$ and the goal wh-XP are checked at a distance without any movement required as illustrated in (10).

(10)  

```
                CP  
               /   \  
  Spec   CP  
  /   \  /   \  
 C_{[WH]}  TP  wh-XP_{[WH]}  
           
 Agree   
```

Agree analyses predict no feature-driven movement. In fact, they predict no movement at all and therefore predicts everything in-situ. Therefore, the existence of ex-situ wh-questions becomes a problem and Agree analyses must invoke additional mechanisms. It is usually assumed that content questions in wh-ex-situ languages are derived in this system by an Agree operation followed by Move. However, there are several puzzles with regard to Move, especially the mechanisms that force it and why it applies at all. Attempts to solve this problem include the use of EPP-features, edge features and the satisfaction of labeling (Chomsky 2007, 2013).

2.1.3.1 Why Agree + EPP-features do not work

It has been proposed that Move only takes place if the head carrying the probe feature is also endowed with an EPP-feature. That is, while the feature checking operation is satisfied under
Agree, the presence of an EPP-feature at C forces movement of the wh-phrase to Spec-C as illustrated in (11).

(11)

In wh-ex-situ languages, the head C has an EPP feature that triggers movement of the wh-XP to Spec C in addition to the wh/Q-features that are checked under Agree. In contrast, in wh-in-situ languages the head C lacks the EPP feature. For Medumba-type languages which allow both wh-in-situ and wh-ex-situ, is it the case that C has an EPP-feature for ex-situ construals and no EPP-feature for in-situ construals? If so, why and what determines the presence or absence of the EPP-feature?

(12) EPP and wh-ex-situ versus wh-in-situ languages

Lg 1: [wh C\textsubscript{EPP} wh] wh-ex-situ only

Lg 2: [wh wh] wh-in-situ only

Lg 3: ?a. [wh C\textsubscript{EPP} wh]

?b [wh wh]

2.1.3.2 Why Agree + Edge-features do not work

Chomsky (2007, 2008) analyzes features that favor Move as edge features. Edge features (EFs) are the properties of lexical items that enable them to be merged and to enter a computational system
(Chomsky 2008:139). In such an analysis, every lexical item has an edge feature. Chomsky argues that EFs permit free merge to the edge and Move satisfies EFs of phase heads.

(13) The edge feature EF of a phase head P can seek a goal in the complement of P, which it can raise to SPEC-P (Chomsky 2007: 24).

While A’-movement is Internal Merge driven by EFs of the phase head, A-movement is Internal Merge contingent on probe by uninterpretable inflectional features (Chomsky 2007: 24). This is illustrated below as applied to wh-movement.

(14) \[
\begin{array}{c}
\text{CP} \\
\text{Wh-XP} & \text{CP} \\
& \text{CEF} & \text{TP} \\
& \text{T} & \text{vP} \\
& <\text{Wh-XP}> & \text{vP} \\
& v_{EF} & \text{VP} \\
& <\text{Wh-XP}> &
\end{array}
\]

It appears that Move is conditioned by EFs and is to be a free operation that may or may not be applied. One can therefore conclude that in wh-fronting languages, EFs permits Move to the edge whereas in wh-in-situ languages, EFs do not permit Move to the edge. However, it remains unclear under which conditions EFs permit or do not permit movement to the edge, especially for Medumba-type languages.

(15) \textit{EFs and ex-situ versus in-situ languages}

\[\begin{array}{c}
\text{Lg 1:} & \left[ \begin{array}{c}
\text{wh} \\
\text{C}_{EF} \\
\text{wh}
\end{array} \right] & \text{wh-ex-situ}
\end{array}\]

\[\begin{array}{c}
\text{Lg 2:} & \left[ \begin{array}{c}
\text{C}_{EF} \\
\text{wh}
\end{array} \right] & \text{wh-in-situ}
\end{array}\]
2.1.3.3 Why Agree + labelling does not work

In Chomsky’s 2013 labeling theory (*Problems of Projection*), the necessity of movement to intermediate positions is derived by the failure of labeling if one of sister non-terminal projections does not move. He assumes that movement is free (untriggered). In such an analysis, the only way for non-terminal projections that are sisters to be labeled is if there is an agreement relation between them that can project. For wh-interrogatives, such an agreement is not available, until its features match those of C, so that \([/[\text{wh-XP}] [\text{C+wh} \text{ / TP}]])\) can project a common label, namely wh-interrogative. This is probably satisfied in wh-in-situ languages by covert movement, but this is not clear in Chomsky’s description. The labeling theory tries to derive movement (especially movement to intermediate CPs) in wh-questions without recourse to features. However, it still faces problems with Medumba-type languages. In fact, if the necessity of movement (be it overt or covert) is to avoid failure of labeling, then this would incorrectly predict wh-in-situ to be ruled out in Medumba if there is no movement of some sort. But I show in the next section that wh-in-situ in Medumba does not seem to undergo any movement of any sort.

2.1.4 Another possible (and viable) solution: interpretation-driven movement

To derive wh-questions in Medumba, I propose an analysis where movement is driven by interpretation.

(16) *Movement is driven by interpretation*

In this analysis, movement in wh-questions in Medumba is not motivated by the desire to check *wh/Q-features* at C, but instead is driven by interpretation. This correctly predicts that there must
be structural and semantic differences between in-situ and ex-situ wh-/focus in Medumba. I show that in-situ and ex-situ wh-/focus differ in Medumba:

- Ex-situ wh- and focus require exhaustivity
- In-situ wh- and focus don’t require exhaustivity
- Question/answer pairs condition the in-situ/ex-situ partition
- Fragment answers condition the in-situ/ex-situ partition
- Subject wh-/focus are (predictably) different

Also, interpretation-driven movement captures the properties of *Agree* that distinguish it from *Move*: while *Agree* is legislated by formal features, *Move* is driven by interpretation.

This analysis is similar to the free (untriggered) approach to movement advocated in Chomsky (2008, 2013) and Safir (2010, 2018), paraphrased as follows:

(17) *The Chomsky-Safir conjecture:* A wh-phrase has to move somewhere else the interpretation will fail.

However, the interpretation-driven movement analysis proposed here differs from the Chomsky-Safir conjecture in one crucial way: interpretation-driven movement permits — but does not require — movement; in contrast, the Chomsky-Safir conjecture requires movement. Simply put, the hypothesis that movement is driven by interpretation predicts that if the wh-XP stays in-situ the sentence gets one interpretation and if the wh-XP moves, the resulting sentence gets a different interpretation. So, movement in some sense is free in Medumba; not in the sense that the interpretation will fail in the absence of movement (as would be the case according to the Chomsky-Safir Conjecture) but free in the sense that the absence of movement does not lead to ungrammaticality.
2.1.4.1 Why interpretation-driven movement is conceptually necessary

Languages like Medumba, in which both the ex-situ and the in-situ strategies are used in forming wh-questions and focus pose a challenge for theories in which (i) ex-situ wh-questions are derived either by movement or by copy and deletion of the tail of the chain; and (ii) in-situ wh-questions are derived by covert movement or by copy and deletion of the tail of the chain. The conceptual problem is that economy and the minimization of the cost of a derivation are core concepts of the Minimalist Program (Chomsky 1995 and subsequent work). As such, it is problematic within such a framework to allow in the same language, processes, such as the possibility of having overt movement alongside covert movement, or processes such as the deletion of the head versus deletion of the tail of the chain as concurrent processes aiming at the same result. That is, using two different mechanisms to achieve the same result. Also, given the interpretative difference between in-situ and ex-situ wh-questions and focus in Medumba, it is hard to conceptually motivate why configurations derived by the same process of movement (be it overt or covert) are interpreted differently and why that should exist in a system that promotes economy of derivations. Interpretation-driven movement is advantageous in that it derives ex-situ wh-questions and focus without invoking additional mechanisms for in-situ configurations. Put simply, in-situ wh-questions and focus are derived for free within this approach. Also, with interpretation-driven movement, the question of what triggers movement through intermediate CPs, and what is the nature of those features is no longer at issue as movement is not feature-driven but free.

2.1.4.2 How interpretation-driven movement works

As stated above, interpretation-driven movement permits but does not require movement. That is when a wh-/focus-XP is merged, it can freely move to the CP edge or remain in-situ depending on which interpretation the resulting derivation conveys. In Medumba, ex-situ wh-questions and ex-
situ foci are interpreted as exhaustive whereas their in-situ counterparts are non-exhaustive. I propose that ex-situ wh-/focus XPs in Medumba need to move within the vicinity of a covert exhaustification operator ($\tilde{o}_{Exh.}$) at C in order to be interpreted as exhaustive (see also Chierchia, Fox and Spector 2008). By vicinity, I mean being within the same phase as the covert exhaustification operator. Given that the targeted phase here is C, it means XPs at Spec-C or XPs within its complement, more specifically elements at Spec-T, would be affected.

As for in-situ wh-/focus XPs, they remain in-situ and are interpreted as non-exhaustive. Consider for instance the derivation of an object wh-question within a phase-based framework (Chomsky 2000, 2001). When the first vP phase is built, if the object Wh-XP remains in its first merge position (the V complement position), it is sent to transfer and can no longer participate further in the merge operation. Thus, when all items are merged from the numeration, the resulting derivation is interpreted as a non-exhaustive wh-question in Medumba. In contrast, if the first vP phase is built and the object Wh-XP moves and adjoins to vP, then it will remain visible for subsequent merge operations when VP (complement of the v phase-head) is sent to transfer. Thus, when the CP phase is built, the Wh-XP can be remerged from the vP phase-edge to the CP phase-edge. The resulting derivation is interpreted in Medumba as an exhaustive wh-question (see section 2.3 for the step-by-step derivation of ex-situ and in-situ wh-questions).
2.1.5 **Preview of chapter**

The chapter is organized as follows:

- (six) diagnostics for A′-movement (§2.2);
- (five) arguments in favour of interpretation-driven movement (§2.3);
- broader landscape of A′-movement (§2.4).

2.2 **Six diagnostics for A′-movement**

This section is an overview of the different general diagnostic properties of A′-movement and thus, can be skipped by readers with sufficient background knowledge. A′-movement typically exhibits the following properties:

- A′-movement is associated with gapping or resumption (§2.2.1);
- A′-movement permits long-distance dependencies (§2.2.2);
- A′-movement supports reconstruction (§2.2.3);
- A′-movement conditions Strong and Weak Crossover (§2.2.4);
- A′-movement is island-sensitive (§2.2.5);
- A′-movement conditions A′-agreement (§2.2.6).

2.2.1 **Diagnostic 1: A′-movement relates the head and tail of an A′-chain**

2.2.1.1 **Relation between the head and tail of an A′-chain: the general picture**

The relation between the head and the tail of A′-chains can vary both within and across languages. In some languages, the tail of the chain is left unpronounced (a gap) as shown in (19) for English.

(19)  Who did Mary see ____?

In other languages, the tail of the chain is spelled out as a resumptive pronoun or alternates between a gap and a resumptive pronoun. This is shown in (20) for Lebanese Arabic where the tail of the
chain is spelled out as a resumptive pronoun and in (21) for Hebrew where A’-movement leaves behind a gap or a resumptive pronoun.

(20) S-Sabe yalli rafī taf‘ī T-o Zeena man l-madrase harab

the-boy that FUT.kick.3SF-him Z. from the-school ran-away.3SM

‘The boy that Zeina will kick [him] out of school ran away.’

[Lebanese Arabic, Aoun and Choueiri 2000: 15b, p. 10]

(21) a. raʔiti ?et ha-yeled she-ʔasher rina ?ohevet ?oto

saw-I ACC the-boy that Rina loves him

‘I saw the boy that Rina loves [him].’

b. raʔiti ?et ha-yeled she-ʔasher rina ?ohevet ___

saw-I ACC the-boy that Rina loves

‘I saw the boy that Rina loves.’

[Hebrew, Borer 1984: 1a, 1d, p. 220]

2.2.1.2 Relation between the head and tail of an A’-chain: the picture in Medumba

In Medumba, the relation between the head and tail of an A’-chain patterns as follows:

**Generalization 1:** SUBJECT extraction always leaves a resumptive pronoun.

**Generalization 2:** With extraction from root CPs, if the head of the A’-chain is an OBJECT, then the tail of the A’-chain can be a gap or a resumptive pronoun (i.e. with wh-/foc-movement as well as relativization).

**Generalization 3:** With extraction from non-root CPs, the tail of the A’-chain is always a resumption pronoun.

As stated in the above generalizations, A’-movement of an XP from a root clause in Medumba can leave a gap or a resumptive pronoun at the extraction site. This is illustrated below
for A’-movement from the subject position. (22-24) show that subject extraction is always associated with a resumptive pronoun⁸.

(22) Subject wh-question

a. *Gap*

á wú nòs? n-s²èèn Nùŋgè å?

FOC WH AGR.AUX.T2 N-sell Nuga C.Q.L

T.HL

‘Who betrayed Nuga?’

b. *Resumption*

á wú à nòs? n-s²èèn Nùŋgè å?

FOC WH 3SG.L AGR.AUX.T2 N-sell Nuga C.Q.L

T.HL

‘Who [he] betrayed Nuga?’

(23) Subject Focus

a. *Gap*

á Wàtèêt nòs? n-s²èèn Nùŋgè

FOC Watat.H AGR.AUX.T2 N-sell Nuga

T.HL

‘Watat betrayed Nuga?’

b. *Resumption*

á má-a⁷dʒúm à nòs? n-s²èèn Nùŋgè lá

FOC SG-male 3SG.L AGR.AUX.T2 N-sell Nuga C.-Q

T.HL

‘The boyFOC [he] betrayed Nuga’

---

⁸ I treat the subject wh- and the subject focus examples (23a) and (24a) respectively as being in-situ (see section 2.3.5 for discussion).
Subject relativization

a. Gap

\[ *\text{má-}n\text{dʒùúm} \quad \text{zò} \quad \text{nōōʔ} \quad \text{sʷéén} \quad \text{Nùŋgè} \quad \text{lá} \ldots \]

SG-male.H  C.CL1  AGR. AUX.T2  N-sell  Nuga  C.-Q

T.HL

[The boy that betrayed Nuga…]

b. Resumption

\[ \text{má-}n\text{dʒùúm} \quad \text{zò} \quad \text{à} \quad \text{nōōʔ} \quad \text{sʷéén} \quad \text{Nùŋgè} \quad \text{lá} \ldots \]

SG-male.H  C.CL1  3SG.L  AGR.AUX.T2  N-sell  Nuga  C.-Q

T.HL

[The boy that [he] betrayed Nuga…]

Unlike A′-movement of the subject which is conditioned by the type of A′-extraction, A′-movement of the object alternates between a gap and a resumptive pronoun. (25) illustrates wh-movement of object wh-XP á wū ‘who’; (26) shows focus movement of the DP-object á má-n\text{dʒùúm} ‘boy’; and (27) shows relativization of the object-DP má-ndʒùúm ‘boy’. In all these examples, when the XP moves from the complement-of-V position, it leaves behind a gap or a resumptive pronoun (in this case the animate H-tone pronoun í).

(25) Object wh-question

a. Gap

\[ \text{á} \quad \text{wū} \quad \text{Wátét} \quad \text{nōōʔ} \quad \text{sʷéén} \quad \text{áʔ} \]

FOC  WH  Watat  AGR.AUX.T2  N-AGR.sell  C.Q.H

T.HL  V.HL

‘Who did Watat betray?’

a. Resumption

\[ \text{á} \quad \text{wū} \quad \text{Wátét} \quad \text{nōōʔ} \quad \text{sʷéén} \quad \text{í} \quad \text{áʔ} \]

FOC  WH  Watat  AGR.AUX.T2  N-AGR.sell  3SG.H  C.Q.H

T.HL  V.HL

‘Who did Watat betray [him/her]?”
(26) Object Focus

a. Gap

á má-nḍùm Wàtèt nôò? ṳ-ṣwéèn ñ lā
FOC SG-male Watat AGR.AUX.T2 N-AGR.sell C.-Q
T.HL V.HL

‘The boy FOC Watat betrayed’

b. Resumption

á má-nḍùm Wàtèt nôò? ṳ-ṣwéèn í lā
FOC SG-male Watat AGR.AUX.T2 N-AGR.sell 3SG.H C.-Q
T.HL V.HL

‘The boy FOC Watat betrayed [him]’

(27) Object relativization

a. Gap

má-nḍùm zò Wàtèt nôò? ṳ-ṣwéèn ñ lā …
SG-male.H C.CL1 Watat AGR.AUX.T2 N-AGR.sell C.-Q
T.HL V.HL

‘The boy that Watat betrayed…’

b. Resumption

má-ngùm zò Wàtèt nôò? ṳ-ṣwéèn í lā …
SG-male.H REL.CL1 Watat AGR.AUX.T2 N-AGR.sell 3SG.H C.-Q
T.HL V.HL

‘The boy that Watat betrayed [him] …’

In sum, in Medumba root clauses, A’-moved constituents leave a gap or a resumptive pronoun at extraction site. This gap/resumption alternation has semantic correlates. The gap configurations are interpreted as specific or non-specific whereas the resumptive configurations are interpreted as specific. This is further discussed in chapter 5 in which I link this split in interpretation to the general de dicto and de re distinction. More specifically, the gap is ambiguous between the de dicto and de re interpretation in Medumba whereas resumption forces only the de re interpretation.
2.2.2 Diagnostic 2: A’-movement permits long-distance dependency

2.2.2.1 Long-distance dependencies: the general picture

A hallmark property of A’-movement is that the distance between the head and the tail of the A’-chains can be arbitrarily long. That is, A’-movement is unbounded so that the moved XP can cross-over several CP boundaries as shown in (28).

(28) [ CP who [ does Lucy think] [ CP wh [ that Susan said] [ CP wh [ that Mary saw ___ ]]]]

In (28), the wh-XP *who* crosses the lower CP ([that Mary saw ___ ]), the intermediate CP introduced by the verb *say* and lands at the spec-position of the highest CP introduced by the verb *think.*

2.2.2.2 Long-distance dependencies: the picture in Medumba

Long distance (non-root clause) A’-extraction in Medumba always leaves a resumptive pronoun at the extraction site. The examples in (29), (30) and (31) illustrate respectively wh-movement, focus movement and relativization from an embedded subject position. These examples show that if there is A’-movement from an embedded subject position in Medumba, the tail of the A’-chain can only be associated with a resumptive pronoun (the (b) examples) and not a gap (the (a) examples).

(29) **Wh-movement**

a. *Gap*

```
*á wú Númí nòò? n-tfúp mbú ___ nòò? n-swéén NùṘgè à
 FOC WH Numi AGR.AUX.T2 N-say C.L AGR.AUX.T2 N-sell Nuga C.Q.L
 T.HL     T.HL
```

[Who did Numi say that betrayed Nuga?]

b. *Resumption*

```
á wú Númí nòò? n-tfúp mbú á nòò? n-swéén NùṘgè à
 FOC WH Numi AGR.AUX.T2 N-say C.L 3SG.H AGR.AUX.T2 N-sell Nuga C.Q.L
 T.HL     T.HL
```

‘Who did Numi say that [he] betrayed Nuga?’
(30) **Focus movement**

a. *Gap*

\[ *á mén Nùmí nóò? \underset{a.}{^n\text{-}tʃü̂p \text{}{mbù} \ _{mòò? \ _{n\text{-}s°̃é̂en Nùŋgê la}}} \]

\[ \text{FOC child Numi AGR.AUX.T2 N-say} \ _{C.L} \ _{\text{AGR.AUX.T2 N-sell} \ _{Nuga C.-Q} \ _{T.HL}} \]

[The child\textsubscript{FOC} Numi said that betrayed Nuga.]

b. *Resumption*

\[ á mén Nùmí nóò? \ _{n\text{-}tʃü̂p \text{}{mbù á nóò? \ _{n\text{-}s°̃é̂en Nùŋgê la}}} \]

\[ \text{FOC child Numi AGR.AUX.T2 N-say} \ _{C.L} \ _{\text{3SG.H AGR.AUX.T2 N-sell} \ _{Nuga C.-Q} \ _{T.HL}} \]

‘The child\textsubscript{FOC} Numi said that [he] betrayed Nuga.‘

(31) **Relativization**

a. *Gap*

\[ *mén zò Nùmí nóò? \underset{a.}{^n\text{-}tʃü̂p \text{}{mbù á nóò? \ _{n\text{-}s°̃é̂en Nùŋgê lá \ _{...}}} \}

\[ \text{child C.CL1 Numi AGR.AUX.T2 N-say} \ _{C.L} \ _{\text{AGR.AUX.T2 N-sell} \ _{Nuga C.-Q} \ _{T.HL}} \]

[The child that Numi said betrayed Nuga …‘]

b. *Resumption*

\[ mén zò Nùmí nóò? \underset{b.}{^n\text{-}tʃü̂p \text{}{mbù á nóò? \ _{n\text{-}s°̃é̂en Nùŋgê lá \ _{...}}} \}

\[ \text{child C.CL1 Numi AGR.AUX.T2 N-say} \ _{C.L} \ _{\text{3SG.H AGR.AUX.T2 N-sell} \ _{Nuga C.-Q} \ _{T.HL}} \]

‘The child that Numi said [he/she] betrayed Nuga …‘

The same pattern is found with object extractions from an embedded clause as given below for wh-movement (32), focus movement (33) and relativization (34). Again, it is illicit if the tail of the A’-chain is associated with a gap (the (a) examples) and licit if and only if the tail of the A’-chain is associated with a resumptive pronoun (the (b) examples).
(32) **Wh-movement**

a. *Gap*

```
*á wù Nùmì nôô? n-tʃûp m'bù Wàtèêt nôô? n-sʷéên á
FOC WH Numi AGR_AUX.T2 N-say C.L Watat.H AGR_AUX.T2 N-AGR.sell C.Q.H
T.HL T.HL V.HL
```

[Who did Numi say that Watat betrayed?]

b. *Resumption*

```
á wù Nùmì nôô? n-tʃûp m'bù Wàtèêt nôô? n-sʷéên í á
FOC WH Numi AGR_AUX.T2 N-say C.L Watat.H AGR_AUX.T2 N-AGR.sell 3SG.H C.Q.H
T.HL T.HL V.HL
```

‘Who did Numi say that Watat betrayed [him/her]?’

(33) **Focus movement**

a. *Gap*

```
*á mên Nùmì nôô? n-tʃûp m'bù Wàtèêt nôô? n-sʷéên. ñá
FOC child Numí AGR_AUX.T2 N-say C.L Watat.H AGR_AUX.T2 N-AGR.sell C.-Q
T.HL T.HL V.HL
```

[The child FOC Numi said that Watat betrayed]

b. *Resumption*

```
á mên Nùmì nôô? n-tʃûp m'bù Wàtèêt nôô? n-sʷéên í ñá
FOC child Numí AGR_AUX.T2 N-say C.L Watat.H AGR_AUX.T2 N-AGR.sell 3SG.H C.-Q
T.HL T.HL V.HL
```

‘The child FOC Numi said that Watat betrayed [him/her]’

(34) **Relativization**

a. *Gap*

```
*mên zò Nùmì nôô? n-tʃûp m'bù Wàtèêt nôô? n-sʷéên ñá...
child C.C.L1 Numi AGR_AUX.T2 N-say C.L Watat.H AGR_AUX.T2 N-AGR.sell C.-Q
T.HL T.HL
```

[The child that Numi said Watat betrayed …]
b. Resumption

The child that Numi said Watat betrayed [him/her] …

A’-movement is always to the left-most edge of the clause in Medumba. As a result, partial wh-movement or movement to the edge of the embedded clause is not possible in Medumba under the interrogative reading. That is, Medumba lacks embedded questions (see chapter 3 for details and analysis). More precisely such configurations have only the root clause interpretation and are interpreted as direct quotes. Moreover, in these configurations – unlike extraction from a non-root clause where resumption is obligatory — the tail of the A’-chain can be associated with a gap or with a resumptive pronoun. That is, resumption is optional. The fact that resumption is optional in apparent partial wh-movement in Medumba confirms that they are actually not embedded clauses. (35) and (36) confirm that resumption is optional in Medumba construals involving apparent partial wh-movement.

(35) Subject extraction

a. Wh-movement

Numí nò? bëttó mbù á wù (à) nò? n-swęéén Nùنغè à
Numi AUX.T2 ask C.L FOC WH 3SG.L AGR.AUX.T2 N-sell Nuga C.Q.L
T.HL

# ‘Numi asked who betrayed Nuga
= Numi asked: “who (he) betrayed Nuga?”

b. Focus movement

Numí nò? tjùp mbù á mën (á) nò? n-swęéén Nùنغè lá
Numi AUX.T2 say C.L FOC child 3SG.H AGR.AUX.T2 N-sell Nuga C-Q
T.HL

# ‘Numi said that the child_{FOC} betrayed Nuga’
= Numi said: “the child_{FOC} (he) betrayed Nuga”
c. Relativization

Nùmí nɔ? tʃug mɔbù mën zɔ á nɔɔ? n-swέén Nùgɛ̀ lá …
Numi AUX.T2 say C.L child C.CL1 3SG.H AGR.AUX.T2 N-sell Nuga C.-Q
T.HL

# ‘Numi said that the child that betrayed Nuga …’
= Numi said: “the child that [he] betrayed Nuga …”

Object extraction

a. Wh-movement

Nùmí nɔ?-běttɔ mɔbù a wú Wàtětɛ̀ nɔɔ? n-swέén (i) á
Numi Aux-ask C.L FOC WH Watat.H AGR.AUX.T2 N-AGR.sell 3SG.H C.Q.H
T.HL V.HL

# ‘Numi asked who Watat betrayed’
= Nuga asked: “who did Watat betrayed (him/her)”

b. Focus movement

Nùmí nɔ? tʃug mɔbù á mën Wàtětɛ̀ nɔɔ? n-swέén (i) lá
Numi AUX.T2 say C.L FOC child Watat.H AGR.AUX.T2 N-AGR.sell 3SG.H C-Q
T.HL V.HL

# ‘Numi said that the child FOC Watat betrayed [him/her]’
= Numi said “the child FOC Watat betrayed (him/her)”

c. Relativization

Nùmí nɔ? tʃug mɔbù mën zɔ Wàtětɛ̀ nɔɔ? n-swέén i lá …
Numi AUX.T2 say C.L child C.CL1 Watat.H AGR.AUX.T2 N-AGR.sell 3SG.H C.-Q
T.HL V.HL

# ‘Numi said that the child that Watat betrayed …’
= Numi said: “the child that Watat betrayed (him/her)…”

To summarize, the tail of A'-chains is always spelled out as a resumptive pronoun in Medumba non-root clauses and, A'-movement is always to the leftmost edge of the clause. Movement to the edge of an apparent embedded clause has root clause interpretation, involves optional resumption and is interpreted as a direct quote (see Collins and Branigan 1997).
2.2.3 Diagnostic 3: A’-movement supports reconstruction

2.2.3.1 Reconstruction: the general picture

Reconstruction refers to a context in which in an A’-chains, with regard to binding principles, the head of the chain is interpreted in its original position as if movement has not taken place (Chomsky 1976, Huang 1993). The examples below illustrate reconstruction with regard to Principle A of Binding Theory (Chomsky 1981) and show that Principle A holds despite the fact that the reflexive is not c-commanded.

(37) **Principle A**: An anaphor\(^9\) must be bound in its Domain (Sportiche et al. 2014:168)

(38a) is a well-formed sentence even though the reflexive *himself* is not c-commanded by its antecedent *John*. (38b) is ambiguous and shows that either the matrix subject DP *John* or the embedded subject DP *Bill* can be the antecedent of the reflexive *himself*. The ambiguity of (38b) is resolved when the antecedent matrix DP and the antecedent embedded DP differ in gender feature. This is confirmed in (38c) where the matrix subject DP *John* is the antecedent of the reflexive and in (38d) where the embedded subject DP *Mary* is the antecedent of that reflexive.

(38) a. Which pictures of himself did John like *which pictures of himself*?

b. Which pictures of himself did John think Bill saw *which pictures of himself*?

c. Which pictures of himself did John think Mary saw *which pictures of himself*?

d. Which pictures of herself did John think Mary saw *which pictures of herself*?

[Huang 1993: 3, p. 103]

\(^9\) Anaphors includes reflexives and reciprocals
Taken together, the examples in (38) establish that the head of an A′-chain which contains the reflexive is interpreted as if movement has not occurred; that is the reflexive reconstructs to its original position.

2.2.3.2 Reconstruction: the picture in Medumba

A′-movement reconstructs in Medumba. The examples in (39), (40) and (41) illustrate subject wh-movement, subject focus movement and subject relativization respectively. The (a) examples provide the baseline sentences which establish that Principle A holds in Medumba. The reflexive *tʰú-vúdl-i* ‘himself/herself’ is co-indexed with and is c-commanded within its local domain by the antecedent DP *Nùᵑgè*, making biding possible. The (b) examples show that Principle A still holds even though the subject reflexive *tʰú-vúdl-i* (himself/herself) has been moved and now a resumptive pronoun surfaces at the extraction site.

(39) Subject wh-movement

a. Nùᵑgèj tfúp mбу sòvʰɔ́ Nùᵑgèj tfúpjí sòvʰɔ́ tʰú-vúdl-i ʋʰùù sì
   Nuga say C.L picture head-body-3SG fall.H down
   ‘Nuga said that the picture of himself fell down’

b. á jíìt sòvʰɔ́ Nùᵑgèj tfúpjí mbu äj ʋʰùù sì ā
   FOC SG which picture head-body-3SG Nuga AGR.say C.L 3SG.H fall.H down C.Q.H
   v.HL
   ‘Which picture of himself/herself did Nuga say that [it] fell down?’

(40) Subject focus movement

a. Nùᵑgèj tfúp mбу á sòvʰɔ́ Nùᵑgèj tfúpjí mbu äj ʋʰùù sì Nóò? m-ʋʰúù sì
   Nuga say C.L FOC picture head-body-3SG AGR.AUX.T2 N-fall down HL
   ‘Nuga said that [picture of himself/herself][FOC] fell down’

b. á sòvʰɔ́ Nùᵑgèj tfúpjí mbu äj Nóò? m-ʋʰúù sì lá
   FOC picture head-body-3SG Nuga AGR.say C.L 3SG.H AGR.AUX.T2 N-fall down C.-Q
   v.HL T.HL
   ‘[Picture of himself/herself][FOC] Nuga said that [it] fell down’
(41) Subject relativization

a. Nùᵑgɛj tʃú mbū sòvʰɔ̀ thú-vúdl-íj vʰùú sí
   Nuga say C.L picture head-body-3SG fall.H down
   ‘Nuga said that the picture of himself fell down’

b. sòvʰɔ̀ thú-vúdl-íj sò Nùᵑgɛj tʃuú mbū áj vʰùú sí lá …
   picture head-body-3SG C.CL5 Nuga AGR.say C.L 3SG.H fall.H down C.-Q
   v.HL
   ‘The picture of himself/herself that Nuga said that [it] fell down …’

The same pattern is found with A′-movement from the object position. As shown in the following examples, Principle A continues to hold even though the object reflexive has been extracted and the sentence is interpreted as if movement has not occurred.

(42) Object wh-movement

a. Nùᵑgɛj kè á jít sòvʰɔ̀ thú-vúdl=íj á
   Nuga choose FOC SG.which picture head-body=3SG C.Q.H
   ‘Nuga chose which picture of himself/herself?’

b. á jít sòvʰɔ̀ thú-vúdl-íj Nùᵑgɛj kèè ___ á
   FOC SG.which picture head-body-3SG Nuga AGR.choose C.Q.H
   v.HL
   ‘Which picture of himself/herself did Nuga choose?’

(43) Object focus movement

a. Nùᵑgɛj kè á sòvʰɔ̀ thú-vúdl=íj
   Nuga choose FOC picture head-body=3SG
   ‘Nuga chose [picture of himself/herself]FOC

b. á sòvʰɔ̀ thú-vúdl-íj Nùᵑgɛj kèè ___ lá
   FOC picture head-body-3SG Nuga AGR.choose C.-Q
   v.HL
   ‘Picture of [himself/herself]FOC Nuga chose’

(44) Object relativization

a. Nùᵑgɛj kèè sòvʰɔ̀ thú-vúdl=íj
   Nuga choose.H picture head-body=3SG
   ‘Nuga chose [picture of himself/herself]FOC
b. sóvʰɔ́ò tʰú-vúdl-ɪ̀ sɔ̀ NùNguɛj kɛɛ ___ lá vʰùù sì
picture head-body-3SG C.CL5 Nuga AGR.choose C.-Q fall.H down v.HL

‘The picture of himself/herself that Nuga chose fell down’

The fact that principle A continues to hold after the reflexive has been extracted confirms that A’-movement reconstructs in Medumba.

2.2.4 Diagnostic 4: A’-movement conditions Strong and Weak Crossover

2.2.4.1 Strong & Weak Crossover: the general picture


(45) **Strong Crossover**

*The trace of movement to an A’-position may not be anaphorically linked with a c-commanding pronoun* (McCloskey 2006: 101)

Strong Crossover gives rise to a Condition C effect.

(46) **Condition C**: Non-pronominal DPs and wh-traces must not be bound by an element in an A-position (McCloskey 2006: 101).

In the example below, the trace of the moved wh-XP in the embedded subject position is c-commanded and co-indexed with the pronoun *she*, giving rise to a Condition C violation.

(47) *Who did she; claim [ti had arrived earliest]?*  

Weak Crossover arises when A’-movement crosses over a c-commanding phrase containing a pronoun it binds. This is illustrated in the following examples.

(48) *Who; does his; mother like ___?*

(49) *Which boy; did you say his; mother like ___?
In the above examples, even though there is no Condition C violation, the bound reading of the pronoun is excluded. These are known as Weak Crossover configurations because the judgment about the unavailability of the bound reading of the pronoun is less robust than in Strong Crossover configurations (Wasow 1972; Lasnik and Stowell 1991; Moulton 2013).

2.2.4.2 Strong & Weak Crossover: the picture in Medumba

A’-movement in Medumba conditions Strong and Weak Crossover. With regard to Strong Crossover, (50) is the baseline sentence which establishes that Condition C holds in Medumba. That is, an R-expression such as Nùŋgà must be free, and so, cannot be co-indexed with a c-commanding antecedent such as bʰúʔtʰú ‘some/the idiots’.

(50) *bʰúʔtʰú, tfúp mᵇù mû àʔ 3ʷí Nùŋgài
idiot say C.L 1SG.L IRR kill Nuga
[*the idiot said that I would kill Nuga]"n

Even after A’-movement has taken place, which creates a Strong Crossover environment, Condition C continues to hold as shown in (51a) for subject wh-movement, (51b) for subject focus movement and (51c) for subject relativization.

(51) Subject extraction

a. Wh-movement

*á wúi bʰúʔtʰú, tfúp mᵇù ái àʔ 3ʷí Wàtèt à
FOC WH idiot AGR.say C.L 3SG.L IRR kill Watat C.Q.L
V.HL
[*who did the idiot say that [he] would kill Watat]

b. Focus movement

*á Nùŋgài bʰúʔtʰú, tfúp mᵇù ái àʔ 3ʷí Wàtèt lá
FOC Nuga idiot AGR.say C.L 3SG.L IRR kill Watat C.-Q
V.HL
[*Nuga the idiot said that [he] would kill Watat]
c. Relative clause

\[
*\text{Nù}gè; \quad \text{zò} \quad \text{b}^{h_u}t^{h_u}i \quad \text{tfúùp} \quad \text{m}^{b_i} \quad \text{mù} \quad \text{á}^2-\text{z}^i \text{í} \quad \text{lá}
\]

Nuga \quad \text{C.CL.1} \quad \text{idiot} \quad \text{AGR.say} \quad \text{C.L} \quad \text{3SG.L} \quad \text{IRR} \quad \text{kill Watat} \quad \text{C.-Q}

\[
[N\text{uga;} \text{that the idiot;} \text{said that I would kill Watat]}
\]

The same pattern obtains when the object is extracted as illustrated below in (52a) for object wh-movement, in (52b) for object focus movement, and in (52c) for object relativization.

(52) Object extraction

a. Wh-movement

\[
*\text{á} \quad \text{wú}i; \quad \text{b}^{h_u}t^{h_u}i \quad \text{tfúùp} \quad \text{m}^{b_i} \quad \text{mù} \quad \text{á}^2-\text{z}^i \text{í} \quad \text{á}
\]

FOC \quad WH \quad \text{idiot} \quad \text{AGR.say} \quad \text{C.L} \quad \text{1SG.L} \quad \text{IRR-kill} \quad \text{C.O.H}

\[
[\text{*who;} \text{did the idiot;} \text{said that I would kill]}
\]

b. Focus movement

\[
*\text{á} \quad \text{Nù}gè; \quad \text{b}^{h_u}t^{h_u}i \quad \text{tfúùp} \quad \text{m}^{b_i} \quad \text{mù} \quad \text{á}^2-\text{z}^i \text{í} \quad \text{lá}
\]

FOC \quad Nuga \quad \text{idiot} \quad \text{AGR.say} \quad \text{C.L} \quad \text{1SG.L} \quad \text{IRR-kill} \quad \text{C.-Q}

\[
[N\text{ugaFOCl the idiot;} \text{said that I would kill]}
\]

c. Relative clause

\[
*\text{Nù}gè; \quad \text{zò} \quad \text{b}^{h_u}t^{h_u}i \quad \text{tfúùp} \quad \text{m}^{b_i} \quad \text{mù} \quad \text{á}^2-\text{z}^i \text{í} \quad \text{lá} \ldots
\]

Nuga \quad \text{C.CL.1} \quad \text{idiot} \quad \text{AGR.say} \quad \text{C} \quad \text{1SG.L} \quad \text{IRR-kill} \quad \text{C.-Q}

\[
[N\text{uga;} \text{that the idiot;} \text{said that I would kill …}]
\]

Weak crossover arises when A’-movement crosses over a c-commanding phrase containing a pronoun it binds. In the following examples, the A’-extracted XPs cross over a possessive DP that contain a pronoun. As the extracted phrase binds the pronoun, this results in ungrammaticality as illustrated in (53a) for wh-movement, in (53b) for focus movement, and in (53c) for relativization.
(53)  
a. wh-movement

\[ *\text{á wú} \text{ j}^{\text{in-i}_j} \text{ áʔ-tʃʃ̃dò} \text{ á} \]

FOC WH friend-3SG.POSS.C1 IRR-greet C.Q.L

[Lit.: Who\textsubscript{i} will his\textsubscript{i} friend greet?]  

b. Focus movement

\[ *\text{á Nùgè} \text{ j}^{\text{in-i}_j} \text{ áʔ-tʃʃ̃dò} \text{ lá} \]

FOC NUGA friend-3SG.POSS.C1 IRR-greet C.-Q

[Lit.: Nuga\textsubscript{i} his\textsubscript{i} friend will greet.]  

c. Relativization

\[ *\text{mén} \text{ zò} \text{ j}^{\text{in-i}_j} \text{ áʔ-tʃʃ̃dò} \text{ lá …} \]

child C.CL\textsubscript{1} friend-3SG.POSS.C1 IRR-greet C.-Q

[Lit.: the child\textsubscript{i} that his\textsubscript{i} friend will greet … ]

Weak Crossover environments are licit in Medumba when the tail of the chain is spelled out as a resumptive pronoun.

(54)  
a. wh-movement

\[ \text{á wú} \text{ j}^{\text{in-i}_j} \text{ áʔ-tʃʃ̃dò i}_j \text{ á} \]

FOC WH friend-3SG.POSS.C1 IRR-greet 3SG.H C.Q.H

Lit.: Who\textsubscript{i} will his\textsubscript{i} friend greet [him]?  

b. Focus movement

\[ \text{á Nùgè} \text{ j}^{\text{in-i}_j} \text{ áʔ-tʃʃ̃dò i}_j \text{ lá} \]

FOC WH friend-3SG.POSS.C1 IRR-greet 3SG.H C.-Q

Lit.: Nuga\textsubscript{i} his\textsubscript{i} friend will greet [him]  

c. Relative clause

\[ \text{mén} \text{ zò} \text{ j}^{\text{in-i}_j} \text{ áʔ-tʃʃ̃dò i}_j \text{ lá} \]

child C.CL\textsubscript{1} friend-3SG.POSS.C1 IRR-greet 3SG.H C.-Q

Lit.: the child\textsubscript{i} that his\textsubscript{i} friend will greet [him\textsubscript{i}]
2.2.5 Diagnostic 5: A'-movement is island-sensitive

2.2.5.1 Island-sensitivity: the general picture

Islands are configurations that render otherwise legitimate syntactic dependencies illicit (Boeckx 2007). They are considered to be a standard diagnostic property of A'-movement. The notion of islandhood originates from Ross (1967) and includes complex DPs, adjoined clauses, coordinate structures, ‘left branches’, sentential subjects, and embedded interrogative clauses. Chomsky (1973, 1986) further investigates these domains and proposes that they are constrained by the principle of subjacency. Concretely, subjacency bars movement from crossing two bounding nodes such as the top clausal S and NP (modern IP/TP and DP); these are treated as barriers in Government and Binding Theory (Chomsky 1986, Haegeman 1994) and as phases in Minimalism (Chomsky 2000, 2001). Although the literature distinguishes between strong or absolute islands and weak or selective islands (Boeckx 2007, Szabolcsi 2006), there is no clear-cut distinction between the two. Strong islands prohibit extraction of any kind and include complex DPs (relative clauses and complement clauses), adjunct clauses and coordinate structures as illustrated in the examples below adapted from Szabolci 2006: 482-483).

(55) Complex DP (with relative clause)
   a. *Which kid must you call [the teacher who punished ___ ]?
   b. *What size shoes did you call [the man who wears ___ ]?
   c. *Where must you call [the teacher who put the book ___ ]?
   d. *How did you call [the man who behaved ___ ]?

10 A condition that bars movement from crossing in one step, two or more bounding nodes.
(56) **Complex DP (with complement clause)**

a. *Which man did you hear [the rumor that my dog bit ___]?*

b. *What size shoes did you hear [the rumor that I wear ___]?*

c. *Where did you hear [the rumor that I put the book ___]?*

d. *How did you hear [the rumor that I behaved ___]?*

(57) **Adjunct island**

a. *About which topic did you leave [because Mary talked ___]?*

b. *Which topic did you leave [because Mary talked about ___]?*

c. *How did you leave [because Mary behaved ___]?*

(58) **Coordinate structure**

a. *Which man did you invite [Mary and ___]?*

b. *Which man did you invite [___ and Mary]?*

With regard to weak islands — which include embedded interrogative clauses — extraction of arguments is permitted, but extraction of adjuncts is prohibited (see a.o. Huang 1982; Lasnik and Saito 1984, 1992; Chomsky 1986; Szabolci 2006; Boeckx 2007). As illustrated in (59), they show an argument/adjunct asymmetry, in that extraction is licit from an argument position, but not from an adjunct position.

(59) **Wh-island**

a. *About which topic did John ask [who was talking ___]?*

b. *?Which topic did John ask [who was talking about ___]?*

c. *How did John ask [who behaved ___]?
The examples below illustrate cases where an argument can be extracted (the (a) examples), an adjunct such as *how, why and when* cannot be extracted (the (b) examples) (See Szabócs 2006 for discussion).

(60)  a. Which problem did John ask [how to phrase ___ ]?

b. *How did John ask [which problem to phrase ___ ]?

(61)  a. Which man did John ask [whether to fire ___ ]?

b.i *Why did John ask [whether to fire him ___ ]?

b.ii ??When did John ask [whether to fire him ___ ]?

Nevertheless, as pointed out by Ross (1967) there are at least three contexts where islands can be circumvented (see also Boeckx 2007). The first includes configurations where the tail of the *A*-chain is spelled out as a resumptive pronoun (62).

(62)  a. *Which woman did John laugh [after Bill kissed ___ ]

b. Which woman did John laugh [after Bill kissed her] [Boeckx 2007: 5-6, p. 155]

The second context which circumvents islandhood involves pied-piping where the moved constituent takes along the whole island. In this case, movement is not strictly speaking out of an island as it is the entire island that moves.

(63)  a. *Whose did you buy [whose book]?


The third context where islandhood is circumvented involves sluicing. Ross (1969) noted that configurations in which islands are part of the ellipsis site are acceptable; see (64).

---

11 Sluicing is a type of elliptical construction in which the sentential portion of a content question is deleted, leaving only the remnant Wh-XP (Ross 1969, Merchant 2001).
(64)  a. *That he will hire someone is possible, but I will not divulge who that he will hire is possible.

b. That he will hire someone is possible, but I will not divulge who <that he will hire ___ is possible> [Ross 1969: 73, p. 277)]

2.2.5.2 Island-sensitivity: the picture in Medumba

Extraction out of an island is prohibited in Medumba if the tail of the A’-chain is a gap. (65) shows that a wh-XP\textsuperscript{12} cannot be extracted out of the embedded interrogative CP […]“bùù Wàtèt nòò?“-tʃɔɔʔdɔ __] ‘…whether Watat greeted __’. (66) shows that if a wh-XP is extracted out of the adjunct CP […]kàà Wàtèt tʃɔɔʔdɔ __] ‘before Watat greeted’, the resulting structure is also ungrammatical. Similarly, if the wh-XP is extracted out of a complex DP (in this case a relative clause) [mèn zà à nòò? n-tʃɔɔʔdɔ __] ‘the child who greeted __’ the result is ill-form as shown in (67). The coordinate structure constraint stipulates that extraction out of coordinated XPs is prohibited. (68a) and (68b) show that movement of a wh-XP out of either branch of a coordinated structure is illicit in Medumba.

(65) Wh-island

\begin{verbatim}
 á  wú  Nùgè  nòò?  m-bëttó  [mbùù
 FOC  WH  Nuga  AGR.AUX.T2  N-ask  C.HL
      T.HL  Wàtèt  nòò?  n-tʃɔɔʔdɔ __]  á
      Watat.H AGR.AUX.T2  N-AGR.greet  C.Q.H
         HL  V.HL
‘*Who did Nuga ask whether Watat greeted ___?'
\end{verbatim}

\textsuperscript{12} Only wh-movement is illustrated here but the same pattern holds for focus movement and relativization
(66) **Adjunct Island**

*á wú Nùgà nòò? nèèn n'tòn [kàà Watèt tʃɔòdɔ̀ __] á?
FOC WH Nuga AGR.AUX.T2 N-go market before Watat.H AGR.greet C.Q.L T.HL

‘*who did Nuga go to the market before Watat greeted?’

(67) **Complex DP (Relative clause)**

*á wú Nùgà nòò? n-dʒùn [mèn zò á nòò? n-tʃɔòdɔ̀ __] á?
FOC WH Nuga AGR.AUX.T2 N-see child C.CL1 3SG.L AGR.AUX.T2 N-AGR.greet C.Q.H T.HL

‘*who did Nuga see the child that greeted?’

(68) a. The coordinate structure constraint 1

*á wú Nùgà nòò? n-tʃɔòdɔ̀ [Watèt búù __] á?
FOC WH Nuga AGR.AUX.T2 N-AGR.greet Watat PL C.Q.L T.HL

*who did Nuga greet Watat and ——?

b. The coordinate structure constraint 2

*á wú Nùgà nòò? n-tʃɔòdɔ̀ [ __ búù Watèt] á?
FOC WH Nuga AGR.AUX.T2 N-AGR.greet PL Watat C.Q.L T.HL

*who did Nuga greet —— and Watat?

In Medumba A’-chains, crossing of an island boundary is prohibited if the tail of the A’-chain is a gap. However, if the tail of the A’-chain is a resumptive pronoun, extraction out of an island is permitted. This is illustrated in (69) where the same island domains that were deemed illicit with a gap are now licit with a resumptive pronoun.

(69) a. wh-island

á wú Nùgà nòò? m-bēttô [m'búù
FOC WH Nuga AGR.AUX.T2 N-ask C.HL T.HL

Watèt nòò? n-tʃɔòdɔ̀=í á
Watat.H AGR.AUX.T2 N-AGR.greet=3SG.H C.Q.H T.HL

‘*Who did Nuga ask if Watat greeted [him/her]?’
b. Adjunct island

á wú Nugi nɔɔ? néen nɔn kàà Wàtɛt tʃɔɔ?di=í á?
FOC WH Nuga AGR.AUX.T2 N-go market before Watat.H AGR.greet=3SG.H C.Q.H
T.HL T.HL V.HL
‘Who did Nuga go to the market before Watat greeted [him/her]?’

c. Complex DP (Relative clause)

á wú Nugi nɔɔ? -dʒùn mën zɔ̀ a nɔɔ? n-tʃɔɔ?d=í á?
FOC WH Nuga AGR.AUX.T2 N-see child C.C.L1 3SG.L AGR.AUX.T2 N-AGR.greet=3SG.H C.Q.H
T.HL T.HL V.HL
‘Who did Nuga see the child that greeted [him/her]?’

d. The coordinate structure constraint 1

á wú Nugi nɔɔ? n-tʃɔɔ?dó Wàtɛt búù jí á?
FOC WH Nuga AGR.AUX.T2 N-AGR.greet Watat PL 3SG.H C.Q.H
T.HL T.HL V.HL
*Who did Nuga greet Watat and [him/her]?

e. The coordinate structure constraint 2

á wú Nugi nɔɔ? n-tʃɔɔ?d [=í búù Wàtɛt] á?
FOC WH Nuga AGR.AUX.T2 N-AGR.greet=3SG.H PL Watat C.Q.L
T.HL T.HL V.HL
*Who did Nuga greet [him/her] and Watat?

To sum up, A’-movement across an island boundary is prohibited in Medumba if the
tail of the A’-chain is a gap. But islands can be circumvented if the tail of the chain is a
resumptive pronoun.

2.2.6 Diagnostic 6: A’-movement conditions A’-agreement

2.2.6.1 A’-agreement: the general picture

A’-agreement is the reflex of Agree (see chapter 4 for discussion) which surfaces within the V-
domain or C-domain when there is A’-extraction. In Kilega for instance, A’-agreement takes the
form of concordial agreement. The morpheme that surfaces within the verbal complex when there
is wh-movement agrees in φ-features with the moved wh-XP. A’-agreement only happens when
the wh-XP has moved; this is confirmed by the fact that in-situ contexts do not exhibit A’-agreement. This is illustrated in (70).

(70) Kilega A’-agreement

<table>
<thead>
<tr>
<th>a. bá-bo</th>
<th>bi-kulu</th>
<th>bá-kás-il-é</th>
<th>mwámí</th>
<th>bi-kí</th>
<th>mu-mw-ilo</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-that</td>
<td>2-woman</td>
<td>2SM-V-give-PFV-FV</td>
<td>1-chief</td>
<td>8-what</td>
<td>18-3-village</td>
</tr>
<tr>
<td>lit: those women gave what the chief in the village</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[Kinyalolo 1991: 13a, p. 21]

<table>
<thead>
<tr>
<th>b. bi-kí</th>
<th>bi-á-kás-il-é</th>
<th>bá-bo</th>
<th>bi-kulu</th>
<th>mw-amí</th>
<th>mu-mw-ilo</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-what</td>
<td>8.AGR-V-give-PFV-FV</td>
<td>2-that</td>
<td>2-woman</td>
<td>1-chief</td>
<td>18-3-village</td>
</tr>
<tr>
<td>‘what did those women give the chief in the village?’</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[Kinyalolo 1991: 13b, p. 21]

2.2.6.2 A’-agreement: the picture in Medumba

A’-agreement is realized in Medumba as an HL tonal melody that overwrites the lexical tone of main verbs, temporal auxiliaries as well as aspectual auxiliaries. With root CPs, A’-agreement shows a subject/object asymmetry: with subject extraction, agreement is only with T; but with object extraction agreement is with V and T. (71) shows that when the subject undergoes A’-movement, the HL melody surfaces only on the temporal auxiliary; this is illustrated in (71a.i) for wh-movement, (71b.i) for focus movement, and in (71c.i) for relativization. Failure of A’-agreement in these contexts leads to ungrammaticality (see the examples in (71a.ii), (71b.ii) and (71c.ii)).

(71) Subject extractions

a. wh-movement

<table>
<thead>
<tr>
<th>á  wú  nō?</th>
<th>n-dzun</th>
<th>Nùgè</th>
<th>à?</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOC</td>
<td>WH</td>
<td>AGR.AUX.T2</td>
<td>N-see</td>
</tr>
<tr>
<td>T.HL</td>
<td>V.H</td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘Who saw Nuga?’</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a.ii

<table>
<thead>
<tr>
<th>*á  wú  nō?</th>
<th>jún</th>
<th>Nùgè</th>
<th>à?</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOC</td>
<td>WH</td>
<td>AUX.T2</td>
<td>see</td>
</tr>
<tr>
<td>T.H</td>
<td>V.H</td>
<td></td>
<td></td>
</tr>
<tr>
<td>‘Who saw Nuga?’</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
b.i focus movement

á  Wàtèt  nòò?  n-ðùn  Nùngè
FOC  Watat.H  AGR.AUX.T2  N-see  Nuga
T. H  V.H

‘Watat saw Nuga’

b.ii *á  Wàtèt  nò?  jùn  Nùngè
FOC  Watat.H  AUX.T2  see  Nuga
T. H  V.H

‘Watat saw Nuga’

c.i Relativization

má-ndʒùúm  zò  à  nòò?  n-ðùn  Nùngè  lá …
SG-male.H  C.CL 3SG.L  AGR.AUX.T2  N-see  Nuga  C.-Q
T. H  V.H

[The boy that saw Nuga…]

c.ii *má-ndʒùúm  zò  à  nò?  jùn  Nùngè  lá …
SG-male.H  C.CL 3SG.L  AUX.T2  see  Nuga  C.-Q
T. H  V.H

[The boy that saw Nuga…]

Object extraction is illustrated in (72) where the HL melody surfaces both on the verb and the temporal auxiliary. This is true for wh-movement (72a.i), focus movement (72b.i) and relativization (72c.i). Failure of A’-agreement with object-extraction leads to ungrammaticality (cf. (72a.ii), (72b.ii) and (72c.ii)).

(72) Object extractions

a.i Wh-movement

á  wú  Wàtèt  nòò?  n-ðúùn  á?
FOC  WH  Watat  AGR.AUX.T2  N-AGR.see  C.Q.H
T. H  V.H

‘Who did Watat see?’

a.ii *á  wú  Wàtèt  nò?  jùn  á?
FOC  WH  Watat  AUX.T2  see  C.Q.H
T. H  V.H

‘Who did Watat see?’
b.i Focus movement

\[
\begin{array}{llllll}
\text{á} & \text{Nùgars} & \text{Wàtét} & \text{nòò?} & \text{n-dʒùùn} & \text{lá} \\
\text{FOC} & \text{Nuga} & \text{Watat} & \text{AGR.AUX.T2} & \text{N-AGR.see} & \text{C.-Q} \\
\text{T.HL} & \text{V.HL} & & & &
\end{array}
\]

‘Nuga\text{FOC} Watat saw’

b.ii  *á  Nùgars  Wàtét  nòò?  jùn  lá

\[
\begin{array}{llllll}
\text{FOC} & \text{Nuga} & \text{Watat} & \text{AUX.T2} & \text{see} & \text{C.-Q} \\
\text{T.H} & \text{V.H} & & & &
\end{array}
\]

‘Nuga\text{FOC} Watat saw’

c.i Relativization

\[
\begin{array}{llllll}
\text{má-n-dʒùùn} & \text{zò} & \text{Wàtét} & \text{nòò?} & \text{n-dʒùùn} & \text{lá} \\
\text{SG-male.H} & \text{C.CL1} & \text{Watat} & \text{AGR.AUX.T2} & \text{N-AGR.see} & \text{C.-Q} \\
\text{T.HL} & \text{V.HL} & & & &
\end{array}
\]

‘The boy that Watat saw…’

c.ii  *má-n-dʒùùn  zò  Wàtét  nòò?  jùn  lá ...

\[
\begin{array}{llllll}
\text{SG-male.H} & \text{C.CL1} & \text{Watat} & \text{AUX.T2} & \text{see} & \text{C.-Q} \\
\text{T.H} & \text{V.H} & & & &
\end{array}
\]

‘The boy that Watat saw…’

To summarize, it appears from what precedes that:

- \(A'\)-movement is associated with a gap or a resumptive pronoun;
- \(A'\)-movement permits long-distance dependencies;
- \(A'\)-movement supports reconstruction;
- \(A'\)-movement conditions Strong and Weak Crossover;
- \(A'\)-movement is island-sensitive;
- \(A'\)-movement conditions \(A'\)-agreement.

2.3 Five arguments in favour of interpretation-driven movement

In this section, I present the different arguments in favour of interpretation-driven movement.

These arguments support the idea that there is structural and semantic difference between in-situ and ex-situ construals as predicted by interpretation-driven movement. The arguments are:
2.3.1 Argument 1: ex-situ wh/focus requires exhaustivity

The diagnostics presented in this section establish that ex-situ wh-questions and foci are exhaustive in Medumba. These diagnostics are:

(i) the entailment test;
(ii) the use of universal quantifiers;
(iii) the use of additive particles;
(iv) and the unavailability of function denotations (natural functions and random functions also called pair list reading).

The first three diagnostics follow Kiss’s (1998, 2010) analysis of exhaustivity in Hungarian and the last one is a new diagnostic that I have developed for Medumba. In the following subsections, I first show the mechanics of the derivation of ex-situ wh-questions and foci. As predicted by interpretation-driven movement, movement is driven by interpretation and involves the presence of a covert exhaustive operator at C which marks any constituent it associates with as exhaustive. Then I show the diagnostics that confirms the exhaustiveness of ex-situ wh-questions and foci.

2.3.1.1 The mechanics of the derivation

In (73), I show a step-by-step derivation of an ex-situ object wh-question in Medumba. The ingredients for this consist of:
o **A numeration**: a set of lexical items tokens needed for the derivation and which must be exhausted by the end of the derivation

o **Merge**: an operation which selects a pair of syntactic objects and combine them into new syntactic objects. It consists of either selecting and combining syntactic objects directly from the numeration (first merge or external merge) or by selecting and combining syntactic objects contain within others (internal merge or movement).

(73) **Step-by-step derivation of an ex-situ (exhaustive) wh-question**

Numeration: \{áFOC; kúWH; NúmíN; nóóʔT2; n-kéév; áC.Q; vø; Do; CExh; Tø1\}

**a. vP phase**

I. **Merge <V; Wh-XP>**

The wh-XP is merged as complement of V

[VP [V nджún ] [Wh-XP á wú]]

II. **Merge <DP; vP> and <v; VP>**

The phase head v merges with its complement VP and the subject DP is merged at Spec-vP

[vP [DP [Númí ] ] [vP [v Ø ] [VP [V nджún] [Wh-XP á wú]]]
III. Move Wh-XP and adjoin to vP

The wh-XP moves and adjoins to vP at the phase edge so that it remains visible for subsequent merge. The complement of the phase (VP) is sent to transfer.

\[
[vP \text{Wh-XP á wú}] [vP \text{DP [Númí ]}] [vP [v ø ] [VP [V ñdüzüñ] [<Wh-XP>]]
\]

b. CP phase

I. Merge \text{<T2; vP>}

\[
[\text{TP2 [T2 nöñi]}] [vP \text{Wh-XP á wú}] [vP \text{DP [Númí ]}] [vP [v ø ] [VP [V ñdüzüñ] [<Wh-XP>]]
\]
II. Merge <T1; TP2>

T1 merges with TP2 and the subject DP moves to Spec-T1

[TP1 [DP [Nùmí ]] [TP1 [T1 ø ] [TP2 [T2 nòò?]] [vP [Wh-XP á wú] [vP [<DP>] [vP [v Ø ]] [VP [V ògùùn]] [<Wh-XP>]

III. Merge <CøExh; TP1>

C1 (øExh) merges with TP1 and the wh-XP moves to Spec-C1. TP is sent to transfer.

[CP1 [Wh-XP á wú] [CP1 [C1 øExh] [TP1 [DP [Nùmí ]] [TP1 [T1 ø ] [TP2 [T2 nòò?]] [vP [<Wh-XP>]] [vP [<DP>]] [vP [v Ø ]] [VP [V ògùùn]] [<Wh-XP>]]
IV. Merge \(<CQ, CP1>\)

C2 hosting the Q-operator merges with CP1

\[
[\text{CP2} [\text{C2 á}] \text{[CP1 [Wh-XP á wú]]} \text{[CP1 [C1 øExh]]} \text{[TP1 [DP [Nùmí]]]} \text{[TP1 [T1 ø]]} \text{[TP2 [T2 nòó?]]}} \text{[vP [<Wh-XP>]]} \text{[vP [<DP>]]} \text{[vP [v Ø]]} \text{[VP [V ñdjęün]]} [<Wh-XP>]
\]

V. Move CP1 to Spec-C2

CP1 moves to Spec-C2 for linearization and the Q-particle is stranded in final position
This analysis predicts that overt exhaustification marking should be incompatible with ex-situ construals. This is indeed the case as an overt exhaustive particle such as 'dɔŋ? 'only' is illicit with ex-situ wh- and focus construals in Medumba as shown in (74a) and (74b) respectively.\footnote{I predict the overt exhaustification operator to be compatible with in-situ focus. Details are given in §2.3.2.5.}

(74)  
\begin{align*}
\text{a.} & \quad \ast[á \ n̄dɔŋ? \ kú] \text{ Nümí} \ n̄dɔŋ? \ n̄-kēɛ \ á? \\
& \quad \text{FOC only WH Numi AGR.AUX.T2 N-AGR.fry C.O.H} \\
& \quad \text{[?what only did Numi fry]}
\end{align*}

\begin{align*}
\text{b.} & \quad \ast[á \ n̄dɔŋ? \ n̄dʒ̄wɛn] \text{ Nümí} \ n̄dɔŋ? \ n̄-kēɛ \ lá \\
& \quad \text{FOC only chips Numi AGR.AUX.T2 N-AGR.fry C.-Q} \\
& \quad \text{[?only chips Numi fried]}
\end{align*}

The overt exhaustive operator and the wh-XP form a single constituent in Medumba. When this constituent is merged with V in the complement of V position, it does not need to move within the vicinity of the covert exhaustive operator at C to be interpreted as exhaustive. Instead, it is interpreted as exhaustive in place. In fact, interpretation-driven movement blocks movement if the resulting sentence will not get a different interpretation. Interpretation-driven movement favours
the most economical derivation. Thus, the non-movement operation is preferable unless the movement operation results in an interpretation that differs from the non-movement one.

2.3.1.2  Ex-situ wh-/focus blocks entailment relations

Entailment is a relationship between statements where one statement is true when it logically follows from one or more other statements, so that in every situation where \( p \) is true then \( q \) is also true. For instance, if the proposition in (75) is true, the proposition in (76) is true as well.

(75)  
Susan and Tom ate carrots

(76)  
Susan ate carrots

In the above examples, the statement Susan and Tom ate carrots entails the statement Susan ate carrots. Exhaustivity marking perturbs the entailment relation. For example, the statement in (77) does not entail (78).

(77)  
Only Susan and Tom ate carrots

(78)  
Only Susan ate carrots

In the above examples, the statement Susan and Tom ate carrots entails the statement Susan ate carrots. Exhaustivity marking perturbs the entailment relation. For example, the statement in (77) does not entail (78).

In (77), the only people who ate carrots are Susan and Tom (but Susan and Tom may eat other things besides carrots). The entailment relation between (77) and (78) fails to hold because the exclusive particle ‘only’ in (78) presents Susan as the singleton member of the set, but this does not logically follow from (77).

In Medumba, the entailment relation is perturbed in ex-situ contexts. Consider for instance the ex-situ question in (79a) and the corresponding ex-situ answer in (79b).

(79) a.  
Q:  á kú Nùŋgê nò?  n̪=fâå  Wàtèt à?
FOC WH Nuga AGR.AUX.T2 C-AGR.give Watat C.Q.L
T.HL V.HL
‘What did Nuga give to Watat?’
b. **A1:** bò búù fù̀ à nò̀ò m-fàà jì lá

FOC bag 3PL hat 3SG.L AGR.AUX.T2 N-AGR.give 3SG.H C.-Q

T.HL V.HL

‘He gave [the bag and the hat]FOC to him’

In (79), the answer in (b) where the coordinated DP [á bò búù fù̀] ‘[the bag and the hat]FOC’ is ex-situ does not entail (c) and (d). In fact, if (79b) is true in Medumba, then (79c-d) are false.

c. **A2:** á bò à nò̀ò m-fàà jì lá

FOC bag 3SG.L AGR.AUX.T2 N-AGR.give 3SG.H C.-Q

T.HL V.HL

‘He gave [the bag]FOC to him’

d. **A3:** á fù̀ à nò̀ò m-fàà jì lá

FOC hat 3SG.L AGR.AUX.T2 N-AGR.give 3SG.H C.-Q

T.HL V.HL

‘He gave [the hat]FOC to him’

The fact that the entailment relations are blocked in ex-situ contexts in Medumba can be explained if the ex-situ construals are assumed to be exhaustive. (79b) presents the bag and the hat as the only things that Nuga gave Watat. However, (79c&c) present either the bag or the hat as the only thing that Nuga gave Watat and this does not logically follow (79b).

### 2.3.1.3 Ex-situ wh-/focus blocks universal quantification

A universal quantifier entails that the statement within its scope is true for everything or for every instance of a specific thing. For instance, in a situation with three children such as Lucy, Susan and Pete, if (80) is true:

(80) Every child bought a hat

then it is necessarily true that:

(i) Lucy bought a hat

(ii) Susan bought a hat

(iii) Pete bought a hat
This contrasts with exhaustivity marking in that exhaustivity entails that the statement about the entity which it marks is not true for other entities. In other words, it entails that other entities are excluded. For example, if (81) is true:

(81) Only Lucy and Susan bought a hat

then it is not true that:

(82) Pete bought a hat

In (81), other individuals are excluded from the set of people who bought a hat contra (80) in which everyone is included.

In Medumba, the construal of ex-situ focus is interpreted as exhaustive. The sentence in (83) for instance is true only in a context where Nuga gave the hat to Watat and nothing else. In other words, the hat exhausts the list of items given to Watat by Nuga. That is, other items are excluded from the list.

(83) á ṭfù? Nùgè nòò? m-fàà Wàtèt lá
FOC hat Nuga AGR.AUX.T2 N-AGR.give Watat C.-Q
T.HL V.HL
‘The hatFOC (is the thing) Nuga gave to Watat’

Universal quantifiers, however, are predicted to be excluded with ex-situ focus in Medumba because, unlike exhaustivity which entails exclusivity, universal quantifiers do not. And so, are incompatible with exhaustivity. This explains the ungrammaticality of the Medumba sentence in (84).

(84) *á aŋʤɔŋ ṭfù? fé Nùgè nòò? m-fàà Wàtèt lá
FOC every hat all Nuga AGR.AUX.T2 N-AGR.give Watat C.-Q
T.HL V.HL
[Nuga gave [every hat]FOC to Watat]
2.3.1.4 Ex-situ wh/focus blocks additive particles

The use of additive particles is another diagnostic of exhaustivity. I consider entities under the scope of the additive particle "mbà ‘even, also, too’ as well as the use of additive particles in follow-ups (additive follow-ups). In general, the use of an additive particles presupposes that the statement about the entity under its scope is true for other entities as well. For instance, if (85) is true:

(85) Lucy also bought a hat

Then it is true that there are other individuals who bought a hat. This contrasts with exhaustivity marking which entails exclusivity. In Medumba, the additive particle "mbà ‘even, also, too’ is incompatible with ex-situ foci. (86a) shows the baseline sentence and (86b) an ungrammatical sentence involving ex-situ focus with "mbà (even).

(86) a. Nùŋɡè  nōʔ  fá  "mbà  tfūʔ  Wàtèt
Nuga  AUX.T2  give  even  hat  Watat
T.H  V.H

Lit.: Nuga gave even the hat to Watat

b. á  "mbà  tfūʔ  Nùŋɡè  nɔɔʔ  m-fāā  Wàtèt  lá
FOC  even  hat  Nuga  AGR.AUX.T2  N-AGR.give  Watat  C.-Q
T.HL  V.HL

[Nuga gave [even the hat]FOC to Watat]

As for additive follow-ups, they are also infelicitous if they follow an ex-situ construal

(87) a. á  tfūʔ  Nùŋɡè  nɔɔʔ  m-fāā  Wàtèt  lá
FOC  hat  Nuga  AGR.AUX.T2  N-AGR.give  Watat  C.-Q
T.HL  V.HL

‘Nuga gave the hatFOC to Watat’

b. #ŋŋ!  "mbà  bɔ
yes  even  bag

‘yes! He also gave him the bag’

(86a) and (86b) above cannot be both true at the same time.
2.3.1.5 Ex-situ wh/focus blocks functional readings

I show that exhaustivity marking is only compatible with individual-denoting expressions in Medumba. This has implications on what constituent can move ex-situ in Medumba and what the answer to ex-situ wh-questions can denote. In English, a wh-question such as *which girl did each boy greet* can be answered by a natural function (89a) or a random function also known as a pair-list reading (89b).

(88) which girl did each boy greet?

(89) a. His sister

b. Tom greeted Susan; Sam greeted Lucy …

In Medumba, the natural function denotation and the pair list reading are infelicitous as an answer to an ex-situ wh-question as shown in (90) and (91) respectively.

(90) a. Q: á jït ñgïn ñbà jït jïm ló nôô? n-tjôô?dô á
   FOC which girl even which boy ? AGR.AUX.T2 N-AGR.greet C.Q.H
   T.HL V.HL
   Lit: which girl did each boy greet?

b. A1: #á ñgù-mâuáp
   FOC girl-mother.3POSS
   ‘His sister’

(91) a. Q: á jït ñgïn ñbà jït jïm ló nôô? n-tjôô?dô á
   FOC which girl even which boy ? AGR.AUX.T2 N-AGR.greet C.Q.H
   T.HL V.HL
   Lit: which girl did each boy greet?

b. A: #á Mârjà Pità nôô? n-tjôô?dô lá, á Nùmî Nûnçgë
   FOC Mary Peter AGR.AUX.T2 N-AGR.greet C.-Q FOC Numi Nuga
   nôô? n-tjôô?dô lá
   AGR.AUX.T2 N-AGR.greet C.-Q
   T.HL V.HL
   ‘Peter greeted Mary FOC, Nuga greeted Numi FOC’
The unavailability of the functional reading (be it a natural function or a random function (pair list)) with ex-situ construals is arguably due to exhaustivity. One way of understanding this is that exhaustivity (in some sense maximality) applies to entities that denote individuals but not to functions because functions denote sets. Accordingly, expressions denoting functions are ruled out with ex-situ construals. This converges with Szabolcsi (1997) who argues that the denotational semantic properties of some elements may determine their syntactic/scopal configurations. If exhaustivity applies only to individuals and not to functions, then this predicts that all event-modifying adjuncts (i.e. where, when, how and why wh-questions (the (a) examples) and their corresponding foci (the (b)) examples) will be prohibited from ex-situ contexts. This prediction is confirmed. See (92-95).

(92)  Locative

a. *á já Nuges nó? n-dgüün Wättét à
   FOC WH Nuga AGR.AUX.T2 N-AGR.see Watat C.Q.L
   T.HL V.HL
   [where did Nuga saw Watat?]

b. *á intón Nuges nó? n-dgüün Wättét lá
   FOC market Nuga AGR.AUX.T2 N-AGR.see Watat C.-Q
   T.HL V.HL
   [Nuga saw Watat at the market] FOC

(93)  Temporal

a. *á sú Nuges nó? n-dgüün Wättét à
   FOC WH Nuga AGR.AUX.T2 N-AGR.see Watat C.Q.L
   T.HL V.HL
   [when did Nuga saw Watat?]

b. *á ngyú?-mù? Nuges nó? n-dgüün Wättét lá
   FOC year-other Nuga AGR.AUX.T2 N-AGR.see Watat C.-Q
   T.HL V.HL
   [Nuga saw Watat [last year] FOC]
2.3.2 Argument 2: in-situ wh/focus does not require exhaustivity

Wh-/focus XPs can be ex-situ in Medumba, in which case they are interpreted as exhaustive. In this section, I show that in the absence of movement in Medumba, in-situ wh-/focus are interpreted in place. In fact, no extra mechanism is needed in order to derive in-situ wh-/focus construals. They are base generated in-situ and are interpreted as non-exhaustive.

I first show that wh-/focus can be construed in-situ in Medumba. This is illustrated in (96) for object wh-question and in (97) object focus.

(96) In-situ object wh-question

\[
\begin{aligned}
\text{Nùugo} & \quad \text{nó?} \\
\text{Nuga} & \quad \text{AUX.T2} \\
\text{T.H} & \quad \text{V.H}
\end{aligned}
\]

\[
\begin{aligned}
\text{Nùugo} & \quad \text{nó?} \\
\text{Nuga} & \quad \text{see} \\
\text{FOC} & \quad \text{WH} \\
\text{T.H} & \quad \text{V.H}
\end{aligned}
\]

‘Nuga saw who?’
In-situ object focus

Nùgè nō? jùn á Wàtèt
Nuga AUX.T2 see FOC Watat
‘Nuga saw Watat\textsubscript{FOC}’

In the following subsections, I first show the mechanics of the derivation of in-situ focus and then the diagnostics that confirm the non-exhaustiveness of in-situ focus in Medumba.

2.3.2.1 The mechanics of the derivation

In this section, I show the step-by-step derivation of an in-situ object wh-question in Medumba.

(98) Step-by-step derivation of an in-situ (non-exhaustive) wh-question

Numeration: \{á\textsubscript{FOC}; kù\textsubscript{WH}; Nùmì\textsubscript{N}; nōs\textsubscript{t2}; ŋ-kēè\textsubscript{v}; ác\textsubscript{Q}; vø; Dø; Tø\}

a. vP phase

I. Merge \(<V; Wh-XP>\)

\[[VP [V jùn ] [Wh-XP^ á wù]]\]

\[\begin{array}{c}
\text{VP} \\
\text{V} \quad \text{Wh-XP} \\
\text{jùn} \quad \text{á wù}
\end{array}\]

II. Merge \(<DP; vP>\ and \(<v; VP>\)

\[[vP [DP^ [Nùmì ] ] [vP [v Ø ] [VP [V jùn ] [Wh-XP^ á wù]]\]

\[\begin{array}{c}
\text{vP} \\
\text{DP} \quad \text{vP} \\
\text{Nùmì} \\
\text{Ø} \quad \text{VP} \\
\text{V} \quad \text{Wh-XP} \\
\text{jùn} \quad \text{á wù}
\end{array}\]
b. CP phase

I. Merge <T2; vP>

[TP2 [T2 nó?]] [vP [DP^ [Nùmí ]] [vP [v ø ] [VP [V jún ] [Wh-XP^ á wú]]

II. Merge <T1; TP2>

[TP1 [DP^ [Nùmí ]]] [TP1 [T1 ø]] [TP2 [T2 nó?] [vP [<DP>]] [vP [v ø ] [VP [V jún ] [Wh-XP^ á wú]]

III. Merge <CQ; TP1>

[CP [C á] [TP1 [DP^ [Nùmí ]]] [TP1 [T1 ø]] [TP2 [T2 nó?] [vP [<DP>]] [vP [v ø ] [VP [V jún ] [Wh-XP^ á wú]]}
IV. Move TP1 to Spec-C

[CP [TP1 [DP^ [Nûmí ]] [TP1 [T1 ø] [TP2 [T2 nó?] [vP [<DP>]] [vP [v ø] [VP [V jún ] [Wh-XP^ á wú]]]]] [CP [C á] [<TP1>]]

2.3.2.2 In-situ wh/focus allows entailment relations

In-situ wh-/focus allows the entailment relations in Medumba. In the question below in (99a) in which the wh-phrase is in-situ, the corresponding in-situ answer in (99b) entails (99c-d). This confirms that in-situ construals are non-exhaustive in Medumba.

70
(99) a. Q: Nùgè nọ? fá á kú Wátèt ạ?
Nuga AUX.T2 give FOC WH Watat C.Q.L
T.H V.H
‘What did Nuga give to Watat?’
3SG.L AUX.T2 give FOC bag 3PL hat 3SG.H
T.H V.H
‘He gave [the bag and the hat]FOC to him’
c. A2: à nọ? fá á bò jí
3SG.L AUX.T2 give FOC bag 3SG.H
T.H V.H
‘He gave [the bag]FOC to him’
d. A3: à nọ? fá á tfụ? jí
3SG.L AUX.T2 give FOC hat 3SG.H
T.H V.H
‘He gave [the hat]FOC to him’

2.3.2.3 In-situ wh/focus allows universal quantification

Universal quantifiers are allowed with in-situ focus in Medumba. (100) shows that the focused quantified DP \[á ndʒɔŋ tfụ? ʃe\] ‘every hat/FOC’ can be construed in-situ in the complement of V position. This confirms that in-situ focus is non-exhaustive in Medumba.

(100) Nùgè nọ? fá á ndʒɔŋ tfụ? ʃe Wátèt
Nuga AUX.T2 give FOC every hat all Watat
T.H V.H
‘Nuga gave [every hat]FOC to Watat?’

2.3.2.4 In-situ wh/focus allows additive particles

Additive particles and additive follow-ups are compatible with in-situ focus in Medumba. (101) shows that the additive particle ‘\[mbà ‘even, also, too’\] is allowed in-situ with the focused DP and (102) shows that an additive follow-up is felicitous with in-situ focus. This confirms the non-exhaustiveness of Medumba in-situ focus.
(101) Nùᵑgɛ̀ nɔ? fà á mbà tʃū? Wàtèt
Nuga AUX.T2 give FOC even hat Watat
T.H V.H
‘Nuga gave [even the hat]FOC to Watat?’

(102) a. Nùᵑgɛ̀ nɔ? fà á tʃū? Wàtèt
Nuga AUX.T2 give FOC hat Watat
T.H V.H
‘Nuga gave the hatFOC to Watat?’

 b. ñŋ! mbà bò
yes even bag
‘yes! He also gave him the bag’

2.3.2.5 In-situ wh/focus allows functional readings

Unlike ex-situ wh-questions, the natural function denotation and the pair list reading are felicitous as an answer to an in-situ wh-question in Medumba. This is shown in (103) and (104) respectively.

(103) a. mbà jiît jùm ló nɔ? tfɔʔdɔ̀ á jiît mbùn à
   even which boy? AUX.T2 greet.H FOC which girl C.Q.L
   T.H V.L
Lit: Each boy greeted which girl?

 b. ngù-máuqáp
girl-mother.3POSS
‘His sister’

(104) a. Q: mbà jiît jùm ló nɔ? tfɔʔdɔ̀ á jiît mbùn à
   even which boy? AUX.T2 greet.H FOC which girl C.Q.L
   T.H V.L
Lit: Each boy greeted which girl?

   Peter AUX.T2 greet FOC Mary Nuga AUX.T2 greet FOC Numi
   T.H V.L T.H V.L
   ‘Peter greeted MaryFOC, Nuga greeted NumiFOC’

It appears from the above that in-situ wh-/focus is non-exhaustive in Medumba. Thus, in-situ wh-/foci are correctly predicted to be compatible with an overt exhaustification marker as illustrated below in (105a) for wh-question and in (105b) for focus.
Moreover, unlike ex-situ wh-/focus, event modifying adverbs are also predicted to be allowed in-situ in Medumba. This prediction is confirmed. See (106-109). The (a) examples are wh-questions and the (b) examples are their focus counterpart.

(106) Locative

a. Nùgè nò? jùn á ndùjù wù á
   Nuga AUX.T2 see FOC only WH C.Q.H
   T.H V.H
   ‘Nuga saw only who?’

b. Nùgè nò? jùn á ndùjù Wàtët
   Nuga AUX.T2 see FOC only Watat
   T.H V.H
   ‘Nuga saw only WatatFOC’

(107) Temporal

a. Nùgè nò? jùn Wàtët á jà á
   Nuga AUX.T2 see Watat FOC WH C.Q.H
   T.H V.H
   ‘Nuga saw Watat when?’

b. Nùgè nò? jùn Wàtët á nìtòn
   Nuga AUX.T2 see Watat FOC market
   T.H V.H
   ‘Nuga saw Watat at the marketFOC’

‘Nuga saw Watat last year’
(108) Manner

a. Nùᵑgè  nóʔ  sʷéén  Wàtèt  á  ñùᵑ-ú-kú  á
Nuga AUX.T2 sell.H Watat FOC manner-WH C.Q.H
T.H V.L

‘Nuga betrayed Watat how?’

b. Nùᵑgè  nóʔ  sʷéén  Wàtèt  á  bùù  jéᵉⁿ-ŋɓú  á
Nuga AUX.T2 sell.H Watat FOC PL hurt-heart
T.H V.L

‘Nuga betrayed Watat with anger’

(109) Rationale

a. Nùᵑgè  nóʔ  sʷéén  Wàtèt  á  nùùm-kú  á
Nuga AUX.T2 sell.H Watat FOC for-WH C.Q.H
T.H V.L

‘Nuga betrayed Watat why?’

b. Nùᵑgè  nóʔ  sʷéén  Wàtèt  á  ñdëːn-ŋɓú  á  bɔ-n-i
Nuga AUX.T2 sell.H Watat FOC know-that 3SG.H hate-N-3SG.H
T.H V.L

‘Nuga betrayed Watat [because s/he hate him/her]FOC’

2.3.3 Argument 3: Q/A pairs are conditioned by in-/ex-situ contrast

In this section, I show that the information-theoretic structure of their focus answers must match the information-theoretic structures of wh-questions in Medumba

2.3.3.1 Ex-situ wh-questions are answered by ex-situ focus

In Medumba, if a question is asked with the wh-XP ex-situ, the answer must likewise contain the counterpart to the wh-XP as an ex-situ focus. The examples below, which illustrate object extraction, show that a felicitous answer to an ex-situ wh-question (110a) is when the constituent in the answer corresponding to the wh-XP in the question is an ex-situ focus (110b), and not an in situ focus (110c).
(110) a. Q: á kú Nùgã nòó? m-fàà Wàtèt ã?
FOC WH Nuga AGR.AUX.T2 N-AGR.give Watat C.Q.L
T.HL V.HL
‘What did Nuga give to Watat?’

b. A1: á bò à nòó? m-fàà jí lá
FOC bag 3SG.L AGR.AUX.T2 N-AGR.give 3SG.H C.-Q
T.HL V.HL
Lit: ‘the bagFOC he gave to him’

c. A2: #á nò? fá á bò ji
3SG.L AUX.T2 give FOC bag 3SG.H
T.H V.H
‘He gave the bagFOC to him’

The same pattern is found when a PP-complement is extracted as shown in (111).

(111) a. Q: á múùm wú Nùgã nòó? m-fàà bò ã?
FOC PREP WH Nuga AGR.AUX.T2 N-AGR.give bag C.Q.L
T.HL V.HL
‘To whom did Nuga give the bag?’

b. A1: á múùm Wàtèt à nòó? m-fàà bò lá
FOC PREP Watat 3SG.L AGR.AUX.T2 N-AGR.give bag C.-Q
T.HL V.HL
Lit: ‘to WatatFOC he gave the bag’

c. A2: #á nò? fá bò á Wàtèt
3SG.L AUX.T2 give bag FOC Watat
T.H V.H
‘He gave the bag to WatatFOC’

2.3.3.2 In-situ wh-questions are answered by in-situ focus

In-situ wh-questions in Medumba require their answers to be an in-situ focus. This is illustrated in
(112) for in-situ objects and in (113) for in-situ PP-complements. In both cases, a felicitous answer
to the wh-question is the one in which the constituent in the answer that corresponds to the wh-XP
in the question is an in-situ focus, but not an ex-situ focus (see 112c and 113c).
(112)  a.  Q:  Nùŋgɛ̀ nɔ̀?  fǎ̀  á  kù̀  Wàtɛt  à?
Nuga  AUX.T2  give  FOC  WH  Watat  C.Q.L
T.H  V.H
‘What did Nuga give to Watat?’

  b.  A1:  à̀  nɔ̀?  fǎ̀  á  bɔ̀  jì̀
3SG.L  AUX.T2  give  FOC  bag  3SG.H
T.H  V.H
‘He gave the bag FOC to him’

  c.  A2:  #á  bɔ̀  à  nɔ̀ɔ̀?
FOC  bag  3SG.L  AGR.AUX.T2  N-AGR.give  3SG.H  C.-Q
T.HL  V.HL
Lit: ‘the bag FOC he gave to him’

(113)  a.  Q:  Nùŋgɛ̀ nɔ̀?  fǎ̀  bɔ̀  á  wú̀  à?
Nuga  AUX.T2  give  bag  FOC  WH  C.Q.L
T.H  V.H
‘To whom did Nuga give the bag?’

  b.  A2:  à̀  nɔ̀?  fǎ̀  bɔ̀  á  Wàtɛt
3SG.L  AUX.T2  give  bag  FOC  Watat
T.H  V.H
‘He gave the bag to Watat FOC’

  c.  A1:  #á  müùm  Wàtɛt  à  nɔ̀ɔ̀?
FOC  PREP  Watat  3SG.L  AGR.AUX.T2  N-AGR.give  bag  C.-Q
T.HL  V.HL
‘He gave the bag to Watat FOC’

2.3.4  Argument 4: fragment answers are conditioned by in-/ex-situ contrast

2.3.4.1  Fragment answers to ex-situ wh require focus-marking

Medumba wh-phrases are always preceded by the invariable high-tone focus particle á, but, fragment answers pattern differently with regard to the presence or absence of the focus particle in Medumba. With ex-situ wh-questions, the felicitous fragment answer must be preceded by the focus particle as shown in (114) for object extraction and in (115) for a PP-complement. A fragment answer without the focus particle is infelicitous as an answer to an ex-situ wh-question. See (114c) and (115c).
(114) a. Q: á kú Nùgè nồg? m-fáà Wàtèt â?
FOC WH Nuga AGR.AUX.T2 N-AGR.give Watat C.Q.L
T.HL V.HL
‘What did Nuga give to Watat?’

b. A1: á bò
FOC bag
‘The bag’

c. A2: #bò
bag
‘The bag’

(115) a. Q: á múùm wú Nùgè nồg? m-fáà bò â?
FOC PREP WH Nuga AGR.AUX.T2 N-AGR.give bag C.Q.L
T.HL V.HL
‘To whom did Nuga give the bag?’

b. A1: á múùm Wàtèt
FOC PREP Watat
‘To Watat’

c. A2: #Wàtèt
Watat

2.3.4.2 Fragment answers to in-situ wh- do not require focus-marking

Medumba in-situ wh-questions require a bare (non-focus marked) fragment answer. This is illustrated in (116) for in-situ object and in (117) for in-situ complement PP. A fragment answer with the focus particle is infelicitous as an answer to an in-situ wh-question as confirmed by the infelicity of (116c) and (117c).

(116) a. Q: Nùgè nồg? fá á kú Wàtèt â?
Nuga AUX.T2 give FOC WH Watat C.Q.L
T.H V.H
‘What did Nuga give to Watat?’

b. A1: bò
bag
‘The bag’
c. A2: #á bò
   FOC bag
   ‘The bagFOC’

(117) a. Q: Nùgè nɔ? fà bò á wú à?
   Nuga AUX.T2 give bag FOC WH C.Q.L
   T.H V.H
   ‘To whom did Nuga give the bag?’

b. A2: Wàtèt
   Watat

c. A1: #á mú姆 Wàtèt
   FOC PREP Watat
   ‘To WatatFOC’

2.3.4.3 Implications for the syntax of fragment answers

Fragment answers confirm that there is an ex-situ/in-situ partition in Medumba both in terms of
the form of the question and the form of the answer; this has implications for syntactic theories of
fragments. In the standard approach for fragment answers, the remnant phrase undergoes focus
movement to a peripheral position before deletion takes place (Merchant 2004). But there are also
approaches to fragment answers where the remnant is in-situ (Lobeck 1995, Abe 2016). The
Medumba facts suggest that there might be two ways of deriving fragment answers. Teasing these
two apart is beyond the scope of the present dissertation.

(118) a. Possible derivation of focus-marked fragment answers

   [CP [FocP [Foc] [DP]] [CP [C] [TP [T] [vP [v] [VP [V] [FocP [Foc] [DP]]]]]

b. Possible derivation of bare fragment answers

   [CP [C] [TP [T] [vP [v] [VP [V] [FoeP [Foe] [Foc] [DP]]]]]

In sum, interpretation-driven movement captures the fact that ex-situ and in-situ wh-/focus
in Medumba are semantically distinct. In addition to the interpretive and the structural difference,
there are two other arguments in favor of semantic and syntactic non-parallelism between in-situ
and ex-situ wh-/focus in Medumba. The first argument relates to A’-agreement, a crucial diagnostic property of A’-movement in Medumba. Notably, in-situ wh-/focus construals in Medumba do not show A’-agreement as shown in (119). The (a) and the (b) examples are wh- and focus respectively.

\[(119)\]
a. Wàtët nó? jún á wù á?
Watat AUX.T2 see FOC WH C.Q.H
T.H V.H
‘Watat saw who?’

b. Wàtët nó? jún á Nùgè
Watat AUX.T2 see FOC Nuga
T.H V.H
‘Watat saw NugaFOC’

Crucially, in-situ construals in Medumba are ungrammatical if they surface with A’-agreement. These facts are compelling evidence against the movement theories of wh-in-situ. Whether it is the head-deletion theory of wh-in-situ (see a.o Chomsky 1995, Pesetsky 2000, Bobaljik 2002, Bošković and Nunes 2007) or disguised movement (Munaro, Poletto and Pollock 2001) as under these theories, wh-in-situ would actually be wh-movement and so incorrectly predict wh-in-situ to show A’-agreement in Medumba.

\[(120)\]
a. *Wàtët nóó? n-dùùn á wù á?
Watat AGR.AUX.T2 N-AGR.see FOC WH C.Q.H
T.HL V.HL
[Watat saw who?]

b. *Wàtët nóó? n-dùùn á Nùgè
Watat AGR.AUX.T2 N-AGR.see FOC Nuga
T.HL V.HL
[Watat saw NugaFOC]
constituents are construed in-situ within a wh-island (121), an adjunct island (122), and a complex DP (123).

(121) Wh-island

Nùgè náʔ-bëttó [ⁿbūu Wàtèt náʔ tʃɔʔdɔó á wú] á
Nuga Aux-ask C.CI. Watat AUX.T2 greet.H FOC WH C.Q.H
T.H V.L

Lit: Nuga ask if Watat greeted who?

(122) Adjunct Island

Nùgè náʔ nèn ^=tɔn [kàà Wàtët tʃɔʔdɔó á wú] á?
T.H V.L V.L

Lit: Nuga go to the market before Watat greeted who?

(123) Complex DP (Relative clause)

Nùgè náʔ jùn [mèn zò á nàʔ a-tʃɔʔdɔó á wú] á?
Nuga AUX.T2 see child C.CL 3SG.L AGR.AUX.T2 N-greet.H FOC WH C.Q.H
T.H V.H T.HL V.L

‘Nuga saw the child that greeted who?

With regard to intervention effects (Beck 1996, 2006), elements such as negation behave like interveners and such block LF-movement of wh-in-situ. However, in Medumba, negation does not seem to block wh-in-situ as illustrated in (124). This is evidence against the LF-movement theory of wh-in-situ (Huang 1982, Aoun and Li 1993, Watanabe 2001, Cheng 2009) as it incorrectly predicts negation to block wh-in-situ in the language. The (a) and the (b) examples are wh- and focus respectively.

(124) a. Wàtèt náʔ kà jùn á wú á?
Watat AUX.T2 NEG see FOC WH C.Q.H
T.H V.H

Lit.: Watat didn’t see who?

b. Wàtèt náʔ kà jùn á Nùgè
Watat AUX.T2 NEG see FOC Nuga
T.H V.H

‘Watat didn’t see Nuga’
To sum up, the Medumba facts suggest the wh-in-situ does not undergo any movement of some kind in Medumba and are derived in place as predicted by the interpretation-driven movement approach. However, it is worth mentioning that this approach is different from other no movement approaches to wh-in-situ which require extra mechanism such as (unselective) binding or absorption (see a.o Baker 1970, Higginbotham and May 1981, Heim 1982, Pesetsky 1987, Reinhart 1998).

2.3.5 Argument 5: subjects are (predictably) different

Subject wh-questions and focus in Medumba pose a problem in terms of their derivation and their interpretation. Extracted subjects permit an “apparent” gap or resumption. As for their interpretation, subject wh-questions and focus are always exhaustive in Medumba; this raises the question of how non-exhaustive subject wh-questions and foci are expressed in Medumba. I show that the apparent gap/resumption split with subject extractions correlates to positional differences. With regard to their interpretation, the different exhaustivity tests indicate that subjects wh-/focus are indeed exhaustive in Medumba and that non-exhaustive subjects are clefted.

2.3.5.1 Temporal auxes and resumption diagnose in-situ versus ex-situ subject

Temporal auxiliaries and resumption diagnose the in-situ/ex-situ partition with subject wh-/focus in Medumba. In-situ subject wh-/focus needs T-support; that is require the presence of a temporal auxiliary at T. (125) and (126) shows that in-situ subject wh-/focus are ungrammatical if there is no auxiliary in the structure.

(125) a. *á wú kéé ødzwén á
   FOC WH AGR.fry chips C.Q.H
   V.HL
   [Who fried the chips?]
b. á wú nɔɔ? ⁹-kê ⁹dʒʷén á
FOC WH AGR.AUX.T2 N-fry chips C.Q.H
T.HL V.H
‘Who fried the chips?"

(126) a. *á Nùmí kêê ⁹dʒʷén
FOC Numi AGR.fry chips
V.HL
[NumiFOC fried the chips]

b. á Nùmí nɔɔ? ⁹-kê ⁹dʒʷén
FOC Numi AGR.AUX.T2 N-fry chips
T.HL V.H
‘NumiFOC fried the chips’

Ex-situ wh-/focus subject require resumption instead as show in (127) for ex-situ subject wh-
question and in (128) for ex-situ subject focus.

(127) a. *á wú kêê ⁹dʒʷén á
FOC WH AGR.fry chips C.Q.H
V.HL
[Who fried the chips?]

b. á wú à kêê ⁹dʒʷén á
FOC WH 3SG.L AGR.fry chips C.Q.H
V.HL
Lit.: ‘Who did [s/he] fry the chips?’

(128) a. *á Nùmí kêê ⁹dʒʷén
FOC Numi AGR.fry chips
V.HL
[NumiFOC fried the chips]

b. á Nùmí à kêê ⁹dʒʷén
FOC Numi 3SG.L AGR.fry chips
V.HL
‘NumiFOC [s/he] fried the chips’

2.3.5.2 Deriving subject wh/focus

As shown above, A’-extracted subjects in Medumba alternate with what I call an ‘apparent gap’
and a resumptive pronoun. I propose that these two strategies correspond to different structures in
Medumba. The apparent gap strategy is derived by movement of the subject from the vP-internal position to Spec-T. In contrast, the resumptive strategy is derived by movement of the subject to Spec-C. This is illustrated in (129) and (130) for subject wh-question and subject focus respectively.

(129) Subject wh-XP at Spec-T

á  wú  nóò?  
m-fá  bò  Núqè  á?
FOC  WH  AGR.AUX.T2  N-give  bag  Nuga  C.Q.L
T.HL  V.H

‘Who gave the bag to Nuga?’
When the subject moves to Spec-C, Spec-T is spelled out as a resumptive pronoun. This is illustrated in (131) and (132) for subject wh-question and subject focus respectively.

(131) Subject wh-XP at Spec-C

á wú à nọ̀g? m-fá bò Nùgè á?
FOC WH 3SG.L AGR.AUX.T2 N-give bag Nuga C.Q.L

‘who [he] gave the bag to Nuga?’
(132) Subject focus XP at spec-C

á Wàtèt à nóó? m-fà bò Nùgè lá
FOC Watat 3SG.L AGR.AUX.T2 N-give bag Nuga C.-Q

Lit: WatatFOC [he] gave the bag to Nuga’
2.3.5.3 Subject wh/focus is always exhaustive

Exhaustivity tests introduced in section 2.3.1 are used in this section to demonstrate that subject wh-questions and foci are indeed exhaustive in Medumba. (133) illustrates the entailment test; (133b) can be used as a corresponding focused answer to the subject wh-question in (133a).

(133) a. Q: á wù nòò? m-fā bò Wàtèt á?
   FOC WH AGR.AUX.T2 N-give bag Watat C.Q.L
   T.HL V.H
   ‘Who gave the bag to Watat?’

   b. A1: á Nùmí búù Nùgëë nòò? m-fā bò jì
   FOC Numi 3PL Nuga.H AGR.AUX.T2 N-give bag 3SG.H
   T.HL V.H
   ‘[Numi and Nuga] FOC gave the bag to him

The statement in (133b) does not entail (133c) or (133d), confirming that subject wh-questions and foci are exhaustive in Medumba.

   c. A2: #á Nùmí nòò? m-fā bò jì
   FOC Numi AGR.AUX.T2 N-give bag 3SG.H
   T.HL V.H
   ‘[Numi] FOC gave the bag to him

   d. A3: #á Nùgëë nòò? m-fā bò jì
   FOC Nuga.H AGR.AUX.T2 N-give bag 3SG.H
   T.HL V.H
   ‘[Nuga] FOC gave the bag to him

Similar to ex-situ objects, universal quantifiers are illicit with subject focus as illustrated in (134). But if the subject is not focused, universal quantifiers are allowed (135).

(134) *á ʰdʒ̃ɔŋ bùn fé nòò? nèén ʰtɔn
   FOC every PL.person all AGR.AUX.T2 N-go market
   T.HL
   ‘[[Everyone] FOC went to the market’

(135) ʰdʒ̃ɔŋ bùn fé nòò? nèén ʰtɔn
   every PL.person all AUX.T2 go.H market
   T.H L
   ‘Everyone went to the market’
Additive particles are prohibited with focus-marked subjects. (136) shows that the additive particle ṁbà cannot be associated with focused subjects. But if the subject is not focus-marked, additive ṁbà is licit (137).

(136) *á ṁbà  Nùŋgéé nó? née? ūn tón
FOC even  Nuga.H  AGR.AUX.T2 N-go market
T.HL
‘[[Nuga also]FOC went to the market]’

(137) ṁbà  Nùŋgéé nó? née tón
even  Nuga  AUX.T2  go.H market
T.H
‘Nuga also went to the market’

Likewise, additive follow-ups are infelicitous if they follow a subject focus (138) but felicitous if they follow a non-focused subject (139).

(138) a. á  Nùŋgéé nó? née tón
FOC  Nuga.H  AGR.AUX.T2 N-go market
T.HL
‘NugaFOC went to the market’

b. #ŋŋ! ṁbà  Sëëmí
yes even Sami
‘yes! Sami also went to the market’

(139) a. Nùŋgéé nó? née tón
Nuga  AUX.T2  go.H market
‘NugaFOC went to the market’

b. ŋŋ! ṁbà  Sëëmí
yes even Sami
‘yes! Sami also went to the market’

A natural function is infelicitous as an answer to a subject wh-question (140).

(140) a. á  jìt  ġùn ṁbà  jìt ūm ló ū ūp ṁbù  à  nó? née tón á
FOC wh  girl  even  wh  boy  ?  AGR.say  C.L  3SG.L  AGR.AUX.T2  N-go  market  C.Q.H
V.HL  T.HL
‘Which girl did each boy say that [she] went to the market?’
b. #á ³gù-máɰáp
   FOC girl-mother.3POSS
   ‘His sister’

Similarly, a pair list reading is also incompatible as an answer to a subject wh-question (141).

(141) a. á jìt ³gùn ³bà jìt jùm ló jì̀wù jì à nò̀? nèèn ³tòn á
   FOC wh girl even wh boy ? AGR.say C.L 3SG.L AGR.AUX.T2 N-go market C.Q.H
   V.HL T.HL
   ‘Which girl did each boy say she went to the market?’

b. #á Màrjà Pítà jì̀wù ³bù á nò̀? nèèn ³tòn là
   FOC Mary Peter jì̀wù ³bù á nò̀? nèèn ³tòn là
   AGR.say C.L 3SG.H AGR.AUX.T2 N-go market C.-Q
   V.HL T.HL
   á Númí Nùgè jì̀wù ³bù á nò̀? nèèn ³tòn là
   FOC Numi Nuga jì̀wù ³bù á nò̀? nèèn ³tòn là
   AGR.say C.L 3SG.H AGR.AUX.T2 N-go market C.-Q
   V.HL T.HL
   ‘Peter said that MaryFOC went to the market, Nuga said that NumiFOC went to the market’

In sum, subject wh-questions and subject foci are exhaustive in Medumba as confirmed by the various exhaustivity tests.

2.3.5.4 Clefted subject wh/focus is non-exhaustive

A question that arises is that if subject wh-questions and subject foci are always exhaustive in Medumba, how are non-exhaustive wh-questions and foci expressed in the language?. I show that non-exhaustive subject wh-questions and foci are expressed as clefts.

I start with the entailment test and show that a clefted subject wh-question (142a) can be answer by the corresponding clefted focused answer (141b).

(142) a. Q: à bù á wù zà à nò̀?
   3SG.L BE FOC WH C.CL1 3SG.L AGR.AUX.T2
   T.HL
   ‘Who is it that gave the bag to Watat?’
b. A1: à bú á Nùmí búù Nùgège nòô? m-fá bò jì
3SG.L BE FOC Numi 3PL Nuga AGR.AUX.T2 N-give bag 3SG.H T.HL V.H

‘It was Numi and NugaFOC who gave the bag to him’

Unlike subject wh-questions and their corresponding focused answers, the clefted subject focus statement used as an answer to the question above entails (142c) and (142d). This is only possible if clefts are assumed to be non-exhaustive in Medumba.

c. A2: à bú á Nùmí nòô? m-fá bò jì
3SG.L BE FOC Numi AGR.AUX.T2 N-give bag 3SG.H T.HL V.H

‘It was NumiFOC who gave the bag to him’

d. A3: à bú á Nùgège nòô? m-fá bò jì
3SG.L BE FOC Nuga AGR.AUX.T2 N-give bag 3SG.H T.HL V.H

‘It was NugaFOC who gave the bag to him’

Likewise, universal quantifiers (143), additive particles (143) and additive follow-ups (145) are also compatible with clefted subject focus.

(143) Universal quantifier
à bú á ṣòǒn bùn fé nòô? nèèn ṣòôn
3SG.L BE FOC every persons all AGR.AUX.T2 N-go market T.HL

‘*It is everyone that went to the market’

(144) Additive particle
à bú á ṣòà Nùgège nòô? nèèn ṣòôn
3SG.L BE FOC even Nuga.H AGR.AUX.T2 N-go market T.HL

‘*It was even NugaFOC who went to the market’

(145) Additive follow-up
à bú á Nùgège nòô? nèèn ṣòôn
3SG.L BE FOC Nuga.H AGR.AUX.T2 N-go market T.HL

‘It was NugaFOC who went to the market’
With regard to function denotations, both the natural function (146b) and the pair-list reading (146c) are used as felicitous answers to a clefted subject wh-question.

(146) a. à bú á jít "gùn mbà jít jùm ló ʧùùp mbù 3SG.L BE FOC which girl even which boy ? AGR.say C.L V.HL

á nò̀? née n’tón á 3SG.H AGR.AUX.T2 N-go market C.Q.H T.HL

‘It was which girl that each boy said she went to the market?’

b. à bú á "gù-màuìp 3SG.L BE FOC girl-mother.3POSS

‘It was his sister’

c. à bú á Màrjà Pità ʧùùp mbù á nò̀? née n’tón lá 3SG.L BE FOC Mary Peter AGR.say C.L 3SG.H AGR.AUX.T2 N-go market C.-Q V.HL T.HL

‘It was MaryFOC Peter said went to the market, it was NumiFOC Nuga said went to the market …’

Subject wh-questions and subject foci are always exhaustive in Medumba whereas their non-exhaustive counterparts are always clefted. The behaviour of subject clefts in Medumba has theoretical significance. Clefts are usually described as exhaustive (Hole and Zimmermann 2009) — even though it is not clear what the nature of their exhaustiveness is — but the fact that subject clefts are not exhaustive in Medumba raises the question whether clefts have the same structure, semantics, and pragmatics cross-linguistically. The answer to this question is beyond the scope of this dissertation and will be subject of future investigation.
2.3.6 A loose end: the semantics of exhaustivity

The in-situ/ex-situ contrast found with Medumba wh-questions and focus construals has semantic correlates: while in-situ configurations are non-exhaustive, ex-situ ones are exhaustive and exclusively individual-denoting as seen by the unavailability of all event-modifying adjuncts (e.g. how, where, when, how wh-questions) and function denotations in ex-situ contexts. Building on this, a further investigation of other non-individual denoting elements is needed for a unifying semantic analysis of exhaustivity marking. My initial proposal in this chapter is that the exhaustivity operator or “Max” operator applies only to individuals, but not to functions, whether natural functions or random functions (i.e. pair-list readings). This is of theoretical significance as it appears that the denotational semantic properties of some elements might determine their syntactic configuration (see also Szabolcsi 1997).

2.4 The broader landscape of A’-movement

Interpretation-driven movement has implications both for the syntax of A’-dependencies within the Minimalist framework and for the in-situ/ex-situ partition cross-linguistically. One of the outstanding questions in modeling Move in this framework includes the mechanisms that force it and why it applies at all. As pointed out by Rouveret (2011), more work needs to be done to develop a better understanding of the properties of Agree that distinguish it from Move. Interpretation-driven movement predicts that wh-ex-situ and wh-in-situ would not always mean the same thing cross-linguistically. Moreover, it predicts that if a language has an in-situ/ex-situ partition, there should be an interpretive difference as well.
2.4.1 Wh-ex-situ doesn’t always “mean” the same thing

2.4.1.1 Wh-ex-situ can be just inquisitive: English

English ex-situ wh-questions are inquisitive. That is, the basic interrogative form used for information seeking as given in (147).

(147) **Context:** John is doing a survey about linguistic diversity in his neighbourhood. He meets a resident on the street and asks:

a. **What** is your native language ___?

b. #Your native language is **what**?

2.4.1.2 Wh-ex-situ can be inquisitive and exhaustive: Medumba

As demonstrated in this chapter, Medumba ex-situ wh-questions are inquisitive and exhaustive. That is, the speaker when asking an ex-situ wh-question, is not only seeking information, but also is requesting from the addressee an exhaustive list as answer. This is illustrated in (148).

(148) **Context:** Watat and Nuga went to the market while their mother was out of town, to buy groceries for the feast happening in the neighbourhood. When she returns in town, she wants to know the full list of things they have bought. So, she asks:

a. áku **bin** 3\textsuperscript{w}ín ___ **tón** á?
   FOC WH 2PL.L AGR.buy market C.Q.H
   \textsuperscript{V.HL}
   ‘What did you buy at the market?’

b. **bin** 3\textsuperscript{w}ín á **kú** **tón** á?
   2PL.L buy FOC WH market C.Q.H
   \textsuperscript{V.H}
   ‘Lit.: You bought what at the market?’
2.4.2 Wh-in-situ doesn’t always “mean” the same thing

2.4.2.1 Wh-in-situ can be just inquisitive: Medumba

In-situ wh-questions in Medumba can only be inquisitive. That is, the basic form of interrogative used to seek information in the language.

(149) Context: Watat and Nuga went to the market to buy groceries. When they return, their mother wants to know what they have bought. So, she asks:

<table>
<thead>
<tr>
<th>a.</th>
<th>bin</th>
<th>3*ín</th>
<th>á</th>
<th>kû</th>
<th>ⁿtón</th>
<th>á?</th>
</tr>
</thead>
<tbody>
<tr>
<td>2PL.L buy</td>
<td>FOC</td>
<td>WH</td>
<td>market</td>
<td>C.Q.H</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

‘Lit.: You bought what at the market?’

<table>
<thead>
<tr>
<th>b.</th>
<th>#á</th>
<th>kû</th>
<th>bin</th>
<th>3*ín</th>
<th>___</th>
<th>ⁿtón</th>
<th>á?</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOC</td>
<td>WH</td>
<td>2PL.L</td>
<td>AGR.buy</td>
<td>market</td>
<td>C.Q.H</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

‘What did you buy at the market?’

2.4.2.2 Wh-in-situ can be supplemented with reprise “a.k.a echo” particle: Medumba

A question that arises is whether in-situ wh-questions are used for reprise questions (a.k.a echo-questions). More precisely, how are reprise questions expressed in Medumba? This is of interest because some languages that use the in-situ strategy for information seeking also use the same strategy for reprise questions (see Engdhal 2006 for French). Interpretation-driven movement predicts that the inquisitive semantics (i.e. wh-in-situ) is the “base form” of information seeking questions in Medumba. All other forms are additive. We have already seen that exhaustive inquisitive questions requires \textit{wh-XP + Move}. As for reprise questions, I show that they require the reprise question particle \textit{dí}, that is, they involve \textit{wh-XP + dí}. (150) illustrates the different wh-questions strategies and semantics in Medumba.
(150) **Wh-question strategies and their semantics in Medumba**

a. wh-XP (i.e. wh-in-situ) = inquisitive Q

b. wh-XP + ɗí = reprise inquisitive Q

c. wh-XP + Move = inquisitive exhaustive Q

d. wh-XP + Move + ɗí = reprise inquisitive exhaustive Q

A reprise question is a replay of (part of) a previous utterance (Engdhal 2006: 102); (see also Bolinger 1978; Ginzburg and Sag 2000). The type of reprise question addressed in this section is the one in which part of the utterance is inaudible. The form of a reprise question in Medumba depends on the part of the utterance that is inaudible. That is, whether it is a subject, an object, or a full CP. The reprise particle is always in final position as illustrated in the following examples for reprise inquisitive question. (151) for object, (152) for adjuncts, and (153) for a full CP.

(151) **Object**

A: Nùⁿɡɛ́ nóʔ jún [inaudible]

Nuga AUX.T2 see T.H V.H

‘Nuga saw [inaudible]’

B: Nùⁿɡɛ́ nóʔ jún á wú ɗí

Nuga AUX.T2 see FOC WH C.ECHO T.H V.H

‘Nuga saw who?’

(152) **Adjuncts**

a. **Locative**

A: Nùⁿɡɛ́ nóʔ jún Wàtɛt [inaudible]

Nuga AUX.T2 see Watat T.H V.H

‘Nuga saw Watat [inaudible]’
B: Nùgè nò? jún Wàtèt á já ↓dí
Nuga AUX.T2 see Watat FOC WH C.ECHO
T.H V.H
‘Nuga saw Watat where?’

b. Temporal

A: Nùgè nò? jún Wàtèt [inaudible]
Nuga AUX.T2 see Watat
T.H V.H
‘Nuga saw Watat [inaudible]’

B: Nùgè nò? jún Wàtèt á sú ↓dí
Nuga AUX.T2 see Watat FOC WH C.ECHO
T.H V.H
‘Nuga saw Watat when?’

c. Manner

A: Nùgè nò? sèén Wàtèt [inaudible]
Nuga AUX.T2 sell.H Watat
T.H V.L
‘Nuga betrayed Watat [inaudible]’

B: Nùgè nò? sèén Wàtèt á ṣèʤù-kú ↓dí
Nuga AUX.T2 sell.H Watat FOC manner-WH C.ECHO
T.H V.L
‘Nuga betrayed Watat why?’

d. Rationale

A: Nùgè nò? sèén Wàtèt [inaudible]
Nuga AUX.T2 sell.H Watat
T.H V.L
‘Nuga betrayed Watat [inaudible]’

B: Nùgè nò? sèén Wàtèt á nùm-kú ↓dí
Nuga AUX.T2 sell.H Watat FOC for-WH C.ECHO
T.H V.L
‘Nuga betrayed Watat why?’
(153) *CP*

A: [inaudible]

B: 

\[ \text{mbù kú } \downdownarrow \text{dí} \]

C WH C.ECHO

Lit: that what?

‘What?’

The reprise particle can also appear with exhaustive questions in Medumba as shown in (154).

(154) Reprise exhaustive inquisitive Q

a. *Subject*

A: [inaudible] nôô? \n-ðùn Wàtète

AGR.AUX.T2 N-see Watat

T.HL V.H

‘[inaudible] saw Watat?’

B: à wú nôô? \n-ðùn Wàtète \downdownarrow

FOC WH AGR.AUX.T2 N-see Watat C.ECHO

T.HL V.H

‘Who saw Watat?’

b. *Object*

A: [inaudible] Nûmí nôô? \n-këë — lá

Numi AGR.AUX.T2 N-AGR.fry

T.HL V.H C.-Q

‘[inaudible] Numi fry’

B: á kú Nûmí nôô? \n-këë — \downdownarrow di?

FOC WH Numi AGR.AUX.T2 N-AGR.fry C.ECHO

T.HL V.H

‘What did Numi fry?’

2.4.2.3 Wh-in-situ can be a reprise question: English

In English a wh-in-situ form is typically used for reprise questions as shown in (155).

(155) A: Lucy saw [inaudible]

B: Lucy saw who?
2.4.3 Wh-questions always and only contrast in-situ versus ex-situ

2.4.3.1 Prolific inquisitive forms in French: seven ways of asking a question?

French is also a language where the wh-XP can stay in-situ or move to the clause left-peripheral position. The hypothesis adopted in this chapter predicts that there must be a difference between in-situ and ex-situ wh-questions in French. It is reported that there are several strategies (4 to 7 strategies) to form wh-questions in French (Chang 1997; Adli 2006; Deprez et al. 2012; Shlonsky 2012; Tailleur 2013). Those strategies are listed in (156), and are adapted from Chang 1997, Tailleur 2013 and Shlonsky 2012.

(156)

a. Tu as vu qui
   2SG have see wh
   ‘You saw who?’

b. Qui tu as vu __?
   WH 2SG have see
   ‘Who did you see?’

c. Qui as-tu vu __?
   WH have-2SG see
   ‘Who did you see?’

d. Qui que tu as vu __?
   WH C 2SG have see
   ‘Who that you saw?’

e. C’est qui que tu as vu __?
   It be WH C 2SG have see
   ‘It is who that you saw?’

f. Qui c’est que tu as vu __?
   WH it be C 2SG have see
   ‘Who it is that you saw?’

g. Qui est-ce que tu as vu __?
   WH be-it C 2SG have see
   ‘Who is it that you saw?’
2.4.3.2 The French paradigm reduces to an in-situ/ex-situ partition

The various wh-question patterns in French can be reduced to two major strategies namely, an in-situ/ex-situ partition. The in-situ strategy is illustrated in (157). The ex-situ strategy can be divided into three different categories: The simple ex-situ — which includes ex-situ with no T-to-C movement (158a), ex-situ with T-to-C movement (158b), and ex-situ with doubly-filled Comp (158c) —; the clefted wh-questions (which include what I call cleft type 1 (159a) and cleft type 2 (159b)); and the base-generated form or reinforced interrogative, which is argued to be different from wh-clefs (160); (see Chan 1997 and Tailleur 2013).

(157) **In-situ**

Tu as vu **qui**  
*You saw who?*

(158) **Simple ex-situ wh-questions**

a. Qui tu as vu __?  
 WH 2SG have see  
‘Who did you see?’  
*Ex-situ with No T-to-C movement*

b. Qui as-tu vu __?  
 WH have-2SG see  
‘Who did you see?’  
*Ex-situ with T-to-C movement*

c. Qui que tu as vu __?  
 WH C 2SG have see  
‘Who that you saw?’  
*Ex-situ with Doubly-filled Comp*

(159) **Wh-clefs**

a. C’est **qui** que tu as vu __?  
 It be WH C 2SG have see  
‘It is who that you saw?’  
*Cleft type 1*

b. Qui c’est que tu as vu __?  
 WH it be C 2SG have see  
‘Who it is that you saw?’  
*Cleft type 2*
Reinforced interrogative

 Qui est-ce que tu as vu __ ?
 WH be-it C 2SG have see
 ‘who is it that you saw?’

It is still unclear whether there is an interpretative difference between in-situ and ex-situ wh-questions in French; the description in the literature is controversial. Bošcović 1998 argues for optionality in French wh-questions; that is, in-situ and ex-situ wh-questions in French are optional variants of the same structure (see also Adli 2006). Matthieu 1999 claims that French wh-in-situ forms are not restricted only to echo-questions but are also used as standard questions to ask new information and suggested no difference in interpretation between French in-situ and ex-situ construals. Cheng and Rooryck 2000 argue that the optionality is only apparent, but their argument is only in terms of derivation. Shlonsky 2012 argues that French wh-clefts are associated with an existential presupposition whereas their in-situ counterparts are not necessarily associated with such a presupposition. One important thing worth mentioning is that not all strategies may be available in a single dialect of French. But it is clear that each dialect has the in-situ strategy plus some version of the ex-situ strategy. Other factors that could also condition the variation in French are register and social class (See also Tailleur 2013, Adli 2017). A careful study including control of dialect differences, possible answers, and information structure is needed in order to examine the complexity of French wh-questions. Chang 1997 argues that there is a three way distinction among the types of questions. They are questions neutres (information seeking questions), question de précision (detail seeking questions), and questions de reprise (echo questions); (Chang 1997: 45). Hamlaoui 2011 in this respect argues that there are information-structural differences related to givenness that tease apart in-situ and ex-situ wh-questions in Francilian French, the variety of French spoken in Paris and its suburbs.
2.4.4 A prediction about wh-interrogative and wh-relative in Medumba

In English, a wh-question is only inquisitive, and thus not exhaustive. Relativization too is not exhaustive. As such wh-movement in English is compatible with questions and operator-movement (i.e. relativization) as shown in (161).

(161) a. Who did Jane talk to?
   b. The boy who Jane talked to

In Medumba, wh-movement is inquisitive and exhaustive; relativization is not exhaustive and so, relativization is predicted to have a different form in Medumba. Crucially there is no wh-relative in the language as shown in (162).

(162) a. á wú Númí jún ̀n á
   FOC WH Numi AGR.see C.Q.H
   V.HL
   ‘Who did Numi see?’

   b. *má-ngùm wú Númí jún lá
   SG-male WH Numi see C.-Q
   [The boy who Numi saw]

Relativization in Medumba is introduced by two complementizers: An optional clause-internal C that agrees in noun class with the head noun and an obligatory external C (lá) that surfaces in clause-final position. When the optional C surfaces in the structure, an additional high tone is added to the head noun. (163a) shows the C (zò) which agrees in noun class 1 with the head noun má-ngùm ‘boy’, whose final syllable bears an additional H-tone. (163b) in contrast, shows that when the internal C is absent, there is no additional H-tone on the head noun.

(163) a. má-ngùm zò Wátèt nžò? n-s°éèn lá …
   SG-male.H C.CL.1 Watat AGR.AUX.T2 N-AGR.sell C.-Q
   T.HL V.HL
   ‘The boy that Watat betrayed…’
b. máⁿdʒùım Wàtèt nôô? nⁿ-sʷéên lá …
SG-male Watat AGR.AUX.T2 N-AGR.sell C.-Q
HL HL

‘The boy Watat betrayed…’

(164a) illustrates the plural exponent (tˢ) of the C which agrees in noun class 6 with the head noun báⁿdʒùım ‘boys’. (164b) lacks the internal C.

(164) a. báⁿdʒùúm tⁿ Wàtèt nôô? nⁿ-sʷéên lá …
PL-male.H C.CL6 Watat AGR.AUX.T2 N-AGR.sell C.-Q
T.HL V.HL

‘The boys that Watat betrayed…’

b. báⁿdʒùım Wàtèt nôô? nⁿ-sʷéên lá …
PL-male Watat AGR.AUX.T2 N-AGR.sell C.-Q
T.HL V.HL

‘The boys that Watat betrayed…’

(165a) shows that the complementizer (zə) which is used for class 1 is also used for a class 3 noun such as kʰú ‘foot’. If the agreeing C surfaces in the structure, the head noun carries an additional H-tone. (166) shows its class 4 plural counterpart (mì).

(165) a. kʰúú zô Wàtèt nôô? nⁿ-sôôm lá …
foot.H C.CL3 Watat AGR.AUX.T2 N-AGR.massage C.-Q
T.HL V.HL

‘The foot that Watat massaged…’

b. kʰú Wàtèt nôô? nⁿ-sôôm lá …
foot Watat AGR.AUX.T2 N-AGR.massage C.-Q
T.HL V.HL

‘The foot that Watat massaged…’

(166) a. n-kʰúú mi Wàtèt nôô? nⁿ-sôôm lá …
PL-foot.H C.CL4 Watat AGR.AUX.T2 N-AGR.massage C.-Q
T.HL V.HL

‘The feet that Watat massaged…’

b. n-kʰú Wàtèt nôô? nⁿ-sôôm lá …
PL-feet Watat AGR.AUX.T2 N-AGR.massage C.-Q
T.HL V.HL

‘The feet that Watat massaged…’
(167) shows the complementizer (sò) agreement in noun class 5 with the head noun sò ‘tooth’ and (168) is its class 4 plural form.

(167) a. sòò sò Wàtèt nòò? n-ğiüù? lá …
tooth.H C.CL5 Watat AGR.AUX.T2 N-AGR.remove C.-Q
T.HL V.HL

‘The tooth that Watat removed…’

b. sò Wàtèt nòò? n-ğiüù? lá …
tooth Watat AGR.AUX.T2 N-AGR.remove C.-Q
T.HL V.HL

‘The tooth that Watat removed…’

(168) a. n-sòò mi Wàtèt nòò? n-ğiüù? lá …
PL-tooth.H C.CL4 Watat AGR.AUX.T2 N-AGR.remove C.-Q
T.HL V.HL

‘The teeth that Watat removed…’

b. n-sò Wàtèt nòò? n-ğiüù? lá …
PL-tooth Watat AGR.AUX.T2 N-AGR.remove C.-Q
T.HL V.HL

‘The teeth that Watat removed…’

The agreeing C is not always optional in Medumba. It is obligatory in relative clauses where the head noun is not always spelled out. This is illustrated in the following examples with C inflected for the noun class of the head noun.

(169) a. zò Wàtèt nòò? n-sẹ̀ẹ́n lá …
C.CL1 Watat AGR.AUX.T2 N-AGR.sell C.-Q
T.HL V.HL

‘The one/CL1 that Watat betrayed…’

b. tò Wàtèt nòò? n-sẹ̀ẹ́n lá …
C.CL6 Watat AGR.AUX.T2 N-AGR.sell C.-Q
T.HL V.HL

‘The ones/CL6 that Watat betrayed…’

(170) a. zò Wàtèt nòò? n-sóòm lá …
C.CL3 Watat AGR.AUX.T2 N-AGR.massage C.-Q
T.HL V.HL

‘The one/CL3 that Watat massaged…’
In sum, the internal C can be optional if the head noun is overt, but obligatory if the head noun is covert. One way of understanding this variability is in terms of recoverability: if the head noun is not spelled out, the only way to recover its features for the purposes of interpretation is through the agreeing features of C, making C obligatory in such contents. This makes the complementizer obligatory in this context.

The fact that the internal C found in relative clauses agrees in noun class with the head noun is reminiscent of the connection between the relative marker and demonstrative in other Bantu languages, where the same form (C/D) is used for relative clauses and demonstratives. In Lingala for instance, the form of C involves in relative clauses is similar to that of the demonstrative D (Henderson 2006). This is illustrated in (172a) and (172b) where the same class 5 form (muye) is used for the relative C and for the demonstrative D.

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14 Another way of understanding this is in terms of Koopman’s 1997 Principle of Projection Activation which states that a projection is interpretable if and only if it is activated by lexical material (Koopman 1997:32). That is for a projection to be interpretable, lexical material must associate either as head or specifier of that projection in the course of the derivation. Thus, the condition on recoverability can be reduced to the Principle of Projection Activation.
The same pattern is also found in Southern Sotho and Tsonga (Zeller 2004, 2006). This is illustrated in (173) for Southern Sotho where the class 7 form (seo) is used for both the relative clause C and the demonstrative D, and in (174) for Tsonga where the class 9 form (leyi) is likewise used as C and D. The examples in (a) and (b) represent relative clause Cs and demonstrative Ds respectively.

(173) a. setulo seo basadi ba-se-rek-ile-ng kajeno … S. Sotho
   7chair 7REL 2women 3PL-5OM-buy-PERF-RS today
   ‘The chair which the women bought today …’
   [Zeller 2004:7, p. 77]

   b. setulo seo
   7chair 7DEM
   ‘this chair’
   [Zeller 2004:10a, p. 77]

(174) a. buku leyi munhu a yi hlaya-ka … Tsonga
   9book 9REL 1person 1SA 9OM read-RS
   ‘The book that the person is reading …’
   [Zeller 2004:15, p. 79]

   b. buku leyi
   9book 9REL
   ‘this book’
   [Zeller 2004:17, p. 79]

In contrast, in Medumba, the internal C used for relative clauses is different from the demonstrative D. In fact, the relative clause agreeing C cannot substitute for the demonstrative D as shown in (175).

(175) a. *máⁿdʒúúm zà
   SG-male.H C.CL.1
   [Intended: this man]
It is worth mentioning that relative clauses lacking the head noun (which I refer to as pro-drop relative clauses) are not free relatives in Medumba because the latter have a different form as illustrated in the following examples. The head noun is always present in headed relative clauses (176). The features of the head noun are interpretable in pro-drop relative clauses (177) whereas a quantified expression is used in free relative (178).

(176) *Headed relative clause*

\[ \text{bàk àʔ-fá } \text{ná} \text{dǒ́? } \text{úgün} \text{ zò } \text{à } \text{àʔúùm } \text{m hô } \text{mèn lá} \]

\[ \text{1PL IRR}-\text{give gift girl.H C.CL1 3SG.L AGR.come first person C.-Q} \]

\[ \text{V.HL} \]

‘We should give the present to the girl who came first’

(177) *pro-drop relative clause*

\[ \text{bàk àʔ-fá } \text{ná} \text{dǒ́? } \text{zà } \text{à } \text{àʔúùm } \text{m hô } \text{mèn lá} \]

\[ \text{1PL IRR}-\text{give gift C.CL1 3SG.L AGR.come first person C.-Q} \]

\[ \text{V.HL} \]

= ‘We should give the present to the one who came first’

# ‘we should give the present to whoever came first’
(178) *Headless or free relative clause*¹⁵

a. bòk əʔ-fâ ndɔ? mbà wú lô ə gb'ùm mbɔ mɛn lá
   1PL IRR-give gift even WH? 3SG.L AGR.come first person C.-Q
   V.HL
   ‘We should give the present to whoever came first’

b. bòk əʔ-fâ ndɔ? mbà jìt gùn lô ə gb'ùm mbɔ mɛn lá
   1PL IRR-give gift even WH girl? 3SG.L AGR.come first person C.-Q
   V.HL
   ‘We should give the present to whichever girl came first’

2.5 Conclusion

This chapter has given an overview of the different A’-movement construals in Medumba such as wh-movement, focus movement and relativization. With regard to A’-movement diagnostics in Medumba, the major findings are that six diagnostics identify a cluster of properties characteristics of an A’-movement dependency, namely:

- Diagnostic 1: A’-movement from a root CP permits gapping or resumption, but A’-movement from a non-root CP requires resumption;
- Diagnostic 2: A’-movement participate in long-distance dependencies
- Diagnostic 3: A’-movement exhibits reconstruction effects
- Diagnostic 4: A-movement conditions Strong and Weak Crossover
- Diagnostic 5: A-movement is island-sensitive, and islands can be rescued by resumption

¹⁵ Headless relative clauses cannot surface with the agreeing C in Medumba

i. bòk əʔ-fâ ndɔ? m'bà wú lô zɔ ə gb'ùm m'bɔ mɛn lá
   1PL IRR-give gift even WH? C.CL1 3SG.L AGR.come first person C.-Q
   V.HL
   ‘We should give the present to whoever came first’

ii. bòk əʔ-fâ ndɔ? m'bà jìt gùn lô zɔ ə gb'ùm m'bɔ mɛn lá
   1PL IRR-give gift even WH girl? C.CL1 3SG.L AGR.come first person C.-Q
   V.HL
   ‘We should give the present to whichever girl came first’
• Diagnostic 6: A’-movement conditions A’-agreement in the form of an HL tone melody

As for the derivation of A’-movement, I argued that it is driven by interpretation, and in particular, by a covert exhaustive operator at C. I marshalled the following arguments in support of the claim that movement is driven by interpretation:

• Argument 1: ex-situ wh-/focus are interpreted as exhaustive

• Argument 2: in-situ wh-/focus are interpreted as non-exhaustive

• Argument 3: ex-situ wh-questions require and ex-situ focus as answer; in-situ wh-questions require an in-situ focus as answer

• Argument 4: ex-situ wh-questions require an ex-situ fragment answer; in-situ wh-questions require an in-situ fragment answer

• Argument 5: subject wh-questions are always exhaustive; non-exhaustive subject wh-questions are clefted.
Chapter 3: A’-movement and A’-agreement in Medumba

3.1 What is A’-agreement?

Usually referred to as wh-agreement, wh-copying or extraction morphology, A’-agreement is the ‘morphological’ reflex of A’-movement of an XP (Chung 1994, Fanselow and Mahajan 2000, Felser 2004, Carstens 2005, Reintges, LeSourd and Chung 2006, Wasike 2007, Hedinger 2008, Lochbihler and Mathieu 2010, Zentz 2016 a.o.). In the literature, this phenomenon is often referred to as wh-agreement. Choice of this term reflects the fact that previous research has focused on classical cases of wh-movement (including content questions, relative clauses and focus movement). To date, there exists no systematic investigation of wh-agreement across different A’-movement contexts. Since in Medumba this phenomenon occurs in every context where there is A’-movement of an XP — namely with content questions, relative clauses, focus movement and topicalization — I refer to this phenomenon as A’-agreement.

Although A’-agreement and related phenomena in many languages have been used as a diagnostic of successive cyclic movement, its cross-linguistic formalization is still not yet thoroughly established. In this chapter, I argue that A’-agreement associates with different cluster of properties when one moves from one language to another. However, all instances of A’-agreement reflect the activity of the same formal mechanism, namely Phasal-Agree: I call this the agree hypothesis (see also Carstens 2005, Reintges et al. 2006).

(1) Agree hypothesis: A’-agreement is the reflex of Phasal-Agree
3.1.1 The locus and form of A′-agreement in Medumba

3.1.1.1 Detecting the basic form of the verb: yes/no question frame

Medumba has been variously described as having a contrastive:

(i) two-tones (H vs L) system (Voorhoeve 1974; Franich 2014);

(ii) four-tones (H vs L vs M vs LH) system (Wandji 1993); or

(iii) five-tones (H vs L vs M vs HL vs LH) system (Tondji 1979, Kouankem 2012).

These descriptions are usually based on the surface forms with little attention paid to all the different surface allomorphs or to word classes. By attending to tonal distribution between lexical and functional categories in Medumba, I adopt a rather radical approach to the analysis\(^\text{16}\) of tone contrasts in Medumba: I posit that Medumba lexical categories contrast a low versus an unmarked tone (L vs ∅), and that the unmarked tone with lexical categories surfaces as a default high tone (∅ → H). With regard to functional categories, they show a three-way partition between L, H, and a toneless mora (which copies the tone of the element that precedes it). The Medumba tone inventory is given in (2).

(2) Medumba tone inventory: L-cats: \{L, ∅\} (surface L/H contrast, ∅ → H)

F-cats: \{L, H, μ\} (surface L/H contrast, μ → H/L)

In table 3.1, I summarize the different surface tonal allomorphs of verbs in Medumba which will be key in diagnosing A′-agreement in Medumba.

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\(^{16}\) See Barczak 2007; Déchaine 2001 and Déchaine 2015 as a precedent for this type of partition
As shown in appendix B, there are four verb tone classes in Medumba: CV<sub>L</sub> vs CV and CVC<sub>L</sub> vs CVC. In the examples below, I use the yes/no question frame as the diagnostic of Medumba verbal base forms. The tone classes that are analyzed as unmarked surface in this context as high (default H-tone) as illustrated in (3).

(3) a. ṁungɛ̀ Nuga.H choose kè C.Q<sub>V/N</sub> CV<sub>L</sub> → CV<sub>L</sub>
   ‘Did Nuga choose ?

d. ṁungɛ̀ Nuga.H harvest kèk C.Q<sub>V/N</sub> CV<sub>C</sub> → CV<sub>C</sub>H
   ‘Did Nuga harvest (it)?
3.1.1.2 Detecting the reflex of A'-agreement: HL tone overwrite with A'-movement

In the yes/no question frame provided in the previous section, there is a split between the two verb tone classes is observed in Medumba. Classes that are lexically marked as low surface as low (CV_L and CVC_L) whereas unmarked tone classes surface as high (CV_H and CVC_H). When there is A'-movement of an XP in Medumba there is a complete neutralization of the different verb tone classes: all verb classes surface with an HL tonal melody. The marked tone classes CV_L and CVC_L all surface as CVV_HL and CVVC_HL and the unmarked tone classes CV and CVC also surface as CVV_HL and CVVC_HL. This is illustrated in the following examples in which are contrasted the verbal tone in yes/no interrogative and wh-interrogative.

(4) CV_L verb

a. Nùᵑgɛ́  kè  kí  CV_L  →  CV_L
   Nuga.H  choose  C.Q/V/N

   ‘Did Nuga choose?’

b. á wú Nùᵑgɛ́  kèè  á  CV_L  →  CVV_HL
   FOC  WH Nuga  AGR.choose  C.Q.H

   ‘Who did Nuga choose?’

(5) CV verb

a. Nùᵑgɛ́  ṭkè  kí  CV  →  CV_H
   Nuga.H  fry  C.Q/V/N

   ‘Did Nuga fry?’

b. á kú Nùᵑgɛ́  kèè  á  CV  →  CVV_HL
   FOC  WH Nuga  AGR.fry  C.Q.H

   ‘What did Nuga fry?’
(6) CVC\textsubscript{L} verb

\begin{itemize}
\item[a.] Nūŋgɛ̀ kēk kí & CVC\textsubscript{L} → CVC\textsubscript{L}
\end{itemize}

Nuga.H weed V.L

‘Did Nuga weed?’

\begin{itemize}
\item[b.] á kú Nūŋgɛ̀ kēg á & CVC\textsubscript{L} → CVVC\textsubscript{HL}
\end{itemize}

FOC WH Nuga AGR.weed C.Q.H V.\textit{HL}

‘What did Nuga weed?’

(7) CVC verb

\begin{itemize}
\item[a.] Nūŋgɛ̀ kēk kí & CVC → CVC\textsubscript{H}
\end{itemize}

Nuga.H harvest V.H

‘Did Nuga harvest (it)?

\begin{itemize}
\item[b.] á kú Nūŋgɛ̀ kēg á & CVC → CVVC\textsubscript{HL}
\end{itemize}

FOC WH Nuga AGR.harvest C.Q.H V.\textit{HL}

‘What did Nuga harvest?’

The HL overwrite pattern found with the above examples is not restricted only to wh-movement in Medumba. It is actually found in all A’-movement contexts, including focus-movement (8), relativization (9), and topicalization (10).

(8) Focus movement

\begin{itemize}
\item[a.] á sɡùn Nūŋgɛ̀ kē ṭá & CV\textsubscript{L} → CVV\textsubscript{HL}
\end{itemize}

FOC girl Nuga AGR.choose C.-Q V.\textit{HL}

‘The girl\textsubscript{FOC} (is the one) Nuga chose’

\begin{itemize}
\item[b.] á sɡɛ̀n Nūŋgɛ̀ kē ṭá & CV → CVV\textsubscript{HL}
\end{itemize}

FOC chips Nuga AGR.fry C.-Q V.\textit{HL}

‘The chip\textsubscript{FOC} Nuga fried’
c. á nà Núngê kêeg lá CVC₁ → CVVC₉L
   FOC field Nuga AGR.weed C.-Q V.HL
   ‘The fieldFOC Nuga weeded’

d. á ṃóžá Núngê kêeg lá CVC → CVVC₉L
   FOC honey Nuga AGR.harvest C.-Q V.HL
   ‘The honeyFOC Nuga harvested’

(9) Relativization

   a. ṙgùún zàn Núngê kêê lá … CV₁ → CVV₉L
      girl.H C.CL₁.L Nuga AGR.choose C.-Q V.HL
      ‘The girl that Nuga chose …’

   b. ṙgùn ṙu zàn Núngê kêê lá … CV → CVV₉L
      chips C.CL₁.L Nuga AGR.fry C.-Q V.HL
      ‘The chip that Nuga fried …’

   c. náá zàn Núngê kêeg lá … CVCL → CVVC₉L
      field.H C.CL₁.L Nuga AGR.weed C.-Q V.HL
      ‘The field that Nuga weeded …’

   d. ṙgùn zàn Núngê kêeg lá CVC → CVVC₉L
      honey C.CL₁.L Nuga AGR.harvest C.-Q V.HL
      ‘The honey that Nuga harvested …’

(10) Topicalization\(^{18}\)

   a. ṙgùn jùùn-ní kí Núngê kêê í CV₁ → CVV₉L
      girl AGR-1PROX TOP Nuga AGR.choose 3SG.ANIM V.HL
      ‘This girl, Nuga chose her’

\(^{18}\) Object pronouns with regard to topicalization show an animacy contrast in Medumba. Animate pronouns are overt whereas inanimate pronouns are null.
b. *ŋʷɛ́n ʃùùn-í kí Nùŋgè kéé CV → CVV<sub>HL</sub>

‘These chips, Nuga fried them’

c. nà jùùn-í kí Nùŋgè kék Ø CVC₃ → CVV<sub>HL</sub>

‘This field, Nuga weeded it?’

d. ṇ̑ɔ́ ʃùùn-í kí Nùŋgè kék Ø CVC₃ → CVV<sub>HL</sub>

‘This honey, Nuga harvested it?’

The HL tonal melody found with Medumba A’-movement overwrites lexical tone. I consider this tonal melody to be a form of A’-agreement signaling A’-movement of an XP in Medumba. With this in place, I now introduce the formal mechanism that accounts for the appearance of a dedicated tone melody with A’-movement, namely phasal agree.

3.1.2 The proposal: Phasal-Agree derives A’-agreement

3.1.2.1 There are (at least) two phases: vP and CP

A phase is an economy principle designed to solve derivational complexities. It is a domain within which all derivational processes operate at the same time and where all features are checked (Chomsky 2001). A phase consists of a phase head and a phase domain, also known as the phase spell out domain or the complement of the phase head. Whenever any derivation reaches a phase and all the features are checked, the phase spell out domain is sent to transfer and is invisible to further computations. Any movement must obey the Phase Impenetrability Condition (PIC) defined as:

(11) Phase Impenetrability Condition: “The domain of H is not accessible to operations outside HP. Only H and its edge are accessible to such operations” (Chomsky 2001:13).
The edge is any elements outside H (the phase head), which can be specifiers or elements adjoined to HP (Chomsky 2001: 13). I consider CPs and vPs as phase boundaries in Medumba. The choice of these phase boundaries\(^\text{19}\) is motivated by the fact that they are “propositional” in nature. That is, they are either verbal phrases with full argument structure or CPs with force indicators (See Chomsky 2000, 2001). A phase and its different constituents are schematized in (12).

\[
\begin{array}{c}
\text{XP} \\
\text{XP} \\
\text{XP} \\
\text{XP} \\
\text{XP}
\end{array}
\]

(Phase Edge) (Phase head) (Phase spell out Domain)

3.1.2.2 \(A'\)-agreement is Phasal-Agree

Agree is the basic dependency-building mechanism within the Minimalist framework. It involves an operation of feature checking between a probe and a goal. The operation Agree takes place only if the probe and the goal both bear uninterpretable/unvalued features, which make them active. After the operation Agree, the unvalued features of the probe and the goal are valued or deleted, making them inactive or invisible for further Agree operations. The operation Agree is schematized in (13) with \(\alpha\) as a probe and \(\beta\) as a goal:

\[
\begin{array}{c}
\text{XP} \\
\text{XP} \\
\text{XP} \\
\text{XP} \\
\text{XP}
\end{array}
\]

(Phase Edge) (Phase head) (Phase spell out Domain)

---

I propose that A'-agreement in Medumba is move-based and proceeds by phase. It creates what I call an ‘agreement chain’ within each phase spell out domain each time the moved XP reaches a phase edge and the relevant A'-feature is checked. In Medumba, when the moved XP reaches a phase edge, an HL overwrite tonal melody is added to the head of the complement of the phase head. This is Phasal-Agree: the result of an Agree operation that tracks the different movement and agreement steps of an A'-bound XP through the different phase-edges.

Phasal-Agree: A phase-bound operation (OP) between a probe (P) and a goal (G), where P is a phase-head and G an A'-bound XP; applies in such a way that the reflex of OP is either on P or the complement of P.

I consider the A'-feature as a feature bundle relating to discourse or information structural features such as focus and topic (see also Lochbihler and Mathieu 2010). In some languages, it also involves ϕ-feature agreement with the moved constituent (see Carstens 2005, Baier 2018). The valuation of the A'-feature in Medumba is reflected by overwriting of lexical tone of phase-head complements. This overwrite tone surfaces in Medumba as an HL melody on relevant heads; namely, verbal heads, temporal auxiliaries and aspectual auxiliaries. I argue that A'-agreement is not only a crucial diagnostic for A'-movement but also for Phasal-Agree and for the locality of movement (cyclic phase-by-phase movement (see also Biberauer and D’Alessandro 2006, van Urk 2015, van Urk and Richards 2015).
3.2 How phasal agree derives A’-agreement in Medumba

3.2.1 Phasal-Agree predicts subject/non-subject asymmetry

Analyzing A’-agreement in Medumba as a move-based Phasal-Agree operation predicts that subjects should pattern differently from non-subjects in Medumba. Assuming that subjects are first merged in the vP-internal position at Spec-v (Koopman and Sportiche 1991), when there is A’-movement from Spec-v, the next available position is spec-T before it reaches spec-C. Therefore, the reflex of agreement can only appear on T when the moved constituent reaches the CP phase edge in root-clauses as TP is the complement of the C phase-head. As for objects, they are first merged within the VP-domain as the complement of V. When an XP undergoes A’-movement from the object position, the next available escape hatch is to adjoin at vP-phase edge in order to avoid the PIC (Chomsky 2001). The reflex of agreement is realized on V as VP is the complement of the v phase-head. When the next phase is built the object can then continue to its landing position at the edge of the CP-phase, namely Spec-C where the reflex of agreement is spelled out on T. As stated above, the reflex of A’-agreement surfaces on the complement of phase-heads, and T and V are respectively the head of the complement of C for the CP-phase and v for the vP-phase. This is illustrated by the tree structures in (15).
(15) a. Subject

The predicted patterns of A'-agreement are summarized in the table below for Medumba root-clauses: we expect A’-agreement to surface within the CP-domain for subjects and within the CP- and vP-domain for objects.

<table>
<thead>
<tr>
<th>Extraction site</th>
<th>Locus of agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject</td>
<td>✓</td>
</tr>
<tr>
<td>Object</td>
<td>✓</td>
</tr>
</tbody>
</table>

Table 3.2: The locus of A’-agreement in Medumba root-clauses

The examples below illustrate the locus of A’-agreement in Medumba root-clauses. (16a) shows that when the subject wh-phrase á wú ‘who’ moves from the vP-internal position to Spec-C, T (in the case headed by Aux.T2 nòʔ) surfaces with an HL tone melody. As shown in (16b), in the presence of A’-movement, absence of this HL melody on the T-head leads to ungrammaticality.

(16) Subject Wh-movement

a. á wú nòʔ? n-ðjun Nùgè áʔ?  
FOC WH AGR.AUX.T2 N-see Nuga C.Q.L  
T.HL V.H  
‘Who saw Nuga?’
With regard to object extraction, (17a) shows that when the object wh-phrase á kú ‘what’ moves, it first stops at the vP-edge to avoid violating PIC. In that position agreement is expressed on the V head jún ‘see’ which now surfaces with an HL tone melody (ⁿ-dʒùn). The Wh-XP continues to Spec-C where it is interpreted and, in that position, agreement is expressed on T nóʔ as an HL tone melody (ⁿ-oʔ). The absence of A'-agreement with V and T when the object is A'-moved leads to ungrammaticality (17b).

(17) **Object wh-movement**

| ‘Who did Watat see?’ |

| [Who did Watat see?] |

The structures in (18) illustrates the derivation of subject and object wh-movement in Medumba.
A question that arises is why the subject extraction does not trigger A’-agreement with the verb when the subject first merged at Spec-v. It appears that A’-agreement in Medumba requires movement. So, A’-agreement is not expected at first merge, that is between the verb and the subject at Spec-v. This correctly predicts that A’-agreement will not occur with in-situ XPs in general, including in-situ object XPs. This is confirmed in (19) for in-situ wh-questions, and in (20) for in-situ focus-marking. A’-agreement with in-situ XP is illicit in Medumba (see 19b and 20b).

(19) In-situ wh-question

a. m-én nóʔ fá bò á wú á
   C1-child AUX.T2 give bag FOC WH C.Q.H
   Lit.: ‘the child gave the bag to who(m)’
Thus, it is illicit to have A’-agreement in the absence of A’-movement in Medumba. This is consistent with analyzing A’-agreement as the by-product of move-based Phasal-Agree in Medumba.

3.2.2 Phasal-movement and the absence of Superiority effects in Medumba

A language like English allows only one wh-XP to be fronted in multiple wh-questions with bare wh-XPs like who/what. Any additional wh-XP must remain in-situ. Moreover, there is a constraint known as the Superiority effects which governs which wh-XP must be fronted. Thus, only the closest wh-XP to C can move to spec-C (see Kuno and Robinson 1972, Chomsky 1973). This explains the grammaticality of (21) and the ungrammaticality of (22).

(21) a. Who ate what?
   b. Who went where?
   c. What happened to whom?
   d. What did you give to whom?
(22)  a. *What did who eat?
    b. *Where did who go?
    c. *To whom did what happen?
    d. *To whom did you give what?

Medumba does not work the same way. Multiple wh-fronting is possible in Medumba multiple
wh-questions and thus violates the Superiority effect. I argue that Phasal-Agree could explain the
lack of superiority effect found in Medumba. In chapter 2, I showed that subject wh-/focus does
not need to be at Spec-C to be interpreted as exhaustive. In fact, subject wh-/focus can be
interpreted as exhaustive in Spec-T as they just need to be within the vicinity (same phase) of
the covert exhaustive operator. This makes it possible for the object wh-phrase to move to
Spec-C while the subject wh-phrase is in Spec-T. This configuration is repeated in (23).

![Diagram]

The configuration in (23) predicts the absence of superiority in Medumba. In fact, when the
first phase (vP) is built, the object wh-XP can move and adjoins to vP to avoid violating the
PIC as illustrated in the structure in (24).
When the next phase (CP) is built the object can move to Spec-C while the subject moves to Spec-T, creating a multiple wh-question where the object and the subject are both exhaustive.

This prediction is borne out in Medumba. I first show that in Multiple wh-questions in Medumba, it is possible to front one wh-XP and leave the other XPs in situ. (26a) shows a fronted subject and
an in-situ direct object; (26b) shows a fronted subject and an in-situ indirect object, and (26c) shows a fronted subject with all the other arguments in-situ.

(26) a. á wú nồ? m-fá á kú Wàtèt á?
FOC WH AGRAUX.T2 N-give FOC WH Watat C.Q.L
T.HL V.H
‘Who gave what to Watat?’

b. á wú nồ? m-fá bò á wú á?
FOC WH AGRAUX.T2 N-give bag FOC WH C.Q.H
T.HL V.H
‘Who gave the bag to whom?’

c. á wú nồ? m-fá á kú wú á?
FOC WH AGRAUX.T2 N-give FOC WH WH C.Q.H
T.HL V.H
‘Who gave what to whom?’

(27) confirms that it is possible to have multiple wh-fronting in Medumba where two wh-phrases are fronted at the same time. In (27a), the inanimate object wh-XP kú ‘what’ and the subject wh-XP are fronted and in (27b) the animate object wh-XP wú ‘who’ and the subject wh-XP are fronted.

(27) a. á kú á wú nồ? m-fáá á wú á?
FOC WH FOC WH AGRAUX.T2 N-AGRGive FOC WH C.Q.H
HL HL
‘*What did who gave to whom?’

b. á wú á wú nồ? m-fáá á kú jí á?
FOC WH FOC WH AGRAUX.T2 N-AGRGive FOC WH 3SG.H C.Q.H
T.HL V.H
‘*Who did who gave what to him?’

Interestingly, only two wh-XPs can be fronted at the same time in Medumba and one of them must be a subject. (28) shows that it is illicit to have more than two fronted wh-XPs in

\[\text{With multiple wh-in-situ, only the first wh-XP is focus marked in Medumba (focus absorption?). The question of this is beyond the scope of the present dissertation and will be the subject of future research.}\]

\[\text{It is to be noted here that what I call multiple wh-fronting in Medumba does not involve multiple A’-fronting as the subject stays in spec-TP.}\]

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Medumba, and (29) shows that even though two wh-phrases can be fronted, it is illicit if one of them is not a subject.

\[(28)\]
\[
\begin{align*}
\text{a. } & \text{á kú á wú á wú nòò?} & \text{m-fáà } \text{jí } \text{á?} \\
& \text{FOC WH FOC WH FOC WH AGR.AUX.T2 N-AGR.give 3SG.H C.Q.H} \\
\text{b. } & \text{á wú á kú á wú nòò?} & \text{m-fáà } \text{jí } \text{á?} \\
& \text{FOC WH FOC WH FOC WH AGR.AUX.T2 N-AGR.give 3SG.H C.Q.H}
\end{align*}
\]

\[(29)\]
\[
\begin{align*}
\text{a. } & \text{á kú á wú Nùgè nòò?} & \text{m-fáà } \text{jí } \text{á?} \\
& \text{FOC WH FOC WH Nuga AGR.AUX.T2 N-AGR.give 3SG.H C.Q.H} \\
\text{b. } & \text{á wú á kú Nùgè nòò?} & \text{m-fáà } \text{jí } \text{á?} \\
& \text{FOC WH FOC WH Nuga AGR.AUX.T2 N-AGR.give 3SG.H C.Q.H}
\end{align*}
\]

Multiple wh-fronting in Medumba does not create additional Spec-C positions. The lack of superiority in Medumba is a result of a conspiracy between Phasal-Agree and the ability of subject wh-XPs to move to Spec-T in Medumba. Thus, Medumba wh-questions are predicted to be sensitive to superiority if the subject wh-XP moves to Spec-C. As discussed in chapter 2, subject wh-movement to Spec-C is detected by the presence of a resumptive pronoun. This is confirmed in (30).

\[(30)\]
\[
\begin{align*}
\text{a. } & \text{á kú á wú á nòò?} & \text{m-fáà Nùgè á?} \\
& \text{FOC WH FOC WH 3SG.H AGR.AUX.T2 N-AGR.give Nuga C.Q.L} \\
& \text{[*What did who [he] gave to Nuga?]}
\end{align*}
\]

\[
\begin{align*}
& \text{b. } \text{á wú á wú á nòò?} & \text{m-fáà bò jí á?} \\
& \text{FOC WH FOC WH 3SG.H AGR.AUX.T2 N-AGR.give bag 3SG.H C.Q.H} \\
& \text{[*Who did who [he] gave the bag to [him]?]}
\end{align*}
\]

### 3.2.3 The surface realization of A’-agreement

#### 3.2.3.1 The problem: iterated agreement is incompatible with agree

This section addresses the issue of multiple Agree and how to handle it within the Minimalist Framework. In fact, the reflex of Agree at every phase level poses a problem to the standard notion
of Agree namely, how can an item enter subsequent Agree relations after valuing its features. After the operation Agree, the unvalued features of the probe and the goal are valued or deleted, making them inactive or invisible for further Agree operations. This is shown below with α as a probe and β as a goal:

(31) a. Feature matching phase b. Agree phase

\[
\begin{align*}
\text{\(\alpha_{uF}\)} & \quad \ldots \\
\beta_{uF} & \quad \ldots \\
\text{\(\alpha_{uE}\)} & \quad \ldots \\
\beta_{uE} & \quad \ldots
\end{align*}
\]

The problem is how to account for multiple Phasal-Agree with root clauses and non-root clauses. After feature checking, the constituents involved in that operation are inactive or invisible for further Agree operations as their unvalued features are checked. So, with a phase-based derivation of ex-situ wh-/focus XPs, the derivation will crash at the first phase level (vP) for two reasons: (i) all the features are checked, therefore the goal is invisible for further Agree operations, and (ii) the A'-moved XP is stuck at the edge of the first phase. Given that this is not a position where it is interpreted, the derivation crashes. Consider for example how Agree operates in Kilega. Carstens (2005) proposes that C has an uninterpretable Q-feature which initiate the Agree relations and which must be deleted by a matching feature of the closest c-commanded wh-operator. In long distance extraction, she argues that the moved XP first raises to embedded Spec-v and then to the embedded Spec-C where agreement is obligatory. Then from there it can move to the specifier position of the matrix vP, and finally to the specifier position of the matrix CP where a second agreement is also obligatory as illustrated in (32).

(32) bi-kí bi-á-tend-ilé b-ána bi-á-gúl-ilé nina-bó
‘what did the children say their mother had bought?’
It is not clear from Carstens’s analysis how Agree could handle the second Agree relation with the matrix CP and, also why agree is not possible with the embedded v before V-to-C movement as it would yield the same result with only one agreement prefix on the verbal complex. In fact, under standard Agree, the wh-XP at the edge of the embedded CP cannot be an active goal for the matrix C because the features of the wh-XP are already valued and deleted. This therefore makes it invisible to the matrix probe C as represented in (33).

One possibility to account for multiple instances of Agree is to assume that once the moved XP reaches the matrix CP edge, Agree can happen across phase boundaries at the same time with the matrix and embedded CP (see also Zeijlstra 2012). The problem with this view is that if we take the Phase Impenetrability Condition seriously there is no way to go back and value features inside lower phases because these are already sent for transfer and so are invisible to Agree. Therefore delaying Agree until the highest phase will make the derivation crash if there are unvalued features at the lower phases.

3.2.3.2 The solution: Resume Agree

In order to account for multiple reflexes of Agree at different phase domains, I propose a condition on Agree with I called Resume Agree:

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(34)  *Resume Agree: the features of a goal (G) are resumed at each phase so that G can remain active until it reaches the position where it is interpreted.*

With this condition in mind, when the moved XP first reaches the vP phase edge, the first Phasal-Agree operation takes place and the reflex of Agree surfaces on V. Then, the A'-features of the moved XP are resumed so that it can become an active goal for the next Phasal-Agree operation with the probe C\textsuperscript{22}. Finally, when the moved XP reaches the edge of the CP-phase where it is interpreted, the reflex of Agree surfaces on T. At this stage, for root clauses, the features of the moved XP do not need to be resumed as it is interpreted at Spec-C. But with non-root clauses, this derivation predicts the features of the moved XP to be resumed so that it can reach the highest CP edge where it is interpreted. This is illustrated in (35).

(35)

Another alternative would be to assume that the probe-goal relation can be asymmetric, with only features being checked on the probe. As such, that would leave the features on the goal active.
3.3 A surprising result: Phasal-Agree does not predict root/non-root CP asymmetry

A move-based Phasal-Agree analysis of A′-agreement in Medumba predicts an agreement symmetry between root CPs and non-root CPs. That is, root-clauses and non-root clauses are expected to display the same agreement pattern. Consider the case of object extraction, as illustrated in (36); we expect phasal cyclic-movement through the different phase edges with agreement at every phasal-domain, namely the embedded V and T, as well as on the matrix V and T.

Medumba non-root CPs do not exhibit the predicted pattern of agreement; in particular, the matrix V fails to show A′-agreement. The table below summarizes the expected versus attested A′-agreement pattern with root CPs and non-root CPs in Medumba.
Table 3.3: The locus of A′-agreement in Medumba non-root clauses

Non-root clause extraction from a subject position triggers A′-agreement on T in matrix and embedded clauses. This is illustrated in (37) for wh-movement, in (38) for focus movement, and in (39) for relativization in which the matrix verb n-ʧùp ‘say’ surfaces with H-tone (the (a) examples) rather than with the expected A′-agreement HL tone melody, which is ill-form in this context (the (b) examples).

(37) Subject wh-movement

a. á wú Sèémi nòò? n-ʧùp ìbù
  FOC  WH  Sami  AGR.AUX.T2  N-say  C.L
  T.HL  V.H
  á nòò? m-fá bò Nùŋgè á?
  3SG.H  AGR.AUX  N-give  bag  Nuga  C.Q.L
  T.HL  V.H

‘Who did Sami say that [he] gave the bag to Nuga?’

b. *á wú Sèémi nòò? n-ʧùùp ìbù
  FOC  WH  Sami  AGR.AUX.T2  N-AGR.say  C.L
  T.HL  V.HL
  á nòò? m-fá bò Nùŋgè á?
  3SG.H  AGR.AUX.T2  N-give  bag  Nuga  C.Q.L
  T.HL  V.H

[Who did Sami say that [he] gave the bag to Nuga?]
(38) **Subject focus-movement**

<table>
<thead>
<tr>
<th>a. á mén</th>
<th>Sèémi</th>
<th>nòò?</th>
<th>n-tfúp</th>
<th>mbù</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOC child</td>
<td>Sami</td>
<td>AGR.AUX.T2</td>
<td>N-say</td>
<td>C.L</td>
</tr>
<tr>
<td>T.HL</td>
<td>V.H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>à</td>
<td>nòò?</td>
<td>mř-fā</td>
<td>bò</td>
<td>Nùŋgè lá</td>
</tr>
<tr>
<td>3SG.H</td>
<td>AGR.AUX.T2</td>
<td>N-give</td>
<td>bag</td>
<td>Nuga</td>
</tr>
<tr>
<td>T.HL</td>
<td>V.H</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

‘The child FOC Sami said that [he] gave the bag to Nuga’

<table>
<thead>
<tr>
<th>b. *á mén</th>
<th>Sèémi</th>
<th>nòò?</th>
<th>n-tfúup</th>
<th>mbù</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOC child</td>
<td>Sami</td>
<td>AGR.AUX.T2</td>
<td>N-AGR.say</td>
<td>C.L</td>
</tr>
<tr>
<td>T.HL</td>
<td>V.H</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>à</td>
<td>nòò?</td>
<td>mř-fā</td>
<td>bò</td>
<td>Nùŋgè lá</td>
</tr>
<tr>
<td>3SG.H</td>
<td>AGR.AUX.T2</td>
<td>N-give</td>
<td>bag</td>
<td>Nuga</td>
</tr>
<tr>
<td>T.HL</td>
<td>V.H</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[The child FOC Sami said that [he] gave the bag to Nuga]

(39) **Subject relativization**

<table>
<thead>
<tr>
<th>a. mén</th>
<th>zò</th>
<th>Sèémi</th>
<th>nòò?</th>
<th>n-tfúp</th>
<th>mbù</th>
</tr>
</thead>
<tbody>
<tr>
<td>child</td>
<td>C.CL1</td>
<td>Sami</td>
<td>AGR.AUX.T2</td>
<td>N-say</td>
<td>C.L</td>
</tr>
<tr>
<td>T.HL</td>
<td>V.H</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>à</td>
<td>nòò?</td>
<td>mř-fā</td>
<td>bò</td>
<td>Nùŋgè lá</td>
<td></td>
</tr>
<tr>
<td>3SG.H</td>
<td>AGR.AUX.T2</td>
<td>N-give</td>
<td>bag</td>
<td>Nuga</td>
<td>C.-Q</td>
</tr>
<tr>
<td>T.HL</td>
<td>V.H</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

‘The child that Sami said that [he] gave the bag to Nuga’

<table>
<thead>
<tr>
<th>b. *mén</th>
<th>zò</th>
<th>Sèémi</th>
<th>nòò?</th>
<th>n-tfúup</th>
<th>mbù</th>
</tr>
</thead>
<tbody>
<tr>
<td>child</td>
<td>C.CL1</td>
<td>Sami</td>
<td>AGR.AUX.T2</td>
<td>N-AGR.say</td>
<td>C.L</td>
</tr>
<tr>
<td>T.HL</td>
<td>V.H</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>à</td>
<td>nòò?</td>
<td>mř-fā</td>
<td>bò</td>
<td>Nùŋgè lá</td>
<td></td>
</tr>
<tr>
<td>3SG.H</td>
<td>AGR.AUX.T2</td>
<td>N-give</td>
<td>bag</td>
<td>Nuga</td>
<td>C.-Q</td>
</tr>
<tr>
<td>T.HL</td>
<td>V.H</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[The child that Sami said that [he] gave the bag to Nuga]

With non-root clause extraction from an object position, there is A’-agreement with the embedded V and T in the embedded clause, but A’-agreement only on T in the matrix clause. This is shown in (40) for wh-movement, (41) for focus movement, and (42) for relativization. The
matrix $V^{n-tʃúp}$ ‘say’ surfaces with H-tone (the (a) examples) rather than with the expected A’-agreement HL tone melody which is ungrammatical in this context (the (b) examples).

(40) *Object wh-movement*

(a) á wú Sëëmi nóò? $^{n-tʃúp}$ mò

<table>
<thead>
<tr>
<th>FOC</th>
<th>WH</th>
<th>Sami</th>
<th>AGR.AUX.T2</th>
<th>N-say</th>
<th>C.L</th>
</tr>
</thead>
<tbody>
<tr>
<td>T.HL</td>
<td>V.H</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Nùgëë nòò? $^{n-s^{v}éên}$ í á?

Nuga.H AGR.AUX.T2 N-AGR.give 3SG.H C.Q.H

T.HL V.HL

‘Who did Sami say that Nuga betrayed [him/her]?’

(b) *á wú Sëëmi nóò? $^{n-tʃúùp}$ mò

<table>
<thead>
<tr>
<th>FOC</th>
<th>WH</th>
<th>Sami</th>
<th>AGR.AUX.T2</th>
<th>N-AGR.say</th>
<th>C.L</th>
</tr>
</thead>
<tbody>
<tr>
<td>T.HL</td>
<td>V.HL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Nùgëë nòò? $^{n-s^{v}éên}$ í á?

Nuga.H AGR.AUX.T2 N-AGR.give 3SG.H C.Q.H

T.HL V.HL

[Who did Sami say that Nuga betrayed [him/her]?]

(41) *Object focus-movement*

(a) á mí Sëëmi nóò? $^{n-tʃúp}$ mò

<table>
<thead>
<tr>
<th>FOC</th>
<th>child</th>
<th>Sami</th>
<th>AGR.AUX.T2</th>
<th>N-say</th>
<th>C.L</th>
</tr>
</thead>
<tbody>
<tr>
<td>T.HL</td>
<td>V.H</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Nùgëë nòò? $^{n-s^{v}éên}$ í lá

Nuga.H AGR.AUX.T2 N-AGR.give 3SG.H C.-Q

T.HL V.HL

‘The child$_{FOC}$ Sami said that Nuga betrayed [him/her]’

(b) *á mí Sëëmi nóò? $^{n-tʃúùp}$ mò

<table>
<thead>
<tr>
<th>FOC</th>
<th>child</th>
<th>Sami</th>
<th>AGR.AUX.T2</th>
<th>N-AGR.say</th>
<th>C.L</th>
</tr>
</thead>
<tbody>
<tr>
<td>T.HL</td>
<td>V.HL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Nùgëë nòò? $^{n-s^{v}éên}$ í lá

Nuga.H AGR.AUX.T2 N-AGR.give 3SG.H C.-Q

T.HL V.HL

[‘The child$_{FOC}$ Sami said that Nuga betrayed [him/her]]
(42) Object Relativization

a. mén zò Sëemí nóò? n-tʃúp mₘbù
  child C.CL1 Sami AGR.AUX.T2 N-say C.L
  T.HL V.H

Nʉŋgëë nòò? n-sˈɛ̃ɛn í lá
Nuga.H AGR.AUX.T2 N-AGR.give 3SG.H C.-Q
  T.HL V.HL

‘The child that Sami said that Nuga betrayed [him/her]’

b. *á mén zò Sëemí nóò? n-tʃúùp mₘbù
  FOC child C.CL1 Sami AGR.AUX.T2 N-AGR.say C.L
  T.HL V.HL

Nʉŋgëë nòò? n-sˈɛ̃ɛn í lá
Nuga.H AGR.AUX.T2 N-AGR.give 3SG.H C.-Q
  T.HL V.HL

[‘The child that Sami said that Nuga betrayed [him/her]’]

The matrix verb fails to show A’-agreement when there is A’-extraction from a non-root clause. Any attempt to force A’-agreement (in the form of the HL tone melody) with the matrix V results in ungrammaticality. In a phase-based approach to A’-agreement, this implies that in a non-root clause extraction, the matrix vP phase does not participate in A’-agreement as summarized in the table below.

<table>
<thead>
<tr>
<th>Root clause extraction</th>
<th>Locus of A’-agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CP</td>
</tr>
<tr>
<td>Root</td>
<td>YES</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-root clause extraction</th>
<th>CP</th>
<th>vP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matrix</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Embedded</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

Table 3.4: Phasal-Agree and clause typing in Medumba

To account for the lack of A’-agreement with matrix vP phase, two hypotheses are possible: H1: either there is local phasal movement (phase-by-phase movement) with root and embedded CPs and long movement Spec-C-to-Spec-C after the first CP with non-root clauses; or
H2: embedded clauses are extraposed as vP adjuncts clauses and thus movement does not proceed through the edge of the matrix vP phase. In the next section, I go through both hypotheses and argue that the second hypothesis better accounts for the Medumba facts.

3.3.1 Hypothesis 1: Spec-C-to-Spec-C movement with non-root CPs

This hypothesis assumes that there are short local phase-by-phase cyclic-movement with root clauses and embedded clauses in Medumba, and then, long movement (Spec-C-to-Spec-C) after the first CP with non-root clauses. Thus, A’-agreement is expected on T with intermediate CP phases as illustrated in (43).
In (44) A’-agreement surfaces with the lowest V \(^n\)-s\(^v\)ён ‘sell’ and the lowest T нён with the first CP and with intermediate Ts afterwards.

(44) á wú Sëëmí nòò? \(^n\)-tfúp \(^m\)bù Pitàá nòò? \(^n\)-tfúp
FOC WH Sami AGR.AUX.T2 N-say C.L Peter.H AGR.AUX.T2 N-say
T.HL V.H T.HL V.H

\(^m\)bù Nùngë\ë nòò? \(^n\)-së\ën í á?
C.L Nuga.H AGR.AUX.T2 N-AGR.give 3SG.H C.Q.H
T.HL V.H

‘Who did Sami say that Peter said that Nuga betrayed [him/her]?’
The above example is consistent with the analysis that, after the first CP, the wh-XP moves from Spec-C-to-Spec-C. As a result, the reflex of A’-agreement surfaces only on T with the intermediate and highest CP. If this analysis is on the right track, then the matrix vP does not seem to behave like a phase in Medumba. Although this accounts for the data, it becomes unclear and problematic why a phase sometimes can or cannot be active in order to participate to phasal movement. Another problem that the Spec-C-to-Spec-C analysis faces is when there is more than one temporal auxiliary in the clause. As illustrated in (45), in extraction from an embedded clause, each temporal aux shows A’-agreement with the highest CP.

(45) á wú Sēēmí nɔ̀? n-ʧɔ̀̀k n-tʃúp m-bù
FOC WH Sami AGR.AUX.T2 N-AGR.AUX.β N-say C.L
T.HL β.HL V.H
Núŋgɛ̀ nɔ̀? n-ʧɔ̀̀k n-sʷɛ́n i á?
Nuga.H AGR.AUX.T2 N-AGR.AUX.β N-AGR.give 3SG.H C.Q.H
T.HL β.HL V.HL
‘Who did Sami say that Nuga betrayed [him/her]?’

With multi-clausal extraction, as given in (46), both temporal auxes show A’-agreement with the intermediate CP and highest CP.

(46) á wú Sēēmí nɔ̀? n-ʧɔ̀̀k n-tʃúp m-bù Pitáá nɔ̀? n-ʧɔ̀̀k
FOC WH Sami AGR.AUX.T2 N-AGR.AUX N-say C.L Peter.H AGR.AUX.T2 N-AGR.AUX.β
T.HL β.HL V.H T.HL β.HL
N-say C.L Nuga.H AGR.AUX.T2 N-AGR.AUX.β N-AGR.give 3SG.H C.Q.H
H T.HL β.HL V.HL
‘Who did Sami say that Peter said that Nuga betrayed [him/her]?’

To sum up, although Spec-C-to-Spec-C analysis can account for extractions with only one temporal auxiliary, if movement proceeds from Spec-C-to-Spec-C after the first CP, there remains the puzzle of how to account for the presence of A’-agreement on both temporal auxiliaries in multi-clausal extraction. I will return to this issue in chapter 4.
3.3.2 Hypothesis 2: Apparent complement CPs as disguised vP-adjuncts

A more radical solution to the problem is to treat complement CPs as disguised extraposed adjunct clauses; this is the analysis I adopt. Complement CPs first merge in VP-complement position and are extraposed as vP adjuncts. This is not something unusual, as there exists some precedent in the literature\(^{23}\). So, by adjoining to vP, apparent complement CPs fall outside the matrix vP and movement from that position does not proceed through the edge of the matrix vP phase on their way to Spec-C. As a result, as illustrated in the tree in (47), the matrix V cannot participate in the Phasal-Agree operation.

(47)

If complement clauses are extraposed as vP-adjuncts, a moved XP in the Spec of an embedded CP can only be an active goal for an Agree relation with the next available probe, which in this configuration is the matrix C. A question that arises from this configuration is what prevents the moved XP to see further down to the matrix V for agreement. This possibility is ruled out by the

\(^{23}\) See for example Culicover and Rochemont (1990), Wiltschko (1995) and Cook (2008) for a base-generated version of extraposed CPs
Phase Impenetrability Condition (PIC) which renders items in the domain (complement) of a phase head invisible. Simply put, vP is sent to transfer when the matrix CP phase is built, and is therefore invisible for further Agree operations. The above configuration also makes several predictions, namely:

- Apparent complement CPs behave like adjunct islands (§3.3.3.1);
- CPs are never in complement position: the lack of embedded interrogatives (§3.3.3.2);
- CPs are never in argument position: the lack of subject and complement CPs (§3.3.3.3);
- Apparent complement CPs follow matrix VP adjuncts (§3.3.3.4);
- vP-adjuncts don’t trigger A’-agreement, but VP-adjuncts do (§3.3.3.5);
- Apparent complement CPs strand under VP-gapping (§3.3.3.6);
- Apparent complement CPs reconstruct (§3.3.3.7).

3.3.3 Predictions of the vP-adjunct analysis of apparent complement CPs

In this section, I go over the different predictions of the vP-adjunct analysis of complement CPs listed above.

3.3.3.1 Apparent complement CPs behave like adjunct islands

The proposal that apparent complement CPs are vP-adjuncts in Medumba predicts that embedded CPs and adjuncts CPs will pattern in the same way. This is confirmed by their behaviour under A’-extraction, where apparent complement CPs (48) and adjunct CPs (49) both require obligatory resumption.
(48) *Extraction from apparent complement CP*

\[
\begin{align*}
\text{a. } & \text{á wú } & \text{Sèêmî } & nòò? & n^*\text{-tʃụp} & n^*bù \\
\text{b. } & *\text{á wú } & \text{Sèêmî } & nòò? & n^*\text{-tʃụp} & n^*bù \\
\text{FOC WH } & \text{Sami } & \text{AGR.AUX.T2 } & \text{N-say } & \text{C.L} \\
\text{T.HL} & \text{V.H} \\
\text{Nùngɛ́} & nòò? & n^*\text{-swɛ̀ɛn } & í á? \\
\text{Nùngɛ́} & nòò? & n^*\text{-swɛ̀ɛn } & á? \\
\text{Nuga.H} & \text{AGR.AUX.T2 } & \text{N-AGR.give } & \text{3SG.H C.Q.H} \\
\text{T.HL} & \text{V.HL} \\
\end{align*}
\]

‘Who did Sami say that Nuga betrayed *(him/her)?’

(49) *Extraction from an adjunct CP*

\[
\begin{align*}
\text{a. } & \text{á wú } & \text{Nùmí } & nòò? & nèèn & tón \\
\text{b. } & *\text{á wú } & \text{Nùmí } & nòò? & nèèn & tón \\
\text{FOC WH } & \text{Nùmí } & \text{AGR.AUX.T2 } & \text{AGR.go } & \text{market } \\
\text{T.HL} & \text{V.HL} \\
\text{káà } & \text{Nùngɛ́ } & \text{fàà } & \text{bò } & \text{jí } & \text{á?} \\
\text{káà } & \text{Nùngɛ́ } & \text{fàà } & \text{bò } & \text{á?} \\
\text{before } & \text{Nùngɛ́.H} & \text{AGR.give } & \text{bag } & \text{3SG.H C.Q.H} \\
\text{V.HL} \\
\end{align*}
\]

‘Who did Numi go to the market before Nuga gave the bag to *(him/her)?’

(48) and (49) establish that extraction from (apparent) complement CPs and from adjunct CPs both requires a resumptive pronoun. The parallelism between (apparent) complement CP and adjunct CPs relative to island effects falls into place if (apparent) complement CPs are in fact adjunct CPs in Medumba.

3.3.3.2 CPs are never in complement position: the lack of embedded interrogatives

One question that arises is how indirect questions (embedded interrogatives) are construed in Medumba if apparent complement CPs are disguised adjunct clauses. A salient property of head-complement sequences is that specific heads select for specific complements. This is known as c-selection (Chomsky 1965); which entails that syntactic information about complementation is provided in the form of features. These features subcategorize predicates in a manner linked to
phrase structure. Thus, some verbs can only select for a certain type of CP complement. For instance, the verb know selects for [CP ±Q] (50), say for [CP -Q] (51), and wonder [CP +Q] (52).

(50) \( V \) [CP ±Q]

a. I know [CP -Q that Numi broke the calabash]
b. I know [CP +Q who broke the calabash]

(51) \( V \) [CP -Q]

a. I said [CP -Q that Numi broke the calabash]
b. * I said [CP +Q who broke the calabash]

(52) \( V \) [CP +Q]

a. * I wonder [CP -Q that Numi broke the calabash]
b. I wonder [CP -Q who broke the calabash]

As discussed in chapter 2, A’-movement to the edge of embedded CPs in Medumba does not give rise to an indirect question interpretation. (53) shows that although lèn ‘know’ is compatible with [CP -Q] (53a), it cannot select for [CP +Q] (53b); (54) shows that bēttó ‘ask’ when it selects for [CP +Q], only the quotative reading is available but not the embedded interrogative; (55) shows that ŋuòp ‘says’ is compatible with quotative reading with both [CP -Q] and [CP +Q].

(53) \( V \) lèn ‘know’ selects [CP -Q]

a. Wàtèt lèn [ⁿbù Númí nó? sʷèén Nùŋègè]
   Watat know C.L Númí AUX sell.H Nuga
   Watata knows that Numi betrayed Nuga

b. * Wàtèt lèn [ⁿbù á wú á nò? n-sʷèén Nùŋègè á]
   Watat know C.L FOC WH 3SG.L AGR.AUX.T2 N-sell Nuga C.Q.L
   T.HL
   ‘Numi know who betrayed Nuga’
(54) \( V \text{ běttá ‘ask’ selects } [CP +Q] \)

a. *Wàtět nó? běttá \([m)bù Nùmì nó? s^{w}ēën Nùŋəgę\]  
Watat AUX ask C.L Nùmì AUX sell.H Nuga  
*Watata asked that Numi betrayed Nuga

b. Wàtět nó? běttá \([m)bù á wú á nòs? \ n^{s}w^{e}ēën Nùŋəgę \ á]\)  
Watat AUX ask C.L FOC WH 3SG.L AGR.AUX.T2 N-sell Nuga C.Q.L T.HL  
# Watat asked who betrayed Nuga  
= Watat asked: “who (he) betrayed Nuga?”

(55) \( V \text{ ṭúp ‘say’ selects } [CP ±Q] \)

a. ^Wàtět ṭúp \([m)bù Nùmì nó? s^{w}ēën Nùŋəgę\]  
Watat say C.L Nùmì AUX sell.H Nuga  
‘Watat said that Numi betrayed Nuga’  
‘Watat said: “Numi betrayed Nuga”’

b. Wàtět ṭúp \([m)bù á wú á nòs? \ n^{s}w^{e}ēën Nùŋəgę \ á]\)  
Watat say C.L FOC WH 3SG.L AGR.AUX.T2 N-sell Nuga C.Q.L T.HL  
‘Watat said: “who (he) betrayed Nuga”?’

The above examples show that embedding verbs in Medumba behave differently from English embedding verbs for instance with regard to their selectional properties as summarized in table 3.5.

<table>
<thead>
<tr>
<th>Verbs</th>
<th>Selectional Properties</th>
<th>English</th>
<th>Medumba</th>
</tr>
</thead>
<tbody>
<tr>
<td>know</td>
<td>([CP ±Q])</td>
<td>([CP -Q])</td>
<td></td>
</tr>
<tr>
<td>wonder/ask</td>
<td>([CP +Q])</td>
<td>([CP+Q])</td>
<td></td>
</tr>
<tr>
<td>say</td>
<td>([CP -Q])</td>
<td>([CP ±Q])</td>
<td></td>
</tr>
</tbody>
</table>

Table 3.5: Selectional properties of (some) embedding verbs in English and Medumba

The behavior of Medumba embedded CPs confirms that wh-embedded structures are a special kind of configuration in Medumba. I hypothesize that that the lack of embedded interrogative reading is not possible because apparent complement CPs are excluded from argument positions in Medumba (see also Stowell 1981, Moulton 2009). This correctly predicts that in order for a CP to be construed as an indirect question in Medumba, it must merge with an XP that can be
introduced as complement to V. As direct merger of CP complement is prohibited in Medumba, only a "mediate Merge" is available: the interrogative CP merges with a DP, which is itself complement to V. This is illustrated in (56) for lèn ‘know’ and in (57) for bèttò ‘ask’. Crucially, a construal with gùp ‘says’ is ill-formed in this context.

(56)  \( V \) lèn ‘know’

\[
\text{Wàtèt lèn [mèèn zò à nòò? n-swèèn Nùgè lá]} \\
\text{Watat.H know person.H C.CLL 3SG.L AGR.AUX.T2 N-sell Nuga C.-Q T.HL}
\]

Lit.: Watat knows the person that betrayed Nuga ‘Numi know who betrayed Nuga’

(57)  \( V \) bèttò ‘ask’

\[
\text{Wàtèt nó? bèttò [mèèn zò à nòò? n-swèèn Nùgè à]} \\
\text{Watat AUX.T2 ask person.H C.CLL 3SG.L AGR.AUX.T2 N-sell Nuga C.Q.L T.HL}
\]

Lit.: Watat asked the person that betrayed Nuga ‘Watat asked who betrayed Nuga’

(58)  \( V \) gùp ‘say’

\[
\text{*Wàtèt gùp [mèèn zò à nòò? n-swèèn Nùgè lá]} \\
\text{Watat.H say person.H C.CLL 3SG.L AGR.AUX.T2 N-sell Nuga C.-Q T.HL}
\]

‘*Watat said who (he) betrayed Nuga’

Consider the construals where the DP in a V complement position introducing the indirect question interpretation is now extraposed. (59) shows that if the complex DP [mèèn zò à nòò? n-swèèn Nùmì lá] ‘the person that betrayed Numi’ is extraposed — as it follows the VP adjunct [kàà Wàtèt ƙ-kù] ‘before Watat died’ — the resulting sentence is ungrammatical. This confirms that an indirect question interpretation is not available from an extraposed position is illustrated in the tree in (60).
In order to get the intended interpretation, the adjunct clause [kàà Watèét ܩ- kfû] ‘before Watat died’ must be in final position and the DP DP [mèén zò à nòó] ܩ衡水 Nùmí lá] ‘the person that betrayed Numi’ in complement to V position (61). Interestingly, the resulting sentence is structurally ambiguous as the adjunct clause can modify either the matrix VP (62a) or the embedded VP (62b).

= (i) The chief [[asked who betrayed Numi] [before Watat died]]: *matrix VP adjunct

= (ii) The chief asked [[who betrayed Numi] [before Watat died]]: *embedded VP adjunct
The preceding dataset is of theoretical and typological significance given that indirect questions are introduced as relative clauses in some languages. A thorough cross-linguistic investigation is needed in order to establish whether complement CPs in languages that favor relative clauses in indirect questions are in fact disguised extraposed adjunct clauses.
3.3.3.3 CPs are never in argument position: the lack of subject and complement CPs

In the previous section I argued that Medumba lacks complement CPs. (63) shows that sentential subjects (subject CPs) are ill-grammatical in Medumba if the CP [mbù Númí ʒʷ mbʰ j̪á] ‘that Numi killed the goat’ is introduced in subject position as illustrated in the tree in (64).

(63) *[mbù Númí ʒʷ mbʰ j̪á] yùdniì Nùŋgè
     C.L. Numi kill goat bother.H Nuga
     [That Numi killed the goat bothered Nuga]

(64)  
      *TP                     
         CP                  TP
         mbù Númí ʒʷ mbʰ j̪á T vP

Rather, as shown in (65), a sentential subject is construed by insertion of what I call an “anaphoric expletive” DP (in this context nù-tʰ ‘the news of it’) in subject position (Spec-T), and extraposition of the CP as TP adjunct (introduced in this context by the C ndà). See the tree in (66).

(65) nù-tʰ yùdniì Nùŋgè ndà Númí ʒʷ mbʰ j̪á lá
      news-3SG.POSS.CL1 bother.H Nuga C Numi kill.L goat C.-Q
      Lit.: The news of it bothers Nuga as Numi killed the goat
      ‘It bothers Nuga that Numi killed the goat’

(66)  
      TP                     CP
         TP                  T
         nù-tʰ   TP           vP
         ndà Númí ʒʷ mbʰ j̪á

(63-66) confirm that CPs are never in argument position in Medumba.
3.3.3.4 Apparent complement CPs follow matrix VP-adjuncts

Analyzing (apparent) complement CPs as adjunct CPs — more specifically as vP-adjuncts — correctly predicts that matrix VP-adjuncts can precede (apparent) complement CPs. As shown in (67), the adjunct clause \([káà Wàtëét n- kfù]\) ‘before Watat died’ modifies the matrix V \(tfúp\) ‘say’, and precedes the apparent complement CP. This is consistent with an analysis in which apparent complement CPs are extraposed as vP adjunct. See the structure in (68).

(67) á wú mvün nòò? [n-tfúp [káà Wàtëét n-kfù]] mbù Nùgèê nòò? n-s’èèn i á?

(68) CP2
    C CP1
    á Wh-XP CP
    á wú DP TP
    mvün T
    vP
    vP CP
    v VP
    \(n-\text{tfúp}\) CP káà Wàtëét kfù

`?Who did the chief [[say before Watat died] [that Nuga betrayed [him/her]]]?`
As shown in (69), the adjunct clause [kàá Wàtë́t n-ktụ́] ‘before Watat died’ can also appear in sentence-final position, in which case it predictably only modifies the verb of the lower clause (the apparent complement CP). See the structure in (70).


n-s̃ēn =í káá Wàtë́t ktú á?
AGR.sell 3SG.H before Wat die C.Q.H

v.HL

‘Who did the chief say that [Nuga betrayed [him/her] before Watat died]?'

(70) CP2
    C CP1
    á Wh-XP CP
    á wú DP TP
    mvn̓ T n̓?
vP
    vP CP̓ i
    V CP̓ i

3.3.3.5 vP-adjuncts don’t trigger A’-agreement, but VP-adjuncts do

If apparent CPs are adjoined to vP in Medumba, a question that arises is what happens to XPs adjoined to VP. Phasal-Agree predicts that VP-adjuncts should be to trigger A’-agreement with V

---

24 In English where the embedded CP can surface in V complement position, the same adjunct phrase in final position leads to structural ambiguity as it can modify either the embedded or the matrix VP.

(i) *who did the chief say that John betrayed before Numi died?*
   (a) [before Numi died]: adjoins to matrix VP and modifies say
   (b) [before Numi died]: adjoins to embedded VP and modifies betray
when they reach the vP phase edge. This is confirmed, as VP adjuncts trigger A’-agreement on V and T as shown in (71).

(71)  
\[
\begin{array}{llllllllll}
| \text{FOC} & | \text{PREP} & | \text{WH} & | \text{Nuga} & | \text{AGR.AUX.T2} & | \text{N-AGR.give} & | \text{bag} & | \text{Numi} & | \text{C.Q.H} \\
| \text{T.HL} & | \text{V.HL} & \\
\end{array}
\]

‘In front of who(m) did Nuga give the bag to Numi ___?’

(72)  
\[
\begin{array}{llllllllll}
| \text{FOC} & | \text{PREP} & | \text{WH} & | \text{Nuga} & | \text{AGR.AUX.T2} & | \text{N-give bag} & | \text{Numi} & | \text{C.Q.H} \\
| \text{T.HL} & | \text{V.H} & \\
\end{array}
\]

[In front of who(m) did Nuga give the bag to Numi ___ ?]

In (71) when the vP phase is built, the wh-XP á bʰə wú ‘in front of who(m)’ moves and adjoins to vP. This results in A’-agreement HL tone melody with V (72a). When the CP phase is built, it moves to Spec-C where A’-agreement HL tone melody surfaces on T (72b).

(72)  
\[
\begin{array}{llllllllll}
| \text{vP} & | \text{Wh-XP} & | \text{á bʰə wú} & | \text{vP} & | \text{[^Wh-XP á bʰə wú]} & | \text{[vP [^DP Nùᵑgɛ] [vP [v] [VP[^VP m-äftə bò Numi ] [<Wh-XP>]]]}
\end{array}
\]
b. CP phase

[CP2 [C2 á] [CP1 [Wh-XP á balanced wú] [CP [CE xh] [TP1 [DP Nùŋgê] [TP1 [T1 nóó?] ] [TP2 [<T2>] [vP [<Wh-XP>] [vP [<DP>] [vP [v] [VP [m-fáà bò Nûmí] [<Wh-XP>]]]]]]]

The difference between movement from a VP adjunct position and movement from a vP adjunct position is that an XP coming from a VP adjunct position proceeds through the vP edge and henceforth triggers A′-agreement on V. In contrast, with movement from a vP adjunct position, the XP is already at the edge of vP and therefore moves directly from that position to Spec-C where A′-agreement is triggered on T (73).
The fact that VP-adjuncts behave differently from apparent complement CPs in term of their A’-agreement pattern is consistent with the claim that the latter (i.e. apparent complement CPs) are vP-adjoined.

3.3.3.6  Apparent complement CPs strand under VP-gapping

Another piece of evidence in favor of the adjunction analysis of (apparent) complement CPs in Medumba comes from gapping. The first step of the argument is to show that gapping in Medumba involves VP-deletion. (74) shows that the V and its complement has been deleted in the second conjunct. Given that the temporal adjunct Ꙑkù́bù́ ‘morning’ is a vP adjunct, it can be stranded. But if only the verb is elided in Medumba gapping structures stranding the complement, it results to ungrammaticality (75).

(74) Numí fā [n- Ꙑkù́bù́] Ꙑkók, Sēčmé ṣók Ꙑkù́bù́
Numi AUX.T3 N-greet chief.H yesterday Sami morning ‘Lit.: Numi greeted the chief yesterday, Sami this morning’

(75) *Numí fā [n- Ꙑkù́bù́] Ꙑkók, Sēčmé ṣók ꙐNû́gè Ꙑkù́bù́
Numi AUX.T3 N-greet chief yesterday Sami Nuga morning
[Numi greeted the chief yesterday, Sami Nuga this morning]
(74) and (75) confirm that gapping structures involve VP-deletion in Medumba. Now consider the VP-deletion involving apparent complement CPs. (76) shows that the apparent complement CP of the second conjunct can be stranded under VP-deletion. This is consistent with the claim that apparent complement CPs are vP adjunct.

(76) Nùmí fà n-]?Ūp n bü à àʔ-néén iⁿtán
   Numi AUX.T3 N-say C.L 3SG.L IRR-go.H market

   Sëëmi mbù à àʔ-néén i]/vέêt
   Sami C.L 3SG.L IRR-go.H farm

‘Lit.: Numi said that he would go to the market, Sami that he would go to the farm’

3.3.3.7  Apparent complement CPs reconstruct

If apparent complement CPs in Medumba are first merged in the VP-complement position before undergoing extraposition as vP adjuncts, then complement CPs are expected to reconstruct in Medumba. Evidence comes from quantifier binding which is possible if a quantifier c-commands a pronoun it binds25 (see Reinhart 1983; Heim and Kratzer 1998; Büring 2004, 2005; Déchaine and Wiltschko 2017 a.o.). In (77), the 3PL pronoun bú ‘they’ has a bound variable reading when it is construed with the c-commanding quantifier ndʒɔn bun ñɛ26 ‘everyone’. This reading is only possible if the quantified expression c-commands the pronoun and this c-command relation can only be possible if the extrapoosed CP reconstructs at the position where it first merged, namely the VP-complement position.

25 This is still a subject of debate in the literature. See e.g. Barker’s 2012 counter-claim and Déchaine and Wiltschko’s 2017 rebuttal.

26 See Parker et al. 2019 for the internal structure of quantifiers in Medumba
(77) á wú Núŋgë nős? n-tʃúp [ⁿdʒɔŋ] bán fê],
   FOC WH Nuga AGR.AUX.T2 N-say every people all
   T.HL

ⁿmbù búi nős? n-dʒùn í á
C 3PL.H AGR.AUX.T2 N-AGR.see 3SG.H C.Q.H
   T.HL V.HL

‘Lit: who did Nuga say to everyone; that they; saw?’

The same reading is true if the quantified expression [ⁿmbá jiıt ‘gùn lô] ‘each girl’ binds a singular pronoun á ‘s/he’ as illustrated in (78).

(78) á wú Núŋgë nős? n-tʃúp [ⁿmbá jiıt ⁿgùn lô],
   FOC WH Nuga AGR.AUX.T2 N-say even WH girl ?
   T.HL

ⁿmbù ái nős? n-dʒùn í á
C 3SG.H AGR.AUX.T2 N-AGR.see 3SG.H C.Q.H
   T.HL HL

‘Lit: who did Nuga say to [each girl]; that she; saw?’

To summarize, there is compelling evidence to treat apparent complement CPs as extraposed adjunct clauses in Medumba. They do not surface as VP complements in Medumba nor are they base-generated extraposition. A question that arises is what forces the extraposition of a CP in V complement position in Medumba. I hypothesize that there might be a special relation between Vs and DPs in Medumba — we can call it a “D-feature” — such that an XP lacking a D-feature, merged in V complement position is forced to extrapose.

3.4 Towards a cross-linguistic formal typology of Phasal-Agree

This section surveys how other phenomenon related to A′-agreement are expressed. Reintges, LeSourd and Chung (2006) propose the following morpho-syntactic profile of A′-agreement:

A. A′-agreement occurs only in the classic wh-constructions such as constituent questions, relative clauses and focus constructions.
B. The morphological reflex of agreement surfaces on V, T, or C (or on some designated head in the functional layer of the clause, such as Focus (see also Zaenen 1983, Green 1997).

C. In general, A’-agreement is not sensitive to person, number and gender features (ϕ-features).\(^{27}\)

D. A’-agreement registers the presence of a moved *wh*-phrase or some additional features of the moved *wh*-phrase such as category type or case.

E. In long distance constructions in which *wh*-movement crosses a clause boundary, A’-agreement comes in two different flavors: (i) it is recursive and surfaces on every designated head on the path of *wh*-movement or (ii) it is non-recursive and surfaces only on the highest designated head.

I consider these five points in turn and classify them in terms of their spell out domains. I argue that with regard to the locus of A’-agreement, there are two possible loci, namely CP and vP as predicted by the Phasal-Agree analysis. In terms of formal typology, the cross-linguistic morphosyntactic profile of A’-agreement proposed by Reintges et al. (2006) can be summarized and reformulated as follows:

(i) **When?** It occurs in a context where there is A’-movement of an XP;  
(ii) **Where?** It occurs within the CP-domain or within the vP-domain;  
(iii) **How?** It is realized either on the lowest phase, on the highest phase or on every phase in the path of movement.

This is summarized in table 3.6.

\(^{27}\) Reintges et al. acknowledge that Hausa *wh*-agreement could be analyzed as showing phi-feature agreement. I will show with the Kilega data that A’-agreement can be sensitive to phi-feature agreement.
As for the form of A'-agreement, I show that languages differ depending on whether they employ:

(i) the copying strategy. This is the case of German in which the full copy of the wh-XP is spelled out on the path of movement;

(ii) the concordial agreement strategy. This is the strategy in which the form of A'-agreement is the result of a morphological agreement with the moved constituent. In languages in which tones are morphologically and syntactically active such as Kikuyu and Medumba, this form of concordial agreement is reflected by tonal allomorphy of relevant heads; or

(iii) other means such as the use of an invariant A'-particle in Duala or (stylistic) inversion in French. This is summarized in table 3.7. The languages are selected based on existing description and analysis in the literature.

|.LOCUS OF A’-AGREEMENT.
<table>
<thead>
<tr>
<th>CP</th>
<th>vP</th>
<th>Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Type 2</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>Type 3</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

Table 3.6: Formal typology of the locus of A’-agreement

<table>
<thead>
<tr>
<th>FORM OF AGREEMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copy</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Languages</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Table 3.7: Form of A’-agreement cross-linguistically
3.4.1 Type 1: Phasal-Agree at C

This section surveys languages where the locus of A’-agreement is CP, namely, (i) concordial agreement in Kilega; and (ii) non-concordial agreement (anti-agreement) in Kinande, Lubukusu.

Given that A’-agreement is a diagnostic of phasal movement, I also look at other A’-related phenomena where the locus is CP, such as (i) wh-copying in German; and (ii) stylistic inversion in French. This is summarized in table 3.8.

<table>
<thead>
<tr>
<th></th>
<th>LOCUS OF A’-AGREEMENT</th>
<th>Languages</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CP</td>
<td>vP</td>
</tr>
<tr>
<td>Type 1</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Type 2</td>
<td></td>
<td>YES</td>
</tr>
<tr>
<td>Type 3</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

Table 3.8: Type 1 Phasal-Agree

3.4.1.1 Concordial agreement in Kilega

Kilega ([D-25], Guthrie 1948) is a Bantu language spoken in the Democratic Republic of Congo. In the presence of A’-movement of an XP, there is a morpheme that surfaces at the left-edge of the verbal complex and that agrees in phi-features with the moved constituent. This form of agreement does not appear when the constituent is in-situ. The examples below, adapted from Kinyalolo (1991), and Carstens (2005), illustrate the phenomenon in Kilega. When the subject is extracted, an agreement morpheme appears at the left-edge of the verb (79a). It is illicit to use the standard subject marker or the subject agreement prefix in A’-context even though agreement is with the A’-extracted subject (79b). In addition, the A’-agreement morpheme and the subject agreement prefix cannot co-occur28 (79c).

28 It is unclear which agreement morpheme will appear if the subject is left in-situ as that piece of data is missing from the literature.
(79) Subject wh-extraction

a. názi  ú-kú-kit-ag-a  bubo
b. *názi  á-kú-kit-ag-a  bubo
c. *názi  ú-á-kú-kit-ag-a  bubo

1 who  1.AGR-1SM-Prog-do-Hab-FV  14 that
‘Who usually does that’

[Adapted from Kinyalolo 1991: 12, p. 20]

With object extraction, there is no A′-agreement if the object is in-situ (80). However, A′-agreement is required when the object is ex-situ as illustrated by the presence of the class 8 agreement morpheme bi in (81) for wh-object extraction and in (82) for object relative clause.

(80) In-situ object wh

a. *bá-bo  bi-kulu  bi-a  kás-il-é  mwámí  bi-kí  mu-mw-ilo
b. bá-bo  bi-kulu  b-á  kás-il-é  mwámí  bi-kí  mu-mw-ilo
2-that  2-woman  2SM-V-give-PFV-FV  1-chief  8-what  18-3-village
Lit.: those women gave what the chief in the village
[Adapted from Kinyalolo 1991: 13a, p. 21]

(81) Ex-situ object wh

a. bi-kí  bi-á-kás-il-é  bá-bo  bi-kulu  mw-ámí  mu-mw-ilo
b. *bi-kí  b-á-kás-il-é  bá-bo  bi-kulu  mw-ámí  mu-mw-ilo
8-what  8.AGR-V-give-PFV-FV  2-that  2-woman  1-chief  18-3-village
‘What did those women give the chief in the village?’
[Adapted from Kinyalolo 1991: 13b, p. 21]

(82) Object relative clause

a. bi-tondo  bí-ku-ténd-a  úzo  mw-ána  ta-bí-li  bi-sóga
b. *bi-tondo  b-a-ku-ténd-a  úzo  mw-ána  ta-bí-li  bi-sóga
8-word  8.AGR-V-Prog-say-FV  1-that  1-child  Neg-8SM-be  8-good
‘The words that that child is saying are not good’
[Adapted from Carstens 2005: 19]

29 Kinyalolo (1991, 2003) analyzes this vowel ‘A’ as a default vowel in Kilega. I gloss it as V
30 Kinyalolo (1991, 2003) analyzes this vowel ‘A’ as a default vowel in Kilega. I gloss it as V
The same pattern is observed with locative adjuncts in (83) where the class 17 agreement morpheme *kú* surfaces with the verbal complex. It is also observed with manner adjunct (84) in which the class 14 agreement morpheme *bú* surfaces on the verb.

(83)  Locative adjunct

a. *kú-ńí  kú-ta-ku-yan-ág-á  b-ána  mu-ki-ndi
b. *kú-ńí  b-a-ta-ku-yan-ág-á  b-ána  mu-ki-ndi

17-where 17.AGR-Neg-Prog-play-Hab-FV  2-child 18-7-night
‘Where don’t usually children play at night?’

[Adapted from Carstens 2005: 13b]

(84)  Manner adjunct

a. *bú-ńí  bú-mú-ná-kúbul-il-è  mázi
b. *bú-ńí  b-a-mú-ná-kúbul-il-è  mázi

14-how 14.AGR-IIPL-Mod-pour-PFV-FV  6-water
‘How could you have poured water?’

[Adapted from Carstens 2005: 17]

In long distance extraction, Carstens (2005) argues that the moved XP first raises to the embedded Spec-v, then to the embedded Spec-C where agreement is obligatory. Then from there, it moves to the specifier position of the matrix vP, and finally to the specifier position of the matrix CP (85).

(85)  Long distance extraction

bi-ki  bi-á-ténd-ilé  b-ána  bi-á-gúl-ilé  nina-bó
8-what 8.AGR-V-say-PFV  2-child 8.AGR-V-buy-PFV  mother-their
‘What did the children say their mother had bought?’

This reflex of A’-movement in Kilega has previously been analyzed in terms of the Spec-Head Agreement Hypothesis (Kinyalolo 1991: 14). Carstens (2005) reanalyzes the phenomenon in terms of the standard Agree operation. She argues that C has an uninterpretable Q-feature which

---

31 A mechanism whereby the phi-features are shared between a head and its specifier (Chomsky 1986, Koopman 1987, Carstens and Kinyalolo 1989, Kinyalolo 1991)
initiates the Agree relations and which must be deleted by a matching feature of the closest c-commanded wh-operator. In order to reconcile the derivation of in-situ and ex-situ construals, she proposes that there is a correlation between the presence of φ-feature and the presence of EPP-feature, trigger of Movement. Thus, C exhibits φ-feature agreement only in ex-situ cases because it also has an EPP-feature, but with in-situ construals C lacks φ-feature and therefore has no EPP-feature that can trigger movement. She formalizes it in term of Bantu φ_{EPP}:

(86) Bantu φ_{EPP}: uφ-features have EPP features, in Bantu. [Carstens 2005:6]

Kilega involves V-to-C movement. Phasal Agree predicts that in such configuration, A'-agreement surfaces on the verbal head at C. For the derivation of object wh-movement for instance, when vP phase is built, in order to avoid violating PIC, the object wh-XP moves to the edge of vP while the verb moves to v before VP is sent to transfer (87a). When the CP phase is built, while the wh-XP moves to Spec-C, V moves to C and A'-agreement surfaces with the verbal complex at C (87b).

(87) a. vP phase

\[
\text{bi-ki} \quad \text{bábo bikulu} \quad \text{a-kás} \quad \text{mumwilo} \\
\text{wh-XP} \quad \text{DP} \quad \text{vP} \quad \text{VP} \quad \text{PP} \\
\text{vP} \quad \text{vP} \quad \text{vP} \quad \text{vP} \quad \text{vP} \\
\text{a-kás} \quad \text{<V>} \quad \text{DP} \quad \text{vwâmi} \quad \text{<V>}
\]
3.4.1.2 Anti-agreement in Bantu

Anti-agreement is a term used to describe contexts in which the canonical form of agreement between the verb and its argument has been altered (see e.g. Ouhalla 1993, Richards 2001, Schneider-Zioga 2000, 2007, Henderson 2009). This usually happens when the subject is extracted. As illustrated below in Kinande and Lubukusu, the form of subject agreement is a- but when the subject is A’-extracted, this form of agreement surfaces as u- in Kinande and o- in Lubukusu.

\[(88)\]

<table>
<thead>
<tr>
<th>a.</th>
<th>Kambale</th>
<th>a-langira</th>
<th>Marya</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kambale</td>
<td>3SG-saw</td>
<td>Mary</td>
</tr>
<tr>
<td></td>
<td>‘Kambale saw Mary’</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b. *iyondi yo a-langira Marya

\[1\text{who} \ 1\text{REL} \ 3\text{SG- saw Mary}\]

‘It is who that saw Mary?’

[Schneider-Zioga 2007:1]
Although anti-agreement is different from canonical subject agreement prefix, it is important to notice that it occurs when there is A'-movement of the subject. Without getting into the details on how anti-agreement is derived, it is tempting to pursue a unified account of A'-agreement and anti-agreement, as they are both conditioned by A'-movement. If we take into account the fact that feature bundles in A'-contexts can vary from one language to another, then A'-agreement in Kilega and anti-agreement in Lubukusu can be viewed as two different instantiations of the same Agree operation. Therefore Phasal-Agree derives the Lubukusu\textsuperscript{32} facts for instance, in the same way as for Kilega’s. Under this view, anti-agreement reduces to A'-agreement (see also Baier 2018).

3.4.1.3 Wh-copying in German

German is another language in which extraction from a non-root clause exhibits A'-agreement. This is usually referred to as wh-copying or wh-agreement. Although the wh-copying strategy seems to be the preferred way of asking questions in German, questions involving the copying strategy (the (a) examples) also have a long-distance counterpart (the (b) examples). With the

\[\begin{array}{ll}
\text{(89) a. Wafula} & \text{a-a-kw-a} \\
1\text{Wafula} & 1\text{-pst-fall-fv} \\
\text{‘Wafula fell.’} & \text{Lubukusu} \\
\text{b. *Naanu} & \text{a-w-a-kw-a?} \\
\text{who} & \text{AGR-1-pst-fall-fv} \\
\text{‘Who fell?’} & \text{[Adapted from Wasike 2007]} \\
\text{c. Naanu} & \text{o-w-a-kw-a?} \\
\text{who} & \text{AGR-1-pst-fall-fv} \\
\text{‘Who fell?’} & \text{[Wasike 2007:2, p 16]} \\
\end{array}\]

\textsuperscript{32} I assume that Lubukusu also involves V-to-T movement. Given that this particular form of agreement involves subject A'-extraction, it is hard to tell especially when there is string vacuous movement.
latter, the embedded CP is introduced by the complementizer *dass* ‘that’. The examples below are adapted from Fanselow and Mahajan (2000) and Felser (2004).

(90) PP complement

a. **Wovon** glaubst du, **wovon** sie träumt?
   of.what believe 2SG WHCOPY 3SG.FEM dreams
   ‘What do you believe that she dreams of?’
   [Felser 2004: 6c]

b. **Wovon** glaubst du, **dass** sie träumt?
   of.what believe 2SG C 3SG.FEM dreams
   ‘What do you believe that she dreams of?’
   [Felser 2004: 7c]

(91) Manner adjunct

a. **Wie** glaubst du, **wie** sie das gelöst hat?
   how believe 2SG WHCOPY 3SG.FEM that solved has
   ‘How do you believe that she has solved that?’
   [Felser 2004: 6a]

b. **Wie** glaubst du, **dass** sie das gelöst hat?
   how believe 2SG C 3SG.FEM that solved has
   ‘How do you believe that she has solved that?’
   [Felser 2004: 7a]

(92) Rationale

a. **Warum** glaubst du, **warum** sie das getan hat?
   Why believe 2SG WHCOPY 3SG.FEM that done has
   ‘Why do you believe she has done this?’
   [Felser 2004: 6b]

b. **Warum** glaubst du, **dass** sie das getan hat?
   Why believe 2SG C 3SG.FEM that done has
   ‘Why do you believe she has done this?’
   [Felser 2004: 7b]

To account for the German examples, Thornton and Crain (1995) analyze wh-copy as a complementizer that agrees with a long-distance moved wh-expression to the point of phonetic identity. Felser (2004) reanalyzes wh-copy and argues that intermediate wh-copies are spelled out traces of successive cyclic movement. What is important to notice here is that the German copy-strategy is similar to the form of A’-agreement found in Medumba and crucially it surfaces within the CP-domain as predicted by Phasal-Agree.
3.4.1.4  Stylistic inversion in French

Stylistic inversion is a term usually used to refer to the appearance of subject in postverbal position (Kayne and Pollock 1978, 2001). Representative examples are given in (93-95), with the (a) examples showing the subject in canonical pre-verbal position, and the (b) examples, adapted from (Kayne and Pollock 1978, 2001) showing stylistic inversion, with the subject in postverbal position.

(93)  a. ton ami partira quand
      2SG friend leave.3SG.FUT when
      ‘Lit.: your friend will leave when?’

      b. Quand partira ton ami?
          when leave.3SG.FUT your friend
          ‘When will your friend leave?’

(94)  a. Tes enfants jouaient avec qui
      2SG children play.3PL.PST with who
      ‘Lit.: your children were playing with whom?’

      b. Avec qui jouaient tes enfants?
          with who play.3PL.PST 2SG children
          ‘With whom were your children playing?’

(95)  a. tes ami-e-s espéraient diner ou?
      2SG friends hope.3PL.PST dine where
      ‘Lit.: your friends hoped to dine where?’

      b. Où espéraient diner tes amis?
          where hoped.3PL.PST dine 2SG friends
          ‘Where did your friends hope to dine?’  [Kayne and Pollock 1978:1]

It has been argued that XPs at the left periphery of interrogatives (95a), relatives (95b), exclamative (95c) and clefts (95d) are responsible for stylistic inversion (Kayne and Pollock 1978, 2001) as illustrated in the following examples.

(95)  a. A qui a téléphoné ton ami?
      ‘To whom has telephoned your friend?’
Stylistic inversion is restricted only to some sentence types in French; it is incompatible with declaratives (96), yes/no questions (97), and embedded yes/no questions (98).

(96)  a. Ton ami a téléphoné  
2SG friend has telephone  
‘Your friend has telephoned’

b. *A téléphoné ton ami  
has telephone 2SG friend  
‘has telephoned your friend’

(97)  a. *Ton ami a téléphoné?  
2SG friend has telephone  
‘Has your friend telephoned?’

b. *A téléphoné ton ami?  
has telephoned 2SG friend  
‘*Has telephoned your friend’

(98)  a. J’ignore si ton ami a téléphoné  
1SG ignore if 2SG friend has telephone  
‘I don’t know if your friend has telephoned’

b. *J’ignore si a téléphoné ton ami  
1SG ignore if has telephone 2SG friend  
‘*I don’t know if has telephoned your friend’  [Kayne and Pollock 2001:2]

Stylistic inversion has also been argued as evidence of successive cyclicity. In the examples below, stylistic inversion occurs in the embedded clause even though the wh-phrase surfaces in the matrix clause. This illustrated in (99-100) for wh-questions and (101-102) for relative clauses.
The above examples indicate that contexts involving stylistic inversion are also contexts in which there has been A’-movement of an XP. This is reminiscent of A’-agreement. In this regard, stylistic inversion in French could also be argued to be an instance of A’-agreement; and such as A’-agreement, it tracks the successive steps of movement, with the locus CP.

3.4.2 Type 2: Phasal-Agree at v

This section focusses on the manifestation of A’-related phenomena within vP such as Kikuyu downstep deletion and the use of an invariant A’-particle in Duala as summarized in table 3.9.
<table>
<thead>
<tr>
<th>LOCUS OF A’-AGREEMENT</th>
<th>Languages</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP</td>
<td>vP</td>
</tr>
<tr>
<td>Type 1</td>
<td>YES</td>
</tr>
<tr>
<td>Type 2</td>
<td>NO</td>
</tr>
<tr>
<td>Type 3</td>
<td>YES</td>
</tr>
</tbody>
</table>

Table 3.9: Type 2 Phasal-Agree

3.4.2.1 Downstep deletion in Kikuyu

Kikuyu (E-50, Guthrie 1948), is a Bantu language spoken in Kenya. Previously described and analyzed by Clements (1979); Zaenen (1983), Kikuyu deletes the downstep on verbs whenever there is A’-movement of an XP. As illustrated in (103), when a verbal suffix consisting of the downstep element (↓) is not deleted, it is realized to the right of the first complement following the verb (in this case môtë ‘tree’), and otherwise at the end of the verb (Clements 1979). The downstep internal to the verb in this example originates in the preceding noun.

(103) Kàriòkìí á-tém-ìré môtë↓
Source LLLLLH↓ HLHH↓ LL
Output LLLLH H↓HHH LLH↓
Kariuke SM-cut-PFV tree
‘Kariuke cut a tree’

[Clements 1979: 3a]

In the presence of A’-movement, the verb’s right-peripheral downstep is deleted. As a result, the complement môtë ‘tree’ surfaces with low tones. This is illustrated in (104) for subject wh-movement, in (105) for subject focus movement, and in (106) for subject relativization.

(104) Subject wh-movement

nó-ò ó-tèm-ìré môtë?
Source HL LLHH↓ LL
Output HL LLHH∅ LL
Foc-who 1SM-cut-PFV tree
‘who cut a tree?’

[Clements 1979: 3b]
Subject focus movement

\[
né \quad Káriókíí \quad ó-tém-írē \quad mò-tē
\]

Source: H LLLLLH-↓ LLHH-↓ LL
Output: H HLLLLH HH↓HH-∅ LL

Foc kariuki 1SM-cut-PFV tree

‘It's Kariuki (that) cut a tree’

[Clements 1979: 3c]

Subject relativization

\[
mòndò \quad ó-riáá \quad ó-tém-írē \quad mòtē
\]

Source: LL LLLH LLHH-↓ LL
Output: LL LLLH HH↓HH-∅ LL

person c1-DEM 1SM-cut-PFV tree

‘The person (that) cut a tree’

[Clements 1979: 3d]

Clements (1979) explains the downstep occurring internally in the verb by a phonological rule of downstep displacement, which converts an HL tone sequence to H↓H. This rule has affected the first two syllables of the verb, which bear low tones at an earlier stage of derivation.

With non-root clause extraction, the same pattern is observed. According to Zaenen (1983), the right-peripheral downstep associated with the verb \( æːrɪrē \) ‘tell’ shifts over to \( Ká:nakē \) (given that it is the first constituent following the verb), and turns the low tones of the complementizer \( ate \) and \( Kariuki \) into high tones. The shifted-downstep appears now internally on the word \( Kariuki \).

In the embedded clause, the downstep-suffix associated with the verb \( tem \) ‘cut’ shifts to its complement at the end of the sentence, blocking the operation of a rule of final high tone lowering that would otherwise lower the low-high rising tone of \( mote \) ‘tree’ to low. This is illustrated in (107).

(107) Kàmàu \( æː-ɪr-ɪrē \) Kà:nákē átē Káriókí\(^↓\) á-tém-írē mòtēē.
Source: LLH H↑HH↓ LHH LL LLLLH HLHH↓ LL
Output: LLH H↑HH LHH HH LLHH↓ HHHH HLH

Kamau 1SM-tell-PFV Kanake that Kariuki 1SM-cut-PFV tree

‘Kamau told Kanake that Kariuki cut the tree.’

[Zaenen 1983:11]
In A’-context, as illustrated in (108), the tones on the complementizer *ate* (the first one becomes high by an independent rule that spreads the high tone of *Kanake* onto the following syllable) and the DP *mote* ‘tree’ are now low.

(108) **nó-ò** Kàmàú ë:-r-íré Kà:náké até o-tèm-íré mòtè
Source HL LLH H³HH⁻ LL LLHH⁻ LL
Output HL LLH H³HH∅ LHH HL LLHH∅ LL
Foc-wh Kamau 1SM-tell-PFV Kanake that 1SM-cut-PFV tree
‘Who did Kamau tell Kanake that cut the tree?’ [Zaenen 1983:13]

It appears that the right-peripheral downstep on the matrix and embedded verbs are deleted (see Clements 1979 for more discussion). This tonal perturbation of the verb found in Kikuyu A’-movement is similar to Medumba A’-agreement realized as an HL tone melody that overwrites lexical tone. It is tempting to argue that the Kikuyu facts are an instance of Phasal-Agree, which results in deletion of the right-peripheral downstep when an A’-extracted XP reaches the vP phase edge and the relevant features are checked.

### 3.4.2.2 A’-particle in Duala

Duala (A-25, Guthrie 1948), is a Bantu language spoken in Cameroon. The basic word order in this language is SVO as shown in (109).

(109) Kuo a-bodzi nu moto kalati kiele
Kuo SM-give that man book yesterday
‘Kuo gave a book to that man yesterday.’ [Epée 1976: 1a]

When there is A’-movement of an XP in Duala root-clauses, the invariant A’-particle *no* surfaces within the verbal domain and exhibits a subject object asymmetry in that the A’-particle surfaces only with root-clause object extractions but not with root-clause subjects. The examples below, adapted from Epée (1976), show that when the subject is extracted, there is no A’-particle (110a); and if the A’-particle *no* is added, it leads to ungrammaticality (110b).
(110)  

Subject wh-movement

a.  \text{nja} a-bodi Kuo moni?
\text{who} SM-give Kuo money
‘who gave Kuo the money?’

b.  \text{*nja} a-bodi \text{no} Kuo moni
\text{who} SM-give A’.PRT Kuo money
[who gave Kuo the money?]  \hspace{1cm} \text{[Epée 1976: 4]}

It is clear from (110) that the occurrence of the A’-particle \text{no} with subject extraction renders the resulting sentence ungrammatical. But unlike subject extractions, the A’-particle \text{no} is required with object extraction as illustrated by the focus-movement examples in (111-113).

(111)  

Direct object

nu moto nde Kuo a-bodi no — kiel
that man Foc Kuo SM-give A’.PRT book yesterday
‘It's that man Kuo gave a book to yesterday.’ \hspace{1cm} \text{[Epée 1976: 1c]}

(112)  

Indirect object

\text{kalati} nde Kuo a-bodi no nu moto — kiel
book Foc Kuo SM-give A’.PRT that man yesterday
‘It's a book Kuo gave to that man yesterday.’ \hspace{1cm} \text{[Epée 1976: 1d]}

(113)  

Time adjunct

\text{kiele} nde Kuo a-bodi no nu moto kiel
yesterday Foc Kuo SM-give A’.PRT that man book
‘It's yesterday that Kuo gave a book to that man.’ \hspace{1cm} \text{[Epée 1976: 1e]}

The A’-particle \text{no} does not appear with in-situ construals as illustrated in the following wh-questions examples.

(114)  

a. In-situ Object

Kuo a-po \text{njika} ponda?
Kuo SM-come WH- time
‘At what time will Kuo arrive?’
b. *Ex-situ object*

\[
\text{njika ponda Kuo a-po no —?}
\]

WH- time Kuo SM-come A’.PRT

‘At what time will Kuo arrive?’

[Epée 1976: 2]

(115) a. *In-situ locative adjunct*

\[
o \ jai \ bebe \ na \ nja?
\]

you sit close to who

‘Whom are you sitting close to?’

b. *Ex-situ*

\[
\text{bebe na nja o jai no —?}
\]

close to who you sit A’.PRT

‘Whom are you sitting close to?’

[Epée 1976: 3]

The above examples establish that the A’-particle no surfaces within vP only when there is A’-movement of an XP from its base-generated position to the left periphery of the clause, more precisely in root-clauses.

With non-root clause extractions, the A’-particle no occurs only with the highest clause (Epée 1976). There is no subject/non-subject asymmetry in this context, as the A’-particle no occurs for all the extracted positions, including the subject position. This is illustrated in the following examples.

(116) *Subject extraction*

\[
\text{Kuo nde o kwadi no na — a-po wenge?}
\]

Kuo Foc you say A’.PRT that SM-come today

‘Is it Kuo that you said would arrive today?’

[Epée 1976: 11c]

(117) *Object*

\[
\text{ni kalati nde na ta no na kwalane}
\]

that book Foc I past A’.PRT I tell

\[
\text{Kuo na a-angamene wana —}
\]

Kuo that SM-must bring

‘That's the book I told Kuo that he should bring.’

[Epée 1976: 8]
Given that the A’-particle no occurs only with the matrix clause in non-root clause extractions and not with the embedded clause, Epée argues that this is evidence that A’-movement does not involve successive cyclic movement in Duala. Abstracting away from whether this can be used to argue for or against successive cyclic movement, what is important to note here is that this strategy of marking A’-extraction is similar to A’-agreement even though Duala uses an invariant particle to mark this. Also, the subject/non-subject asymmetry found in Duala can be accounted for by Phasal-Agree. So, assuming that the subject originates in vP Spec-position in Duala, when it moves to Spec-C, it does not go through the edge of vP phase and thus, no A’-particle expected. As for an A’-moved object, before getting to Spec-C it first moves to the edge of vP to avoid violating PIC and thus, it triggers insertion of the A’-particle with vP. In non-root clause extraction, any A’-extracted XP (whether subject or object) has to move through the edge of the matrix vP phase where the A’-particle is inserted. Thus, no subject/non-subject asymmetry is expected with non-root clause A’-extraction.

Duala’s uses a particle strategy to mark A’-extraction is reminiscent of the particle found in Plains Cree (Algonquian, western Canada) and Yorùbá (Kwa, Nigeria) wh-adjunct extraction. In these languages, the extraction of an adjunct wh-XP triggers the presence of a preverbal particle referred to as the extraction marker (Cook 2005). This is illustrated in (119b) for Plains Cree where the particle -isi- surfaces for adjunct extraction but not for argument extraction; and in (120b) for Yorùbá where the particle se appears only when there is movement of a wh-adjunct.
(119) a. Argument extraction: No marker

Plains Cree

awîna kâ-sipwêht-ê-t
who REL-leave-AN.SUBJ-3
‘who left?’

b. Adjunct extraction: Preverbal marker

tân-isi kâ-isi-sipwêht-ê-t Wâpastim
Q-MNR REL-ADJ-leave- AN.SUBJ-3 W.
‘How did Wâpastim leave?’

[Cook 2005: 1]

(120) a. Argument extraction: No marker

Yorùbá

ki ni Adé fô
WH Foc A. break
‘What did Adé break?’

b. Adjunct extraction: Preverbal marker

Nítorí ki ni Adé sê fô òwo
reason WH Foc A. EM break plate
‘Why did Adé break the plate?’

[Cook 2005: 2]

(119) and (120) show that the preverbal extraction marker is restricted only to wh-adjunct extraction in Plains Cree and Yorùbá. The A’-particle no in Duala is not restricted only to those positions. In fact, the A’-particle no occurs with argument and non-argument extractions. Also, it is not restricted only to wh-movement since it occurs with focus movement as well.

3.4.3 Type 3: phrasal-agree at v and C

This section focuses on languages that exhibit A’-agreement on V and C. These are the cases of Chamorro and Medumba as summarized in table 3.10.

<table>
<thead>
<tr>
<th>LOCUS OF A’-AGREEMENT</th>
<th>Languages</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP</td>
<td>vP</td>
</tr>
<tr>
<td>Type 1</td>
<td>YES</td>
</tr>
<tr>
<td>Type 2</td>
<td>NO</td>
</tr>
<tr>
<td>Type 3</td>
<td>YES</td>
</tr>
</tbody>
</table>

Table 3.10: Type 3 Phrasal-Agree
3.4.3.1 Chamorro Phasal-Agree at v and C

Chamorro is an Austronesian language spoken in the Mariana island. The canonical word order in the language is VSO as shown in (121).

(121) ha-bendi si Maria i kareta
     Agr-sell Maria the car
     ‘Maria sold the car’

[Reintges et al. 2006: 3]

In A′-movement construals in Chamorro, A′-agreement can surface on V (or A) and reflects the case of the moved XP. With wh-questions for instance, the nominative case of the subject wh-XP in (122) is -um; in (123) the case of the object wh-XP is -in plus the possessor agreement (glossed as Agr.poss.).

(122) hayi bumendi i kareta
     who Agr.NOM.sell the car
     ‘who sold the car’

(123) hafa binde-nña si Maria
     what Agr.Obj.sell-Agr.poss. Maria
     ‘what did Maria sell?’

[Reintges et al. 2006: 4]

The same agreement pattern is observed in relative clauses as illustrated in (122) for a subject relative clause and in (123) for an object relative clause.

(124) kao un-li’i’ i palao’an ni bumendi I kareta
     Q Agr-see the woman CREL Agr.NOM.sell the car
     ‘Did you see the woman who sold the car?’

(125) hu-fahan i kareta ni bininde-nña si Maria
     Agr-buy the car CREL Agr.Obj-Agr Maria
     ‘I bought the car that maria sold’

[Reintges et al. 2006: 5]

In long-distance extraction, A′-agreement surfaces on the embedded V and on the matrix V as illustrated in (124) for a wh-question.

(126) hafa sinangane-nña si Joaquin nu hagu bininde-nña
     what Agr.Obj.tell-Agr Joaquin OBL you Agr-Obj.sell-Agr
     ‘What did Joaquin tell you that he sold?’

[Reintges et al. 2006: 8]
With regard to A’-agreement with C, Reintges et al. (2006) argue that Chamorro operator-C agreement registers the category type of the moved XP as well as its operator feature (the feature that identifies it as an interrogative phrase, a relative DP, or a focus). According to them, this agreement pattern is most transparent when the moved XP is a DP denoting location in time or space. (127) shows that when the wh-locative manu ‘where’ moves to Spec-C, the form of the complementizer is na. If a locative XP is focus-moved, the form of the complementizer is nai (128), and if the locative XP is relativized, the form of the complementizer is änai (129).

(127) **manu na sumásaga hao**
where C.AGR Agr.live.Prog you
‘Where are you living?’

(128) **gi gima’-mami nai sumásaga si Jess**
Loc house-Agr C.AGR Agr-live.Prog Jess
‘Jess is living [in our house]FOC’ [Reintges et al. 2006: 6]

(129) **hu-li’i’ i gima’ änai sumásaga si Maria**
Agr-see the house C.AGR Agr-live.Prog Maria
‘I saw the house that Maria is living in.’ [Reintges et al. 2006: 7]

With Chamorro long-distance extraction, the operator-C agreement surfaces only on highest C as illustrated in the following examples.

(130) **amanu na ha-tagu’ si Dolores i lahi-ña**
where C.AGR Wh.Obj2.Agr-order Dolores the son-Agr
pära u-tohgi
FUT Agr-stand
‘Where did Dolores tell her son that he should stand?’ [Reintges et al. 2006: 10]

(131) **manggi i gima änai ma-sangani i päli’**
where the house C.Agr wh.Obj2.Agr-tell the priest
na pära u-saga
C FUT Agr-live
‘Where is the house where they told the priest that he should live?’ [Reintges et al. 2006: 11]
In order to account for the Chamorro agreement morphology, Reintges et al. (2006) propose that Chamorro agreement is the morphological reflex of Agree (describes in terms of a relation between a probe that bears the active feature that drives wh-movement ([X]) and the goal that bears active feature [wh]) as represented in (132) for V-agreement. They consider CP as a strong phase.

(132) CP
   who
   …
   F
   uX
   …
   CP
   who
   …
   F
   uX
   △
   who

[Reintges et al. 2006:12]

With Chamorro operator-C agreement, the authors describe it as an Agree relation between a probe that bears the feature [X] and the goal that bears an active feature [wh]. Morphology also reflects that fact that both probe and goal bear an operator feature — [Q] with questions, [pred] with relativization, [emphasis] or [contrast] with focus-movement — that is active on probe but inactive on the goal (Reintges et al. 2006). The morphological reflex signals only the higher agree relation (i.e. C-agreement) as shown in (133).
As for the second agree relation in the embedded clause, they argue that it is the one that holds between the lower F and the lowest instance of the wh-XP. It is not clear from their analysis whether the lower Agree relation is on V or something else. Nonetheless, the agreement morphology found in Chamorro A′-movement is similar to Medumba A′-agreement.

### 3.4.3.2 Medumba Phasal-Agree at v and C

Phasal-Agree derives A′-agreement at v and C in Medumba. When an A′-bound object XP moves for instance, it first adjoins at the edge of vP phase where A′-agreement surfaces on V as an HL tone melody. When the CP phase is built, the moved XP moves to Spec-C where A′-agreement surfaces on T. This is confirmed in (134) for wh-movement, (135) for focus movement and (136) for relativization where the verb *n*dʒûn ‘see’ and T nô¿? surface with an HL tone melody.

(134) Wh-movement

\[
\begin{array}{cccccc}
\text{a. } & \text{á } & \text{wú } & \text{Wâtēt} & \text{nô¿?} & \text{n-dʒûn} & \text{á?} \\
\text{FOC} & \text{WH} & \text{Watat} & \text{AGR.AUX.T2} & \text{N-AGR.see} & \text{C.Q.H} \\
& & \text{T.HL} & \text{V.HL} & & \\
\end{array}
\]

‘Who did Watat see?’

[Reintges et al. 2006:12]
b. *á wú Wátét nɔ? jún á?
FOC WH Watat AUX.T2 see C.Q.H
T.H V.H
‘Who did Watat see?’

(135) Focus movement

a. á Nùgè Wátét nɔ? ñ-dʒùùn lá
FOC Nuga Watat AGR.AUX.T2 N-AGR.see C.-Q
T.HL V.HL
‘NugaFOC Watat saw’

b. *á Nùgè Wátét nɔ? jún lá
FOC Nuga Watat Aux see C.-Q
T.H V.H
‘NugaFOC Watat saw’

(136) Relativization

a. má-ñ-dʒùùm zɔ Wátét nɔɔ? ñ-dʒùùn lá …
SG-male.H C.CL1 Watat AGR.Aux N-AGR.see C.-Q
T.HL V.HL
‘The boy that Watat saw…’

b. *má-ñ-dʒùùm zɔ Wátét nɔɔ? jún lá …
SG-male.H C.CL1 Watat AUX see C.-Q
T.H V.H
‘The boy that Watat saw…’

(135) is a step-by-step derivation of an ex-situ wh-question in Medumba.
(137) Step-by-step derivation of an object wh-XP

I. vP phase

(i) Merge $<\text{DP};v>$ and merge $<V; \text{Wh-XP}>$

$[\text{vP} [\text{DP Wàtét}] [\text{vP } [\text{VP } [V \text{ nôzûn}]] [\text{Wh-XP á wù}]]$

(ii) Re-merge Wh-DP and adjoin it to vP. $A'$-agreement with v spelled out as HL on V and VP sent to transfer.

$[\text{vP} [\text{Wh-XP á wù}] [\text{vP} [\text{DP Wàtét}] [\text{vP } [\text{VP } [V \text{ nôzûn}]] [\text{Wh-XP <á wù>}}]$
II. CP phase

(i) Merge <T2; vP>

[TP2 [T2 nó?] [vP [Wh-XP á wú][vP [DP Wàtét] [vP [v ] [VP [V ^dʒúːn] [Wh-XP <á wú>]]

(ii) Merge <T1; TP2>; Re-merge DP subject to Spec-T and move T2 to T1

[TP1 [DP Wàtét] [TP1 [T1 [T2 nó?] [T1 ø]] [TP2 [T2 nó?] [vP [Wh-XP á wú][vP [DP <Wàtét>] [vP [v ] [VP [V ^dʒúːn] [Wh-XP <á wú>]]]
(iii) Merge \(<C; TP1>\) and re-merge Wh-XP to Spec-C; \(A'\)-agreement with \(c\) spelled out as HL on \(T\).

\[
[\text{CP1} [\text{Wh-XP á wú}] [\text{CP1} [\text{CExh }]] [\text{TP1} [\text{DP Wàtét}]] [\text{TP1} [\text{T1} [\text{T2 nóóʔ}] [\text{T1} \emptyset]]] [\text{TP2} [\text{T2} <\text{nóóʔ}>] [\text{vP} [\text{Wh-XP <á wú>}] [\text{vP} [\text{DP <Wàtét>}] [\text{vP} [\text{V} ] [\text{V nỳuun}]] [\text{Wh-XP <á wú>}]}
\]
(iv) Merge $<C2;CP1>$ and re-merge $CP1$ to Spec-$CP2$

$[CP2 [CP1 [Wh-XP á wú] [CP1 [CExh ] [TP1 [DP Wàtét] [TP1 [T1 [T2 nó?œ] [T1 Ø] [TP2 [T2 <nó?] [vP [Wh-XP <á wú>] [vP [DP <Wàtét>] [vP [v ] [VP [V ñdžùn] [Wh-XP <á wú>]]]]]]]]] [CP2 [C2 á] [<CP1> ]}$

3.4.4 Broader implications of the Phasal-Agree analysis

This section tries to answer the question of what conditions the variability in the locus of A'-agreement in different languages. It appears from the cross-linguistic empirical evidence that the locus of A'-agreement is either the vP phase, the CP phase or both of the CP and the vP phases.

The question that arises from this typology is what then conditions the locus of A'-agreement? Or how can we predict where the reflex of A'-agreement surfaces? In principle, Phasal-Agree predicts A'-agreement surfaces with every phase. Two hypotheses are possible:

Hypothesis 1: the internal syntax of each language may influence the domain within which A'-agreement surfaces. That is A'-agreement with V in languages with no V-to-C movement
(Kikuyu), A’-agreement with C in languages that allow V-to-C movement (German, Kilega) and A’-agreement with C and V for languages that allow short local V movement (Medumba).

Hypothesis 2: the nature of the phases. The locus of A’-agreement with a given phase depends on whether a phase is strong or weak in a given language. Strong phases could be considered as phases where their domain is spelled out immediately when the phase is built; while weak phases are phases in which spell out of their domain is delayed until the derivation reaches a strong phase boundary. In fact, if all phases are strong in a language A’-agreement surfaces within each phase; if CP is a strong phase in a given language then agreement surfaces with CP; and if vP is a strong phase then agreement surfaces with vP; and if CP and vP are strong phases then agreement surfaces within CP and vP.

3.5 Conclusion

This chapter focused on A’-movement and A’-agreement in Medumba. I defined A’-agreement as the reflex of Phasal-Agree. The reflex of Phasal-Agree takes the form of an overwrite HL tone melody in Medumba. I proposed that A’-agreement in Medumba is derived via Phasal-Agree: A phase-bound operation (OP) between a probe (P) and a goal (G), where P is a phase-head and G an A’-bound XP; such that the reflex of OP is either on P or the complement of P. The subject/object asymmetry predicted by Phasal-Agree with regard to A’-extraction was confirmed in Medumba. I argued that the surface realization of A’-agreement which involves multiple Agree cannot be accounted for by classical Agree, which involves feature-checking operation between a probe and a goal. I proposed a mechanism to account for multiple agree which involves Resume Agree. Resume Agree stipulates that the features of a goal (G) are resumed at each phase so that G can remain active until it reaches the position where it is interpreted. However, Phasal-Agree hit a surprising result with regard to the absence of symmetry in root and non-root clauses in that
there is no A′-agreement with the matrix vP phase in Medumba. I argued that this was due to the fact that apparent complement clauses are in fact disguised adjunct clauses in Medumba. My proposal was supported by the following arguments:

- Apparent complement CPs behave like adjunct islands;
- CPs never surface in complement position in Medumba (hence the lack of embedded interrogatives);
- CPs never surface in argument position in Medumba (hence the lack of subject and complement CPs);
- Apparent complement CPs follow matrix VP-adjunct;
- vP-adjuncts don’t trigger A′-agreement;
- Apparent complement CPs strand under VP-gapping;
- Apparent complement CPs reconstruct.

With regard to the cross-linguistic formal typology of A′-agreement, I proposed the following cross-linguistic profile of A′-agreement:

- **When?** It occurs in a context where there is A′-movement of an XP;
- **Where?** It occurs within the CP-domain or within the vP-domain;
- **How?** It is realized either on the lowest phase, on the highest phase or on every phase in the path of movement.

As for the form of A′-agreement, I showed based on data from typologically unrelated languages that the form of A′-agreement differs depending on whether a language employs:

- the copying strategy. This is the case of German in which the full copy of the wh-XP is spelled out on the path of movement;
• the concordial agreement strategy. This is the strategy in which the form of A′-agreement is the result of a morphological agreement with the moved constituent. In languages in which tones are morphologically and syntactically active such as Kikuyu and Medumba, this form of concordial agreement is reflected by tonal allomorphy of relevant heads; or
• other means such as the use of an invariant A′-particle in Duala or (stylistic) inversion in French.
Chapter 4: A’-movement and the tense-aspect system in Medumba

4.1 The abundance of Medumba temporal auxiliaries

4.1.1 Three observations about tense, A’-movement and A’-agreement

4.1.1.1 Observation 1: Some temporal auxiliaries require A’-agreement

The temporal auxiliaries ⁿòʔ, ⁿò and ⁿù always show A’-agreement when they appear in A’-construals in Medumba. This is shown in (1) for the temporal auxiliary ⁿòʔ; in (2) for the temporal auxiliary ⁿò; and in (3) for the temporal auxiliary ⁿù. The (a) examples illustrate the base line sentence and the (b) examples, the A’-context.

(1)  

a. Nùgè ⁿòʔ ⁿ-kè ⁿ-dʒ’én
Nuga AUX.T2 fry chips
T.H V.H

‘Nuga fried the chips (long time ago)’

b. á ⁿ-dʒ’én Nùgè ⁿòʔ ⁿ-kèè lá
FOC chips Nuga AGR.AUX.T2 C-AGR.fry C.-Q
T.HL V.HL

Lit.: ‘The chips FOC Nuga fried (long time ago)’

(2)  

a. Nùgè ⁿò ⁿ-kè ⁿ-dʒ’én
Nuga AUX.T3 N-fry chips
T.L V.H

‘Nuga fried the chips (yesterday)’

b. á ⁿ-dʒ’én Nùgè ⁿò ⁿ-kèè lá
FOC chips Nuga AGR.AUX.T3 N-AGR.fry C.-Q
T.LH V.HL

Lit.: ‘The chips FOC Nuga fried (yesterday)’

(3)  

a. Nùgè ⁿù ⁿ-kè ⁿ-dʒ’én
Nuga AUX.T3 N-fry chips
T.L V.H

‘Nuga fried the chips (recently)’
4.1.1.2 Observation 2: Some temporal auxiliaries show optional A’-agreement

The temporal auxiliaries zi, tʃɔk, jɔk, and yù show A’-agreement in retrospective contexts (compatible with past) and no A’-agreement in prospective contexts (compatible with simple future) with àʔ. This is illustrated in (4) for the temporal auxiliary zi; in (5) for the temporal auxiliary tʃɔk; in (6) for the temporal auxiliary jɔk; and in (7) for the temporal auxiliary yù. The (b) examples show that in A’-context, these temporal auxiliary surface with A’-agreement HL tone melody. The absence of the A’-agreement HL tone melody leads to ungrammaticality (the (b) examples).

(4) a. *á lınʤʰén Nùŋgè zi ŋ-kêê lá
   FOC chips Nuga AUX.α N-AGR.fry C.-Q
   H V.HL
   Lit.: ‘The chipsFOC Nuga fried last night’

   b. á lınʤʰén Nùŋgè zií ŋ-kêê lá
   FOC chips Nuga AGR. AUX.α N-AGR.fry C.-Q
   HL V.HL
   Lit.: ‘The chipsFOC Nuga fried last night’

(5) a. *á lınʤʰén Nùŋgè tʃɔk ŋ-kêê lá
   FOC chips Nuga AUX.β N-AGR.fry C.-Q
   H V.HL
   Lit.: ‘The chipsFOC Nuga fried earlier this morning’

   b. á lınʤʰén Nùŋgè tʃɔɔk ŋ-kêê lá
   FOC chips Nuga AGR. AUX.β N-AGR.fry C.-Q
   HL V.HL
   Lit.: ‘The chipsFOC Nuga fried earlier this morning?’

(6) a. *á lınʤʰén Nùŋgè jɔk ŋ-kêê lá
   FOC chips Nuga AUX.γ N-AGR.fry C.-Q
   H V.HL
   Lit.: ‘The chipsFOC Nuga fried earlier today’
The preceding examples establish that the temporal auxiliaries zí, tʃə́k, jɔ́k, and yù show A'-agreement in the form of an HL tone overwrite melody when they are construed in retrospective; that is, past tense. In the following set of examples, I show that the temporal auxiliaries zí, tʃə́k, jɔ́k, and yù do not show A'-agreement when they are construed in prospective context with àʔ (the (a) examples). The presence of A'-agreement in this context leads to ungrammaticality (the (b) examples).

The preceding examples establish that the temporal auxiliaries zí, tʃə́k, jɔ́k, and yù show A'-agreement in the form of an HL tone overwrite melody when they are construed in retrospective; that is, past tense. In the following set of examples, I show that the temporal auxiliaries zí, tʃə́k, jɔ́k, and yù do not show A'-agreement when they are construed in prospective context with àʔ (the (a) examples). The presence of A'-agreement in this context leads to ungrammaticality (the (b) examples).
b. *á ³nʤʷén Nǔgè áʔ tfšòk n-ḵēē lá
FOC chips Nugo IRR AGR.AUX.β N-AGR.fry C.-Q
L HL V.HL
Lit.: ‘The chipsFOC Nuga will fry tomorrow’

(10) a. á ³nʤʷén Nǔgè áʔ jók n-ḵēē lá
FOC chips Nugo IRR AUX.γ N-AGR.fry C.-Q
L H V.HL
Lit.: ‘The chipsFOC Nuga fried earlier today’

b. *á ³nʤʷén Nǔgè áʔ jók n-ḵēē lá
FOC chips Nugo IRR AGR.AUX.γ N-AGR.fry C.-Q
L HL V.HL
Lit.: ‘The chipsFOC Nuga fried earlier today’

(11) a. á ³nʤʷén Nǔgè áʔ yù n-ḵēē lá
FOC chips Nugo IRR AUX.δ N-AGR.fry C.-Q
L L V.HL
Lit.: ‘The chipsFOC Nuga will fry immediately (after whatever happened)’

b. *á ³nʤʷén Nǔgè áʔ yù n-ḵēē lá
FOC chips Nugo IRR AGR.AUX.δ N-AGR.fry C.-Q
L HL V.HL
Lit.: ‘The chipsFOC Nuga will fry immediately (after whatever happened)’

4.1.1.3 Observation 3: Some temporal auxiliaries are incompatible with A’-agreement

The temporal auxiliary liù is incompatible with A’-agreement and does not appear in A’-contexts.

However, áʔ fails to show A’-agreement and so appears in A’-contexts with no A’-agreement in the form of the HL overwrite tone melody.

(12) a. Nǔgè liù n-ḵé ³nʤʷén
Nugo AUX.T2 N-fry chips
T.HL V.H
‘Nuga fried the chips (long long time ago)’

b. *á ³nʤʷén Nǔgè liù n-ḵēē lá
FOC chips Nugo AUX.T2 N-AGR.fry C.-Q
T.HL V.HL
Lit.: ‘The chipsFOC Nuga fried (long long time ago)’
4.1.2 Five ingredients of the analysis

In the following, I outline the different ingredients necessary for the analysis of the various temporal auxes in Medumba. These ingredients will be used in the different sections of this chapter and are as follows:

- Ingredient 1: tense-marking versus tense shifting
- Ingredient 2: an exploded tense projection
- Ingredient 3: N-prefix diagnoses in-situ heads
- Ingredient 4: Auxiliary allomorphy tracks agreement and head movement
- Ingredient 5: Phasal agree diagnoses intermediate phases

4.1.2.1 Ingredient 1: tense-marking versus tense-shifting

The temporal system in Medumba is organized around a past and a non-past paradigm. The past context includes a zero past tense marker and various tense-shifters. Tense-shifters include retrospective temporal-shifters (nɔ́ʔ, lúù, fɔ and lù) which are always construed as past and neutral tense-shifter (zì, tʃòk, jɔk, and yù) which can be construed either as past with the zero tense marker or as future with the irrealis marker ɔʔ. The non-past contexts include the simple future construal with the irrealis marker ɔʔ and the present tense construal with the marker tfɔˈɛt.

4.1.2.2 Ingredient 2: an exploded Tense projection

To host the various temporal auxes in Medumba, I propose an exploded tense projection as follows:
- T1 hosts the zero past tense morpheme
- T2 hosts the retrospective temporal shifters *nɔʔ* and *lùù* used for remote past
- T3 hosts the retrospective temporal shifters *lù* and *fɔ* used for recent past
- α hosts the tense-shifter *zi* construed in retrospective as “last night” past
- β hosts the tense-shifter *tfɔk* construed in retrospective as “this morning” past
- γ hosts the tense-shifter *jɔk* construed in retrospective as “today” past
- δ hosts the tense shifter *γù* construed in retrospective as immediate past

(14) **Retrospective context**

α, β and γ are used to describe events happened within ±24h. In retrospective, they are not additive and behave as unique restrictors and so, are predicted to not co-occur. The above structure predicts α, β and γ to be compatible with prospective contexts where they behave as additive restrictors and so, can co-occur:

- α in prospective is construed as remote future
(15) **Prospective context**

With regard to T syntax, in addition to the zero past tense which is hosted in T, labelled here as (T1), there are two more elements hosted in T: The present tense ʧʷɛ̀ɛ́t and the low tone habitual.

(16) **T syntax in Medumba**

The exploded tense projection predicts auxiliary-stacking in Medumba. This prediction is confirmed as shown in (17-34) for the retrospective contexts.
(17)  **Remote T2 nɔʔ + recent T3 lù**

**Context:** A and B are talking about a wedding that took place on Monday, December 01, 1986 and are trying to recall all the events that happened before the wedding. Then A recalls that a **week before the wedding**, Numi fried the chips. So, A says:

```
a. Numi  nɔʔ  lù  n-kɛ  lnɗzéɛn
   Numi  AUX.T2  AUX.T3  N-fry  chips
   T.H    T.L    V.H
‘Numi fried the chips (recently in a remote past)’
```

(18)  **Remote T2 nɔʔ + recent (yesterday) T3 fə̀**

**Context:** A and B are talking about a wedding that took place on Monday, December 01, 1986 and are trying to recall all the events that happened before the wedding. Then A recalls that on **Sunday, November 30 1986**, Numi fried the chips. So A says:

```
a. Numi  nɔʔ  fə̀  n-kɛ  lnɗzéɛn
   Numi  AUX.T2  AUX.T3  N-fry  chips
   T.H    T.L    V.H
‘Numi fried the chips (the day before in a remote past)’
```

(19)  **Remote T2 nɔʔ + a.night zì**

**Context:** A and B are talking about a wedding that took place on Monday, December 01, 1986 and are trying to recall all the events that happened before the wedding. Then A recalls that the **night before the wedding**, Numi fried the chips. So A says:

```
Numi  nɔʔ  zì  n-kɛ  lnɗzéɛn
   Numi  AUX.T2  AUX.α  N-fry  chips
   T.H    H      V.H
‘Numi fried the chips (the night before in a remote past)’
```
(20)  *Remote T2 nɔʔ + β.24hrs.morning ʧɔk*

**Context:** A and B are talking about a wedding that took place on Monday, December 01, 1986 and are trying to recall all the events that happened before the wedding. Then A recalls that in the *morning of the day of the weeding*, Numi fried the chips. So A says:

<table>
<thead>
<tr>
<th>Numí</th>
<th>nɔʔ</th>
<th>ʧɔk</th>
<th>n-kɛ</th>
<th>ɪnʤɛn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numi</td>
<td>AUX.T2</td>
<td>AUX.β</td>
<td>N-fry chips</td>
<td></td>
</tr>
<tr>
<td>T.H</td>
<td>H</td>
<td>V.H</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

‘Numi fried the chips (in the morning in a remote past)’

(21)  *Remote T2 nɔʔ + γ.today jɔk*

**Context:** A and B are talking about a wedding that took place on Monday, December 01, 1986 and are trying to recall all the events that happened before the wedding. Then A recalls that *earlier in the day of the weeding*, Numi fried the chips. So A says:

<table>
<thead>
<tr>
<th>Numí</th>
<th>nɔʔ</th>
<th>jɔk</th>
<th>n-kɛ</th>
<th>ɪnʤɛn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numi</td>
<td>AUX.T2</td>
<td>AUX.γ</td>
<td>N-fry chips</td>
<td></td>
</tr>
<tr>
<td>T.H</td>
<td>H</td>
<td>V.H</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

‘Numi fried the chips (during the day in a remote past)’

(22)  *Remote T2 nɔʔ + δ.immediate ɣu*

**Context:** A and B are talking about a wedding that took place on Monday, December 01, 1986 and are trying to recall all the events that happened before the wedding. Then A recalls that *immediately after Numi finished singing*, he fried the chips. So A says:

<table>
<thead>
<tr>
<th>Numí</th>
<th>nɔʔ</th>
<th>ɣu</th>
<th>n-kɛ</th>
<th>ɪnʤɛn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Numi</td>
<td>AUX.T2</td>
<td>AUX.δ</td>
<td>N-fry chips</td>
<td></td>
</tr>
<tr>
<td>T.H</td>
<td>L</td>
<td>V.H</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

‘Numi fried the chips (immediately after whatever happened in a remote past)’
Remote T2 nɔʔ + recent T3 lù + α.night zi + δ.immediate yù

Context: A and B are talking about a wedding that took place on Monday, December 01, 1986 and are trying to recall all the events that happened before the wedding. Then A recalls that a week before the wedding, immediately after Numi finished singing at night, he fried the chips. So A says:

Nûmí nɔʔ lù n-zi n-gyù n-ké lⁿdʒʷɛn
Numi AUX.T2 AUX.T3 N-AUX.α N-AUX.δ N-fry chips
T.H T.L H L V.H

‘Numi fried the chips (immediately the night before recently in a remote past)’

Remote T2 nɔʔ + recent T3 lù + β.24hrs.morning ʧɔk + δ.immediate yù

Context: A and B are talking about a wedding that took place on Monday, December 01, 1986 and are trying to recall all the events that happened before the wedding. Then A recalls that a week before the wedding, immediately after Numi finished singing in the morning, he fried the chips. So A says:

Nûmí nɔʔ lù n-ʧɔk n-gyù n-ké lⁿdʒʷɛn
Numi AUX.T2 AUX.T3 N-AUX.β N-AUX.δ N-fry chips
T.H T.L H L V.H

‘Numi fried the chips (immediately in the morning recently in a remote past)’

Remote T2 nɔʔ + recent T3 lù + γ.today ʃɔk + δ.immediate yù

Context: A and B are talking about a wedding that took place on Monday, December 01, 1986 and are trying to recall all the events that happened before the wedding. Then A recalls that a week before the wedding, immediately after Numi finished singing during the day, he fried the chips. So A says:

Nûmí nɔʔ lù n-ʤɔk n-gyù n-ké lⁿdʒʷɛn
Numi AUX.T2 AUX.T3 N-AUX.γ N-AUX.δ N-fry chips
T.H T.L H L V.H

‘Numi fried the chips (immediately during the day recently in a remote past)’
Remote T2 nɔʔ + recent (yesterday) T3 fɔ + a.night zí + ɣ.immediate ɣù

Context: A and B are talking about a wedding that took place on Monday, December 01, 1986 and are trying to recall all the events that happened before the wedding. Then A recalls that the day before the wedding, immediately after Numi finished singing at night, he fried the chips. So A says:

Nùmí nɔʔ  fɔ  n-zi  n-gyù  n-ké  n-dʒʷèn
Numi AUX.T2  AUX.T3  N-AUX.ɑ  N-AUX.δ  N-fry  chips
T.H  T.L  H  L  V.H
‘Numi fried the chips (immediately the night before the day before in a remote past)’

Remote T3 fɔ + y.today jòk + ɣ.immediate ɣù

Context: A and B are talking about a wedding that took place on Monday, December 01, 1986 and are trying to recall all the events that happened before the wedding. Then A recalls that the day before the wedding, immediately after Numi finished singing in the morning, he fried the chips. So A says:

Nùmí nɔʔ  fɔ  n-gòk  n-gyù  n-ké  n-dʒʷèn
Numi AUX.T2  AUX.T3  N-AUX.β  N-AUX.δ  N-fry  chips
T.H  T.L  H  L  V.H
‘Numi fried the chips (immediately in the morning the day before in a remote past)’
(29) **Recent T3 lù + a.night zí + δ.immediate ɣù**

Númí lù n-zí n-gyù n-ké ɬ̣ndʒʷèn
Numi AUX.T3 N-AUX.α N-AUX.δ N-fry chips
T.L H L V.H
‘Last week, Numi fried the chips (immediately the night before)’

(30) **Recent T3 lù + β.24hrs.morning ʧək + δ.immediate ɣù**

Númí lù n-ʧək n-gyù n-ké ɬ̣ndʒʷèn
Numi AUX.T3 N-AUX.β N-AUX.δ N-fry chips
T.L H L V.H
‘Last week, Numi fried the chips (immediately in the morning)’

(31) **Recent T3 lù + γ.today ʒək + δ.immediate ɣù**

Númí lù n-ʒək n-gyù n-ké ɬ̣ndʒʷèn
Numi AUX.T3 N-AUX.γ N-AUX.δ N-fry chips
T.L H L V.H
‘Last week, Numi fried the chips (immediately during the day)’

(32) **Recent (yesterday) T3 fə + a.night zí + δ.immediate ɣù**

Númí fə n-zí n-gyù n-ké ɬ̣ndʒʷèn
Numi AUX.T3 N-AUX.α N-AUX.δ N-fry chips
T.L H L V.H
‘Yesterday, Numi fried the chips (immediately at night)’

(33) **Recent (yesterday) T3 fə + β.24hrs.morning ʧək + δ.immediate ɣù**

Númí fə n-ʧək n-gyù n-ké ɬ̣ndʒʷèn
Numi AUX.T3 N-AUX.β N-AUX.δ N-fry chips
T.L H L V.H
‘Yesterday, Numi fried the chips (immediately in the morning)’

(34) **Recent (yesterday) T3 fə + γ.today ʒək + δ.immediate ɣù**

Númí fə n-ʒək n-gyù n-ké ɬ̣ndʒʷèn
Numi AUX.T3 N-AUX.γ N-AUX.δ N-fry chips
T.L H L V.H
‘Yesterday, Numi fried the chips (immediately during the day)’

T3 recent lù and yesterday fə cannot co-occur as shown in (35). Syntactically they are in complementary distribution and semantically used for past recent events.
(35)  a. *Numi fô n-dù n-ké ³dʒwén  
Numi AUX.T3 N-AUX.T3 N-fry chips  

b. *Numi lù m-fô n-ké ³dʒwén  
Numi AUX.T3 N-AUX.T3 N-fry chips  

Although α, β and γ occupy different projection syntactically, semantically they are used for events happened within ±24h in retrospective context. As such, they are not additive and behave as unique restrictors and so are predicted to not co-occur as shown in (36).

(36)  a. *Numi zí n-tʃók n-ké ³n³dʒwén  
Numi AUX.α N-AUX.β N-fry chips  

b. *Numi zí n-dʒɔk n-ké ³n³dʒwén  
Numi AUX.α N-AUX.γ N-fry chips  

c. *Numi tʃók n-dʒɔk n-ké ³n³dʒwén  
Numi AUX.β N-AUX.γ N-fry chips  

d. *Numi zí n-tʃók n-dʒɔk n-ké ³n³dʒwén  
Numi AUX.α N-AUX.β N-AUX.γ N-fry chips  

However, when construed with the irrealis ãʔ in prospective context, α, β and γ behave as additive restrictors and so, can co-occur. This is illustrated in (37) for the prospective construal of α, β and γ with the irrealis ãʔ and in (38) for the stacking context.

(37)  a. α.night zí

<table>
<thead>
<tr>
<th>Utterance Time</th>
<th>Event time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Today</td>
<td>+1Day</td>
</tr>
</tbody>
</table>

Nûmî  ãʔ  zí n-ké ³n³dʒwén  
Numi  IRR  AUX.α N-fry chips  
L  H  V.H  
‘Numi will fry the chips far in the future’
b. β.morning ṭʃók

**Utterance Time** | **Event time**
---|---
Today | +1Day

Numí àʔ  ṭʃók  n-ké  ĩndʒʷén
Numi  IRR  AUX.β  N-fry  chips
L H V.H

‘Numi will fry the chips tomorrow’

c. γ.today ḟók

**Utterance Time** | **Event time**
---|---
6am | today | +1 Day

Numí àʔ  ḟók  n-ké  ĩndʒʷén
Numi  IRR  AUX.α  N-fry  chips
L H V.H

‘Numi will fry the chips later day’

(38) a. Nūmí àʔ  zí  n-tʃók  n-ké  ĩndʒʷén

Numi  IRR  AUX.α  N-AUX.β  N-fry  chips
L H H V.H

‘Numi will fry the chips the next day far in the future’

b. Nūmí àʔ  zí  n-dʒók  n-ké  ĩndʒʷén

Numi  IRR  AUX.α  N-AUX.γ  N-fry  chips
L H H V.H

‘Numi will fry the chips during the day far in the future’

c. Nūmí àʔ  tʃók  n-dʒók  n-ké  ĩndʒʷén

Numi  IRR  AUX.β  N-AUX.γ  N-fry  chips
L H H V.H

‘Numi will fry the chips tomorrow during the day’

d. Nūmí àʔ  zí  n-tʃók  n-dʒók  n-ké  ĩndʒʷén

Numi  IRR  AUX.α  N-AUX.β  N-AUX.γ  N-fry  chips
L H H V.H

‘Numi will fry the chips during the day of the next day far in the future’
4.1.2.3 Ingredient 3: N-prefix diagnoses in-situ heads

In Medumba verbs, temporal and aspectual auxiliaries sometimes occur with a nasal prefix and sometimes not. I propose that the nasal prefix diagnoses in-situ heads and its absence indicates movement to T. In (39a), the verb *kɛ ‘fry’ occurs without the nasal prefix, meaning that it has moved to T. In (39b), there is the presence of the present tense marker *ʧʷɛ́t in the structure and the verb now surfaces with the N-prefix (*-kɛ). Structures are given in (40).

(39) a. No nasal prefix: V-to-T movement

\[
\begin{align*}
Nùⁿɡɛ̀̀  & \downarrow \ln Dʒɛ́n  \\
Nuga.H \quad \text{fry} \quad \text{chips} \\
\text{‘Nuga fried the chips’}
\end{align*}
\]

b. Nasal prefix: V in-situ in the presence of Aux

\[
\begin{align*}
Nùⁿɡɛ̀̀  & \downarrow \ln \text{N}-fry \quad \text{chips} \\
\text{‘Nuga is frying the chips right now’}
\end{align*}
\]

(40) a. V-to-T movement  

b. V in-situ

In (41a), there is co-occurrence of the aspectual auxiliary and the verb. The aspectual auxiliary *kù occurs with no N-prefix and the verb with the N-prefix. My analysis predicts that in this configuration the aspectual auxiliary moves to T and the verb stays in-situ. As a result, the
aspectual auxiliary occurs without the N-prefix and the in-situ verb with the N-prefix. Crucially, in (41b) where there is the present tense marker ʧʷɛ̀ɛ́t in the structure, both the aspectual auxiliary and the verb stay in-situ and occur with the N-prefix. The trees are shown in (42).

(41)  a. No nasal prefix: Asp-to-T movement

\[
\begin{align*}
\text{Nuga.H} & \quad \text{IPFV} & \text{N-fry} & \text{chips} \\
\text{Nùŋgèé} & \quad \text{kù} & \text{in}-\text{kè} & \text{in}\text{ʤwèn} \\
\end{align*}
\]

‘Nuga was frying the chips’

b. Nasal prefix: Asp in-situ in the presence of Aux

\[
\begin{align*}
\text{Nuga.H} & \quad \text{PRES} & \text{N-IPFV} & \text{N-fry} & \text{chips} \\
\text{Nùŋgèé} & \quad \text{ʧʷɛ̀ɛ́t} & \text{in}-\text{kù} & \text{in}-\text{kè} & \text{in}\text{ʤwèn} \\
\end{align*}
\]

‘Nuga was frying the chips’

(42)  a. Asp-to-T movement

b. Asp in-situ

![Tree diagrams](image)

Retrospective ǹɔʔ and prospective àʔ host V-to-T; and so, the verb surfaces with no N-prefix in these contexts as shown in (43) for retrospective ǹɔʔ and in (44) for prospective àʔ. As for the habitual, it has only a prosodic shape (a low tone mora (μ-L)); that is, no segmental melody, and so forces T-to-V. As a result, V surfaces with the N-prefix in this context as shown in (45). The structures are shown in (46).
4.1.2.4 Ingredient 4: auxiliary allomorphy tracks agreement and head-movement

The shapes of auxiliaries and main verbs in Medumba depend on the context. With regard to the contexts that are at play in this chapter, tonal allomorphy tracks agreement and head movement. Agreement here is whether the relevant head occurs in an A’ or a non-A’ context, and head-
movement is whether the head is in-situ (no head-movement) or ex-situ (head-movement). This is summarized in table 4.1.

<table>
<thead>
<tr>
<th>MOOD</th>
<th>ALLOMORPHS</th>
<th>HEAD IN-SITU</th>
<th>HEAD EX-SITU</th>
<th>FEATURE SPECIFICATION</th>
<th>GLOSS</th>
<th>e.g.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-AGR +AGR</td>
<td>-AGR +AGR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MOOD</td>
<td>à? à?</td>
<td>n/a</td>
<td>n/a</td>
<td>Mood: Irrealis</td>
<td>will VERB</td>
<td>(46)</td>
</tr>
<tr>
<td>TENSE-</td>
<td>X</td>
<td>n/a</td>
<td>T1: Past</td>
<td></td>
<td>VERB-ed</td>
<td>(47)</td>
</tr>
<tr>
<td>MARKING</td>
<td></td>
<td></td>
<td>T1: Present</td>
<td></td>
<td>is VERB-ing now</td>
<td>(48)</td>
</tr>
<tr>
<td>(µ-L)</td>
<td>X</td>
<td>n/a</td>
<td>T1: Habitual</td>
<td></td>
<td>always VERB-s</td>
<td>(49)</td>
</tr>
<tr>
<td>TENSE-</td>
<td>n/a</td>
<td>lúù</td>
<td>X</td>
<td>T2: Remote, Past</td>
<td>long, long ago</td>
<td>(50)</td>
</tr>
<tr>
<td>SHIFTING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>n/a</td>
<td>nöʔ</td>
<td>nöʔ</td>
<td>T2: Remote, Past, Specific</td>
<td>long ago</td>
<td>(52)</td>
</tr>
<tr>
<td></td>
<td>n̥du</td>
<td>lúù</td>
<td>lúù</td>
<td>T3: 24hrs, Past, Recent</td>
<td>recently</td>
<td>(53)</td>
</tr>
<tr>
<td></td>
<td>m̥fɔ</td>
<td>fɔ</td>
<td>fɔ</td>
<td>T3: 24hrs, Past, Yesterday</td>
<td>yesterday</td>
<td>(54)</td>
</tr>
<tr>
<td></td>
<td>m̥zi</td>
<td>zi</td>
<td>zii</td>
<td>α: Night</td>
<td>night/far in time</td>
<td>(55)</td>
</tr>
<tr>
<td></td>
<td>m̥tʃɔk</td>
<td>tʃɔk</td>
<td>tʃɔk</td>
<td>β: Morning</td>
<td>this/tmr morning</td>
<td>(56)</td>
</tr>
<tr>
<td></td>
<td>m̥dʒɔk</td>
<td>jɔk</td>
<td>jɔk</td>
<td>γ: Day</td>
<td>earlier/later today</td>
<td>(57)</td>
</tr>
<tr>
<td></td>
<td>n̥gyù</td>
<td>n̥gyùù</td>
<td>yù</td>
<td>δ: Immediate</td>
<td>immediately</td>
<td>(58)</td>
</tr>
<tr>
<td>ASPECT-</td>
<td>Ø</td>
<td>n/a</td>
<td></td>
<td>Asp: Perfective</td>
<td>has/had VERB-en</td>
<td>(59)</td>
</tr>
<tr>
<td>MARKING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>%kà</td>
<td>kùù</td>
<td>kù</td>
<td>Asp: Imperfective</td>
<td>is/was VERB-ing</td>
<td>(60)</td>
</tr>
<tr>
<td>MAIN VERB</td>
<td>%kè</td>
<td>%kèè</td>
<td>kèè</td>
<td>V</td>
<td>‘fry’</td>
<td>(61)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HEAD IN-SITU</th>
<th>HEAD EX-SITU</th>
<th>FEATURE SPECIFICATION</th>
<th>GLOSS</th>
<th>e.g.</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \text{Nùŋgù à? kè 1^{nd}y èn} )</td>
<td>( \text{Nùŋgù à? kèè á} )</td>
<td>( \text{Nùŋgù à? kèè á} )</td>
<td>( \text{Nùŋgù à? kèè á} )</td>
<td>( \text{Nùŋgù à? kèè á} )</td>
</tr>
</tbody>
</table>

Table 4.1: Auxiliary allomorphy in Medumba

(47) shows that the irrealis \( à? \) keeps the same form in non-\( A' \) and in \( A' \)-contexts.

(47) **Irrealis à?**

a. -AGR

Nùŋgù à? kè 1^{nd}y èn
Nùŋgù à? kèè á

‘Nuga will fry the chips’

b. +AGR

Nùŋgù à? kèè á
Nùŋgù à? kèè á

‘What will Nuga fry?’
(48) shows that the construal of unmarked verbs has a past tense interpretation. I propose that past tense is a null morpheme in Medumba (see §4.2), inducing V-to-T movement. In A’-contexts, A’-agreement surfaces on the verb.

(48) **Zero-marked past tense**

a. -AGR

```
Nùŋgɛ́ N̖ k̬̉ N̖ ď ɛ̊n
Nuga.H fry.PST chips
V.H
```

‘Nuga fried the chips’

b. +AGR

```
á kú Nùŋgɛ́ k̬̉ á
FOC WH Nuga AGR.fry.PST C.Q.H
V.HL
```

‘What did Nuga fry?’

(49) shows that the present marker tj̋ k̬̉t keeps the same form in non-A’ and in A’-contexts.

(49) **Present tj̋ k̬̉t**

a. -AGR

```
Nùŋgɛ́ tj̋ k̬̉t N̖ k̬̉ N̖ ď ɛ̊n
Nuga.H PRS N-fry chips
T.LH V.H
```

‘Nuga is frying the chips right now’

b. +AGR

```
á kú Nùŋgɛ́ tj̋ k̬̉́t N̖ k̬̉́ á
FOC WH Nuga.H PRS N-AGR.fry C.Q.H
T.LH V.HL
```

‘What is Nuga frying right now?’

(50) illustrates the low tone habitual and shows that the verb keeps the same form with the N-prefix in non-agreement and in A’-agreement context.
(50)  **Low-tone habitual (µ-L)**

a. -AGR

\[
\begin{align*}
\text{Nùŋgɛ́} & \quad \text{ŋ-kɛ̀} & \quad \text{³nʤʷ̀n} \\
\text{Nuga.H} & \quad \text{N-fry.HAB} & \quad \text{chips}  \\
\hline
\end{align*}
\]

\[\mu-L\]

‘Nuga habitually fries the chips’

\b.  +AGR

\[
\begin{align*}
\text{urances} & \quad \text{á} & \quad \text{Nùŋgɛ́} & \quad \text{ŋ-kɛ̀} & \quad \text{á} \\
\text{FOC} & \quad \text{WH} & \quad \text{Nuga.H} & \quad \text{N-AGR.fry.HAB} & \quad \text{C.Q.H}  \\
\hline
\end{align*}
\]

\[\text{V.HL}\]

‘What does Nuga habitually fry?’

(51) shows that the retrospective lùù which surfaces with an HL tone is only construed ex-situ; that is, always moves to T, as no other auxiliary can precede it. It is incompatible with A’-agreement and results in ungrammaticality in A’-context as shown in (51b). I hypothesize that vowel length might be blocking A’-agreement with retrospective lùù in Medumba. Evaluative vowel lengthening with retrospective lùù marks degree quantification over temporal span as shown in (52).

(51)  **Retrospective lùù**

\a. -AGR

\[
\begin{align*}
\text{Nùŋgɛ́} & \quad \text{lùù} & \quad \text{ké} & \quad \text{³nʤʷ̀n} \\
\text{Nuga} & \quad \text{AUX.T2} & \quad \text{fry} & \quad \text{chips}  \\
\hline
\end{align*}
\]

\[\text{T.HL} \quad \text{V.HL}\]

‘Nuga fried the chips long long time ago’

\b. +AGR

\[
\begin{align*}
\text{urances} & \quad \text{*á} & \quad \text{kù} & \quad \text{Nùŋgɛ́} & \quad \text{lùù} & \quad \text{kɛ̀} & \quad \text{á} \\
\text{FOC} & \quad \text{WH} & \quad \text{Nuga} & \quad \text{AGR.AUX.T2} & \quad \text{AGR.fry} & \quad \text{C.Q.H}  \\
\hline
\end{align*}
\]

\[\text{T.HL} \quad \text{V.HL}\]

[What did Nuga fry long long time ago?]
(52)  Evaluative vowel lengthening

a. Nùᵑgé  lùùù kę́ ⁿdʒʷen  [short]
   Nuga  AUX.T2  fry  chips
   V.HL  V.H
   ‘Nuga fried the chips long long time ago’

b. Nùᵑgé  lùùùùùùù kę́ ⁿdʒʷen  [medium]
   Nuga  AUX.T2  fry  chips
   T.HLLLLLL  V.H
   ‘Lit.: Nuga fried the chips long long long time ago’

c. Nùᵑgé  lùùùùùùùùùùù kę́ ⁿdʒʷen  [long]
   Nuga  AUX.T2  fry  chips
   T.HLLLLLLLLL  V.H
   ‘Lit.: Nuga fried the chips long long long time ago’

(53) shows that the retrospective nɔ́ʔ is construed ex-situ; that is always moves to T as no auxiliary can precedes it. In a non-agreement context, it surfaces with an H-tone and in an A’-agreement context it surfaces with the HL tone melody (nɔ́ɔ̃).  

(53)  Retrospective nɔ́ʔ

a. -AGR

      Nùᵑgé  nɔ́ʔ  kę́ ⁿdʒʷen
   Nuga  AUX.T2  fry  chips
   T.H  V.H
   ‘Nuga fried the chips long time ago’

b. +AGR

      á  kú  Nùᵑgé  nɔ́ʔ  n-kę̖́  á
   FOC  WH  Nuga  AGR.AUX.T2  N-AGR.fry  C.Q.H
   HL  HL
   ‘What did Nuga fry long time ago?’

In an in-situ context the retrospective lù surfaces with the nasal prefix. While in a non-agreement context it surfaces as "-dù with an L-tone (54a-i), it surfaces as "-diù with an LH contour (54a-ii). in A’-agreement context. While ex-situ (i.e. head-movement to T), it surfaces without the nasal
prefix as lù with an L-tone in non-agreement context (54b-i) and as lùú with an LH contour in A’-agreement context (54b-ii).

(54)  Retrospective lù

a. In-situ

i.  -AGR

Nùⁿɡɛ̀ lù n-dù ⽯-ké ⁿdʒʷèn
Nuga AUX.T2 N-AUX.T3 N-fry chips
T.HL T.L V.H
‘Nuga fried the chips long long time ago’

ii.  +AGR

á kú Nùⁿɡɛ̀ nɔ́ʔ n-dùú ⽯-ké́ á
FOC WH Nuga AGR.AUX.T2 N-AGR.AUX.T3 N-AGR.fry C.Q.H
T.HL T.LH V.HL
‘What did Nuga fry long time ago?’

b. Ex-situ

i.  -AGR

Nùⁿɡɛ̀ lù n-ké ⁿdʒʷèn
Nuga AUX.T3 N-fry chips
T.L V.H
‘Nuga fried the chips recently’

ii.  +AGR

á kú Nùⁿɡɛ̀ lùú n-ké́ á
FOC WH Nuga AGR.AUX.T3 N-AGR.fry C.Q.H
T.LH V.HL
‘What did Nuga fry recently?’

(55) illustrates the retrospective fə. In an in-situ context, it surfaces with the nasal prefix. While in a non-agreement context it surfaces as m-fə with an L-tone (55a-i), in an A’-agreement context, it surfaces as n-fəə with an LH contour (55a-ii). When ex-situ (i.e head-movement to T), it surfaces
without the nasal prefix as $f$ with an L-tone in a non-agreement context (55b-i) and as $f\ddot{a}$ with an LH contour in an A'-agreement context (55b-ii).

(55) Retrospective $f$

a. In-situ

   i. -AGR

   Nɔŋɛ̀ lùù $m\nd_{y}^{ɛ}n$ N-fry chips
   Nuga AUX.T2 N-AUX.T3 N-AUX.T2
   T.L V.H

   ‘Nuga fried the chips the day before long long time ago’

   ii. +AGR

   á kù Nɔŋɛ̀ nɔŋ$á$ $m\nd_{y}^{ɛ}n$ á
   FOC WH Nuga AGR.AUX.T2 N-AUX.T3 N-AUX.T2
   T.L V.H

   ‘What did Nuga fry the day before long time ago?’

b. Ex-situ

   i. -AGR

   Nɔŋɛ̀ $f$ $n$-kɛ̀ $l_{n}^{d_{y}^{ɛ}n}$
   Nuga AUX.T3 N-fry chips
   T.L V.H

   ‘Nuga fried the chips yesterday’

   ii. +AGR

   á kù Nɔŋɛ̀ fɔ́ $n$-kɛ̀ á
   FOC WH Nuga AGR.AUX.T3 N-AGR.fry C.Q.H
   T.LH V.HL

   ‘What did Nuga fry yesterday?’

(56) illustrates the retrospective tense-shifting $z\ddot{i}$. In an in-situ context, it surfaces with the nasal prefix as $n$-$z\ddot{i}$ with an H-tone in a non-agreement context (56a-i) and as $n$-$z\ddot{i}i$ with the HL A'-agreement overwrite tone melody in an A'-agreement context (56a-ii). In an ex-situ context (i.e. head-movement to T), it surfaces without the nasal prefix as $z\ddot{i}$ with an H-tone in a non-agreement
context (56b-i) and as zì with the HL A’-agreement tone melody in an A’-agreement context (56b-ii).

(56) Retrospective tense-shifting zì

a. In-situ

i. -AGR

\[
\begin{array}{cccc}
\text{Nùgè} & \text{AUX.T2} & \text{N-AUX.α} & \text{N-fry} \\
\text{Nuga} & \text{H} & \text{V.H} & \text{chips}
\end{array}
\]

‘Nuga fried the chips at night long long time ago’

ii. +AGR

\[
\begin{array}{cccc}
\text{á} & \text{kú} & \text{Nùgè} & \text{nò?} & \text{n-zì} & \text{ⁿ-ké} & \text{ⁿ-dʒʷén} \\
\text{FOC} & \text{WH} & \text{Nuga} & \text{AGR.AUX.T2} & \text{N-AGR.AUX.α} & \text{N-AGR.fry} & \text{C.Q.H}
\end{array}
\]

‘What did Nuga fry at night long time ago?’

b. Ex-situ

i. -AGR

\[
\begin{array}{cccc}
\text{Nùgè} & \text{zì} & \text{ⁿ-ké} & \text{ⁿ-dʒʷén} \\
\text{Nuga} & \text{H} & \text{V.H} & \text{chips}
\end{array}
\]

‘Nuga fried the chips last night’

ii. +AGR

\[
\begin{array}{cccc}
\text{á} & \text{kú} & \text{Nùgè} & \text{ziù} & \text{ⁿ-kéč} & \text{ⁿ-dʒʷén} \\
\text{FOC} & \text{WH} & \text{Nuga} & \text{AGR.AUX.α} & \text{N-AGR.fry} & \text{C.Q.H}
\end{array}
\]

‘What did Nuga fry last night?’

In an in-situ context, the retrospective time shifting ꙥk surfaces with the nasal prefix as ꙥ-k with an H-tone while in a non-agreement (57a-i), and as ꙥ-k with the HL A’-agreement overwrite tone melody in an A’-agreement context (57a-ii). While ex-situ (i.e head-movement to T), it
surfaces without the nasal prefix as ʧək with an H-tone in a non-agreement context (57b-i) and as ʧəsk with the overwrite HL A’-agreement tone melody in an A’-agreement context (57b-ii).

(57) Retrospective tense-shifting ʧək

a. In-situ

i. -AGR

Nùŋgè lùù ʧək ʧək jnʤʷén
Nuga AUX.T2 AUX.β N-fry chips
T.HL H V.H
‘Nuga fried the chips in the morning long long time ago’

ii. +AGR

å kù Nùŋgè ǃño? ʧək ʧək ʧək å
FOC WH Nuga AGR.AUX.T2 N-AGR.AUX.β N-AGR.fry C.Q.H
T.HL HL H V.H
‘What did Nuga fry in the morning long time ago?’

b. Ex-situ

i. -AGR

Nùŋgè ʧək ʧək jnʤʷén
Nuga AUX.β N-fry chips
H V.H
‘Nuga fried the chips in the morning’

ii. +AGR

å kù Nùŋgè ʧəsk ʧəsk å
FOC WH Nuga AGR.AUX.β N-AGR.fry C.Q.H
T.HL V.H
‘What did Nuga fry in the morning?’

In an in-situ context, the retrospective time shifting jşk surfaces with the nasal prefix as ʧštək with an H-tone in non-agreement (58a-i), and as ʧštəɔk with the HL A’-agreement overwrite tone melody in an A’-agreement context (58a-ii). While ex-situ (i.e head-movement to T), it surfaces
without the nasal prefix as $jɔ̊k$ with an H-tone in a non-agreement context (58b-i) and as $jɔ̊ɔk$ with the overwrite HL A’-agreement tone melody in A’-agreement context (58b-ii).

(58) Retrospective tense-shifting $jɔ̊k$

a. In-situ

i. -AGR

\[
\begin{array}{c}
\text{Nùŋgę́} & ñ-dʒɔ̊k & \text{ñ-ké} & ñn-dʒwén \\
\text{Nuga} & \text{AUX.T}2 & \text{N-AUX.γ} & \text{N-fry} & \text{chips} \\
\text{T.HL} & \text{H} & \text{V.H} \\
\end{array}
\]

‘Nuga fried the chips during the day long long time ago’

ii. +AGR

\[
\begin{array}{c}
\text{á} & \text{kú} & \text{Nùŋgę́} & \text{nò?} & ñ-dʒɔ̊k & \text{ñ-kéé} & \text{á} \\
\text{FOC} & \text{WH} & \text{Nuga} & \text{AGR.AUX.T}2 & \text{N-AGR.AUX.γ} & \text{N-AGR.fry} & \text{C.Q.H} \\
\text{T.HL} & \text{HL} & \text{V.HL} \\
\end{array}
\]

‘What did Nuga fry during the day long time ago?’

b. Ex-situ

i. -AGR

\[
\begin{array}{c}
\text{Nùŋgę́} & \text{jók} & \text{ñ-ké} & ñn-dʒwén \\
\text{Nuga.H} & \text{AUX.γ} & \text{N-fry} & \text{chips} \\
\text{H} & \text{V.H} \\
\end{array}
\]

‘Nuga fried the chips during the day’

ii. +AGR

\[
\begin{array}{c}
\text{á} & \text{kú} & \text{Nùŋgę́} & \text{jɔ̊k} & \text{ñ-kéé} & \text{á} \\
\text{FOC} & \text{WH} & \text{Nuga} & \text{AGR.AUX.γ} & \text{N-AGR.fry} & \text{C.Q.H} \\
\text{HL} & \text{V.HL} \\
\end{array}
\]

‘What did Nuga fry during the day?’

(59) illustrates the retrospective tense-shifting ɣù. In an in-situ context, it surfaces with the nasal prefix as ɣ-gù with an H-tone in a non-agreement context (59a-i) and as ɣ-gùù with the HL A’-agreement overwrite tone melody in an A’-agreement (59a-ii). In an ex-situ context (i.e head-movement to T), it surfaces without the nasal prefix as ɣù with an H-tone in a non-agreement
context (59b-i) and as *yu’u* with the HL A’-agreement tone melody an in an A’-agreement context (59b-ii).

(59) Retrospective tense-shifting *yu’u*

a. In-situ

i. -AGR

\[
\text{Nùŋgè} \quad \text{lúù} \quad \text{ŋ-} \text{gyù} \quad \text{ŋ-ké} \quad \text{ɗnʤʷén}
\]

Nuga AUX.T2 N-AUX.δ N-fry chips
T.HL L V.H

‘Nuga fried the chips immediately long long time ago’

ii. +AGR

\[
\text{á} \quad \text{kú} \quad \text{Nùŋgè} \quad \text{nòɔ?} \quad \text{ŋ-} \text{gyúù} \quad \text{ŋ-ké} \quad \text{á}
\]

FOC WH Nuga AGR.AUX.T2 N-AGR.AUX.δ N-AGR.fry C.Q.H
T.HL HL V.H

‘What did Nuga fry immediately long time ago?’

b. Ex-situ

i. -AGR

\[
\text{Nùŋgè} \quad \text{yù} \quad \text{ŋ-ké} \quad \text{ɗnʤʷén}
\]

Nuga.H AUX.δ N-fry chips
H V.H

‘Nuga fried the chips immediately’

ii. +AGR

\[
\text{á} \quad \text{kú} \quad \text{Nùŋgè} \quad \text{yúù} \quad \text{ŋ-ké} \quad \text{á}
\]

FOC WH Nuga AGR.AUX.δ N-AGR.fry C.Q.H
T.HL HL V.H

‘What did Nuga fry immediately?’

(60) shows that the construal of unmarked verbs in Medumba is interpreted as past perfective. I propose that perfective is a null morpheme. In section 4.2, I provide diagnostics to tease apart a zero-marked past tense from a zero-marked perfective aspect.
(60) **Zero-marked perfective**

a. `-AGR

Nùᵑgɛ́ lùù ɢ-kú ɢ-ké ʰnʤʷén
Nuga AUX.T2 N-IPFV N-fry chips

`Nuga was frying the chips long long time ago`

b. `+AGR

á kú Nùᵑgɛ́ kéé á
FOC WH Nuga AGR.fry.PST.PFV C.Q.H

`What was Nuga frying long time ago?`

(61) illustrates the imperfective aspectual auxiliary `kú`. In an in-situ context, it surfaces with the nasal prefix as `ᵑ-kú` with an H-tone in a non-agreement context (61a-i) and as `ᵑ-kùù` with the HL A'-agreement overwrite tone melody in an A'-agreement (61a-ii). In an ex-situ context (i.e. head-movement to T), it surfaces without the nasal prefix as `kú` with an H-tone in a non-agreement context (61b-i) and as `kùù` with the HL A'-agreement tone melody in an A'-agreement context (61b-ii).

(61) **Imperfective kú**

a. In-situ

i. `-AGR

Nùᵑgɛ́ láù ò-kú ò-ké ʰnʤʷén
Nuga AUX.T2 N-IPFV N-fry chips

`Nuga was frying the chips long long time ago`

ii. `+AGR

á kú Nùᵑgɛ́ nɔ dù? ò-kùù ò-kéé á
FOC WH Nuga AGR.AUX.T2 N-AGR.IPFV N-AGR.fry C.Q.H

`What was Nuga frying long time ago?`
b. Ex-situ

i. -AGR

\[
\begin{array}{cccc}
\text{Nù الغربية} & \text{kú} & ⁿ-ké & \text{agine}\n \\
\text{Nuga.H} & \text{IPFV} & \text{N-fry} & \text{chips} \\
\text{H} & \text{V.H} \\
\end{array}
\]

‘Nuga was frying the chips’

ii. +AGR

\[
\begin{array}{cccc}
\text{á} & \text{kú} & \text{Nù الغربية} & \text{kùù} \\
\text{FOC} & \text{WH} & \text{Nuga} & \text{AGR.IPFV} \\
\text{HL} & \text{V.H} \\
\end{array}
\]

‘What was Nuga frying?’

(62) shows that in an in-situ context, the main verb ké ‘fry’ surfaces with the nasal prefix as ⁿ-ké with an H-tone in a non-agreement context (62a-i) and as ⁿ-kéé with the HL A’-agreement overwrite tone melody in an A’-agreement (62a-ii). In an ex-situ context (i.e V-to-T movement), it surfaces without the nasal prefix as ké with an H-tone in a non-agreement context (62b-i) and as kéé with the HL A’-agreement tone melody in an A’-agreement context (62b-ii).

(62) Main verb ké

a. In-situ

i. -AGR

\[
\begin{array}{cccc}
\text{Nù الغربية} & \text{lúù} & ⁿ-ké & \text{agine}\n \\
\text{Nuga} & \text{AUX.T2} & \text{N-fry} & \text{chips} \\
\text{T.HL} & \text{V.H} \\
\end{array}
\]

‘Nuga fried the chips long long time ago’

ii. +AGR

\[
\begin{array}{cccc}
\text{á} & \text{kú} & \text{Nù الغربية} & \text{náà} \\
\text{FOC} & \text{WH} & \text{Nuga} & \text{AGR.AUX.T2} \\
\text{T.HL} & \text{V.HL} \\
\end{array}
\]

‘What did fry long time ago?’
b. Ex-situ

i. -AGR

\[ \text{Nùŋgɛ́} \quad \text{kɛ́} \quad \text{\textsuperscript{\text{\textipa{\text{\text{\textipa{}}}n}}}dʒʷ\text{ɛ́}} \]

Nuga.H fry chips

V.H

‘Nuga fried the chips’

ii. +AGR

\[ \text{á} \quad \text{kú} \quad \text{Nùŋgɛ́} \quad \text{kɛ́} \quad \text{á} \]

FOC WH Nuga AGR.fry C.Q.H

V.HL

‘What did Nuga fry?’

4.1.2.5 Ingredient 5: Phasal-Agree diagnoses intermediate phase between T and v

Phasal-Agree diagnoses intermediate phases in Medumba. I show that vP and CP might not be the only phase boundaries in Medumba. There is an intermediate phase (labelled TP2) between TP1 and AspP (see §4.4.5).

(63) \[ \text{[CP [TP [T1 AGR [TP [T2 [TP [T3 AGR [AspP [Asp [vP [v [vP [AGR ]]]]]]]]]]]]]]} \]

4.1.3 How this chapter will unfold

This chapter is organized as follows:

- background on Medumba temporal auxiliaries (§4.2);
- why some temporal auxiliaries are always compatible with A’-agreement (§4.3);
- why some temporal auxiliaries are only sometimes compatible with A’-agreement (§4.4);
- broader implications of the analysis (§4.5)

4.2 A primer on temporal auxes: the convergence of syntax, semantics and morphology

This section is a background the tense-aspect system in Medumba and can be skipped by the reader. It focuses on the construal of unmarked verbs which I argue is a zero marked past tense;
on the properties of the irrealis àʔ which I argue is an irrealis mood and not a future tense; and on the properties of Medumba temporal auxiliaries which I argue are not temporal adverbs but grammaticalized verbs.

4.2.1 Zero-marked past tense

In Medumba the construal of unmarked verbs is compatible with past perfective. The question that arises is whether these construals involve a zero-past tense or are a form of perfective aspect. In this section, I argue for the former.

Tense and aspect are two notions that are broadly viewed as anchoring temporal relations. While tense is viewed as locating events in time — that is, whether an event happens before now (past); now (present) or after now (future) — aspect is viewed as looking into events’ internal structure — that is, whether an event is ongoing (imperfective/progressive) or completed (perfective) — (Comrie 1976). In the literature there are (at least) two ways of formalizing tense and aspect. In Reichenbach’s (1947) approach, tense is modeled as an ordering relation between speech time, event time and reference time. These three intervals can precede or follow each other or can overlap.

As for Klein’s (1994) approach, tense is viewed as the relation between the reference time and speech time. In this approach, past tense is considered as an ordering relation in which the reference time precedes the speech time; present tense as an ordering relation where both coincide; and future as an ordering relation in which the reference time follows the speech time. As for aspect, it is viewed as an ordering relation between the event time and the reference time. Thus, a

---

33 a. Speech time: time at which an utterance is made
b. Event time: time at which what is described in the utterance occurred
c. Reference time: time about which what is described in the utterance is made
perfect aspect is viewed as an ordering relation in which the event time precedes the reference time; perfective and imperfective aspect are viewed as ones in which both coincide; and prospective aspect is viewed as an ordering relation in which the event time follows the reference time.

4.2.1.1 Retrospective construals are compatible with zero-marked past tense

In Medumba, retrospective construals are interpreted as past for both event (64a) and change-of-state (64b) verbs. I propose that they involve a zero-marked past tense.

(64)  
A1: Numí ʒʷín bɔʔ  
Numi buy house  
‘Numi bought the house’

A2: Numí ìɛ́ɛ́n ɔ̀ŋʔnì  
Numi become_familiar.H AGT.PL-school  
‘Numi got to know the students.’ (i.e. Numi knows the students)

4.2.1.2 Four reasons why unmarked verbs are really zero-marked past tense

Adapting diagnostics from Toews34 (2015), I show that the unmarked verb form in Medumba involves the presence of a zero-marked past tense. There are four diagnostics, as follows:

- Diagnostic 1: default past tense interpretation
- Diagnostic 2: obligatory past tense interpretation
- Diagnostic 3: compatibility with imperfective
- Diagnostic 4: unmarked verbs do not have a completed event time

34 Applying the four diagnostics discussed in the main text (default past orientation, obligatory past tense interpretation, compatibility with imperfective, and uncompleted event time) to Siamou leads Toews (2015) to the conclusion that Siamou unmarked verb forms involved zero-marked perfective aspect. As discussed in the main text, these same diagnostics lead to the conclusion that Medumba unmarked verb forms are zero-marked past tense. This raises wider questions, which go beyond the scope of this dissertation, of how such contrasts are acquired, and their impact on the organization of the tense/aspect system.
The results of applying these diagnostics, summarized in table 4.2, leads to the conclusion that, in
Medumba, unmarked verb forms involve the presence of a zero past tense morpheme.

<table>
<thead>
<tr>
<th>Diagnostic</th>
<th>Unmarked Event V</th>
<th>What this tell us</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Past</td>
<td>Perfective</td>
</tr>
<tr>
<td><strong>Testing for ordering relation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Default past interpretation</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Testing for past tense</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2a. Always construed as past</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>2b. Required for context that force past</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>3. Compatible with imperfective</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>4. Uncompleted event time</td>
<td>✗</td>
<td>✔</td>
</tr>
</tbody>
</table>

Table 4.2: Diagnosing past tense with the construal of event verbs in Medumba

Diagnostic 1 shows that unmarked verb forms in Medumba have a default past interpretation.
Diagnostic 2 shows that unmarked verb forms have obligatory past tense interpretation; that is, they are always construed as past and are required in contexts that force past interpretation.
Diagnostic 3 shows that unmarked verb forms are compatible with imperfective marking; and Diagnostic 4, which is for a specific type of perfective (see Toews 2015) shows that Medumba unmarked verb forms do not have a completed event time. The examples illustrating these diagnostics are given below.

- **Unmarked verbs have a default past interpretation**

(65) shows that unmarked verb forms in Medumba are compatible with past perfective reading (65a). A past imperfective reading (65b) or a present reading (either imperfective (65c) or habitual (65d) is infelicitous in this context. The examples in (66), (67) and (68) illustrate respectively, contexts in which the past imperfective, the present imperfective and the habitual readings are felicitous. In those contexts, the unmarked verb form is infelicitous in Medumba.
(65) **Context for past perfective**

What did the baby do when he woke up?

a. Past perfective: ✓ á jégó 3SG.H yawn.H ‘He yawned’

b. Past imperfective: # á kú n-dzégó 3SG.H IPFV N-yawn.H ‘He was yawning’

c. Present progressive: # á tʃʷɛ́ɛt n-kú n-dzégó 3SG.H PRS N-IPFV N-yawn.H ‘He is yawning’

d. Habitual: # á n-dʒéégó 3SG.H N-yawn.H ‘He yawns’

(66) **Context for past imperfective (infelicitous)**

What was the baby doing when you got there?

a. Past perfective: # á jégó 3SG.H yawn.H ‘He yawned’

b. Past imperfective: ✓ á kú n-dzégó 3SG.H IPFV N-yawn.H ‘He was yawning’

c. Present progressive: # á tʃʷɛ́ɛt n-kú n-dzégó 3SG.H PRS N-IPFV N-yawn.H ‘He is yawning’

d. Habitual: # á n-dʒéégó 3SG.H N-yawn.H ‘He yawns’
(67) **Context for present progressive (infelicitous)**

What is the baby doing right now?

a. Past perfective:   # á jégó  
3SG.H yawn.H  
‘He yawned’

b. Past imperfective: # á kú n-dzégó  
3SG.H IPFV N-yawn.H  
‘He was yawning’

c. Present progressive: √ á tfwĉét n-kú n-dzégó  
3SG.H PRS N-IPFV N-yawn.H  
‘He is yawning’

d. Habitual: # á n-dzêłgô  
3SG.H N-yawn.H  
‘He yawns’

(68) **Context for habitual (infelicitous)**

What does the baby do whenever he wakes up?

a. Past perfective:   # á jégó  
3SG.H yawn.H  
‘He yawned’

b. Past imperfective: # á kú n-dzégó  
3SG.H IPFV N-yawn.H  
‘He was yawning’

c. Present progressive: # á tfwĉét n-kú n-dzégó  
3SG.H PRS N-IPFV N-yawn.H  
‘He is yawning’

d. Habitual: √ á n-dzêłgô  
3SG.H N-yawn.H  
‘He yawns’

**Unmarked verbs are construed as past or required in past tense contexts**

Medumba unmarked performative verbs are always construed as past as illustrated in (69).
Medumba unmarked verb forms are also used in contexts that force past interpretation. This is shown in (70a) for perfective; in (70b) for completive; and in (71) for some idiomatic construals. ‘To be hungry’ in Medumba is construed as a subject idiom. When unmarked, as shown in (71a), it is interpreted as past. To get the present interpretation, the overt present tense marker is required as shown in (71b).

(70)  a. *Past perfective*

á nú
3SG.H drink
‘S/he drank (it)’

b. *Completive*

á nú fê
3SG.H drink all
‘S/he drank (it) all’

(71)  a. ŋzi khúʔú jé ám
envy taro hurt 1SG.H
Lit.: ‘the envy of taro hurt me’
‘I was hungry’

b. ŋzi khúʔú tf'ëet ñ-dʒé ám
envy taro PRS N-hurt 1SG.H
Lit.: ‘The envy of taro hurts me right now’
‘I am hungry’

- **Unmarked verbs are compatible with imperfective aspect**

The presence of the imperfective marker in unmarked construals in Medumba is interpreted as past imperfective (72). This is crucial and confirms that unmarked construals involve a zero past tense morpheme. If this was a form of perfective marking for instance, it would have been incompatible with imperfective marking.
(72) Context: What was Numi doing when you got to the village?

á kú nú ndzùʔ-ᵑkʰá
3SG.H IPFV drink wine-palm
‘S/he was drinking palm wine’

○ Unmarked verbs do not have a completed event time

In Medumba, unmarked verb forms do not have a completed event time. That is, they are used in contexts where the event time is not contained within the temporal boundary of an adverbial modifier. This confirms that unmarked construals involve a zero past tense morpheme at T in Medumba. If this was a form of perfective marking then it would be expected to be infelicitous in this context. But actually a temporal auxiliary is needed in order to force this reading in Medumba. Consider the contexts in (73):

(73) Context: Two weeks ago, I started harvesting the corn. At the end of last week, I hadn’t finished yet, and this week I continued harvesting.

a. ✓ mú bú? ⁹gufút ⁹gàb-mú?
1SG.H harvest corn week-other
‘I harvested corn last week’

b. # mú lù m-bú? ⁹gufút fè ⁹gàb-mú?
1SG.h AUX.T3 N-harvest corn all week-other
Lit: I harvested all the corn last week
‘I finished to harvest corn last week’

(73a) involves a structure with no aspectual projection; so, the verb raises from V to T as shown in the tree in (74)
(75) shows a context where past perfective, also marked by a zero morpheme, is felicitous in Medumba. In this context, the unmarked verb form is infelicitous if not supplemented by the adverb ɓɛ ‘all’ to indicate completion. The tree in (76) show the derivation of (75) where the verb moves from V to Asp to T.

(75) **Context (infelicitous):** At the beginning of last week, I started harvesting the corn in my field, and at the end of last week I finished.

a.  # mü bù? ṅgùfùt ṅgàb-mù?
    1SG.H harvest corn week-other
    ‘I harvested corn last week’

b. ✓ mü bù? ṅgùfùt fɛ ṅgàb-mù?
    1SG.H harvest corn all week-other
    Lit: I harvested all the corn last week
    ‘I finished to harvest corn last week’
4.2.2 Concurrent construals are compatible with present tense ʧʷɛɛt

In the previous section, I showed that the construal of unmarked verbs involves a zero past tense morpheme in Medumba. In this section, I show that concurrent construals are compatible with present tense marked by the morpheme ʧʷɛɛt in Medumba. This is illustrated in (77a) for an event verb and in (77b) for a change-of-state verb.

(77) Context: What is Numi doing right now?

a. Event verb

á ʧʷɛɛt n-上班族 bʻúʔ-ŋʷʔni
3SG.H PRES N-read packet-school
‘He is reading the book’

b. Change-of-state verb

á ʧʷɛɛt n-熟 n-上班族 ŋ̂ɛɛ-ŋʷʔni
3SG.H PRES N-become_familiar AGT.PL-school
Lit.: he is becoming familiar with the students
‘He is getting to know the students’
4.2.3 Irrealis àʔ

In this section, I argue that the morpheme àʔ in Medumba, though compatible with future interpretation, is actually an irrealis marker rather than a future tense morpheme. The diagnostics are as follows (see also Michael 2014, Déchaine et al. 2018):

- it is compatible with future (§4.2.3.1);
- it is compatible with “future in the past” (§4.2.3.2);
- expresses degree certainty (§4.2.3.3); and
- is suppletive in negative context (§4.2.3.4).
- I therefore conclude that the irrealis àʔ in Medumba is in Mood (not tense), (§4.2.3.5).

4.2.3.1 Irrealis àʔ is compatible with future interpretation

The context in (78) shows that the irrealis àʔ is compatible with future interpretation in Medumba.

(78) Context: What will Numi do when he arrives at the village?

a. Event verb

\[
\text{Nùmì àʔ nèén ìŋq̀ë́t} \\
\text{Numi IRR go.H N-palace} \\
\text{‘Numi will go to the palace’}
\]

b. Change-of-state verb

\[
\text{Nùmì àʔ lèé̮́n ìŋq̀ë́-ŋ̀ʔnì} \\
\text{Numi IRR become_familiar.H AGT.PL-school} \\
\text{Lit.: Numi will become familiar with the students} \\
\text{‘Numi will get to know the students’}
\]

4.2.3.2 Irrealis àʔ is compatible with “future in the past”

The irrealis marker àʔ is compatible with future in the past (past futurate) and combines with past temporal auxiliaries as shown in (79).
4.2.3.3 Irrealis àʔ forms express degrees of certainty

The construal of irrealis àʔ expresses degrees of certainty in Medumba. In construals, with àʔ alone, the speaker is strongly certain about what they are saying (80a), with àʔ-jók and àʔ-tʃók the speaker is also certain (80b&c) but not as strongly as with the àʔ alone construals; whereas with àʔ-zí the speaker is less certain (80d).

(80)  a. Nûmí àʔ ké ᵁⁿdʒʷén
    Numi IRR fry chips
    L V.H
    ‘Numi will fry the chips (I am strongly certain about that)’

g. Nûmí àʔ jók ⁿ-ké ᵁⁿdʒʷén
    Numi IRR AUX.γ N-fry chips
    L H V.H
    ‘Numi will fry the chips (I am certain about that)’

c. Nûmí àʔ tʃók ⁿ-ké ᵁⁿdʒʷén
    Numi IRR AUX.β N-fry chips
    L H V.H
    ‘Numi will fry the chips (I am certain about that)’

d. Nûmí àʔ zí ⁿ-ké ᵁⁿdʒʷén
    Numi IRR AUX.α N-fry chips
    L H V.H
    ‘Numi will fry the chips (I am less certain about that)’

4.2.3.4 Negative irrealis is suppletive: kú

Negative future is illicit with the affix irrealis àʔ in Medumba. (81) shows that in past negation contexts, the low tone Neg is used either with a null past tense marker (81a) or with a retrospective temporal auxiliary (81b). In future negation contexts, combining the irrealis àʔ with the low-tone Neg leads to ungrammaticality (82a). Only the high-tone Neg is used in future negation contexts.
in Medumba (82b) and crucially, combining the irrealis àʔ with the high-tone Neg leads to ungrammaticality (82c).

(81)  
Past Neg

a. Nùmí kù ké ³nd³wén  
Numi NEG.L fry chips  
‘Numi did not fry the chips’

b. Nùmí nóʔ kù ké ³nd³wén  
Numi AUX.T2 NEG.L fry chips  
‘Numi did not fry the chips’

(82)  
Future Neg

a. *Nùmí àʔ kù ké ³nd³wén  
Numi IRR NEG.L fry chips  
[Numi will not fry the chips]

b. Nùmí kú ké ³nd³wén  
Numi NEG.H fry chips  
‘Numi will not fry the chips’

c. *Nùmí àʔ kú ké ³nd³wén  
Numi IRR NEG.H fry chips  
[Numi will not fry the chips]

4.2.3.5  Irrealis àʔ is in Mood (not Tense)

The preceding subsections confirmed that the irrealis àʔ is not a future tense morpheme but an irrealis mood. I propose that it is in Mood and not T. Thus, the structure provided in (15) for prospective contexts is amended below in (83) where àʔ occupies the Mood head.
(83) **Prospective context as MoodP**

```
MoodP
  \( \alpha \)P\text{NIGHT}; remote
  \( \beta \)PM\text{ORNING}; +1 day
  \( \gamma \)P\text{DAY}; today
  \( \delta \)P\text{IMMEDIATE}
    \( \varepsilon \)VP
      \( \eta \)V
```

### 4.2.4 What are Medumba temporal auxiliaries?

Medumba temporal auxiliaries denote different time intervals in the past or in the future. The question that arises is whether these temporal auxiliaries are not in fact temporal adverbs. Language-internal evidence leads to the conclusion that temporal auxiliaries are not equivalent to temporal adverbs (see also Mucha 2016). In this section, I argue that Medumba temporal auxiliaries are grammaticalized verbs.

#### 4.2.4.1 Medumba temporal auxiliaries are not temporal adverbs

Although temporal adverbs can substitute for temporal auxiliaries, adverbs always occur at sentence peripheral positions whereas auxes always occur in sentence internal position. Also, verbs only take the N-form with auxiliaries and not with adverbs. Moreover, sentences with only temporal adverbs are somewhat degraded\(^{35}\). This is illustrated in (84-88) for the retrospective

\(^{35}\) I prefer using sentences with temporal auxiliaries rather than those with temporal adverbs
context. In those examples, temporal auxiliaries (the (a) examples) are replaced by corresponding temporal adverbs (the (b) examples).

(84) Recent past: yesterday

a. Númí ereço ʰn-ké ʰn-dʒʷè́n
  Numí AUX.T3 t-fry chips
  ‘Numi fried the chips yesterday’

b. Númí ³kè ʰn-dʒʷè́n ³kòk
  Numí fry chips yesterday
  ‘Numi fried the chips yesterday’

(85) Time of the day: night

a. Númí ³zi ʰn-ké ʰn-dʒʷè́n
  Numí AUX.α t-fry chips
  ‘Numi fried the chips at night’

b. Númí ³kè ʰn-dʒʷè́n ³tɛ-tʰmɛ̀ʔ
  Numí fry chips middle-night
  ‘Numi fried the chips at night’

(86) Time of the day: morning

a. Númí ³fjók ʰn-ké ʰn-dʒʷè́n
  Numí AUX.β t-fry chips
  ‘Numi fried the chips in the morning/earlier in the morning’

b. Númí ³kè ʰn-dʒʷè́n ³n-kù́b-³ú
  Numí fry chips NOM-cut-day
  ‘Numi fried the chips in the morning/earlier in the morning’

(87) Time of the day: during the day

a. Númí ³jók ʰn-ké ʰn-dʒʷè́n
  Numí AUX.γ t-fry chips
  ‘Numi fried the chips during the day/earlier today’

b. Númí ³kè ʰn-dʒʷè́n ³mʰók-tf³ú
  Numí fry chips fire-up
  ‘Numi fried the chips during the day/earlier today’
When temporal auxiliaries and temporal adverbs co-occur, the resulting sentence is degraded and redundant as illustrated in (88).

(88)  

a.  ?Nùmí fò t⁸-ké t¹ⁿdʒʷén t⁹-kɔk
    Numi AUX.T3 N fry chips yesterday
    ‘Numi fried the chips yesterday’

b.  ?Nùmí b⁵-zí b⁷-n-kè t¹ⁿdʒʷén t⁷-tʰwʔ?n
    Numi AUX.a N -fry chips middle-night
    ‘Numi fried the chips at night’

c.  ?Nùmí b⁷-tʃɔk b⁸-n-kè t¹ⁿdʒʷén t⁸-kúub-3ú
    Numi AUX.β N fry chips Nom-cut-day
    ‘Numi fried the chips in the morning/earlier in the morning’

d.  ?Nùmí b⁸-jɔk b⁹-n-kè t¹ⁿdʒʷén mᵇ⁶-kɔk-ʧʰú
    Numi AUX.γ N -fry chips fire-up
    ‘Numi fried the chips during the day/earlier today’

Temporal auxiliaries are heads unlike temporal adverbs which are instead full phrases. As a result, temporal auxiliaries cannot stand alone as fragment answers to wh-questions. This is illustrated in (89) where the (a) examples represent temporal adverbs and the (b) examples, the corresponding temporal auxiliary.

(89) Q:  ?Nùmí b⁸-kè t¹ⁿdʒʷén á sú á
        Numi fry chips FOC WH C.Q.H
    Lit: Numi fried the chips when?

A1:  a.  t⁹-kɔk [yesterday]
     b.  *fò [yesterday]

A2:  a.  t⁷-tʰwʔ?n [at night]
     b.  *zí [at night]

A3:  a.  t⁸-kúub-3ú [in the morning or earlier in the morning]
     b.  *tʃɔk [in the morning or earlier in the morning]

A4:  a.  mᵇ⁶-kɔk-ʧʰú [during the day or earlier today]
     b.  *jɔk [during the day or earlier today]
Although temporal auxiliaries and temporal adverbs seem to contribute almost the same meaning in the sentence, they pattern differently and are not identical. Apart from being used as fragment answer to wh-questions, temporal adverbs unlike temporal auxiliaries are also used in focus contexts when the focused element is adverbial.

(90) a. Numí ḷék ḷǹdʒʷèn á ḷǹbọ̀k-ʧù Númí fry chips FOC fire-up
    ‘Numí fried the chips [during the day]FOC’

b. *Númí á jọ́k ḷǹ-ké ḷǹdʒʷèn
    Númí FOC AUX.γ N-fry chips
    [Númí fried the chips [during the day]FOC’

Moreover, overtly focused temporal adverbs cannot be contrasted with temporal auxes as shown in (91).

(91) a. *Númí ḷék ḷǹdʒʷèn á ḷǹbọ̀k-ʧù, Númí fry chips FOC fire-up

b. Númí ḷék ḷǹdʒʷèn á ḷǹbọ̀k-ʧù, Númí fry chips FOC fire-up
    Núgàgèè ḷék ḷǹdʒʷèn á ḷǹkàk
    Núgà.Ḥ fry chips FOC yesterday
    ‘Númí fried the chips [during the day]FOC but Núgà fried the chips yesterday’

c. *Númí jọ́k ḷǹ-ké ḷǹdʒʷèn, Númí AUX.γ N-fry chips

    Núgàgèè ḷék ḷǹdʒʷèn á ḷǹkàk
    Núgà.Ḥ fry chips FOC yesterday
    [Númí fried the chips during the day but Núgà fried the chips yesterday]FOC]
4.2.4.2 Medumba temporal auxes are grammaticalized verbs

Grammaticalization (grammaticalization theory) is a language change phenomenon whereby a lexical item or a construction has a grammatical usage/function in a specific context (Meillet 1912; Lehmann 1995, 2002) or whereby a grammatical item acquires a new grammatical usage/function (Hopper and Traugott 2003). I propose that temporal auxiliaries in Medumba are grammaticalized verbs. While some of them seem to be in an early stage of their grammaticalization process in that they still have their verbal counterpart of the same form, others seem to be in a later stage and are no longer used as verbs though their verbal meanings are still recoverable; and some others are completely grammaticalized with their verbal meanings lost so that cognate verbal forms mean something different. This is summarized in the table 4.3.

<table>
<thead>
<tr>
<th>Temporal auxiliaries</th>
<th>Verbal forms</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. EARLY STAGE: AUX AND VERBAL FORM AND MEANING PRESERVED</td>
<td></td>
</tr>
<tr>
<td>yù</td>
<td>immediately</td>
</tr>
<tr>
<td>zí</td>
<td>at night</td>
</tr>
<tr>
<td>II. LATER STAGE: VERBAL FORM AND MEANING RECOVERABLE</td>
<td></td>
</tr>
<tr>
<td>tʃɔŋk</td>
<td>in the morning</td>
</tr>
<tr>
<td>jók</td>
<td>during the day</td>
</tr>
<tr>
<td>tʃʰɛɛt</td>
<td>right now</td>
</tr>
<tr>
<td>III. FINAL STAGE: VERBAL MEANING LOST</td>
<td></td>
</tr>
<tr>
<td>fɔ</td>
<td>yesterday past</td>
</tr>
<tr>
<td>lù</td>
<td>recent past</td>
</tr>
<tr>
<td>nɔʔ</td>
<td>long time ago</td>
</tr>
<tr>
<td>lùù</td>
<td>long long time ago</td>
</tr>
<tr>
<td>àʔ</td>
<td>prospective</td>
</tr>
</tbody>
</table>

Table 4.3: Grammaticalization of temporal auxiliaries in Medumba
(92-101) illustrate the main verb usage (the (a) examples) versus the aux usage (the (b) examples) of temporal auxiliaries in Medumba.

- **Early stage of grammaticalization: Aux and verbal meaning preserved**

(92) \( \gamma \u00f8 \)

a. \( \& \text{Nug\text{e} \u00f8-\u00f8} \)
\( \text{Nuga.H V-H} \)
= (a) ‘Nuga did (it)’
= (b) Nuga finished (it)
= (c) Nuga had (it)

b. \( \text{Nug\text{e} \u00f8 \u00f8 \u00f8-k\u00f8} \)
\( \text{Nuga.H AUX.\dagger N-fry chips} \)
‘Nuga fried the chips immediately (after whatever happened)’

(93) \( \zí \)

a. \( \text{Nug\text{e} \zí} \)
\( \text{Nuga.H sleep} \)
‘Numi slept’

b. \( \text{Nug\text{e} \zí \u00f8-k\u00f8} \)
\( \text{Nuga.H AUX.\alpha N-fry chips} \)
‘Nuga fried the chips at night’

- **Later stage of grammaticalization: verbal meaning can be recovered**

(94) \( \text{j\u00f6k} \)

a. \( \text{Nug\text{e} \text{j\u00f6-k\u00f6}} \)
\( \text{Nuga.H V-H} \)
‘Nuga spent the morning’

b. \( \text{Nug\text{e} \text{j\u00f6k \u00f8-k\u00f8} \u00f8} \)
\( \text{Nuga.H AUX.\beta N-fry chips} \)
‘Nuga fried the chips in the morning’

(95) \( \text{j\u00f6k} \)

a. \( \text{Nug\text{e} \text{j\u00f6-k\u00f6}} \)
\( \text{Nuga.H V-H} \)
‘Nuga spent the day’
b. Nùⁿgeč jök ṅ-ké ṅa-dʒʷén
Nuga.H AUX.γ N-fry chips
‘Nuga fried the chips during the day’

(96) ṣwéét
a. [Nùⁿgeč ṣwédl-ó]
Nuga.H V-H
‘Something is happening with Nuga right now’

b. Nùⁿgeč ṣwéét ṅ-ké ṅa-dʒʷén
Nuga.H PRS N-fry chips
‘Nuga is frying the chips right now’

o Final stage of grammaticalization: verbal meaning lost

(97) fə
a. Nùⁿgeč fə-ó nà
Nuga.H destroy-H field
‘Nuga destroyed the field’

b. Nùⁿgeč fə ṅ-ké ṅa-dʒʷén
Nuga.H AUX.T3 N-fry chips
‘Nuga fried the chips yesterday’

(98) lù
a. Nùⁿgeč lù-ú
Nuga.H leave/be_well-H
‘Nuga left/was well’

b. Nùⁿgeč lù ṅ-ké ṅa-dʒʷén
Nuga.H AUX.T3 N-fry chips
‘Nuga fried the chips recently’

(99) nəʔ
a. [Nùⁿgeč nəʔ-ó]
Nuga.H V-H

b. Nùⁿgeč nəʔ ṅ-ké ṅa-dʒʷén
Nuga AUX.T2 N-fry chips
‘Nuga fried the chips long time ago’
(100) Ṽùù

a. [Nùŋgɛ̀  Ṽùù]
   Nuga.H V

b. Nùŋgɛ̀  Ṽùù  Ṽ-ké  ¹ⁿdʒʷén
   Nuga  AUX.T2  N-fry  chips
   ‘Nuga fried the chips long long time ago’

(101) ḣà?

a. [Nùŋgɛ̀  ḣà?-á]
   Nuga.H V-H

b. Nùŋgɛ̀  ḣà?  ké  ¹ⁿdʒʷén
   Nuga  IRR  fry  chips
   ‘Nuga fried the chips long long time ago’

Table 4.4 provides the lexical entries that formalize the difference between the auxiliary usage and the main verb usage. These lexical entries consist of the phonological features of the items in question, their formal features or grammatical category and their semantic features; that is, the argument structure for lexical categories and selectional restrictions for functors. Underlined XPs are selected as subject and ‘/’ is used between the types of complement a head can select.
<table>
<thead>
<tr>
<th>Phonological feature</th>
<th>Formal feature</th>
<th>Semantic feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>zí</td>
<td>v</td>
<td>{DP}</td>
</tr>
<tr>
<td>AUX.α</td>
<td>{βP/γP/δP/AspP/VP} night/far in time</td>
<td></td>
</tr>
<tr>
<td>tfɔk</td>
<td>v</td>
<td>{DP}</td>
</tr>
<tr>
<td>AUX.β</td>
<td>{γP/δP/AspP/VP} this/tomorrow morning</td>
<td></td>
</tr>
<tr>
<td>jɔk</td>
<td>v</td>
<td>{DP}</td>
</tr>
<tr>
<td>AUX.γ</td>
<td>{δP/AspP/VP} earlier/later today</td>
<td></td>
</tr>
<tr>
<td>yù</td>
<td>v</td>
<td>{DP; (DP)}</td>
</tr>
<tr>
<td>AUX.δ</td>
<td>{AspP/VP} immediately</td>
<td></td>
</tr>
<tr>
<td>tf'èt</td>
<td>v</td>
<td>{DP}</td>
</tr>
<tr>
<td>tf'èt</td>
<td>T1[+TENSE]</td>
<td>{DP; AspP/VP} happening right now</td>
</tr>
<tr>
<td>fɔ</td>
<td>v</td>
<td>{DP; DP}</td>
</tr>
<tr>
<td>AUX.T3</td>
<td>{αP/βP/γP/δP/AspP/VP} “yesterday past”</td>
<td></td>
</tr>
<tr>
<td>lù</td>
<td>v</td>
<td>{DP}</td>
</tr>
<tr>
<td>AUX.T3</td>
<td>{αP/βP/γP/δP/AspP/VP} recent past</td>
<td></td>
</tr>
<tr>
<td>nɔʔ</td>
<td>v</td>
<td>{DP}</td>
</tr>
<tr>
<td>AUX.T2</td>
<td>{TP3/αP/βP/γP/δP/AspP/VP} long ago</td>
<td></td>
</tr>
<tr>
<td>lúù</td>
<td>v</td>
<td>{DP}</td>
</tr>
<tr>
<td>AUX.T2</td>
<td>{TP3/αP/βP/γP/δP/AspP/VP} long long ago</td>
<td></td>
</tr>
<tr>
<td>àʔ</td>
<td>v</td>
<td>{DP}</td>
</tr>
<tr>
<td>MOOD</td>
<td>{αP/βP/γP/δP/AspP/VP} prospective</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.4: Lexical entries of aux usages and main verb usage in Medumba

4.3 **Why some temporal auxiliaries are compatible with A’-agreement**

This section focuses on temporal auxiliaries that are compatible with A’-agreement in Medumba; namely the retrospective temporal-shifters nɔʔ, lù and fɔ and the neutral tense-shifters zí, tfɔk, jɔk and yù when construed as retrospective. I argue that A’-agreement with these temporal auxiliaries is predicted by Phasal-Agree, as they undergo movement to T, locus of A’-agreement with the CP phase.
### 4.3.1 Why retrospective temporal-shifters are compatible with A’-agreement

In this section, I show that the presence of A’-agreement with the retrospective temporal-shifters nɔʔ, ë and fə is predicted by Phasal-Agree. As argued in chapter 3, when an A’-extracted XP reaches the CP phase edge, A’-agreement in the form of the HL overwrite tone melody surfaces on T. This predicts that any element surfacing in T will show A’-agreement. As shown in section 4.1.2, we now know when a head is in-situ because it appears with a nasal prefix; or ex-situ because it has undergone movement to T and surface without the nasal prefix. As such, the temporal-shifters nɔʔ, ë and fə can appear ex-situ in Medumba. That is, they can raise to T1 (zero marked past tense), and by virtue of raising to T they can surface with A’-agreement in A’-contexts as illustrated in the configurations in (102).

(102) a. T2 remote past nɔʔ

```plaintext
CP
  Wh-XP
  CP
    C_{EXH}
    TP1
      T1_{AGR}
      TP2_{REMOTE}
        T1
        T2
        [∅ - nɔʔ]    T2
        <nɔʔ>        vP
```

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b. T3 recent past nɔʔ

\[
\begin{array}{c}
\text{CP} \\
\text{Wh-XP} \quad \text{CP} \\
\text{C}_{\text{EXH}} \quad \text{TP1} \\
\text{T}_{1\text{AGR}} \quad \text{TP}_{2\text{REMOTE}} \\
\text{T}_1 \quad \text{T}_3 \quad \text{T}_3 \quad \text{vP} \\
[\emptyset \ - \ \text{luu}] \quad <\text{lu}> \\
\end{array}
\]

c. T3 recent past specific (yesterday) lù

\[
\begin{array}{c}
\text{CP} \\
\text{Wh-XP} \quad \text{CP} \\
\text{C}_{\text{EXH}} \quad \text{TP1} \\
\text{T}_{1\text{AGR}} \quad \text{TP}_{2\text{REMOTE}} \\
\text{T}_1 \quad \text{T}_3 \quad \text{T}_3 \quad \text{vP} \\
[\emptyset \ - \ \text{fɔ̌}] \quad <\text{fɔ̌}> \\
\end{array}
\]

This prediction is borne out in Medumba as shown in (103) for the remote past nɔʔ; in (104) for the recent past lù; and in (105) for the “yesterday” past fɔ̌. The (a) examples are the baseline sentences and the (b) examples, the A’-contexts. Note that contrary to the remote past nɔʔ which surfaces with the overwrite HL tone melody, A’-agreement with the recent past lù and the “yesterday” past fɔ̌ takes the form of a polar tone. These two auxiliaries surface with an LH contour in A’-contexts.

(103) a. Nùmí   nɔʔ   kɛ   1ndʒwɛn
    Numi  AUX.T2  fry  chips
    T.H    V.H

    ‘Numi fried the chips (long time ago)’
b. á kú Númí nọ̀ ọ̀-kéè á
FOC WH Numi AGR.AUX.T2 N-AGR.fry C.Q.H
T.HL V.HL
‘What did Numi fry?’

(104) a. Númí lùú n-ọ̀-kéè ñdʒʷén
Numi AUX.T3 N-fry chips
T.L V.H
‘Numi fried the chips recently’

b. á kú Númí lùú n-ọ̀-kéè á
FOC WH Numi AGR.AUX.T3 N-AGR.fry C.Q.H
T.L H V.HL
‘What did Numi fry recently?’

(105) a. Númí fə̀ n-ọ̀-kéè ñdʒʷén
Numi AUX.T3 N-fry chips
T.L H V.HL
‘Numi fried the chips yesterday’

b. á kú Númí fə̀ n-ọ̀-kéè á
FOC WH Numi AGR.AUX.T3 N-AGR.fry C.Q.H
T.L H V.HL
‘What did Numi fry yesterday?’

(103-105) establish that the temporal-shifters nọ̀, lù and fə̀ can raise to t whereby they surface with A’-agreement.

4.3.2 Why neutral tense-shifters permit A’-agreement in retrospective contexts

The neutral tense-shifters zí, tfòk, jòk and yù can be construed in retrospective or in prospective in Medumba. In retrospective construals, they are interpreted as past whereas in prospective construals they are interpreted as future. I argue that in retrospective contexts, the neutral tense-shifters zí, tfòk, jòk raise to T where the zero past tense morpheme is located and as a result, they are interpreted as past. If this is the case, then Phasal-Agree predicts A’-agreement with the neutral tense-shifters zí, tfòk, jòk and yù when they move to T, the locus of A’-agreement with the CP phase as shown in the configurations in (106).
(106) a. Retrospective α.night ẑí

```
CP
  Wh-XP  CP
    C_{EXH}  TP1
      T₁ AGR   αP_{NIGHT}
        T₁ α   α
          [∅ - ẑiǐ] <ẑi>
```

b. Retrospective β.morning tʃək

```
CP
  Wh-XP  CP
    C_{EXH}  TP1
      T₁ AGR   βP_{MORNING}
        T₁ β   β
          [∅ - tʃək] <tʃək>
```

c. Retrospective γ.day jɔk

```
CP
  Wh-XP  CP
    C_{EXH}  TP1
      T₁ AGR   γP_{DAY}
        T₁ γ   γ
          [∅ - jɔk] <jɔk>
```
d. Retrospective δ.immediate γù

\[ \text{CP} \]
\[ \text{Wh-XP} \quad \text{CP} \]
\[ \text{C,EXH} \quad \text{TP1} \]
\[ T_1 \text{AGR} \quad \delta \text{P IMM} \]
\[ T_1 \quad \delta \quad \delta \quad \text{vP} \]
\[ [\varnothing - \gammaùù] \quad <\gammaù> \]

This prediction is confirmed in Medumba as the neutral tense-shifters zi, tjók, jòk and γù surface with the HL A′-agreement overwrite tone melody in retrospective context. This is shown in (107) for the retrospective α.night zi; in (108) for the retrospective β.24hrs.morning gjók; and in (109) for the retrospective γ.today jòk and in (110) for the retrospective δ.immediate γù. The (a) examples are the baseline sentences illustrating the context of use of each tense-shifter and the (b) examples, their construals in A′-contexts.

(107) **Context**

<table>
<thead>
<tr>
<th>Event time</th>
<th>Utterance Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>8pm</td>
<td>6am</td>
</tr>
<tr>
<td></td>
<td>after 6am</td>
</tr>
</tbody>
</table>

\[ \text{a. Nùmí zi } \overset{\text{n-ké di} \text{zùén}}{\overset{\text{H}}{\text{H}}} \text{Numi AUX.Â N-fry chips} \]
\[ \text{‘Numi fried the chips at night time/last night’} \]

\[ \text{b. á kú Nùmí zií } \overset{\text{n-ké}}{\overset{\text{H}}{\text{H}}} \text{á} \]
\[ \text{FOC WH Numi AGR.AUX.Â N-AGR.fry C.Q.H} \]
\[ \text{T.HL V.HL} \]
\[ \text{‘What did Numi fry last night?’} \]
(108) **Context**

<table>
<thead>
<tr>
<th>Event time</th>
<th>Utterance Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>6am</td>
<td>10am</td>
</tr>
</tbody>
</table>

---

a. Nùmí ṭfɔk ŋ-kɛ̀ ndʒʷén
Numi AUX.β N-fry chips
H V.H

‘Numi fried the chips this morning/earlier this morning’

b. á kú Nùmí tfɔ̀k ŋ-kɛ̀ á
FOC WH Numi AGR.AUX.β N-AGR.fry C.Q.H T.HL V.HL

‘What did Numi fry earlier this morning?’

(109) **Context**

<table>
<thead>
<tr>
<th>Event time</th>
<th>Utterance Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>11am</td>
<td>6pm</td>
</tr>
</tbody>
</table>

---

a. Nùmí jɔk ŋ-kɛ̀ ndʒʷén
Numi AUX.γ N-fry chips
H V.H

‘Numi fried the chips during the day/earlier today’

b. á kú Nùmí jɔ̀k ŋ-kɛ̀ á
FOC WH Numi AGR.AUX.γ N-AGR.fry C.Q.H HL V.HL

‘What did Numi fry earlier today?’

(110) a. Nùmí yù ŋ-kɛ̀ ndʒʷén
Numi AUX.δ N-fry chips
L V.H

‘Numi fried the chips immediately (as soon as he finished doing whatever he was doing)’

b. á kú Nùmí yùù ŋ-kɛ̀ á
FOC WH Numi AGR.Aux N-AGR.fry C.Q.H HL V.HL

‘What did Numi fry immediately?’
4.3.3 Temporal auxes provides evidence for Phasal-Agree

In this section, I show that temporal auxiliaries provide evidence for Phasal-Agree in Medumba and crucially that aux-stacking can detect intermediate phases and shifty phases (i.e. phases that domains change depending on what the phase head selects as complement) in Medumba.

4.3.3.1 Detecting intermediate phases: evidence from aux-stacking

As shown in section 4.1.2, the various temporal auxiliaries can co-occur in Medumba. When there is A′-movement from the object position in aux-stacking contexts for instance, A′-agreement surfaces on three different heads on the path movement; namely V, T3 and T2 as shown in (111).

(111) a. á kú Númí nááʔ ṁ-fṍó n-kéê á
    FOC   WH   Numi    AGR.AUX.T2 N-AGR.AUX.T3 N-AGR.fry C.Q.H
    T2.HL T3.LH V.HL

‘What did Numi fry? (the day before in a remote past)’

The question that arises is why A′-agreement surfaces with T3 as well. As we have seen, Phasal-Agree predicts A′-agreement with V because VP is the complement of vP phase; and with T2 because it moves to T1 which is the complement of the CP phase. However, if Phasal-Agree diagnoses local phase-by-phase movement, then we predict any head surfacing with A′-agreement to be in a phasal domain. As such, A′-agreement with T3 is an indication that this head is a complement of a phase. I therefore propose that there is an intermediate phase between CP and vP headed by T2 which selects T3 as its complement. This is shown in the tree structure in (112).
The structure in (112) predicts that only heads hosted by T$_3$ must show A'-agreement in A'-contexts. This prediction is confirmed as shown in (113b) and (114b), in an aux-stacking series comprising T$_2$ nɔʔ, T$_3$ lù and retrospective β.morning ṭɔk, only heads complement of a phase head show A'-agreement; that is V for vP phase, T$_3$ for the intermediate TP$_2$ phase, and T$_2$ (moved to T) for CP phase. β.morning ṭɔk does not show A'-agreement because it is not the complement of a phase-head.

(113) a. Nùmí nɔʔ lù n-ṭɔk n-kɛ ḋʐwɛn
    Numi AUX.T2 AUX.T3 N-AUX.β N-fry chips
    T.H T.L H V.H
    ‘Numi fried the chips (long ago recently in the morning)’

b. á kú Nùmí nɔsʔ n-ðùú n-ṭɔk n-kɛɛ á
    FOC WH Numi AGR.AUX.T2 AGR.AUX.T3 N-AUX.β N-AGR.fry C.Q.H
    HL LH H V.H
    ‘What did Numi fry? (long ago recently in the morning)’

(114) a. Nùmí nɔʔ fɔ n-ṭɔk n-kɛ ḋʐwɛn
    Numi AUX.T2 AUX.T3 N-AUX.β N-fry chips
    T.H T.L H V.H
    ‘Numi fried the chips (long ago in the morning of the day before)’
b. á kú Númi nóóʔ  m-fōo n-tʃāk n-kēɛ  á
FOC WH Numi AGR.AUX.T2 AGR.AUX.T3 N-AUX.β N-AGR.fry C.Q.H
T.HL T.LH H V.HL

‘What did Numi fry (long ago in the morning of the day before)’

(113) and (114) establish that A’-agreement surfaces on specific heads (complements of phase-heads) along the path of phasal movement and not on every head. When an object wh-XP is A’-extracted for instance, it first moves to the edge of the lower vP phase where A’-agreement is with V; then it moves to the edge of the intermediate phase TP2 where agreement is with T3; and finally, it moves to Spec-C where A’-agreement is with T1 (this includes heads moved to T1). This is illustrated in the tree36 in (115).

(115) á kú Númi nóóʔ  m-fōo n-tʃāk n-kēɛ  á
FOC WH Numi AGR.AUX.T2 AGR.AUX.T3 N-AUX.β N-AGR.fry C.Q.H
T.HL T.LH H V.HL

‘What did Numi fry (long ago in the morning of the day before)’

36 The tree shows only details related to Phasal-Agree.
4.3.3.2 Detecting shifty phases: evidence from neutral tense-shifters and IPFV kù

As shown above, phasal agree predicts that only heads that are the complement of a phase head can surface with A’-agreement. In the following, I show that in A’-contexts where either a.night zi, β.24hrs.morning fòk, γ.today jòk or δ.immediate yù is the immediate complement of the intermediate phase head, they exhibit A’-agreement. This is illustrated in (116) for a.night zi; in (117) for β.24hrs.morning fò; in (118) for γ.today jòk; and in (119) for δ.immediate yù. The (a) examples show the baseline sentences and the (b) examples, the A’-contexts.
(116) a. Nùmí nọ? zi ọ-ké ți-dʒʷèn
Numi AUX.T2 AUX.α N-fry chips
T.H H V.H
‘Numi fried the chips at night long time ago’

b. á kú Nùmí nọ? IPAddress ọ-ké ți-dʒʷèn
FOC WH Numi AUX.T2 AUX.β N-fry chips
T.H HL H V.HL
‘What did Numi fry at night long time ago?’

(117) a. Nùmí nọ? jìk ọ-ké ți-dʒʷèn
Numi AUX.T2 AUX.γ N-fry chips
T.H H V.H
‘Numi fried the chips in the morning long time ago’

b. á kú Nùmí nọ? IPAddress ọ-ké ți-dʒʷèn
FOC WH Numi AUX.T2 AUX.β N-fry chips
T.H HL H V.HL
‘What did Numi fry in the morning long time ago?’

(118) a. Nùmí nọ? jīk ọ-ké ți-dʒʷèn
Numi AUX.T2 AUX.γ N-fry chips
T.H H V.H
‘Numi fried the chips during the day long time ago’

b. á kú Nùmí nọ? IPAddress ọ-ké ți-dʒʷèn
FOC WH Numi AUX.T2 AUX.β N-fry chips
T.H HL H V.HL
‘What did Numi fry during the day long time ago?’

(119) a. Nùmí nọ? jàk ọ-ké ți-dʒʷèn
Numi AUX.T2 AUX.δ N-fry chips
T.H H V.H
‘Numi fried the chips after whatever happened long time ago’

b. á kú Nùmí nọ? IPAddress ọ-ké ți-dʒʷèn
FOC WH Numi AUX.T2 AUX.β N-fry chips
T.H HL H V.HL
‘What did Numi fry immediately after whatever happened long time ago?’

If the imperfective kú is the immediate complement of the intermediate phase, then it shows A’-agreement as illustrated in (120).
4.4 Why neutral tense-shifters prohibit A' agreement in prospective contexts

In this section, I propose that the absence of A’-agreement with neutral tense-shifters when they are construed in prospective contexts with the irrealis àʔ could be explained either by phonological (§4.4.1) or syntactic (§4.4.1) constraints. I argue that the irrealis àʔ is phonologically and syntactically defective.

4.4.1 Irrealis àʔ is phonologically defective

Syllable size, syllables can be V, CV or CVC in Medumba. The affix àʔ seems to be the only VC syllable in initial position in Medumba. That is, an onsetless syllable. This is not just a property of Medumba. It has been argued that word initial or phrase initial onsetless syllables have limited distribution and exhibit exceptional prosody cross-linguistically. In some languages, they are excluded from reduplication or fail to bear main stress or a high tone (Downing 1998). So, it appears that failure to show A’-agreement in the form of an HL overwrite tone melody by the affix àʔ could be the result of some prosodic constraint on initial onsetless syllables in Medumba. For instance, the impossibility of àʔ undergoing vowel lengthening as is the case for heads that show A’-agreement.

4.4.2 CP with MoodP complement as a defective phase

In section 4.2.3, I argued that Medumba àʔ is irrealis mood and not future tense. I this section, I propose that CPs taking MoodP as a complement are defective phases in that they lack the tense
projection. So far, we have seen that any given head that ends up in T within the CP phase shows A’-agreement. It is tempting to postulate that failure to show A’-agreement by the irrealis àʔ is due to the fact that àʔ is not actually in T so that there is no T in the structure involving the irrealis àʔ. Since T is the locus of Phasal-Agree with CP phase, absence of A’-agreement with àʔ could be explained by the absence of T in the structure. This is illustrated in the structure in (121) where the irrealis àʔ heads a functional projection MoodP. The verb in this example gets A’-agreement within vP before moving to Mood. I postulate for V-to-Mood movement as the verb lacks the nasal prefix in this context; indicating that it is not in-situ.

(121) á kú Numí àʔ kḗē á
FOC WH Numi IRR AGR.fry C.Q.H
L V.HL

‘What will Numi fry?’

```
CP2
    C
        á
        CP1
            C[EXH] MoodP
                DP Númí Mood vP
                    V àʔ kḗē vP
                        DP <Númí> vP
                            V <kḗē> DP <á kú>
```
The claim that only heads in T within the CP phase can show A’-agreement predicts that the construal of neutral tense-shifters with irrealis àʔ in prospective contexts will also lack A’-agreement as shown in (122).

(122)  
a. Prospective α.night zi

```
CP
  Wh-XP CP
    C_EIH MoodP
      Mood a a VP
        àʔ zi <zi>
```

b. Prospective β.morning tʃək

```
CP
  Wh-XP CP
    C_EIH MoodP
      Mood β β VP
        [àʔ- tʃək] <tʃək>
```

c. Prospective γ.day jɔk

```
CP
  Wh-XP CP
    C_EIH MoodP
      Mood γ γ VP
        [àʔ- jɔk] <jɔk>
```
This prediction is confirmed as neutral tense-shifters do not show A’-agreement when construed in prospective context with irrealis àʔ. This is illustrated in (123) for α.night zí; in (124) for β.morning tʃək; in (125) for γ.day jɔk; and in (126) for δ.immediate yù. The (a) examples illustrate the baseline sentences and the (b) examples the A’-contexts where the neutral tense-shifters surface without the A’-agreement HL overwrite tone melody.

(123) Prospective α.night zí

a. Númí àʔ zí n-ké ¹ kdʒʷén
   Numi   IRR AUX.α N-fry chips
   L     H     V.H
   ‘Numi will fry the chips’

b. á kú Númí àʔ zí n-ké á
   FOC WH Numi IRR AUX.α N-AGR.fry C.Q.H
   L     H     V.HL
   ‘What will Numi fry?’

(124) Prospective β.24hrs.morning tʃək

a. Númí àʔ tʃək n-ké ¹ kdʒʷén
   Numi   IRR AUX.β N-fry chips
   L     H     V.H
   ‘Numi will fry the chips tomorrow’
b. á kú Númí áʔ tjōk ŋ-kéę á
FOC WH Numi IRR AUX,β N-AGR.fry C.Q.H
L H V.HL
‘What will Numi fry tomorrow?’

(125) Prospective γ.today jōk

a. Nūmí áʔ jōk ŋ-kéę ɪndʒwěn
Numi IRR AUX,γ N-fry chips
L H V.H
‘Numi will fry the chips later today’

b. á kú Nūmí áʔ jōk ŋ-kéę á
FOC WH Numi IRR AUX,β N-AGR.fry C.Q.H
L H V.HL
‘What will Numi fry tomorrow?’

(126) Prospective δ.immediate yù

a. Nūmí áʔ yù ŋ-kéę ɪndʒwěn
Numi IRR AUX,δ N-fry chips
L L V.H
‘Numi will fry the chips immediately’

b. á kú Nūmí áʔ yù ŋ-kéę á
FOC WH Numi IRR AUX,δ N-AGR.fry C.Q.H
L L H L
‘What will Numi fry immediately?’

4.5 Coming full circle

4.5.1 Broader implications for the analysis of zero-marked verb forms

4.5.1.1 On the absence of a state/event contrast

Predicates that appear to be stative from their English translations actually denote change-of-state
results. Contra Mucha 2015, there seem to be no stative verbs in Medumba. According to Mucha
2015, “stative” predicates get present interpretation in Medumba as shown in (127).

(127) Marie bɔ Patrick
Marie hate Patrick
‘Marie hates Patrick’ [Mucha 2015:22, p. 153]
The misunderstanding of “stative” predicates in Medumba as stated in Mucha 2015 poses a methodological problem. It is easy to miss the literal interpretation of (127) especially when a translation task is given to the consultant. Also, speakers are more likely to give the translation of the target sentence instead of the Medumba literal meaning. The literal meaning of the Medumba sentence in (127) is given in (128).

(128) Marie bɔ̀ ɔ̀Patrick
Marie have_got_against.H Patrick
Lit.: Marie has got against Patrick, therefore Marie hates Patrick (implicature)

The apparent stative interpretation of “stative” verbs in Medumba is a result of implicature and is general in the language. This is illustrated for instance in (129) for the verb know which literally means to become familiar with and is interpreted as know by implicature. As such, implicature cancellation forces only the past tense reading as shown in (130). Thus, the so-called stative predicates are actually change-of-state verbs in Medumba.

(129) Nùᵑgɛ́ ɛ̀ lɛ̀n Nùmì
Nuga.H become_familiar.H Numi
Lit.: ‘Nuga became familiar with Numi, therefore he knows Numi (implicature)

(130) Implicature cancellation

Nùᵑgɛ́ ɛ̀ lɛ̀n Nùmì, ndɔ̀ʔ-lɛ̀ŋɗũ ɔ̀ kû̀ʔ bèn n-dɛ̀n î
= ‘Nuga knew Numi, but he doesn’t know him anymore’
# ‘Nuga knows Numi but he doesn’t know him anymore’

The diagnostics for past tense used for the construal of unmarked event verbs also hold for the construal of unmarked change-of-state verbs in Medumba as summarized in table 4.5.
Diagnostic 1 shows that unmarked change-of-state verbs in Medumba have a default past interpretation. Diagnostic 2 shows that unmarked change-of-state verb forms have obligatory past tense interpretation; that is, they are always construed as past and are required in contexts that force past interpretation. Diagnostic 3 shows that unmarked change-of-state verb forms are compatible with imperfective marking; and Diagnostic 4 shows that Medumba unmarked change-of-state verb forms do not have a completed event time.

- **Unmarked change-of-state verbs have past interpretation**

  (131) shows that the unmarked change-of-state verbs in Medumba are construed as past perfective (131a). A past imperfective reading (131b) or a present tense (either imperfective (131c) or habitual (131d) is infelicitous in this context. (132), (133) and (134) respectively show contexts in which the past imperfective, the present imperfective and the present habitual readings are felicitous with change-of-state verbs. In those contexts, the unmarked form is infelicitous.

<table>
<thead>
<tr>
<th>Diagnostic</th>
<th>Unmarked change-of-state V</th>
<th>What this tell us</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Testing for ordering relation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Default past interpretation</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Testing for past tense</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2a. Always construed as past</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>2b. Required for context that force past</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>3. Compatible with imperfective</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Testing for perfective</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Uncompleted event time</td>
<td>✗</td>
<td>✔</td>
</tr>
</tbody>
</table>

Table 4.5: Diagnosing past tense with the construal of change-of-state verbs in Medumba
(131) **Context for past perfective**

Who did Sami know in the village?

a. Past perfective: ✓ á lëén Nûmí
   3SG.H become_familiar.H Numi
   Lit.: ‘He became familiar with Numi’
   ‘He knew Numi’

b. Past imperfective: # á kú n-déên Nûmí
   3SG.H IPFV N-become_familiar Numi
   Lit.: he was becoming familiar with Numi

c. Present tense: # á tʃʷέ̂t n-kú n-déên Nûmí
   3SG.H PRS N-IPFV N- become_familiar Numi
   Lit.: he is becoming familiar Numi

d. Low-tone habitual: # á n-déên Nûmí
   3SG.H N-become_familiar Numi
   Lit.: he becomes familiar with Numi

(132) **Context for past imperfective**

What was Sami doing the evening of the day he got to the village?

a. Past perfective: # á lëén Nûmí
   3SG.H become_familiar.H Numi
   Lit.: ‘He became familiar with Numi’
   ‘He knew Numi’

b. Past imperfective: ✓ á kú n-déên Nûmí
   3SG.H IPFV N-become_familiar Numi
   Lit.: he was becoming familiar with Numi

c. Present progressive: # á tʃʷέ̂t n-kú n-déên Nûmí
   3SG.H PRS N-IPFV N- become_familiar Numi
   Lit.: he is becoming familiar Numi

d. Low-tone habitual: # á n-déên Nûmí
   3SG.H N-become_familiar Numi
   Lit.: he becomes familiar with Numi
(133) **Context for present progressive**

What is Sami doing now?

a. Past perfective:  
\[ á \text{ lleén} \] Númí  
3SG.H become_familiar.H Numi  
Lit.: ‘He became familiar with Numi’  
‘He knew Numi’

b. Past imperfective:  
\[ á kú n-déén \] Númí  
3SG.H IPFV N-become_familiar Numi  
Lit.: he was becoming familiar with Numi

c. Present progressive:  
\[ á tfwčét n-kú n-déén \] Númí  
3SG.H PRS N-IPFV N-become_familiar Numi  
Lit.: he is becoming familiar Numi

d. Low-tone habitual:  
\[ á n-déén \] Númí  
3SG.H N-become_familiar Numi  
Lit.: he becomes familiar with Numi

(134) **Context for habitual**

What does Numi do whenever he gets to the village?

a. Past perfective:  
\[ á \text{ lleén} \] Númí  
3SG.H become_familiar.H Numi  
Lit.: ‘He became familiar with Numi’  
‘He knew Numi’

b. Past imperfective:  
\[ á kú n-déén \] Númí  
3SG.H IPFV N-become_familiar Numi  
Lit.: he was becoming familiar with Numi

c. Present progressive:  
\[ á tfwčét n-kú n-déén \] Númí  
3SG.H PRS N-IPFV N-become_familiar Numi  
Lit.: he is becoming familiar Numi

d. Low-tone habitual:  
\[ á n-déén \] Númí  
3SG.H N-become_familiar Numi  
Lit.: he becomes familiar with Numi
Always construed as past or required in past contexts

Unmarked individual-level predicates (135) or stage-level predicates (136) are construed as eventive predicates in Medumba in the past.

(135) Numi sēgō
    Numi lengthen/become_tall.H
    Lit.: Numi lengthened/became tall; therefore, he is tall.

(136) ñʧʰʊ Numi jé
    heat Numi hurt
    Lit.: The heart of Numi hurt; therefore, Numi is angry.

Compatible with imperfective

Unmarked change-of-state verbs are compatible with imperfective aspect in Medumba. The presence of the imperfective marker in unmarked change-of-state construals results in a past imperfective interpretation.

(137) á kú n-déēn Numi
    3SG.H IPFV N-become_familiar Numi
    Lit: he was becoming familiar with Numi

Uncompleted event time

Unmarked change-of-state verbs are also used in contexts where the event time is uncompleted; that is not contained within the temporal boundary of an adverbial modifier. This diagnostic shows that the unmarked construal is a form of past tense marking in Medumba.

(138) Context (felicitous): Numi is a mythical figure in the village. In order to become familiar (know) with Numi, one has to read cards on him and fill a checklist. Every week, there are new cards and one needs to read again and fill the new checklist to update their knowledge. Two weeks ago, I started reading the cards and filled the checklist and by the end of last week I haven’t finished reading all the cards. I will continue to read the cards for this week.
a. ✓ mú ɗe̱n Nùmí ɗgâb-mú?
1SG.H become_familiar Numi week-other
Lit.: I became familiar with Numi last week
‘I knew Numi last week’

b. # mú ɗu ɗ-dé̱n Nùmí ɗgâb-mú?
1SG.H Aux become_familiar Numi week-other
Lit.: I became familiar with Numi last week
‘I knew Numi last week’

(139) Context (infelicitous): Numi is a mythical figure in the village. In order to become familiar
(know) with Numi, one has to read cards on him and fill a checklist. Every week, there are new
cards and one needs to read again and fill the new checklist to update their knowledge. Two
weeks ago, I started reading the cards and filled the checklist and by the end of last week I
finished reading all the cards and there is no more card to read.

a. # mú ɗe̱n Nùmí ɗgâb-mú?
1SG.H become_familiar Numi week-other
Lit.: I became familiar with Numi last week
‘I knew Numi last week’

b. ✓ mú ɗu ɗ-dé̱n Nùmí ɗgâb-mú?
1SG.H Aux become_familiar Numi week-other
Lit.: I became familiar with Numi last week
‘I knew Numi last week’

The preceding examples establish that that apparent state verbs in Medumba are change-
of-state verbs that result in present tense interpretation by implicature. The construal of unmarked
change-of-state verbs further confirms that unmarked verb forms involve a zero past tense
morpheme in Medumba as argued in this chapter. Table 4.6 summarizes the different diagnostics
of the construal of unmarked event and unmarked change-of-state verbs in Medumba.
### Diagnostic

<table>
<thead>
<tr>
<th>Testing for ordering relation</th>
<th>PST</th>
<th>PFV</th>
<th>Event V</th>
<th>change-of-state V</th>
<th>State V</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Default past interpretation</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>×</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Testing for past tense</th>
</tr>
</thead>
<tbody>
<tr>
<td>2a. Always construed as past</td>
</tr>
<tr>
<td>2b. Required for past contexts</td>
</tr>
<tr>
<td>3 Compatible with imperfective</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Testing for perfective</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. uncompleted event</td>
</tr>
</tbody>
</table>

Table 4. 6: Summary of the construal of unmarked verbs in Medumba

### 4.5.1.2 Distinguishing zero-marked past tense from zero-marked perfective aspect

The behaviour of Medumba unmarked verb forms has implications for the cross-linguistic investigation of zero-marked verb forms. In Siamou (Toews 2015) for instance, a low tone suffix on the verb is compatible with past perfective reading. The diagnostic developed for Siamou leads Toews to conclude that the low tone suffix on verbs is a form of perfective marking in Siamou that results in default past interpretation and not a form of past tense marking. Unlike Siamou, the unmarked verb form in Medumba is actually a zero past tense morpheme and not a kind of perfective. Table 4.6 summarizes the differences between Siamou low tone suffix construals on verbs and Medumba construals of unmarked verbs.
Diagnosis | What this tell us
--- | --- | --- | --- | --- | ---
| Siamou | Medumba | consistent with | consistent with | Past | Perfective | Past | Perfective
| L-Tone V | Unmarked V | | | | |

Testing for ordering relation
1. Default past interpretation ✔ ✔ ✔ ✔ ✔ ✔

Testing for past tense
2a. Always construed as past × ✔ × ✔ ✔ ×
2b. Required in contexts × ✔ × ✔ ✔ ×
3. Compatible with imperfective × ✔ × ✔ ✔ ×
4. Uncompleted event time ✔ × × ✔ ✔ ×

Table 4.7: Diagnosing past tense and perfective marking in Medumba and Siamou

Further research is needed to determine what conditions the variation of unmarked verb forms in Medumba and in Siamou; and also for languages that exhibit unmarked verb form; and what are the implications for the analysis of zero marked past tense and zero marked perfective aspect.

### 4.5.2 Broader implications for the analysis of dialect variation

Using the N-prefix on verbal heads, temporal and aspectual auxiliary as a diagnostic of in-situ heads has implication for dialect variation. In fact, it appears that the presence of the N-prefix on verbs, tense and aspect is not just a feature of Medumba, but an areal feature of Grassfields Bantu languages. Other Grassfields Bantu languages exhibit the same patterns as Medumba regarding the presence or absence of the nasal prefix on heads below T. That is, when there is an overt element in T, the heads to the right of and below T bear the nasal prefix. Although this has always been a mystery in Grassfields Bantu, the analysis proposed in this section predicts and accounts for this pattern; namely the absence of nasal when the head is ex-situ (movement to T) and presence of the nasal prefix when the head is in-situ (no movement). This is illustrated in (140)
for Bamileke Southern Ndà’ndà’; (141) for Bamileke Eastern Ndà’ndà’; (142) for Bamileke Ngomba; and (143) for Awing.

(140) Bamileke Southern Ndà’ndà’ (Bazou dialect)

a. Náàná ɣàá ñtná
b. Náäná nú ʊ-gáà ŋtá
‘Nana went to the market’
‘Nana is going to the market’

(141) Bamileke Eastern Ndà’ndà’ (Batoufam dialect)

a. Nònó lə ʊ-kák kɔ̀lɔ̀k
b. *Nònó lə kák kɔ̀lɔ̀k
‘Nono fried plantains (yesterday)’
[Nono fried plantains (yesterday)]

(142) Bamileke Ngomba

Pɛkŋɛ yí ŋ-tsùŋ ʊ-fɛʔne ʊ-kũː: tũ-n-dã lɔʔne
1P.INCL go(F1) N-AUXreally N-AUXquickly N-nail C7-head-AM.c9house today
‘We are going to really quickly nail on the roof today’
[Adapted from Satre 2010: 1]

(143) Awing (Grassfields)

Alombah a zá ʊ-túʔo ŋkɔ̀p
‘Alombah often fetches water’
[Forminyam (in prep.)]

37According to Satre (2010), the N-prefix (also used as infinitive marker) is realized as a minimal vowel [ə] before a voiceless fricative.

mü-bũʔ ʊ-fũ
N-pierce N-come from
‘to pierce’ ‘to come from’
ń-tó ʊ-sɔp
N-come N-prick
‘to come/arrive’ ‘to prick’
ń-ɡu ʊ-fɔ́t
N-go N-turn
‘to go/Depart’ ‘to turn’
4.5.3 Broader implications for the analysis of graded tense

4.5.3.1 Previous descriptions of Medumba: Nganmou 1991; Kouankem 2012

It is usually argued that Medumba has seven past tense markers and 5 future tense markers. Below is a summary of previous analysis of the Medumba temporal system (Nganmou 1991, Kouankem 2012). They use the label 0 for general past or future whereas the labels 1-7 refer to temporal remoteness ranging from immediate to remote past or future.

<table>
<thead>
<tr>
<th></th>
<th>PAST</th>
<th>PRESENT</th>
<th>FUTURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>6</td>
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<tr>
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<td>0</td>
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<td>2</td>
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<td>3</td>
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<td></td>
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<td></td>
<td>4</td>
</tr>
</tbody>
</table>

A look at the above distribution could lead to the conclusion that there is symmetry between some forms of the past and some forms of the future, especially the distribution of the morphemes zi – tʃʊk – jʊk. It appears that these morphemes are used in the past series as well as in the future series. Thus, one cannot treat these morphemes as strictly past or strictly future tense markers.

Contrary to what has been previously claimed, I have demonstrated in this chapter that the temporal system in Medumba is organized around a past paradigm and a non-past paradigm. The past context includes a zero past tense marker and various tense-shifters. Tense-shifters include the retrospective temporal-shifters nɔʔ, lùù, få, and lù which are always construed as past; and neutral tense-shifter zi, tʃʊk, jʊk, and ɣù which can be construed in retrospective contexts as past and in prospective contexts with the irrealis marker àʔ, as future. The non-past contexts include the construal of the irrealis àʔ as simple future, and the construal of tʃʷɛ́ɛ́t as present tense. These temporal auxiliaries lead to an exploded tense projection. In a retrospective context:

\[ \text{Note that previous analysis didn’t mention the construal of} \delta.\text{ɣù in retrospective context} \]
o T₁ hosts the zero past tense morpheme
o T₂ hosts the retrospective temporal shifters nɔʔ and lùù used for remote past
o T₃ hosts the retrospective temporal shifters ù and fɔ̃ used for recent past
o α hosts the tense-shifter zì construed in retrospective as “last night” past
o β hosts the tense-shifter tʃɔk construed in retrospective as “this morning” past
o γ hosts the tense-shifter jɔ́k construed in retrospective as “today” past
o δ hosts the tense shifter yù construed in retrospective as immediate past

In prospective context:

o Irrealis ãʔ is in Mood not tense and is compatible with future certainty
o Irrealis is in ãʔ + α.zi in prospective is construed as remote future uncertainty
o Irrealis is in ãʔ + β.tʃɔk in prospective is construed as “+1day” future certainty
o Irrealis is in ãʔ + γ.jɔ́k in prospective is construed as “today” future certainty
o Irrealis is in ãʔ + δ.yù in prospective is construed as immediate future

4.5.3.2 Mucha 2016

Contrary to Mucha (2016) who argues that there is a split between event and state verbs in Medumba based on the interpretation of unmarked eventive verbs as past and unmarked “stative” verbs as present, I showed in this chapter that Medumba lacks stative verbs. In fact, Medumba apparent stative verbs are change-of-state verbs construed as past, but which result in present tense implication by implicature. Treating unmarked sentences as having only a zero-marked perfective morpheme leads Mucha to account for the interpretation of unmarked sentences in Medumba in a way similar to tenseless languages, even though Medumba is a system with graded tense. I have demonstrated in this chapter that Medumba unmarked sentences actually involve a zero-marked past tense morpheme, which depending on the context can co-occur with the zero marked
perfective morpheme to yield past perfective in most contexts. However, Medumba unmarked sentences are not always construed as past perfective, and more specifically they are construed as past in contexts where the event time is uncompleted. This is a crucial piece of evidence which further supports analysing unmarked sentences in Medumba with a zero past tense morpheme. Further research is needed in order to develop a semantic analysis of Medumba temporal auxiliaries which takes care of all their co-occurrence properties.

4.5.4 Broader implications for the analysis of A’-movement and A’-agreement

It has emerged from this chapter that that A’-agreement is not only a diagnostic of A’-movement, but also a diagnostic of Phasal-Agree and for the locality of movement (phase-by-phase movement). The distribution of A’-agreement in aux-stacking contexts leads to the conclusion that there is an intermediate phase between vP and CP. This has implications for phase theory. Recall that what constitutes a phase is still subject to debate in the literature. For some authors, every phrase is a phase (Müller 2010); for others, only CPs and vPs are phases (van Urk 2015, Georgi 2017); and yet for others, just vP (Rackowski and Richards 2005); and for some others, there are more nuanced possibilities (Den Dikken 2007, Gallego 2007, Wurmbrand 2012, Harwood 2015, Ramchand and Svenonius 2014, Bošković 2014, Sailor 2014, Aelbrecht and Harwood 2015). The analysis adopted for A’-agreement in this chapter points towards a more nuanced possibility. If the claim that A’-agreement diagnoses Phasal-Agree is on the right track, then vPs and CPs may not be the only phases. This leads to the question about the choice of the locus of A’-agreement and the choice of phases as domains where A’-agreement is spelled out. In Medumba, it is clear that the domains where A’-agreement is spelled out are the heads of the complement of phase heads, that is the phase domain. Although in some languages, A’-agreement can be spelled out on phase-heads, the overarching question is, in addition to telling us that movement proceeds by phase, why
does Phasal-Agree need to be spelled out overtly in some languages and why for A’-movement only? And what are the implications for the interfaces: syntax-phonology; syntax-semantics interfaces.
Chapter 5: A′-movement and resumption in Medumba

5.1 What form does resumption take?

This section focuses on the form of resumptive pronouns in Medumba. I show that a resumptive pronoun can be a simplex pronoun (§5.1.1) or a complex pronoun in the language (§5.1.2).

5.1.1 Medumba resumptive pronouns can be simplex

As shown in table 6.1, simplex pronouns in Medumba have three forms according to the position they occur in, namely subject, object, and elsewhere (with the latter including the indirect object position and non-argument positions). As shown in chapter 1, Medumba pronouns exhibit tonal allomorphy. Subject forms with a V or CV syllable surface with a low tone or a high tone; this holds for 1sg (mù, mú), 2sg (ù, ú), 3sg (à, á), and 3pl (bù, bú). In contrast, CVC forms surface as CVC_L or CVVC_LH; this holds for 1pl (bòk, bòök) and 2pl (bîn, biîn). Direct object forms surface with an invariant H-tone: 1sg ám, 1pl jòk/jòg-á, 2sg ú, 2pl jìn(á), 3sg.anim í, 3pl júp/júb-á. The elsewhere forms used for indirect object and in A′-movement position, surface as H-tone (1pl bòk, 2pl bîn, 3sg.anim jí, 3pl bù) or L-tone (1sg mò, 2sg wù). The table below summarizes the simplex pronoun paradigm in Medumba.
<table>
<thead>
<tr>
<th></th>
<th>TONE</th>
<th>SUBJECT</th>
<th>TONE</th>
<th>OBJECT</th>
<th>TONE</th>
<th>ELSEWHERE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SG</td>
<td>L</td>
<td>pute</td>
<td>L</td>
<td>___</td>
<td>L</td>
<td>pute</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>pute</td>
<td>H</td>
<td>ám</td>
<td>H</td>
<td>___</td>
</tr>
<tr>
<td>PL</td>
<td>L</td>
<td>bök</td>
<td>L</td>
<td>___</td>
<td>L</td>
<td>___</td>
</tr>
<tr>
<td></td>
<td>LH</td>
<td>bök</td>
<td>H(H)</td>
<td>jık/jṓ-já̃</td>
<td>H</td>
<td>bök</td>
</tr>
<tr>
<td>SG</td>
<td>L</td>
<td>ù</td>
<td>L</td>
<td>___</td>
<td>L</td>
<td>wù</td>
</tr>
<tr>
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<td>ú</td>
<td>H</td>
<td>ú</td>
<td>H</td>
<td>___</td>
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<td>PL</td>
<td>L</td>
<td>bin</td>
<td>L</td>
<td>___</td>
<td>L</td>
<td>___</td>
</tr>
<tr>
<td></td>
<td>LH</td>
<td>bin</td>
<td>H(H)</td>
<td>jın/jín-á̃</td>
<td>H</td>
<td>bin</td>
</tr>
<tr>
<td>SG</td>
<td>L</td>
<td>á</td>
<td>L</td>
<td>___</td>
<td>L</td>
<td>___</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>á</td>
<td>H</td>
<td>í</td>
<td>H</td>
<td>já̃</td>
</tr>
<tr>
<td>PL</td>
<td>L</td>
<td>bú</td>
<td>L</td>
<td>júp/jù̃-á̃</td>
<td>L</td>
<td>___</td>
</tr>
<tr>
<td></td>
<td>H</td>
<td>bú</td>
<td>H(H)</td>
<td>júp/jù̃-á̃</td>
<td>H</td>
<td>bú</td>
</tr>
</tbody>
</table>

Table 5.1: The simplex pronoun paradigm in Medumba

With topicalized simplex object pronouns, the elsewhere forms surface as the head of the chain (the moved XP) and the simplex object forms surface as a resumptive pronoun at the tail of the chain (extraction site). (1-3) illustrate resumptive simplex pronouns with 1st, 2nd and 3rd person singular pronouns respectively and (4-6) their plural counterparts; that is 1st, 2nd and 3rd person plural pronouns. The (a) examples show the baseline sentence and the (b) examples show the movement context with resumption.

(1) a. Núŋgè nó? swèn á̃m
Nuga AUX.T2 sell 1SG.H
T.H V.L
‘Nuga betrayed me’

b. mò kí, Núŋgè nòó? swèn á̃m
1SG.L TOP Nuga.H AGR.AUX.T2 N-AGR.sell 1SG.H
T.HL V.HL
‘Me, Nuga betrayed me’

39 I treat resumption with A’-dependencies as derived by movement in Medumba.
(2) a. Nùŋgë nò? sʷèn ú
Nuga AUX.T2 sell 2SG.H
T.H V.L
‘Nuga betrayed you’

b. wù kí, Nùŋgë nóò? n-sʷèn ú
1SG.L TOP Nuga.H AGR.AUX.T2 N-AGR.sell 1SG.H
T.HL V.HL
‘You, Nuga betrayed you’

(3) a. Nùŋgë nò? sʷèn í
Nuga AUX.T2 sell 3SG.H
T.H V.L
‘Nuga betrayed him’

b. jí kí, Nùŋgë nóò? n-sʷèn í
3SG.L TOP Nuga.H AGR.AUX.T2 N-AGR.sell 3SG.H
T.HL V.HL
‘Him, Nuga betrayed him/ her, Nuga betrayed her’

(4) a. Nùŋgë nò? sʷèn jòg-ó
Nuga AUX.T2 sell 1PL.H-H
T.H V.L
‘Nuga betrayed us’

b. bòk kí, Nùŋgë nóò? n-sʷèn jòg-ó
1PL.L TOP Nuga.H AGR.AUX.T2 N-AGR.sell 1PL.H-H
T.HL V.HL
‘Us, Nuga betrayed us’

(5) a. Nùŋgë nò? sʷèn jín-ó
Nuga AUX.T2 sell 2PL.H-H
T.H V.L
‘Nuga betrayed you’

b. bin kí, Nùŋgë nóò? n-sʷèn jín-ó
2PL.L TOP Nuga.H AGR.AUX.T2 N-AGR.sell 2PL.H-H
T.HL V.HL
‘You, Nuga betrayed you’

(6) a. Nùŋgë nò? sʷèn júb-ó
Nuga AUX.T2 sell 3PL.H-H
T.H V.L
‘Nuga betrayed them’

266
They, Nuga betrayed them

The above examples establish the simplex object pronoun forms used in the baseline contexts are also recruited as resumptive pronouns in the context of A’-movement (here topic-movement).

5.1.2 Medumba resumptive pronouns can be complex

Complex or compound pronoun in Medumba combines two or more simplex pronoun forms and are an areal feature of Grassfields languages (Wiesemann 1986, Hagège 1982, Voorhoeve 1967, Forchheimer 1953). As proposed by Déchaine and Keupdjio (in prep), complex pronouns, which denote a plurality, can be analyzed as sets which consist of the focal referent, the supremum (the form conveying the denotation of the whole complex and which share the same person feature with the focal referent) and the associate (member of the set). Plural associate members are linked by the low tone à (which is referred to here as the Linker)\(^\text{40}\). Table 5.2 illustrates the 1\(^{st}\) plural denotation of complement forms\(^\text{41}\) in Medumba. These forms can be paraphrased as the ‘me and x’ forms when the focus referent is 1 sg (this includes 1+2 ám-bág-ù ‘me & you’; 1+2PL ám-bág-ù-bín ‘me & y’all’; 1+3 ám-bág-jí ‘me & him’; 1+3PL ám-bág-à-bú ‘me & them’; 1+2PL+3PL ám-bág-à-bín-à-bú ‘me, y’all & them’) or the ‘us and x’ forms when the focal referent is 1pl (this includes 1PL+2PL jóg-bág-à-bín ‘us & y’all’; 1PL+3 jóg-bág-jí ‘us & him’; 1PL+3PL jóg-bág-à-bú ‘us & them’; 1PL+2PL+3PL jóg-bág-à-bín-à-bú ‘us, y’all & them’).

\(^{40}\) For a more detailed analysis of complex pronouns in Medumba, see Déchaine and Keupdjio (in prep.).

\(^{41}\) Colour code: Blue = focal referent; Green = supremum; Red = Linker; Black = associate
composed of tree pluralities (1pl+2pl+3pl).

The following examples illustrate the 1pl denotation of complex pronouns withiti-topicalization. The (a) examples illustrate the baseline sentence with the complex pronoun in object position and the (b) examples illustrate the A’-movement context with resumptive complex pronouns. The data is presented as follows. Examples (7) and (8) illustrate pluralities composed of two atomic individuals: [1+2] in (7); [1+3] in (8). Examples (9) and (10) illustrate pluralities composed of an atomic individual and a plurality: [1+2pl] in (9); [1+3pl] in (10). (11) illustrates a plurality composed of an atomic individual and two pluralities: 1+2pl+3pl. Examples (12) and (14) illustrate pluralities composed of two pluralities: 1pl+2pl in (12) and 1pl+3pl in (14). (13) illustrates a plurality composed of a plurality and an atomic individual (1pl+3); and (15) illustrates a plurality composed of tree pluralities (1pl+2pl+3pl).

(7) [1+2]

<table>
<thead>
<tr>
<th>DENOTATION</th>
<th>SIMPLEX PRONOUN</th>
<th>COMPOUND PRONOUN</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. ‘me and x’ forms</td>
<td>bôk 1PL</td>
<td>‘me and x’ forms</td>
</tr>
<tr>
<td>1+2</td>
<td>‘me &amp; you’</td>
<td>ám-bôg-ù 1SG-[1PL+2SG]</td>
</tr>
<tr>
<td>1+2PL</td>
<td>‘me &amp; y’all’</td>
<td>ám-bôg-ù-bin 1SG-[1PL+2PL]</td>
</tr>
<tr>
<td>1+3</td>
<td>‘me &amp; him’</td>
<td>ám-bôg-ji 1SG-[1PL+3SG]</td>
</tr>
<tr>
<td>1+3PL</td>
<td>‘me &amp; them’</td>
<td>ám-bôg-ù-bú 1SG-[1PL+3PL]</td>
</tr>
<tr>
<td>1+2PL+3PL</td>
<td>‘me, y’all &amp; them’</td>
<td>ám-bôg-ù-bin-ù-bú 1SG-[1PL+2PL+3PL]</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>‘us and x’ forms</th>
<th>bôk 1PL</th>
<th>‘us and x’ forms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1+2</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1+2PL</td>
<td>‘us &amp; y’all’</td>
<td>jàg-bôg-ù-bin 1PL-[1PL+2PL]</td>
</tr>
<tr>
<td>1+3</td>
<td>‘us &amp; him’</td>
<td>jàg-bôg-ji 1PL-[1PL+3SG]</td>
</tr>
<tr>
<td>1+3PL</td>
<td>‘us &amp; them’</td>
<td>jàg-bôg-ù-bú 1PL-[1PL+3PL]</td>
</tr>
<tr>
<td>1+2PL+3PL</td>
<td>‘us, y’all &amp; them’</td>
<td>jàg-bôg-ù-bin-ù-bú 1PL-[1PL+2PL+3PL]</td>
</tr>
</tbody>
</table>

Table 5.2: 1PL denotation of complement complex pronouns in Medumba

Example (7) illustrates a plurality and an atomic individual (1pl+3); and (15) illustrates a plurality composed of tree pluralities (1pl+2pl+3pl).

Example (13) illustrates a plurality composed of a plurality and an atomic individual (1pl+3); and (15) illustrates a plurality composed of tree pluralities (1pl+2pl+3pl).

a. Nûgènó? sîwên ám-bôg-ù
Nuga AUX.T2 sell 1SG-[1PL-2SG]
T.H V.L
Lit.: Nuga betrayed us (me&you).

b. mò-bôg-ù kí, Nûgènó? nôô? n-sîwên ám-bôg-ù
1SG-[1PL-2SG] TOP Nuga.H AGR.AUX.T2 N-AGR.sell 1SG-[1PL-2SG]
T.HL T.HL V.HL
Lit: Us (me&you), Nuga betrayed us (me&you).
(8) [1+3]

a. Núŋgè nò? sʷəŋ ám-bóg-jí
Nuga AUX.T2 sell 1SG-[1PL-3SG] T.H V.L
Lit.: Nuga betrayed us (me&him).

b. mò-bóg-jí ki, Núŋgè nò? nʷ-sʷəŋ ám-bóg-jí
1SG-[1PL-3SG] TOP Nuga.H AGR.AUX.T2 N-AGR.sell 1SG-[1PL-3SG] T.HL V.HL
Lit.: Us (me&him), Nuga betrayed us (me&him).

(9) [1+2PL]

a. Núŋgè nò? sʷəŋ ám-bóg-à-bin
Nuga AUX.T2 sell 1SG-[1PL-LNK-2PL] T.H V.L
Lit.: Nuga betrayed us (me&y’all).

b. mò-bóg-à-bin ki, Núŋgè nò? nʷ-sʷəŋ ám-bóg-à-bin
Lit.: Us (me&y’all), Nuga betrayed us (me&y’all).

(10) [1+3PL]

a. Núŋgè nò? sʷəŋ ám-bóg-à-bú
Nuga AUX.T2 sell 1SG-[1PL-LNK-3PL] T.2 V.L
Lit.: Nuga betrayed us (me&them)

b. mò-bóg-à-bú ki, Núŋgè nò? nʷ-sʷəŋ ám-bóg-à-bú
1SG-[1PL-LNK-3PL] TOP Nuga.H AGR.AUX.T2 N-AGR.sell 1SG-[1PL-LNK-3PL] T.HL V.HL
Lit.: Us (me&them), Nuga betrayed us (me&them)

(11) [1+2PL+3PL]

a. Núŋgè nò? sʷəŋ ám-bóg-à-bin-à-bú
Nuga AUX.T2 sell 1SG-[1PL-LNK-2PL-LNK-3PL] T.2 V.L
Lit.: Nuga betrayed us (me,y’all,them)
b. mò-bóg-à-bin-à-bú  kì, Nùgğéé nò?  n-swèén  ám-bóg-à-bin-à-bú
Lit: Us (me,y’all,them), Nuga betrayed us (me,y’all,them)

(12)  [1PL+2PL]

a. Nùgğéé nò?  s’wèén  jóg-bóg-à-bin
Nuga  AUX.T2  sell  1PL-[1PL-LNK-2PL]
  T.H  V.L
Lit.: Nuga betrayed us (us&y’all)

b. bóg-bóg-à-bin  kì, Nùgğéé nò?  n-swèén  jóg-bóg-à-bin
1PL-[1PL-LNK-2PL] TOP Nuga.H AGR.AUX.T2 N-AGR.sell 1PL-[1PL-LNK-2PL]
  T.HL  V.HL
Lit: Us (us&y’all), Nuga betrayed us (us&y’all)

(13)  [1PL+3]

a. Nùgğéé nò?  s’wèén  jóg-bóg-jí
Nuga  AUX.T2  sell  1PL-[1PL-3SG]
  T.H  V.L
Lit.: Nuga betrayed us (us&him)

b. bóg-bóg-jí  kì, Nùgğéé nò?  n-swèén  jóg-bóg-jí
1PL-[1PL-3SG] TOP Nuga.H AGR.AUX.T2 N-AGR.sell 1PL-[1PL-3SG]
  T.HL  V.HL
Lit: Us (us&him), Nuga betrayed us (us&him)

(14)  [1PL+3PL]

a. Nùgğéé nò?  s’wèén  jóg-bóg-à-bú
Nuga  AUX.T2  sell  1PL-[1PL-LNK-3PL]
  T.H  V.L
Lit.: Nuga betrayed us (us&them)

b. bóg-bóg-à-bú  kì, Nùgğéé nò?  n-swèén  jóg-bóg-à-bú
1PL-[1PL-LNK-3PL] TOP Nuga.H AGR.AUX.T2 N-AGR.sell 1PL-[1PL-LNK-3PL]
  T.HL  V.HL
Lit: Us (us&them), Nuga betrayed us (us&them)
(15) \( [1_{PL}+2_{PL}+3_{PL}] \)

a. Núngè nó? s\(^{w}\)èn jóg-bóg-à-bin-à-bú
Nuga AUX.T2 sell 1PL-[1PL-LNK-2PL-LNK-3PL]
T.H V.L
Lit.: Nuga betrayed us (us,y'all,them)

b. bóg-bóg-à-bin-à-bú kí, Núngè nó? \(^{n}\)-s\(^{w}\)èen jóg-bóg-à-bin-à-bú
1PL-[1PL-LNK-2PL-LNK-3PL] TOP Nuga.H AGR.AUX.T2 N-AGR.sell 1PL-[1PL-LNK-2PL-LNK-3PL]
T.HL V.HL
Lit: Us (us,y'all,them), Nuga betrayed us (us,y'all,them)

The above examples establish that in Medumba, a complex pronoun can function as a resumptive pronoun.

5.1.3 Implications of the (simple versus complex) pronoun partition

There are open questions with regard to the simple versus complex pronoun partition in Medumba. With the 1pl denotation of complement complex pronouns, we have seen that the part of the complex denoting the supremum is similar to the simplex pronoun form. Further investigation is needed to determine the syntax and semantics of simplex and complex pronouns. With regard to syntax, (i) are simplex pronouns simple DPs or are they part of the complex pronoun DP? (ii) Are complex pronouns simple DPs or coordinated DPs? With regard to semantics, (i) do simplex and complex pronouns denote individual or sets? (ii) what are the information-theoretic properties of simple and complex pronouns?

5.2 When does resumption occur?

In this section, I show that resumption is optional in root clauses (§5.2.1), obligatory in island contexts (§5.2.2) and in complement (qua disguised adjunct) clauses (§5.2.3). I argue that the optional resumption versus obligatory resumption partition found in Medumba can be accounted for in terms of the de dicto/de re distinction (§5.2.4).
5.2.1 Resumption is optional in root clauses

Resumption is optional in Medumba root clauses in that the tail of an A’-moved XP in root clauses can be associated with a gap or a resumptive pronoun. (16) shows that when the object wh-XP á wú ‘who’ is moved, a gap (16a) or a resumptive pronoun (16b) can surface at the extraction site. (17a) illustrates focus movement of the DP á má-ŋdùm ‘boy/FOC’ associated with a gap at the extraction site and (17b) the resumptive structure. (18) shows that the relativized DP má-ŋdùm ‘boy’ is compatible with a gap (18a) or a resumptive pronoun (18b) at the extraction site.

(16) Wh-movement

a. á wú Nūŋgè nóó? n-s:wéèn á?
   FOC WH Nuga AGR.AUX.T2 N-AGR.sell C.Q.H
   ‘Who did Nuga betray?’

b. á wú Nūŋgè nóó? n-s:wéèn í á?
   FOC WH Nuga AGR.AUX.T2 N-AGR.sell 3SG.H C.Q.H
   ‘Who did Nuga betray [him/her]?’

(17) Focus movement

a. á má-ŋdùm Nūŋgè nóó? n-s:wéèn lá
   FOC SG-male Nuga AGR.AUX.T2 N-AGR.sell C.-Q
   ‘The boyFOC Numi betrayed’

b. á má-ŋdùm Nūŋgè nóó? n-s:wéèn í lá
   FOC SG-male Nuga AGR.AUX.T2 N-AGR.sell 3SG.H C.-Q
   ‘The boyFOC Numi betrayed [him]’

(18) Relative clause

a. má-ŋdùm zà Nūŋgè nóó? n-s:wéèn lá …
   SG-male C.CL1 Nuga AGR.AUX.T2 N-AGR.sell C.-Q
   ‘The boy that Nuga betrayed…’
5.2.2 Resumption is obligatory in island contexts

Islands can be understood as configurations that render otherwise legitimate syntactic dependencies illicit (Boeckx 2007). The notion of island originates with Ross (1967) and includes domains like complex noun phrases, adjoined clauses, coordinate structures, ‘left branches’, sentential subjects, and embedded interrogative clauses. These domains are now considered to be standard diagnostics for movement. Chomsky (1973, 1986) further investigates these domains and refers to them under the general principle of subadjacency which is a condition that bars movement from crossing two or more bound nodes in one step. Bounding nodes are known as the top clausal S and NP (modern IP/TP and DP respectively) analyzed as barriers in Government and Binding Theory (Chomsky 1986, Haegeman 1994) or as phases in minimalism (Chomsky 2000, 2001).

In Medumba, a dependency across an island boundary is illegitimate if the tail of the A’-chain is a gap but if the tail is pronounced (i.e. spelled out as a resumptive pronoun), then the dependency becomes grammatical. The examples in (19) to (24) illustrate the contrast between ill-formed gaps (the (a) examples) versus well-formed resumption (the (b) examples), for the following island contexts: wh-island (19), adjunct island (20), complex DP1 (relative clause island) (21), complex DP2 (CP-complement to N) (22) and the coordinate structure constraint form a right-conjunct (23) and a left-conjunct (24).
(19) **Wh-island**

a. *á wú Nùgè nòō? m-bêttó [mbúù
FOC WH Nuga AGR.AUX.T2 N-ask C.HL
T.HL V.H
Wàtèt nòō? n-tʃɔɔʔdó á
Watat.H AGR.AUX.T2 N-AGR.greet C.Q.H
T.HL V.H
‘*Who did Nuga ask whether Watat greeted ___?*

b. á wú Nùgè nòō? m-bêttó [mbúù
FOC WH Nuga AGR.AUX.T2 N-ask C.HL
HL V.H
Wàtèt nòō? n-tʃɔɔʔdí i á
Watat.H AGR.AUX.T2 N-AGR.greet 3SG.H C.Q.H
T.HL V.H
‘*Who did Nuga ask if Watat greeted [him/her]?*

(20) **Adjunct island**

a. *á wú Nùgè nòō? nèn n-tón [kàà Wàtèt tʃɔɔʔdó] á?
FOC WH Nuga AGR.AUX.T2 N-go market before Watat.H AGR.greet C.Q.L
T.HL V.H
‘*Who did Nuga go to the market before Watat greeted?’

b. á wú Nùgè nòō? nèn n-tón kàà Wàtèt tʃɔɔʔdí i á?
FOC WH Nuga AGR.AUX.T2 N-go market before Watat.H AGR.greet 3SG.H C.Q.H
T.HL V.H
‘*Who did Nuga go to the market before Watat greeted [him/her]?*

(21) **Complex DP1 (Relative clause)**

FOC WH Nuga AGR.AUX.T2 N-see child C.CL1 3SG.L AGR.AUX.T2 N-AGR.greet C.Q.H
T.HL V.H T.HL V.H
‘*Who did Nuga see the child that greeted?*

b. á wú Nùgè nòō? n-dʒùn mèn zò á nòō? n-tʃɔɔʔdí i á?
FOC WH Nuga AGR.AUX.T2 N-see child C.CL1 3SG.L AGR.AUX.T2 N-AGR.greet 3SG.H C.Q.H
T.HL V.H T.HL V.H
‘*Who did Nuga see the child that greeted [him/her]?*
(22)  **Complex DP2 (CP complement to N)**


FOC  WH  Nuga  AGR.AUX.T2 hear  rumour  C.L  Numí  AGR.AUX.T2  N-AGR.sell  C.Q.H

T.HL  T.HL  V.HL

*Who did Nuga hear the rumour that Numi betrayed?*

b. á wú Núŋgè nóò? ʒú? ꩑ɔ ꩑ɔ ꩑ɔ Númí nóò? ŋ-swéén  í  á

FOC  WH  Nuga  AGR.AUX.T2 hear  rumour  C.L  Numí  AGR.AUX.T2  N-AGR.sell  3SG.H  C.Q.H

T.HL  T.HL  V.HL

*Who did Nuga hear the rumour that Numi betrayed?*

(23)  **The coordinate structure constraint (right conjunct)**

a. *á wú Núŋgè nóò? ŋ-tʃqɔʔdó  [Wàtèt búù  á?]

FOC  WH  Nuga  AGR.AUX.T2  N-AGR.greet  Watat  PL  C.Q.L

T.HL  V.HL

*Who did Nuga greet Watat and ——?*

b. á wú Núŋgè nóò? ŋ-tʃqɔʔdó  Wàtèt búù  jí  á?

FOC  WH  Nuga  AGR.AUX.T2  N-AGR.greet  Watat  PL  3SG.H  C.Q.H

T.HL  V.HL

*Who did Nuga greet Watat and [him/her]?*

(24)  **The coordinate structure constraint (left conjunct)**


FOC  WH  Nuga  AGR.AUX.T2  N-AGR.greet  PL  Watat  C.Q.L

T.HL  V.HL

*Who did Nuga greet —— and Watat?*

b. á wú Núŋgè nóò? ŋ-tʃqɔʔd  [í búù Wàtèt]  á?

FOC  WH  Nuga  AGR.AUX.T2  N-AGR.greet  3SG.H  PL  Watat  C.Q.L

T.HL  V.HL

*Who did Nuga greet [him/her] and Watat?*

The above data show that in Medumba, all syntactic islands can be circumvented via resumption. Resumption is also obligatory in extraction from an “ungoverned” position.

Within the Principle and Parameters framework, resumption in prepositional and genitive contexts overcomes the potential violation of the Empty Category Principle (ECP), (Chomsky 1981). ECP requires that non-pronominal null element be “properly governed” that is, c-
commanded by a lexical head with the relevant properties. But contrary to V, neither N nor P belongs to the set of proper governors. This predicts that while complements of V can tolerate gapping because the position is properly governed by V, complement of N and P will not tolerate gapping because N and P are not proper governors. In Medumba, extraction of an object of N or P requires resumption. This is illustrated in (25) for A'-extraction of an object of N and in (26) for A'-extraction of an object of P. The (a) examples show that these construals are illegitimate if there is a gap and legitimate if there is resumption (the (b) examples).

(25) **Extraction of an object of N**

a. *á wú Nùgè nòò? n-tʃɔ̃ʔdá jwín — á?
   FOC WH Nuga AGR.AUX.T2 N-AGR.greet friend C.Q.H
   T.HL V.HL
   *Who did Nuga greet friend of ___?

b. á wú Nùgè nòò? n-tʃɔ̃ʔdá jwín í á?
   FOC WH Nuga AGR.AUX.T2 N-AGR.greet friend 3SG.H C.Q.H
   T.HL V.HL
   [*Who did Numi greet the friend of [him/her]?]

(26) **Extraction of an object of P**

a. *á wú Nùgè nòò? m-fáá bò Wàtɛɛt mbɔ́ — á?
   FOC WH Nuga AGR.AUX.T2 N-AGR.give bag Watat.H PREP C.Q.L
   T.HL V.HL
   [Who did Nuga give the bag to Watat in front of?]

b. á wú Nùgè nòò? m-fáá bò wàtɛɛt mbɔ́ í á?
   FOC WH Nuga AGR.AUX.T2 N-AGR.give bag Watat.H PREP 3SG.H C.Q.H
   T.HL V.HL
   *Who did Nuga give the bag to Watat in front of [him/her]?

(25) and (26) establish movement from a genitive phrase and from PPs are illicit in Medumba unless the tails of the A'-chain is spelled out as a resumptive pronoun. Therefore,
genitive phrases and PPs behave like island domains in Medumba (see also Boeckx and Lasnik 2006).

5.2.3 Resumption is obligatory in complement (qua disguised adjunct) clauses

In chapter 3, I argued that apparent complement CPs in Medumba are disguised adjunct clauses and therefore are islands. I show in this section that unlike extraction from a root clause where there is optional resumption in that A’-extraction is compatible with a gap or a resumptive pronoun at the extraction site, extraction from a non-root clause in Medumba requires resumption. This is illustrated in (27) for subject wh-movement, (28) subject focus movement, (29) subject relativization, and (30) subject ki-topicalization. The (a) examples show that structures with a gap are ill-formed whereas those with a resumptive pronoun are well-formed.

(27) Wh-movement of subject of complement clause

a. *á wú Númí nòsì n-tjùp mòbù ___ nòsì n-dʒùn Nùgè à
FOC WH Numi AGR.AUX.T2 N-say C.L AGR.AUX.T2 N-see Nuga C.Q.L
T.HL T T.HL V.H

[Who did Numi say that saw Nuga?]

b. á wú Númí nòsì n-tjùp mòbù á nòsì n-dʒùn Nùgè à
FOC WH Numi AGR.AUX.T2 N-say C.L AGR.AUX.T2 N-see Nuga C.Q.L
T.HL T.HL V.H V.H

‘Who did Numi say that [s/he] saw Nuga?’

(28) Focus-movement of subject of complement clause

a. *á mèn Númí nòsì n-tjùp mòbù ___ nòsì n-dʒùn Nùgè lá
FOC child Numí AGR.AUX.T2 N-say C.L AGR.AUX.T2 N-see Nuga C.Q.
T.HL T H V.H T.HL V.H

[The child FOC Numi said that saw Nuga.]

b. á mèn Númí nòsì n-tjùp mòbù á nòsì n-dʒùn Nùgè lá
FOC child Numí AGR.AUX.T2 N-say C.L AGR.AUX.T2 N-see Nuga C.Q.
T.HL T H V.H T.HL V.H

‘The child FOC Numi said that [s/he] saw Nuga.’
(29) Relativization of subject of complement clause

a. *mén zà Numí nòò? n-ǰúp m̀bù ___ nòò? n-dʒám Nùngè lá
   child C.CL1 Numi AGR.AUX.T2 N-say C.L AGR.AUX.T2 N-see Nuga C.-Q
   T.HL V.H T.HL V.H

   [The child that Numi said saw Nuga.’]

b. mén zà Numí nòò? n-ǰúp m̀bù á nòò? n-dʒám Nùngè lá
   child C.CL1 Numi AGR.AUX.T2 N-say C.L 3SG.H AGR.AUX.T2 N-see Nuga C.-Q
   T.HL V.H T.HL V.H

   ‘The child that Numi said [s/he] saw Nuga…’

(30) Topicalization

a. *Nùmí kí, Nùngè nòò? n-ǰúp m̀bù ___ nòò? n-dʒán Wàtét
   Numi TOP Nuga.H AGR.AUX.T2 N-say C.L AGR.AUX.T2 N-sell Watat
   T.HL V.H V.H

   [Numi, Nuga said that saw Watat]

b. Nùmí kí, Nùngè nòò? n-ǰúp m̀bù á nòò? n-dʒán Wàtét
   Numi TOP Nuga.H AGR.AUX.T2 N-say C.L 3SG.H AGR.AUX.T2 N-see Watat
   T.HL V.H T.HL V.H

   ‘Numi, Nuga said [s/he] saw Watat’

The same pattern holds with extraction of objects from a complement clause. As shown below, extraction of objects from complement clauses is illicit in Medumba if there is a gap (the (a) examples) and licit if there is a resumptive pronoun (the (b) examples). This illustrated in (31) for object wh-movement, (32) for object focus movement and (33) for object relativization.

(31) Wh-movement of object of complement clause

a. *á wù Numí nòò? n-ǰúp m̀bù Wàtét nòò? n-dʒúùn ___ á
   FOC WH Numi AGR.AUX.T2 N-say C.L Watat.H AGR.AUX.T2 N-AGR.see C.Q.H
   T.HL V.H T.HL V.H

   [Who did Numi say that Watat saw?]

b. á wù Numí nòò? n-ǰúp m̀bù Wàtét nòò? n-dʒúùn í á
   FOC WH Numi AGR.AUX.T2 N-say C.L Watat.H AGR.AUX.T2 N-AGR.see 3SG.H C.Q.H
   T.HL V.H T.HL V.H

   ‘Who did Numi say that Watat saw [him/her]?’
(32) **Focus-movement of object of complement clause**

a. *á mën Numí nôò? n-tʃúp m-bù Wàtètèt nôò? n-dʒùùn ____ lá

FOC child Numí AGR.AUX.T2 N-say C.L Watat.H AGR.AUX.T2 N-AGR.see C.-Q
T.HL V.H T.HL V.H

[The child FOC Numi said that Watat saw]

b. á mën Numí nôò? n-tʃúp m-bù Wàtètèt nôò? n-dʒùùn i lá

FOC child Numí AGR.AUX.T2 N-say C.L Watat.H AGR.AUX.T2 N-AGR.see 3SG.H C.-Q
T.HL V.H T.HL V.H

‘The child FOC Numi said that Watat saw [him/her]’

(33) **Relativization of object of complement clause**

a. *mën zò Numí nôò? n-tʃúp m-bù Wàtètèt nôò? n-dʒùùn ____ lá

child C.CL1 Numí AGR.AUX.T2 N-say C.L Watat.H AGR.AUX.T2 N-AGR.see C.-Q
T.HL V.H T.HL V.H

[The child that Numi said Watat saw]

b. mën zò Numí nôò? n-tʃúp m-bù Wàtètèt nôò? n-dʒùùn i lá

child C.CL1 Numí AGR.AUX.T2 N-say C.L Watat.H AGR.AUX.T2 N-AGR.see 3SG.H C.-Q
T.HL V.H T.HL V.H

‘The child that Numi said Watat saw [him/her]’

The above examples establish that A’-extraction from a complement clause always requires resumption. This supports the claim that these apparent complement clauses are in fact adjunct clauses and therefore islands in Medumba.

5.2.4 **Implications of the (obligatory versus optional) resumption partition**

The obligatory versus optional resumption found with Medumba A’-extractions has semantic implications with regard to what have called in the literature the *de dicto* versus *de re* distinction.

The *de dicto* and *de re* readings are used to mark distinctions in the possible interpretation of statements (Sterian 2011). Quine (1956) introduced this distinction by pointing out the ambiguity of the following sentence (see also Mckay and Nelson 2014):
Ralph believes that someone is a spy

(i) **De dicto reading**: Ralph believes there are spies (Ralph believes: \( \exists x \ (x \text{ is a spy}) \))

(ii) **De re reading**: Someone is such that Ralph believes that s/he is a spy (\( \exists x \ (\text{Ralph believes that } x \text{ is a spy}) \)).

Although the *de dicto* and the *de re* distinction could mean different things to different authors, the distinction portrayed in this dissertation can be captured by the different interpretations of the following English sentence:

Donald believes that someone is out to get him

(i) **De dicto reading**: Donald suffers a general paranoia; he truly believes that a person is out to get him, but he doesn't have any beliefs about who this person may be. Someone in this case is unspecific (Donald believes: \( \exists x \ (x \text{ is out to get him}) \)).

(ii) **De re reading**: There is some person Donald has in mind and he believes this person is out to get him. Someone in this case is specific, that is picks out a particular person (\( \exists x \) (Donald believes that \( x \text{ is out to get him}) \)).

Doron (1982) observed that in Hebrew although a relative clause with a gap in object position is compatible with both the *de dicto* and the *de re* interpretation (37a), the presence of a resumptive pronoun in the same position is restricted to the *de re* reading. In (37b) there must be a particular woman Dani is looking for (Sichel 2014: 658).

\[
\begin{align*}
\text{(36)} & \quad \text{a. dani yimca et [ha-iša še-hu mexapes ___ ] (de re/de dicto)} \\
& \quad \text{b. dani yimca et [ha-iša še-hu mexapes ota ] (de re)} \\
& \quad \text{Dani find.FUT ACC the-woman C-3SG searches 3SG.FEM}
\end{align*}
\]

‘Dani will find the woman he is looking for (her).’ [Sichel 2014: 3]
Medumba object relative clauses exhibit the same behaviour. The gap strategy is ambiguous between the de dicto and the de re readings (38) whereas the resumptive strategy only permits the de re reading (39).

(37) Relative clause (gap strategy)

Numi áʔ-jún bʰ̥-kʰ̥ʔ tsò á tfʰ̥ɛët ᵃ-kú ᵃ-djóòk __ lá
Numi Fut-see pl.child-Dim C.CL6 3sg.H PRS N-IPFV N-AGR.search C.-Q

‘Lit: Nimi will see the children that he is looking for’
(i) **De dicto reading**: Numi is just looking for some random children (maybe to help him)
(ii) **De re reading**: Numi is looking for a specific group of children

(38) Relative clause (resumptive strategy)

Numi áʔ-jún bʰ̥-kʰ̥ʔ tsò á tfʰ̥ɛët ᵃ-kú ᵃ-djóòk júb lá
Numi Fut-see pl.child-Dim C.CL6 3sg.H PRS N-IPFV N-AGR.search 3pl.H C-Q

‘Lit: Nimi will find the children that he is looking for them’
(i) #**De dicto reading**: Numi is just looking for some random children
(ii) **De re reading**: Numi is looking for a specific group of children

Sichel (2014) proposes that the availability of the de dicto reading in relative clauses is related to reconstruction. The de dicto reading requires the low copy of the moved constituent to be interpreted but in the presence of a pronoun this reading is blocked (Sichel 2014: 659). Therefore only the de re reading is felicitous in resumptive contexts. This follows from what is argued to be the structure of relative clauses. Sichel argues that relative clauses are ambiguous between two distinct structures and that resumptive pronouns may surface in both structures. In the raising structure (40a), the head of the relative clause has moved to Spec-C from a position within TP. In this configuration, the relative clause head is interpreted within the relative clause, so reconstruction is obligatory whereas in the head-external structure (40b) the relative clause head is generated externally and interpreted in that position (Sichel 2014:656). In this configuration, the
relative clause head is related to the pronoun via binding (see also Safir 1984, 1986, McCloskey 1990, Aoun, Choueiri, and Hornstein 2001).

(39)  a. Raising structure
       b. Head-external structure

      DP
       \( \quad \) D the
       \( \quad \) CP
       \( \quad \) NP \( \triangle \) book\(_i\) that john read book\(_i\)

      DP
       \( \quad \) D the
       \( \quad \) NP \( \triangle \) book\(_i\) C' \( \triangle \)

the \( \lambda x \). John read \( \lambda x \) book

the book \( \lambda x \). John read \( \lambda x \)

(Sichel 2014:657)

Sichel argues that the Economy principle is restricted to the raising structure and requires the tail of the chain in this structure to surface as a gap whenever possible. However, while obligatory resumption is compatible with the raising structure, optional resumption is found only with the head-external (binding) structure. Moreover, in Sichel’s analysis only the raising structure allows reconstruction. This predicts that gapping and obligatory resumption will allow reconstruction (as they are compatible with raising), while optional resumption will block reconstruction (compatible with binding) as they are not conditioned by Economy principles.

In Hebrew non-island domains, resumption is optional when a direct object or embedded subject is relativized but is obligatory when the relativized position is within PP or NP (41). Interestingly, the \textit{de dicto} reading is also available when resumption is within a PP or NP.

(40)  a. Dani yimca et [ha-iša še-hu xolem aleya].
       Dani find.FUT ACC the-woman C-3SG dreams.of.3SG.FEM
       ‘Dani will find the woman he is dreaming of.’

       [Sichel 2014: 8a]
b. lo hekarnu et [ha-iṣa še-ha-iton A'im mexapsim et ha-bayit šela].
NEG 1PL.know ACC the-woman C-the-reporters searching ACC the-house 3SG.FEM
‘We didn’t know the woman who the reporters are looking for her house’.

[Sichel 2014: 8b]

This leads Sichel to establish the following generalization:

(41) Optional resumptives block reconstruction; obligatory resumptives allow reconstruction

(Sichel 2014: 658)

To sum up, it appears from Sichel’s generalization that if a resumptive structure blocks reconstruction, then the de dicto reading cannot be available in that structure whereas if a resumptive structure allows reconstruction then the de dicto reading is possible. The question that arises from this generalization is whether the Medumba facts walk and talk like Hebrew’s.

Recall that in Medumba root clauses object resumption is optional. Unlike Hebrew, these resumptive structures reconstruct in Medumba. The example in (43) illustrates anaphor binding and shows that even though there is a resumptive pronoun at its canonical position, the pronoun contains within the DP ‘his children’ is interpreted as if bound by the DP Nuga; that is it is reconstructed. In (44), the embedded idiomatic interpretation of ‘sell’ is still preserved after the DP has moved. The expression ‘to sell someone’ has an idiomatic reading in Medumba meaning ‘to betray’.

Lit: His children that Nuga banished [them] went to see the king.

= (i) His children that Nuga betrayed [them] went to see the king [idiomatic meaning].

# (i) His children that Nuga sold [them] went to see the king [literal meaning].
In fact, if structures with optional resumptive pronouns do not reconstruct in Medumba, only the literal reading of the idiomatic expression would be salient in the preceding example. This is not the case as trying to construct the literal reading of the idiomatic expression under this configuration is infelicitous.

The above examples show that in Medumba, structures with an optional resumptive pronoun reconstruct. So, if it is true that the absence of the _de dicto_ reading in Hebrew’s optional resumption is due to absence of reconstruction which allows the low copy of the moved item to be interpreted, its absence in Medumba cannot be due to the same reasons as optional resumption reconstructs in Medumba. Therefore, it seems this is due to a blocking effect given that the _de dicto_ reading is available with the gap strategy.

Let’s now turn to structures with obligatory resumption in Medumba. If the absence of the _de dicto_ reading in optional resumptive construals is due to a blocking effect, the prediction is that in obligatory resumptive structures (such as extractions from non-root clauses, extraction of an object of P or N) the _de dicto_ reading should be available in Medumba as there is no gap alternative of these structures. This prediction is confirmed. As illustrated in (45), Medumba non-root clause extractions require a resumptive pronoun at the tail of the A’-chain and are ambiguous between the _de dicto_ and the _de re_ readings.

(44)  Numí àʔ-júń  bʰó-í-kʰúʔ  ts̀ó  Nʉ̀gë̀  tʃùːp  mբù

Numi  Fut-see  PL.child-DIM  C.CL6  Nuga  N-AGR.say  C.L

á  tʃọɛ́ɛ̌t  n-kú  n-djóːk  jǔb  lá

3SG.H  PRS  N-IPFV  N-AGR.search  3PL.H  C.-Q

Lit: Numi will find the children that Nuga said that he is looking for [them]

(i) _de dicto_: Numi is looking for some random kids
(ii) _de re_: There is a particular group of kids that Numi is looking for
Other structures in which Medumba requires obligatory resumption are with extraction of an object of P or N. These domains too are ambiguous between the de dicto and the de re readings as illustrated in (46) for extraction of an object of N and (47) for extraction of an object of P.

(45) Nûmì àʔ jún bʰó-i-kʰúʔ tsò Nûŋgè nôʔʔ Nûmî see PL.child-DIM C.CL6 Nûngâ Nûmî IRR see PL.child-DIM C.CL6 Nûngâ AGR.AUX.T2

*Numi will find the children that Nuga greeted the friend of [them]

(i) de dicto: Numi is looking for some random kids that Nuga greeted the friend of theirs
(ii) de re: Numi is looking for a specific group of kids that Nuga greeted the friend of theirs

(46) Nûmì àʔ jún bʰó-i-kʰúʔ tsò Nûŋgè nôʔʔ Nûmî see PL.child-DIM C.CL6 Nûngâ Nûmî IRR see PL.child-DIM C.CL6 Nûngâ AGR.AUX.T2

m-fâà bô Wàtèćèt mbâ bô îlà N-AGR.give bag Watat.H PREP 3PL.H C.-Q

Lit: Numi will find the children that Nuga gave the bag to Watat in front of [them]

(i) de dicto: Numi will find some random kids that Nuga gave the bag to Watat in front of them
(ii) de re: Numi will find a specific group of kids that that Nuga gave the bag to Watat in front of them.

A question that arises from the preceding examples is how general the de dicto and the de re readings in Medumba are. In the literature, the focus has been on relative clauses. Given that wh-movement also exhibits the same pattern as relative clauses in that resumption is required in non-root-clause wh-extraction and optional in root clause wh-extraction, the question is whether the de dicto and the de re readings extend to those contexts as well in Medumba. It appears that Medumba non-root clause wh-extractions are ambiguous between the de dicto and the de re readings as illustrated in (47).
Unlike non-root clause extractions where resumption is required, Medumba root clause extractions exhibit optional resumption. Structures with a gap are ambiguous between the *de dicto* and the *de re* readings (48) whereas resumptive structures are restricted only to the *de re* reading (49).

(48)  **Wh-movement (gap strategy)**

\[
\text{á wú mbà jiít má-ndjùm ló nôô? n-tf³³ʔdô á}
\]

Lit: who did each man greet?

(i) *de dicto*: Spkr just wants to know who Nuga said each man greeted

(ii) *de re*: Spkr wants to know someone specific that Nuga said each man greeted

(49)  **Wh-movement (resumptive strategy)**

\[
\text{á wú mbà jiít má-ndjùm ló, nôô? n-tf³³ʔd=í á}
\]

Lit: who did each man greet [him/her]?

(i) #*de dicto*: Spkr wants to know who each man greeted

(ii) *de re*: Spkr wants to know someone specific that each man greeted

To sum up, it appears that in Medumba optional resumptive structures, the non-availability of the *de dicto* reading is the result of a blocking effect when a pronoun surfaces at the tail of an A'-chain. This contrasts with the Hebrew data where the absence of the *de dicto* reading is parallel with the absence of reconstruction. In obligatory resumptive structures, both languages behave the same way in that those obligatory resumptive structures are ambiguous. While Hebrew obligatory
resumptive structures reconstruct (and are de facto compatible with the *de dicto* reading), it is worth mentioning that both optional and obligatory resumptive structures reconstruct in Medumba. Therefore, reconstruction does not seem to be a factor at play in distinguishing the *de dicto/de re* distinction in Medumba. This has implications on how the obligatory and optional resumptive structures are derived in both languages. In Sichel’s view, obligatory resumptive structures with relative clauses involve raising and resumption in those structures is obligatory to circumvent island violation; whereas optional resumptive structures are head-external relatives derived via binding. The fact that resumptive structures in Medumba behave differently from Hebrew’s confirms that the relevant structures are derived via raising in Medumba. Moreover, reconstruction provides further evidence for a raising analysis.

5.3 Why does resumption occur?

In this section, I propose that resumptive structures in Medumba are subject to syntactic or semantic economy. Syntactic economy or economy of derivation derives resumption in Medumba island contexts, including non-root clauses (§5.3.1). Semantic economy or economy of interpretation derives resumption in Medumba root clauses (§5.3.2).

5.3.1 The syntactic basis of obligatory resumption: economy of derivation

Resumptive pronouns have been a subject of inquiry for generative linguists since the 1980’s. However, it remains a challenge whether one can get to a unifying account of resumptive pronouns cross-linguistically. The overarching question is: how are resumptive structures derived? Are they base-generated or derived by movement? The classical view on resumptive pronouns since the 1980’s is that resumptive structures are base generated and are derived via binding. Under this view, a resumptive pronoun is the spell out of an A’-bound variable (see a.o. Sells 1987, McCloskey 1990, 2006, Rouveret 2011). This view is consistent with languages where the
resumptive pronoun is used as a repair strategy in island violation contexts. However, there is also a movement approach to resumptive pronouns. With this approach, resumptive pronouns are viewed as the spell out of A’-bound traces (see a.o. Engdahl 1985, Koopman 1982, 1984, 2000). This approach is compatible with languages where resumptive pronouns are not only used as a repair strategy in island violation contexts but also in non-island contexts where both the gap strategy and the resumptive strategy are possible. With the advent of the Minimalist Program, two approaches on resumptive pronouns have emerged: (i) Resumption via Phasal-Agree, that is, a resumptive pronoun is the spell out of an Agree relation (Adger and Ramchand 2001, 2005, Rouveret 2002, 2008, 2011); (ii) Resumption via sub-extraction, that is a resumptive pronoun is the spell out of stranded constituent (Boeckx 2003).

We have seen that resumptive pronouns in Medumba surface both in island violation contexts and in contexts where there is no island violation. To account for how resumptive structures are derived in Medumba, I resort to the principle of Last Resort, which is an economy condition that stipulates that an operation may apply only if the derivation would otherwise result in an ungrammatical representation at PF or LF (Koopman and Sportiche 1986; Rizzi 1990; Chomsky 1991, 1998; Shlonsky 1992; Bobaljik 1995, Lasnik 1995; Ura 1996; Pesetsky 1997; Collins 2001). Economy conditions guarantee that derivations are optimal. They suggest that the length or cost of derivations must be minimized and that the representations formed in the course of a derivation should be as simple as possible, consisting of a minimal number of syntactic objects\footnote{42 X is a syntactic object iff 
(i) X is a lexical item token, or 
(ii) X is a set of syntactic objects 
(Collins and Stabler 2016:46)}, each of which is interpretable at either LF or PF (Collins 2001:45). In other words, the
principle of Last Resort requires that every operation applies for a reason (Bošcović 2011:1). The principle of Last Resort is defined as follows:

(50) An operation OP may apply only if the derivation would otherwise result in an ungrammatical representation (at PF or LF) (Collins 2001:46).

To get a unifying account of resumptive structures in Medumba, I posit that Last Resort can be conditioned either by syntactic or semantic constraints. Syntactic Last Resort derives resumptive pronouns in Medumba island violation contexts, i.e. classical islands and non-root (disguised adjunct) clauses. As for semantic Last Resort, it derives resumptive pronouns in Medumba non-island violation contexts, i.e. resumption with root-clauses. In this context, as shown in subsection (5.2.4), the gapping structure is ambiguous between the de dicto and the de re interpretation whereas the resumptive structure is unambiguous and only has the de re interpretation.

With regard to the application of Last Resort to islands, although movement is banned from island contexts, it has also been noticed that such configurations could be redeemed if the tail of the A’-chain is spelled out as a resumptive pronoun (Ross 1967) as in (52).

(51) Which boy did Lucy laugh after Mary kissed him.

Under this view, the resumptive pronoun is used as a Last Resort strategy when movement fails to yield a grammatical structure (Koopman and Sportiche 1986; Rizzi 1990; Ura 1996; Shlonsky 1992; Pesetsky 1997). Before getting into how resumptive structures are derived, it is important to first establish how the tail of the A’-chain ends ups being spelled out as a resumptive pronoun. That is, which mechanism underlies such operation. To account for this, I adopt Boeckx’s 2003 proposal that resumption is derived via sub-extraction. With sub-extraction, resumptive pronouns are stranded portions of the moved constituents they associate with (Boeckx 2003: 25). In fact,
sub-extraction consists of stranding the head D as a resumptive pronoun under feature-matching with the Wh-XP. I propose that this permits the moved wh-XP to be able to unlock the island so that it can licitly proceed its movement through Spec-C when the matrix CP-phase is built. This operation is necessary for the resulting configuration to be legitimate at the interfaces. The cost of unlocking the island is to spell out the stranded D as a resumptive pronoun (with matching features as wh-XP) when the Wh-XP is first merged.

Below, I give the step-by-step derivation of an object wh-movement from an embedded CP which I argue is an adjunct CP in Medumba.

(52) Step-by-step derivation of wh-movement from a disguised adjunct CP

a. *á wú Númí nòò? n-tʃúp ñòò Wàtête t nòò? n-ðǔn á
   FOC WH Numi AGR.AUX.T2 N-say C.L Watat H AGR.AUX.T2 N-AGR.see C.Q.H
   T.HL V.H T.HL V.H
   [Who did Numi say that Watat saw?]

b. á wú Númí nòò? n-tʃúp ñòò Wàtête t nòò? n-ðǔn í á
   FOC WH Numi AGR.AUX.T2 N-say C.L Watat H AGR.AUX.T2 N-AGR.see 3SG.H C.Q.H
   T.HL V.H T.HL V.H
   ‘Who did Numi say that Watat saw [him/her]?’

(53) Numeration of the gap sentence in (53)

{Númí; nòò?T1; n-tʃúp; ñòò; Wàtête; nòò?T2; n-ðǔnV; á.C.Q; CEXh; v; D1; D2; Tø1; Tø2;
áFOC; wúN}

a. Embedded vP-phase

I. Merge <D; Wh-XP>

   [DP [D Ø ] [Wh-XP^ á wú]
II. Merge $\langle DP; \text{vP} \rangle$ and $\langle V; DP \rangle$

$[\text{vP} [\text{DP}^\sim [\text{Wàtèét} ]] [\text{vP} [\text{v} \emptyset ] [\text{VP} [\text{v} \text{ngùùn}] [\text{DP} [\text{D} \emptyset ] [\text{Wh-XP}^\sim \text{Wh wú}]]$

III. Merge Wh-XP to Spec-v to avoid PIC; VP sent to transfer

$[\text{vP} [\text{Wh-XP}^\sim \text{á wú}] [\text{vP} [\text{DP}^\sim [\text{Wàtèét} ]] [\text{vP} [\text{v} \emptyset ] [\text{VP} [\text{v} \text{ngùùn}] [\text{DP} [\text{D} \emptyset ] [\langle \text{Wh-XP} \rangle]]$
b. Embedded CP-phase

I. Merge <T1; vP>

[TP2 [T2 nɔɔʔ] [vP [Wh-XP^ á wú] [vP [DP^ [Wàtèʔt ] ] [vP [v Ø ] [VP [V ⁿʤūùn ] [DP [D Ø ] []<Wh-XP>]]]

II. Merge <To1; TP2>; Subject DP moves to Spec-T1 and t2 moves to T1

[TP1 [DP^ [Wàtèʔt ] ] [TP1 [T1 ø [T2 nɔɔʔ]]] [TP2 [<T2>] [vP [Wh-XP^ á wú] [vP [<DP>]] [vP [v Ø ] [VP [V ⁿʤūùn ] [DP [D Ø ] []<Wh-XP>]]]
III. Merge <C; TP>; merge Wh-XP to Spec-C and TP sent to transfer

[CP [Wh-XP^ á wú] [CP [C mbụ] [TP1 [DP^ [Wàtc̄ēt ]] [TP1 [T1 ø [T2 nọ́ọ́?]] [TP2 [<T2>] [vP [<Wh-XP>] [vP [<DP>] [vP [v Ø ] [VP [V ⁿđụ́nn ] [DP [D Ø ] [<Wh-XP>]]]]]]]]]]]]]]]]]]]]]]]]}}

C. Matrix vP-phase

I. Merge <V; CP>

[VP [V nʃụ́p ] [CP [Wh-XP^ á wú] [CP [C mbụ] [TP1 [DP^ [Wàtc̄ēt ]] [TP1 [T1 ø [T2 nọ́ọ́?]] [TP2 [<T2>] [vP [<Wh-XP>] [vP [<DP>] [vP [v Ø ] [VP [V ⁿđụ́nn ] [DP [D Ø ] [<Wh-XP>]]]]]]]]]]]]]]]]]]]]}}

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II. Merge $<v; VP>$ + extraposition of CP as $vP$-adjunct; $VP$ sent to transfer

$[vP [vP [DP^ Nùmí ] [vP [v ∅] [VP [V nʧúp] [<CP>]]]]] \text{[CP [Wh-XP^ á wú] [CP [C n'bù] [TP1 [DP^ [Wàtët ] [TP1 [T1 ∅ [T2 nôô?]]] [TP2 [<T2>] [vP [<Wh-XP>] [vP [<DP>] [vP [v ∅] [VP [V nʤùn ] [DP [D ∅ ] [<Wh-XP>]]]]]]]]]}}$
d. Matrix vP-phase

I. Merge < T2, vP>

[TP2 [T2 nô̤ʔ] [vP [vP [DP^ Nûmî ] [vP [v Ø] [VP [V ʰtfüp] [<CP>]]]] [CP [Wh-XP^ á wû] [CP [C ’bù] [TP1 [DP^ [Wâtêêt ] [TP1 [T1 Ø [T2 nô̤ʔ]]] [TP2 [<T2>] [vP [<Wh-XP>] [vP [<DP>]] [vP [v Ø ] [VP [V ʰdju:n ] [DP [D Ø ] [<Wh-XP>]]]]]]

II. Merge < Tô2, TP2>

[TP [DP^ Nûmî ] [TP1 [T1 Ø [T2 nô̤ʔ]]] [TP2 [<T2>] [vP [vP [<DP>]] [vP [v Ø] [VP [V ʰtfüp] [<CP>]]]] [CP [Wh-XP^ á wû] [CP [C ’bù] [TP1 [DP^ [Wâtêêt ] [TP1 [T1 Ø [T2 nô̤ʔ]]] [TP2 [<T2>] [vP [<Wh-XP>] [vP [<DP>]] [vP [v Ø ] [VP [V ʰdju:n ] [DP [D Ø ] [<Wh-XP>]]]]]}}

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III. Merge \(<C_{EXh}; TP>\); Merge Wh-XP to Spec-C1; TP sent to transfer

\[
[CP1 [Wh-XP^ á wù]][CP1 [CExh o] [TP1 [DP^ Nùmí ] [TP1 [T1 o [T2 nóò??]]] [TP2 [\langle T2\rangle] [vP [vP [\langle DP\rangle] [vP [v o] [vP [V nʧùp] [\langle CP\rangle]]]]] [CP [Wh-XP^ á wù] [CP [C mbaru] [TP1 [DP^ [Wàtčét ] [TP1 [T1 o [T2 nóò??]]] [TP2 [\langle T2\rangle] [vP [\langle Wh-XP\rangle] [vP [\langle DP\rangle] [vP [v o] [vP [V ndʒùùn ] [DP [D o ] [\langle Wh-XP\rangle]]]]]]]]]]])]
\]

IV. Merge \(<C_o; CP1>\); Merge CP1 to Spec-C1

\[
[*CP2 [CP1 [Wh-XP^ á wù]][CP1 [CExh o] [TP1 [DP^ Nùmí ] [TP1 [T1 o [T2 nóò??]]] [TP2 [\langle T2\rangle] [vP [vP [\langle DP\rangle] [vP [v o] [vP [V nʧùp] [\langle CP\rangle]]]]] [CP [Wh-XP^ ] [CP [C mbaru] [TP1 [DP^ [Wàtčét ] [TP1 [T1 o [T2 nóò??]]] [TP2 [\langle T2\rangle] [vP [\langle Wh-XP\rangle] [vP [\langle DP\rangle] [vP [v o] [vP [V ndʒùùn ] [DP [D o ] [\langle Wh-XP\rangle]]]]]]]]]]])]
\]
This derivation results in ungrammaticality as adjunct CPs are locked islands, hence the moved Wh-XP crosses that boundary to the specifier position of the matrix CP. However, the Wh-XP can move and the stranded D is spelled out as a resumptive pronoun under feature-matching with the wh-XP as shown in (55):

(54)  * Merge Wh-XP to Spec-v; spell out stranded D as PRN and send VP to transfer

\[
\begin{align*}
\text{vP} & \quad [\text{Wh-XP}^\wedge \text{á wù}] [\text{vP} [\text{DP}^\wedge \text{Wátēēt} ] ] [\text{vP} [\text{v} \emptyset ] ] [\text{vP} [\text{V} \text{ṅōdùnn} ] ] [\text{DP} [\text{D} \text{i} ] ] [\text{<Wh-XP>}] 
\end{align*}
\]
Spelling-out the stranded D as a resumptive pronoun enables the wh-XP to be able to unlock the adjunct island. That is, being able to re-merge from the specifier position of the adjunct CP. Thus, the wh-XP can reach Spec-C matrix where it is interpreted. This results in a well-formed sentence.

(55) **island unlocking**

\[
\text{[CP1 [Wh-XP^ á wú]] [CP1 [CExh ø] [TP1 [DP^ Númi ] [TP1 [T1 ø [T2 nɔɔʔ]] [TP2 [<T2>]] [vP [vP [<DP>] [vP [v ø] [VP [V ñtʃúp] [<CP>]]]] [CP<Unlocked> [Wh-XP^ á wú] [CP [C mbù] [TP1 [DP^ [Wàtèé]] [TP1 [T1 ø [T2 nɔɔʔ]] [TP2 [<T2>]] [vP [<Wh-XP>] [vP [<DP>] [vP [v ø] [VP [V ñdʒùn ]] [DP [D í ] [<Wh-XP>]]]
}
\]

To sum up, it is worth mentioning that these island contexts also show A’-agreement. Given that A’-agreement is a crucial diagnostic of A’-movement in Medumba, this is an argument in favor of deriving island structures through movement. This situation is similar to the Weak-Crossover effects cases given in chapter 2 which are ameliorated when there is a resumptive pronoun. A question that arises and which is still unresolved is whether the Weak-Crossover effects cases are also derived in the same way as islands given the presence of A’-agreement or whether they are
derived through a different mechanism. The answer to this question will be a subject of further investigations.

5.3.2 The semantic basis of optional resumption: economy of interpretation

In the previous subsections, I argued that resumption with islands is a result of a syntactic Last Resort condition that forces the tail of the A’-chain to be spelled out as a resumptive pronoun whenever there is an A’-dependency relation across an island boundary. This subsection tries to answer the question what forces resumption with root clauses where the A’-dependency is not across an island boundary. I posit that resumption with root clauses is governed by semantic economy or economy of interpretation. This economy condition on the interpretation of A’-chains seeks to disambiguate A’-dependencies that could otherwise yield ambiguous interpretations.

(56) Condition on interpretation of A’-chains:

Spell out the tail of the A’-chain only if necessary

In the above condition, only if necessary means only when one deems the resulting output would be ambiguous. As established in subsection 5.2.4, construals involving extraction from an object position are compatible with the de dicto and the de re interpretation if the tail of the A’-chain is a gap, and are only compatible with the de re interpretation when the tail of the A’-chain is a resumptive pronoun. In (58a) for instance, when the question is asked using the gap strategy, two readings are possible: Either (i) the speaker wants to know who is the person that Nuga betrayed or (ii) the speaker knows about some specific person that Nuga betrayed and is inquiring further information about them. But, when the question is asked using resumption, the interpretation that it conveys is only specific (58b). That is the speaker knows about someone specific that Nuga betrayed and is inquiring further information.
(57) Wh-movement

a. á wú Nùŋgè nóö? n-sʷ́ɛ̀n — á?
FOC WH Nuga AGR.AUX.T2 N-AGR.sell C.Q.H
T.HL V.HL

(i) *de dicto*: Spkr wants to know who Nuga betrayed
(ii) *de re*: Spkr knows someone specific that Nuga betrayed and is enquiring further information

b. á wú Nùŋgè nóö? n-sʷ́ɛ̀n í á?
FOC WH Nuga AGR.AUX.T2 N-AGR.sell 3SG.H C.Q.H
T.HL V.HL

(i) #*de dicto*: Spkr wants to know who Nuga betrayed
(ii) *de re*: Spkr knows someone specific that Nuga betrayed and is enquiring further information

In the following, I give the step-by-step derivation of gap and resumptive structures in root clauses.

(58) Numeration of the gap structure in (58a)

{NùŋgèN; nóö?₁₁; n-sʷ́ɛ̀nᵣ; áC.Q; C_EXH; v; D₁; D₂; T₀; áFOC; wúN}

a. vP-phase

I. Merge <D; Wh-XP>

[DP [D Ø ] [Wh-XP^ á wú]]

II. Merge <DP; vP> and <V; DP>

[vP [DP^ [Nùŋgè ]] [vP [v Ø ] [VP [V n-sʷ́ɛ̀n] [DP [D Ø ] [Wh-XP^ á wú]]]]

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III. Merge Wh-XP to Spec-v to avoid PIC; VP sent to transfer

\[
[vP [Wh-XP^ á wú]][vP [DP^ [Nùŋgè ] ] [vP [v Ø ] [VP [V ñsẃéén] [DP [D Ø ] ] [<Wh-XP>]]
\]

b. CP-phase

I. Merge <\text{T2};vP>

\[
[TP2 [T2 nòɔ? ] [vP [Wh-XP^ á wú]][vP [DP^ [Nùŋgè ] ] [vP [v Ø ] [VP [V ñsẃéén] [DP [D Ø ] ] [<Wh-XP>]]
\]
II. Merge < T₀; TP2 >

[TP2 [DP^ [Nùⁿgê]] [TP1 [T1 [T1 ø] [T2 nò dó?]]] [TP2 [T2] [V [Wh-XP^ á wù] [V [<DP>] [V [ø] [VP [V nʷɛɛ̀n]] [DP [D ø] [VP [vP [vP <Wh-XP>]]]]]]]]

III. Merge < CExh; TP >

[CP1 [Wh-XP^ á wù] [CP1 [CExh ø] [TP2 [DP^ [Nùⁿgê]] [TP1 [T1 [T1 ø] [T2 nò dó?]]] [TP2 [T2] [V [Wh-XP^ á wù] [V [<DP>] [V [ø] [VP [V nʷɛɛ̀n]] [DP [D ø]] <Wh-XP>]]]]]
In the above structure, given that the stranded D-head is empty (gap), the resulting configuration ends up having an ambiguous interpretation; that is, compatible with the de dicto and de re
readings. However, the stranded D-head can be spelled out as a resumptive pronoun under feature matching with the Wh-XP at first merge as given below.

(59)  
\[
\text{Merge } <DP; \text{ vP}> \text{ and } <V; DP>
\]

\[
[vP [DP^ {\text{Nùn̈gê}}] [vP [\emptyset] [VP [V n̂ŝên̂ž] [DP [D í ] [Wh-XP^ á wú]]]
\]

The derivation will follow the same steps as the gapping structure until the Wh-XP reaches its landing position at Spec-C as illustrated in the final step of the derivation below.

\[
\text{[CP2 [CP1 [Wh-XP^ á wú]] [CP1 [CExh \emptyset] [TP2 [DP^ {\text{Nùn̈gê}}]] [TP1 [T1 [T1 o] [T2 n̂ŝoʔ]] [TP2 [<T2>]] [vP [<Wh-XP>]] [vP [\emptyset] [VP [V n̂ŝên̂ž] [DP [D í ] [<Wh-XP>]]]]]]]}
\]

After this final step of the derivation, the resulting configuration is unambiguous in Medumba and is consistent only with the \textit{de re} interpretation.
5.3.3 Implications of the economy (of derivation versus interpretation) partition

In the preceding section we saw that resumption is Medumba is regulated by syntactic and semantic economy. Syntactic economy or economy of derivation is used as a last resort strategy to salvage configurations that would otherwise results in ungrammaticality whereas semantic economy or economy of interpretation is used for configurations that would results in ambiguity. What needs to be resolved is the question whether syntactic and semantic economy results from the application of two rules or whether they can be reduced to the application of the same rule.

5.4 Question/answer sequences and the gap/resumption partition in Medumba

This section focuses on gap and resumptive structures in Medumba and their possible answers. The answer to a D-linked wh-question can be an individual-denoting expression, a natural function or a pair-list (Sharvit 1999). For instance, an answer to the wh-question which woman did every boy greet in English could be an individual denoting variable, a natural function or a pair list as given below.

(60)  
  a. Q: Which woman did every boy greet?
  b. A1: Mary [Individual]
     A2: His mother [Natural function]
     A3: John greeted Mary; Bill greeted Sue, … [Pair list]

In Medumba, wh-XPs, including D-linked ones, come with two guises: (i) non-plural wh-XPs and (ii) plural wh-XPs. In this section, I show that answers to non-plural wh-XPs can only be individual-denoting variables whereas answers to plural wh-XPs can only be a pair-list. The natural function reading is always unavailable. This is summarized in the table below.
<table>
<thead>
<tr>
<th></th>
<th>Individual</th>
<th>Natural function</th>
<th>Pair-list</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-plural wh-XP</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>Plural wh-XP</td>
<td>NO</td>
<td>NO</td>
<td>YES</td>
</tr>
</tbody>
</table>

Table 5.3: Question and answer sequences in Medumba

5.4.1 Non-plural wh-XPs

In Medumba, non-plural wh-XPs include bare wh-XPs and singular D-linked wh-XPs. (62) shows that a felicitous answer to a bare wh-question such as (62Q) can be a singular DP (A1-a), a coordinated singular DP (A1-b) or a coordinated plural DP (A4-b), a singular pronoun (A2-a), or a complex pronoun regardless of whether the focal referent is singular (A2-b) or plural (A3-a). Infelicitous answers are those whose plural denotations are supremum, including plural DPs (#A4-a), plural simple pronouns (#A3-b).

(61) Q. á wú mbà jíit má-phìdžùm ló nòndì̃? n-tʃɔ̀ʔdɔ̀ __ á
FOC  WH even SG.which SG-male ? AGR.AUX.T2 N-AGR.greet C.Q.H
T.HL V.HL

Lit: who did each man greet yesterday?

A1: a. á Nùgè
FOC Nuga
‘Nuga’

b. á Nùgè bùù Sèmí
FOC Nuga PL Sami
‘Nuga and Sami’

A2: a. á jí
FOC 3SG.H
‘Him’

b. á jí-bú-à-bú
FOC 1SG-[1PL-LNK-3PL]
‘Them (him&them)’
A3: a. á bú-bú-à-bú  
   FOC 1PL-[1PL-LNK-3PL]  
   ‘Them (them&them)’

   b. #á bú  
   FOC 3PL.H  
   ‘Them’

A4: a. #á bá-ⁿdʒ üm  
   FOC pl-male  
   ‘The men’

   b. á bá-ⁿdʒ üm bú à bùú⁻³ⁿí  
   FOC pl-male PL LNK people-female  
   ‘The men and the women’

(62) establishes that coordinated DPs and complex pronouns are felicitous answers to a bare wh-question in Medumba. But it is an open question why plural (non-coordinated) DPs and plural pronouns are infelicitous. I hypothesize that bare wh-XPs in Medumba pick either singleton sets or sets members constituting a set of set but never the supremum.

In question answer sequences, a felicitous answer to these wh-questions can only be an individual-denoting expression but never a natural function or a pair list. This holds regardless of whether the moved wh-phrases leaves at the extraction site a gap, a simple or complex resumptive pronoun.

This is summarized in table 5.4.

<table>
<thead>
<tr>
<th>Question Strategies</th>
<th>INDIVIDUAL</th>
<th>NATURAL FUNCTION</th>
<th>PAIR LIST</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bare wh</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gap</td>
<td>✔</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Resumption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simplex PRN</td>
<td>✔</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Complex PRN</td>
<td>✔</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td><strong>Sg. D-linked</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gap</td>
<td>✔</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Resumption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Simplex PRN</td>
<td>✔</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Complex PRN</td>
<td>✔</td>
<td>✗</td>
<td>✗</td>
</tr>
</tbody>
</table>

Table 5.4: Non-plural wh-XPs and the denotation of their answers in Medumba
5.4.1.1 Individual variable denotation possible with non-plural wh-XPs

An individual-denoting expression is felicitous as answer to a wh-question construed with a bare wh-XP in Medumba. This is true regardless of whether the moved wh-XP leaves a gap, a simple or complex resumptive pronoun. This is shown in (63) for the gap strategy (Q1); the simple pronoun resumptive strategy (Q2); and the complex pronoun resumption (Q3).

(62) **Q1 (with gap)**

\[ \text{á wú} \, \text{mbà} \, \text{jiit} \, \text{má-ndʒùm} \, \text{ló} \, \text{nòó?} \, \text{n-tföö?dò} \, \text{á} \]

FOC WH even SG.which SG-male ? AGR-AUX.T2 N-AGR.greet C.Q.H
T.HL V.HL

Lit.: who did each man greet yesterday?

**Q2 (with simple pronoun)**

\[ \text{á wú} \, \text{mbà} \, \text{jiit} \, \text{má-ndʒùm} \, \text{ló} \, \text{nòó?} \, \text{n-tföö?d} \, \text{i} \, \text{á} \]

FOC WH even SG.which SG-male ? AGR-AUX.T2 N-AGR.greet 3SG.H C.Q.H
T.HL V.HL

Lit.: who did each man greet [him/her] yesterday?

**Q3 (with complex pronoun)**

\[ \text{á wú} \, \text{mbà} \, \text{jiit} \, \text{má-ndʒùm} \, \text{ló} \, \text{nòó?} \, \text{n-tföö?dò} \, \text{jâg-bîg-à-bû} \, \text{á} \]

FOC WH even SG.which SG-male ? AGR-AUX.T2 N-AGR.greet 1PL-[1PL+3PL] C.Q.H
T.HL V.HL

Lit.: who did each man greet [us&them] yesterday?

(63) **A:** á Nùŋgë
FOC Nuga

In Medumba, similar to wh-questions construed with a bare wh-XP, singular D-linked wh-XPs can also have as a felicitous answer an individual-denoting expression; this holds of questions formed by gapping (65-Q1), resumption with a simple pronoun (65-Q2), or resumption with a complex pronoun (65-Q3).
(64) **Q1 (with gap)**

á jìít mèn-3wí ınıbà jìít má-aŋdʒùm ló nỳ̀? ın-tʃùndʒì dà á

FOC SG. which pers-female even SG. which SG. male  AGR. AUX. T2 N-AGR. greet C.Q.H

Lit: which woman did each man greet yesterday?

**Q2 (with simple pronoun)**

á jìít mèn-3wí ınıbà jìít má-aŋdʒùm ló nỳ̀? ın-tʃùndʒì dà=ɪ á

FOC SG. which pers-female even SG. which SG. male  AGR. AUX. T2 N-AGR. greet=3SG. H C.Q.H

Lit.: which woman did each man greet her yesterday?

**Q3 (with complex pronoun)**

á jìít mèn-3wí ınıbà jìít má-aŋdʒùm ló nỳ̀? ın-tʃùndʒì dà jòg-bàŋ-à-bù á

FOC which pers-female even which SG. male  AGR AUX. T2 N-AGR. greet 1PL 1PL+3PL C.Q.H

Lit.: which woman did each man greet [us&them] yesterday?

(65) A: á Nù́ngê

FOC Nuga

5.4.1.2 **Natural function denotation unavailable with non-plural wh-XPs**

A natural function cannot be construed as a felicitous answer to non-plural wh-phrases in Medumba. This holds regardless of whether the moved wh-XP leaves a gap (67-Q1), a simple (67-Q2) or complex (67-Q3) pronoun as resumption. As illustrated below for the singular D-linked wh-XP\(^{43}\), the answer á màyàp ‘his mother’ cannot be interpreted as referring to each man’s mother. This is in a context in which each man greeted his own mother.

\(^{43}\)This is also true for the bare wh-phrase:

(i) Q1 (gap): á wù ınbà jìít má-aŋdʒùm ló nỳ̀? ın-tʃùndʒì dà á

FOC WH even SG. which SG. male  AGR. AUX. T2 N-AGR. greet C.Q.H

Lit: who did each man greet yesterday?

Q2 (simple PRN): á wù ınbà jìít má-ndʒùm ló nỳ̀? ın-tʃùndʒì dà=ɪ á

FOC WH even SG. which SG. male  AGR. AUX. T2 N-AGR. greet=3SG. C.Q.H

Lit: who did each man greet [him/her] yesterday?

Q3 (complex PRN): á wù ınbà jìít má-m-ndʒùm ló nỳ̀? ın-tʃùndʒì dà jòg-bàŋ-à-bù á
(66)  Q1 (with gap)

á jīt mën-ziwí mɔ̀ jīt má-ŋdɔ̀m lò nɔ̀? n-tʃɔ̀ɔdɔ̀  ámbɔ̀ jīt mɔ̀-n-diɔm lò nɔ̀? n-tʃɔ̀ɔdɔ̀  ámb  ámb jīt màn-dʒùm ló nɔ̀? n-tʃɔ̀ɔdɔ̀  ámb
FOC SG. which pers-female even SG. which SG-male  agr-aux. t2 n-agr. greet c.q. h

Lit.: which woman did each man greet yesterday?

Q2 (with simple pronoun)

á jīt mën-ziwí mɔ̀ jīt má-ŋdɔ̀m lò nɔ̀? n-tʃɔ̀ɔd=í ámb  ámb jīt màn-dʒùm ló nɔ̀? n-tʃɔ̀ɔdɔ̀  ámb  ámb jīt màn-dʒùm ló nɔ̀? n-tʃɔ̀ɔdɔ̀  ámb
FOC SG. which pers-female even SG. which SG-male  agr-aux. t2 n-agr. greet=3 sg. h c.q. h

Lit.: which woman did each man greet her yesterday?

Q3 (with complex pronoun)

á jīt mën-ziwí mɔ̀ jīt má-ŋdɔ̀m lò nɔ̀? n-tʃɔ̀ɔd=í ámb  ámb jīt màn-dʒùm ló nɔ̀? n-tʃɔ̀ɔdɔ̀  ámb  ámb jīt màn-dʒùm ló nɔ̀? n-tʃɔ̀ɔdɔ̀  ámb
FOC SG. which pers-female even SG. which SG-male  agr-aux. t2 n-agr. greet=3 sg. h c.q. h

Lit.: which woman did each man greet her yesterday?

(67)  A: #á máu台南ìp
FOC mother.3poss
‘His mother’

In the above examples, the answer á máu台南ìp ‘his mother’ is only felicitous if referring to someone else’s mother and therefore individual-denoting. This is in a context in which each man greeted x’s mother. This doesn’t come as a surprise in Medumba. Recall that in chapter 2, I argued that ex-situ wh-questions in Medumba are exhaustive and exclusively individual-denoting; thus, require an exhaustive individual-denoting answer as well. The answer á máu台南ìp ‘his mother’ in the above examples is infelicitous as it leaves open the set of alternatives that can be used as

FOC WH even SG. which SG-male  agr-aux. t2 n-agr. greet 1-pl- [1-pl+3-pl] c.q. h

Lit.: who did each man greet [us&them] yesterday?

(ii)  #á máu台南ìp
FOC mother.3poss
‘His mother’
possible answers to the question. As shown in chapter 2, a natural function is predictably felicitous as an answer to an in-situ wh-question as they are deemed non-exhaustive in Medumba. This is illustrated in (69).

(68) a. ìmbà jìt má-ndʒùm ló nò? tʃɔ̀dɔ̀ á jìt mèn-3wí á
   even SG.which SG-male ? AUX.T2 greet.H FOC SG.which person-female C.Q.H
   Lit.: Each man greeted which woman?

   b. màuqáp
   mother.3POSS
   ‘His mother’

5.4.1.3 Pair list denotation unavailable with non-plural wh-XP

In Medumba wh-questions construed with a non-plural wh-XP, a pair-list denotation is ruled out as a felicitous answer for the gap strategy (70-Q1); and the resumptive strategy with a simplex (70-Q2) or a complex (70-Q3) pronoun as shown for the singular D-linked wh-phrase\(^ {44} \).

(69) Q1 (with gap)

á jìt mèn-3wí ìmbà jìt má-ndʒùm ló nò? n-ʃɔ̀dɔ̀ á
FOC SG.which pers-female even SG.which SG-male ? AGR.AUX.T2 N-AGR.greet C.Q.H
   T.HL V.HL
Lit.: which woman did each man greet yesterday?

\(^ {44} \) Same for the bare wh-phrase

(i) Q1 (gap): á wù ìmbà jìt má-ndʒùm ló nò? n-ʃɔ̀dɔ̀ __ á
Q2 (simple PRN): á wù ìmbà jìt má-ndʒùm ló nò? n-ʃɔ̀dɔ̀=i á
Q3 (complex PRN): á wù ìmbà jìt má-ndʒùm ló nò? n-ʃɔ̀dɔ̀ jòg-bág-à-bú́ á
   FOC WH even SG.which SG-male ? AGR.AUX.T2 N-AGR.greet 1PL-[1PL+3PL] C.Q.H
   Lit.: who did each man greet him/[us&them] yesterday?

   b. A: #[ʃùù? ìmbá-á Wàtžø lá, Pità nò? n-ʃɔ̀d=;]
sùù? ìmbá-á Nùgè lá, Máŋá nò? n-ʃɔ̀d= ]
come C-be-FOC DP C DP AGR.AUX.T2 N-AGR.greet=3SG
Lit.: As for Watat, Peter greeter him/her; as for Nuga, Mary greeted him/her’
Q2 (with simple pronoun)

á jíjí mèn-3wí mbà jíjí mà-n-dʒùm ló nò? n-tʃɔɔd=í á
FOC  SG.which  pers-female  even  SG.which  SG-male  ?  AGR.AUX.T2  N-AGR.greet=3SG.H  C.Q.H

Lit.: which woman did each man greet her yesterday?

Q3 (with complex pronoun)

á jíjí mèn-3wí mbà jíjí mà-n-dʒùm ló nò? n-tʃɔɔdó jɔ̌-bɔ̀-à-bù á
FOC  which  pers-female  even  which  SG-male  ?  AGR.AUX.T2  N-AGR.greet 1PL[1PL+3PL]  C.Q.H

Lit.: which woman did each man greet [us&them] yesterday?

(70)  A: #sùtì m-bá-íá Wàtët lá, Pità nò? n-tʃɔɔd=í;
come  N-be-FOC  Watat  C  Peter  AGR.AUX.T2  N-greet=3SG.H

sùtì m-bá-íá Nùgè lá, Màrjà nò? n-tʃɔɔd=í]
come  N-be-FOC  Nuga  C  Mary  AGR.AUX.T2  N-greet=3SG.H

Lit: As for Watat, Peter greeter him/her; as for Nuga, Mary greeted him/her’

5.4.2 Plural wh-XPs

Medumba plural wh-XPs include bà-marked bare wh-XPs and plural D-linked wh-XPs. In question/answer sequences, only the pair list reading is compatible with plural wh-XP as summarized in table 5.5.

<table>
<thead>
<tr>
<th>Question Strategies</th>
<th>INDIVIDUAL</th>
<th>NATURAL FUNCTION</th>
<th>PAIR LIST</th>
</tr>
</thead>
<tbody>
<tr>
<td>bà wh-XP</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gap</td>
<td>√</td>
<td>√</td>
<td>✓</td>
</tr>
<tr>
<td>Resumption Simplex PRN</td>
<td>√</td>
<td>√</td>
<td>✓</td>
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<tr>
<td>Resumption Complex PRN</td>
<td>√</td>
<td>√</td>
<td>✓</td>
</tr>
<tr>
<td>PL. D-linked</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gap</td>
<td>√</td>
<td>√</td>
<td>✓</td>
</tr>
<tr>
<td>Resumption Simplex PRN</td>
<td>√</td>
<td>√</td>
<td>✓</td>
</tr>
<tr>
<td>Resumption Complex PRN</td>
<td>√</td>
<td>√</td>
<td>✓</td>
</tr>
</tbody>
</table>

Table 5.5: Plural wh-XPs and the denotation of their answers in Medumba
In what follows, I show that plural wh-XPs are incompatible with both an individual variable denotation (§5.4.2.1) and a natural function denotation (§5.4.2.2), but compatible with a pair-list denotation (§5.4.2.3).

5.4.2.1 Individual variable denotation unavailable with plural wh-XPs

An individual variable denotation is unavailable with Medumba plural wh-XPs. This shouldn’t come as a surprise given that plural wh-XPs in Medumba require plurality as part of the denotation of their answer. Thus, using an individual-variable denotation (such as á Nuga) as an answer to a plural wh-XP is infelicitous in Medumba. This is illustrated below with plural D-linked\(^{45}\) wh-XPs, and holds of gapping (72-Q1), as well as resumption with a simplex pronoun (72-Q2) or a complex pronoun (&2-Q3).

\(^{45}\) The same situation holds for bà-marked wh-phrases:

(i) Q1 (gap): á bà-wú m̀bà jìit mà-ngjum lò nòó? n-tf35?dʒ á FOC APL-WH even SG.which SG-male ? AGR-AUX.T2 N-AGR.greet C.Q.H Lit.: who.pl did each man greet yesterday?

Q2 (simple PRN): á bà-wú m̀bà jìit mà-ngjum lò nòó? n-tf35?dʒ=júp á FOC APL-WH even SG.which SG-male ? AGR-AUX.T2 N-AGR.greet=3PL C.Q.H Lit.: who.pl did each man greet [him/her] yesterday?


(ii) A: #á Nùgɛ̀ FOC Nuga
Q1 (with gap)

á tʃii t bùú-3wí mbà jiit máⁿdʒùm lá nôs? n-tʃôô?dô á
FOC PL. which people-female even SG. which SG-male ? AGR-AUX.T2 N-AGR.greet C.Q.H
T.HL V.HL
Lit.: which women did each man greet yesterday?

Q2 (with simple pronoun)

á tʃii t bùú-3wí mbà jiit máⁿdʒùm lá nôs? n-tʃôô?d= júp á
FOC SG. which people-female even SG. which SG-male ? AGR-AUX.T2 N-AGR.greet=3PL.H C.Q.H
T.HL V.HL
Lit.: which women did each man greet them yesterday?

Q3 (with complex pronoun)

á tʃii t bùú-3wí mbà jiit máⁿdʒùm lá nôs? n-tʃôô?dó jôg-bôg-à-bú á
FOC which people-female even which SG-male ? AGR-AUX.T2 N-AGR.greet 1PL[1PL+3PL] C.Q.H
T.HL V.HL
Lit.: which woman did each man greet [us&them] yesterday?

A: #á Nûgê
FOC Nuga

Predictably, a plural-variable denotation is felicitous as an answer to a plural wh-XP: this
is shown in (74-Q1) for gapping, and in (74-Q2 and 74-Q3) with resumption.

Q1 (with gap)

á tʃii t bùú-3wí mbà jiit máⁿdʒùm lá nôs? n-tʃôô?dô á
FOC PL. which people-female even SG. which SG-male ? AGR-AUX.T2 N-AGR.greet C.Q.H
T.HL V.HL
Lit.: which women did each man greet yesterday?

Q2 (with simple pronoun)

á tʃii t bùú-3wí mbà jiit máⁿdʒùm lá nôs? n-tʃôô?d= júp á
FOC SG. which people-female even SG. which SG-male ? AGR-AUX.T2 N-AGR.greet=3PL.H C.Q.H
T.HL V.HL
Lit.: which women did each man greet them yesterday?
Q3 (with complex pronoun)

á tʃiit buú-3wí n强迫 jiit má-n’dʒʊm ló nɔɔ̀? n-ʧʃɔɔʔdɔ̀ jág-bóg-à-bú á
FOC which people-female even which SG-male ? AGR,AUX,T2 N-AGR,greet 1PL[1PL+3PL] C.Q,H

Lit.: which woman did each man greet [us&them] yesterday?

(74) A: á Nùgɛ buù Wàtɛt
FOC Nuga PL Watat
‘Nuga and Watat’

5.4.2.2 Natural function denotation unavailable with plural wh-XP

Given that the natural function reading is unavailable with non-plural wh-XP, it is also predictably unavailable with plural wh-XP; this is illustrated below with plural D-linked wh-XP for the gap strategy (76-Q1); the simplex (76-Q2) and complex (76-Q3) pronoun resumptive strategy.

(75) Q1 (with gap)

á tʃiit buú-3wí n强迫 jiit má-n’dʒʊm ló nɔɔ̀? n-ʧʃɔɔʔdɔ̀ á
FOC PL.which people-female even SG.which SG-male ? AGR,AUX,T2 N-AGR,greet C.Q,H

Lit.: which women did each man greet yesterday?

---

46 Same with bà-marked wh-phrases as shown below:

(i) Q1 (gap): á bà-wú n强迫 jiit má-n’dʒʊm ló nɔɔ̀? n-ʧʃɔɔʔdɔ̀ á
FOC APL-WH even SG.which SG-male ? AGR,AUX,T2 N-AGR,greet C.Q,H

Lit.: who.pl did each man greet yesterday?

Q2 (simple PRN): á bà-wú n强迫 jiit mâ-ndʒʊm ló nɔɔ̀? n-ʧʃɔɔʔd=ɪ á
FOC APL-WH even SG.which SG-male ? AGR,AUX,T2 N-AGR,greet=3SG C.Q,H

Lit.: who.pl did each man greet [him/her] yesterday?

Q3 (complex PRN): á bà-wú n强迫 jiit mâ-ndʒʊm ló nɔɔ̀? n-ʧʃɔɔʔdɔ̀ jág-bóg-à-bú á
FOC APL-WH even SG.which SG-male ? AGR,AUX,T2 N-AGR,greet 1PL-[1PL+3PL] C.Q,H

Lit.: who.pl did each man greet [us&them] yesterday?

(ii) A: #á máɰáp
FOC mother.3POSS
‘His mother’
Q2 (with simple pronoun)

á tfiɪ̀t bùú-3wí m̀bà jiɪ̀t má-ndʒùm lò nòsɔ́?

Lit.: which women did each man greet them yesterday?

Q3 (with complex pronoun)

á tfiɪ̀t bùú-3wí m̀bà jiɪ̀t má-ndʒùm lò nòsɔ́?

Lit.: which woman did each man greet them/[us&them] yesterday?

(76) A:  #á  gù-má-júp

FOC  girl-mother.3POSS

‘Their sisters’

5.4.2.3 Pair-list denotation possible with bare wh-XP

Unlike non-plural wh-XP s, the pair-list denotation is available with plural wh-XP s regardless of whether there is a gap or resumption (with either a simplex or complex pronoun). Thus, the pair-list reading in Medumba wh-question seems to be a by-product of the plurality introduced by the wh-XP. This is illustrated below with plural D-linked wh-phrases\(^{47}\) for the gap strategy (78-Q1); and the resumptive strategy with either a simplex (78-Q2) or a complex (78-Q3) pronoun.

\(^{47}\) Same for the bá-marked wh-phrase

(i) Q1 (gap):  á bà-wú m̀bà jiɪ̀t má-ndʒùm lò nòsɔ́?

Lit.: who.pl did each man greet yesterday?

(ii) Q2 (simple PRN):  á bà-wú m̀bà jiɪ̀t má-ndʒùm lò nòsɔ́?

Lit.: who.pl did each man greet [him/her] yesterday?

(iii) Q3 (complex PRN):  á bà-wú m̀bà jiɪ̀t má-ndʒùm lò nòsɔ́?

Lit.: who.pl did each man greet [us&them] yesterday?

A:  [sùú?  m̀bà-íá  Wàttì̀t lá,  Pità nòsɔ́?

come  N-be-FOC  Watat  C  Peter  AGR.AUX.T2  N-AGR.greet=3SG

sùú?  m̀bà-íá  Nùgè̀ lá,  Márjà nòsɔ́?

come  N-be-FOC  Nuga  C  Mary  AGR.AUX.T2  N-AGR.greet=3SG

Lit.: As for Watat, Peter greeted him/her; as for Nuga, Mary greeted him/her’
Q1 (with gap)
á tʃiɪ t buú-3wí mbà jįt máⁿdʒum ló nɔɔ? n-tʃɔɔɔdɔ á
FOC PL which people-female even SG which SG male ? AGR AUX T2 N AGR greet C Q H T HL V HL
Lit.: which women did each man greet yesterday?

Q2 (with simple pronoun)
á tʃiɪ t buú-3wí mbà jįt máⁿdʒum ló nɔɔ? n-tʃɔɔɔdɔ=ʃuʃ á
FOC SG which people-female even SG which SG male ? AGR AUX T2 N AGR greet 3PL C Q H T HL V HL
Lit.: which women did each man greet them yesterday?

Q3 (with complex pronoun)
á tʃiɪ t buú-3wí mbà jįt máⁿdʒum ló nɔɔ? n-tʃɔɔɔdɔ jɔg-bąg-à-bù á
FOC which people-female even which SG male ? AGR AUX T2 N AGR greet 1PL [1PL + 3PL] C Q H HL T H L
Lit.: which woman did each man greet [us&them] yesterday?

(78) A: [sùù? m-bá-iá Wàtèt là, Pitàá nɔɔ? n-tʃɔɔɔd=ì;]
come N be FOC Watat C Peter H AGR AUX T2 N AGR greet 3SG H
sùù? m-bá-iá Nùgè là, Màrjáá nɔɔ? n-tʃɔɔɔd=ì ]
come N be FOC Nuga C Mary H AGR AUX T2 N AGR greet 3SG H
Lit: As for Watat, Peter greeted him/her; as for Nuga, Mary greeted him/her

To summarize, it appears that in Medumba question-answer sequences, only an individual variable denotation is compatible with non-plural wh-XPs whereas only the pair-list denotation is compatible with plural wh-XPs. The exhaustiveness of ex-situ wh-questions makes the natural function reading incompatible with non-plural and plural wh-XPs. This is summarized in table 5.6.
Table 5.6: Summary of wh-XPs and the denotation their answers in Medumba

From the above it is still an open question (i) why a singular wh-XP question only permits as an answer an individual-denoting expression; and (ii) why a plural wh-XP question only permits as an answer a pair-list. Further investigation is needed to provide answers to these questions.

5.5 Conclusion

In this chapter, to the question what form resumption takes in Medumba, I showed that resumptive pronouns can be a simplex or a complex pronoun. With regard to when resumption occurs, I showed that resumption is: (i) optional in root clauses; (ii) obligatory in island contexts; and (iii) obligatory in apparent complement (disguised adjunct) clauses. As for why resumption occurs, I argued that syntactic and semantic economy regulate resumption in Medumba. Syntactic economy or economy of derivation derives resumption in island contexts including disguised adjunct
(apparent complement) clauses. Semantic economy or economy of interpretation derives resumption in Medumba root clauses.
Chapter 6: Conclusion

6.1 Summary and contributions

In this dissertation I investigated the syntactic properties of A’-movement in Medumba, including wh-movement, focus movement and relativization. Our journey through Medumba A’-movement involved looking at the following issues:

- the in-situ/ex-situ partition with regard to wh- and focus construals;
- the tonal reflex of A’-movement (A’-agreement) on verbal heads, temporal and aspectual auxes; and
- the relation between the extracted XP and its extraction site; that is, optional resumption with root clauses and obligatory resumption with islands including non-root clauses.

To the best of my knowledge, this is the first study of a Grassfields Bantu language (or even any Bantu language) that thoroughly investigates and diagnoses the syntactic and semantic properties of in-situ and ex-situ wh-/focus construals. Moreover, it is the first study that systematically investigates A’-agreement across several A’-construals namely wh-movement, focus movement, relativization and topicalization. This empirical contribution of the dissertation lays out the foundation for micro- and macro-parametric analysis of A’-movement within the Bamileke cluster in particular, and within Grassfields Bantu, and for Bantu languages in general.

Methodologically, this dissertation is probably the first syntactic study of a tone language to have introduce interlinear tone glossing which is crucial in teaching tonal allomorphy to non-specialists. Theoretically, the analysis adopted in this dissertation provides a novel way of looking at wh-movement, especially within a framework such as Minimalism where priority is given to economy. The research findings have implications for:
the syntax of A’-dependencies,

- the syntax-morpho/phonology interface, and

- the syntax-semantics interface.

The discussion of the major properties of A’-movement in Medumba spanned four chapters: Chapter 2 focused on A’-movement and the in-situ/ex-situ partition; chapter 3 on A’-movement and A’-agreement; chapter 4 on A’-movement and the tense/aspect system; and chapter 5 on A’-movement and resumption. Since these chapters cover a range of topics that can be analyzed independently, I give in the following subsections a summary of the major findings from each chapter and the prospects for future research, highlighting unsolved problems.

6.2 A’-movement and the in-situ/ex-situ partition in Medumba

In chapter 2 I examined the property of A’-movement that relates to the in-situ/ex-situ partition focusing on the construal of wh-questions and focus. I argued that the necessity of movement in Medumba is driven by interpretation and not by the need to check some Q-/wh-features at C. More precisely, I proposed that there is a covert exhaustive operator at C that marks any wh-/focus XP within its vicinity as exhaustive. This approach makes the following predictions which were confirmed in Medumba.

Prediction 1: Interpretation-driven movement predicts a structural and semantic difference between in-situ versus ex-situ wh-questions and foci in Medumba. That is, if a wh-/focus XP stays in-situ, the sentence gets one interpretation and if it moves, the resulting sentence gets a different interpretation. This prediction was confirmed in Medumba as in-situ and ex-situ wh-questions and foci differ from each other with regard to: (i) exhaustivity — in-situ wh-questions and foci are non-exhaustive whereas their ex-situ counterparts are exhaustive — (ii) question-answer pairs — the information-theoretic structure of the answer must match the information-theoretic structure of the
question — and (iii) fragment answers — fragment answers to in-situ wh-questions are not focus-marked whereas fragment answers to ex-situ wh-questions are focus-marked.

**Prediction 2:** Interpretation driven movement predicts that languages will always and only contrast in-situ versus ex-situ with regard to wh-questions. As such, if a language contrasts in-situ versus ex-situ, then there must be a difference in interpretation.

**Prediction 3:** The fact that wh-ex-situ is inquisitive and exhaustive in Medumba predicts that operator movement is expected to use a different form in the language; crucially, wh-relatives are not possible in Medumba. Relativization involves the use of an agreeing complementizer. This contrasts for instance with languages like English in which wh-ex-situ is inquisitive and so, is compatible with both wh-questions and operator movement.

### 6.2.1 Implications for future research

The analysis adopted in chapter 2 has implication for the syntax and semantics of A’-dependencies. Interpretation-driven movement advocates for free movement; not in the sense of the Chomsky-Safir conjecture (Chomsky 2008, 2013; Safir 2010, 2018), in which absence of movement leads to failure of interpretation but in the sense that absence of movement yields a different interpretation. This has implications for the broader landscape of wh-questions in that it predicts that in-situ and ex-situ wh-questions do not always mean the same thing. As such, wh-ex-situ can just be inquisitive (as in English) or can be inquisitive and exhaustive (as in Medumba). Wh-in-situ can just be inquisitive (as in Medumba); can be a reprise question (as in English); or can be supplemented by a reprise question particle (Medumba) to form a reprise question. Table 6.1 summarizes the broader landscape of wh-questions including the strategies and the respective question semantics.
6.2.1.1 The semantics of exhaustivity marking: “Max” applies only to individuals

I argued in chapter 2 that Medumba ex-situ wh-questions and foci are exhaustive and exclusively individual-denoting. I also showed that all event-modifying adjuncts (e.g. how, where, when, how wh-questions) and functions are predictably excluded in ex-situ contexts in the language. Further investigation of other non-individual-denoting elements is needed for a complete picture of the exhaustive nature of ex-situ wh-/focus in Medumba. A formal semantic analysis of exhaustivity marking is needed in order to determine how this meaning is composed and derived. My working hypothesis is that the exhaustivity operator “Max” only applies to individuals and not to functions, whether natural or random functions (i.e. pair-list readings). This is of theoretical significance as it suggests that the denotational semantic properties of some elements determine their syntactic configuration (see also Szabolcsi 1997).

6.2.1.2 Question/Answer sequences and fragment answers

Question answer sequences and fragment answers confirmed the in-situ/ex-situ partition found in Medumba both in terms of the form of the question and the form of the answer. Fragment answers exhibit two patterns in the language: (i) if the wh-phrase is ex-situ the fragment answer is marked with the focus particle and (ii) if the wh-phrase is in-situ, the fragment answer is not focus-marked. This has implications for syntactic theories of fragments and requires further research. In the standard approach to fragment answers, the remnant phrase undergoes focus movement to a
peripheral position before deletion takes place (Merchant 2004). But there are also approaches to fragment answers where the remnant is in-situ; that is, it does not undergo any movement (Lobeck 1995, Abe 2016). The Medumba empirical material suggests that there might be two ways of deriving fragment answers in natural languages. That is, there might be languages that employ the movement approach; languages that employ the non-movement approach; and languages like Medumba that employ both.

(179) a. Possible derivation of focus-marked fragment answers

\[ \text{[CP [FocP [Foc | DP]] [CP [C ] [TP [T ] [vP [v ] [VP [V ] | [FocP [Foc ] | DP]]]} \]

b. Possible derivation of bare fragment answers

\[ \text{[CP [C ] [TP [T ] [vP [v ] [VP [V ] | [FocP [Foc ] [DP]]]} \]

As for question/answer sequences, further research is needed to discover what could be the underlying mechanism that constrains and maps the information-theoretic structure of questions and information-theoretic structure of answers in Medumba.

6.3 A’-movement and A’-agreement in Medumba

In chapter 3, I examined the property of A’-movement that relates to the tonal reflex of A’-movement which I analyzed as A’-agreement. This is realized in Medumba as an HL tone melody that overwrites the lexical tone of verbal heads, as well as of temporal and aspectual auxiliaries. I proposed that A’-agreement is the reflex of Phasal-Agree. A phase-bound operation (OP) between a probe (P) and a goal (G), where P is a phase-head and G an A’-bound XP; applies in such a way that the reflex of OP is either on P or on the complement of P. Phasal-Agree predicts movement to proceed in a stepwise fashion phase-by-phase, with A’-agreement within each phase domain each time the moved XP reaches a phase edge. This prediction was confirmed in Medumba root clause extraction where there is a subject/object asymmetry in that Phasal-Agree predicts A’-agreement.
with CP phase on T when there is subject extraction, and with vP phase on V and CP phase on T when there is object extraction. The absence of A’-agreement with the matrix vP phase in non-root clause extractions was accounted for by the fact that apparent complement CPs are disguised adjunct CPs in Medumba. Thus, movement from within those CPs does not go through the edge of the matrix vP phase. As such, the following predictions were made:

- Apparent complement CPs behave like adjunct islands;
- CPs are never in complement position: the lack of embedded interrogatives;
- CPs are never in argument position: the lack of subject and complement CPs;
- Apparent complement CPs follow matrix VP adjuncts;
- vP-adjuncts don’t trigger A’-agreement, but VP-adjuncts do;
- Apparent complement CPs strand under VP-gapping;
- Apparent complement CPs reconstruct.

It follows from this chapter that A’-agreement is not only a crucial diagnostic for A’-movement but also for Phasal-Agree and for the locality of movement (cyclic phase-by-phase movement (Biberauer and D’Alessandro 2006; Chomsky 2000, 2001; van Urk 2015; van Urk and Richards 2015)).

I also surveyed in chapter 3 the cross-linguistic formal typology of A’-agreement and established the following cross-linguistic profile of A’-agreement:

(i) When? A’-agreement occurs in a context where there is A’-movement of an XP;
(ii) Where? A’-agreement occurs within the CP-domain or within the vP-domain;
(iii) How? A’-agreement is realized either on the lowest phase, on the highest phase or on every phase along the path of movement.
With regard to the form of A’-agreement, it was shown in chapter 3 based on data from unrelated languages that although the form of A’-agreement may differ from one language to another depending on which strategy a language employs — copying, concordial agreement, A’-particles, or inversion —, A’-agreement can be viewed as different instantiations of the same abstract mechanism, namely Phasal-Agree. This is summarized 6.2 (repeated from table 3.5).

<table>
<thead>
<tr>
<th>Languages</th>
<th>Copy</th>
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<th>Other means</th>
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<tr>
<td>German</td>
<td>Morphem</td>
<td>Tonemes</td>
<td>A’-particle</td>
</tr>
<tr>
<td>Germanic</td>
<td>Chamorro</td>
<td>Kilega</td>
<td>Medumba</td>
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<tr>
<td>Austronesian</td>
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<tr>
<td>Bantu</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
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Table 6. 2: Form of A’-agreement cross-linguistically

6.3.1 Implications for future research

The data analyzed in chapter 3 establish that there is variability with regard to the form and the locus of A’-agreement cross-linguistically. The locus of A’-agreement is either with the lower phase, with the higher phase, or with every phase on the path of movement. I showed that there are at least two hypotheses that could explain the variability in the locus of A’-agreement. The first hypothesis suggests that the internal syntax of each language may influence the domain within which A’-agreement surfaces. The possibilities are A’-agreement with V in languages with no V-to-C movement, A’-agreement with C in languages that allow V-to-C movement and A’-agreement with C and V for languages that allow short local V movement such as Medumba. The second hypothesis suggests that the nature of the phases could explain such variability. That is, the locus of A’-agreement with a phase depends on whether such a phase is strong or weak in a given language. Strong phases could be considered as phases where their domain is spelled out.
immediately when the phase is built; while weak phases are phases in which spell out of their domain is delayed until the derivation reaches a strong phase boundary. As such, if CP is a strong phase in a language, the locus of A’-agreement is with CP. If vP is a strong phase in a language, vP is the locus of A’-agreement. And if all phases are strong in a language, A’-agreement surfaces within each phase. A more thorough investigation is needed to first confirm or refute either of the hypotheses; and to further determine whether these two hypotheses work independently or whether one could be reduced to another. Another question worth investigating is what A’-agreement tells us about transfer and spell out. Finally, another area for further research on A’-agreement is interdisciplinary and could have implications in the area of neurolinguistics; perhaps one day a study might be carried out to compare and contrast for instance, brain imaging in A’-agreement and non-A’-agreement contexts.

6.4 A’-movement and the tense/aspect system in Medumba

In chapter 4, I continued to examine the property of A’-movement that relates to the tonal reflex of A’-movement. Specifically, I focused on the distribution of A’-agreement in aux-stacking contexts. The data examined in this chapter led to the conclusion that A’-agreement — in addition for being a diagnostic of A’-movement, Phasal-Agree and the locality of movement —, is also a diagnostic for intermediate phases. Specifically, I proposed that in Medumba there is an intermediate phase between vP and CP. This explains why A’-agreement occurs only on some auxiliaries but not on every auxiliaries in the path of movement.

6.4.1 Implications for future research

The findings of this chapter have implications for phase theory and contribute to the debate in the literature about what constitutes a phase. Among the various proposals varying from every phrase (Müller 2010); to CP and vP (van Urk 2015, Georgi 2017); or to just vP (Rackowski and Richards
2005); the analysis adopted for A’-agreement in this chapter points towards a more nuanced possibility, that vPs and CPs may not be the only phases (see also Den Dikken 2007, Gallego 2007, Wurmbrand 2012, Harwood 2015, Ramchand and Svenonius 2014, Bošković 2014, Sailor 2014, Aelbrecht and Harwood 2015).

However, further research is needed to determine what other phrases that behave like phases have in common and whether phases are uniform or not in their nature. In order words, what are the properties of a domain that identifies it as a phase and what are other possible diagnostics of phases?

6.5 A’-movement and resumption in Medumba

In chapter 5, I examined the property of A’-movement that pertains to the relation between the extracted XP and the extraction site. The data analyzed in this chapter established that resumptive pronouns in Medumba are obligatory in island violation contexts including non-root CPs (analyzed as disguised adjunct clauses) and are optional in contexts in which there is no island violation (root CPs). I proposed that resumption is derived via sub-extraction and that resumptive pronouns are stranded portions of the moved constituents they associate with. Moreover, sub-extraction consists of stranding the head D as a resumptive pronoun under feature-matching with the Wh-XP (Boeckx 2003). More specifically, I argued that resumptive structures are derived in Medumba via the economy principle of Last Resort which can be conditioned by syntactic or semantic constraints. Syntactic Last Resort derives resumptive pronouns in Medumba island violation contexts, to salvage A’-dependencies that would otherwise result in ungrammaticality. Semantic Last Resort is a condition on interpretation that derives resumption in configurations that would otherwise result in interpretative ambiguities. It was established in this chapter that while gap structures in root CPs
are ambiguous between the *de dicto* and the *de re* interpretation, resumptive structures are unambiguous and always have the *de re* interpretation.

### 6.5.1 Implications and future research

The findings from chapter 5 have implications for the syntax and semantics of resumptive structures. Some questions that arise are (i) what is the underlying mechanism that licences resumptive pronouns and (ii) how are the interpretations derived and (iii) what are the implications for the syntax-semantics interface. Another question that needs to be resolved is whether syntactic and semantic economy result from the application of two different mechanisms or if instead they can be reduced to an application of one and the same mechanism.
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Appendices

Appendix A: ki-topicalization as a species of A’-movement

The main chapters of the dissertation focused on classical A’-movement construals (wh-movement, focus movement and relativization) and with little reference to topicalization. In this section, I focus on Medumba ki-topicalization and show that it partly walks and talks like A’-movement but also is not a well-behaved species of A’-movement.

A.1 ki-movement is topicalization

ki-movement in Medumba has the properties of topic-movement as per the diagnostics\(^{48}\) developed by Erteschik-Shir (2013). These are illustrated in the following set of examples which instantiate a topicalized XP. Thus, Medumba ki-movement can host pronouns (1), definite DPs\(^{49}\) (2), and generics (3).

(1) a. Subject

\[
\begin{array}{cccccc}
bú & ki, & bú & náɔ? & ⁿ-tʃɔʔdó & Nùŋgè
\end{array}
\]

3PL TOP 3PL.H AGR.AUX.T2 N-greet.H Nuga

\[\text{T.HL} \]

‘Them, they greeted Nuga.’

b. Object

\[
\begin{array}{cccccc}
bú & ki, & Nùŋgè & náɔ? & ⁿ-tʃɔʔdó & júbó
\end{array}
\]

3PL TOP Nuga.H AGR.AUX.T2 N-AGR.greet.H 3PL.H

\[\text{T.HL} \]

\[\text{V.HL} \]

‘Them, Nuga greeted them.’

\[^{48}\] Contrastive test and specific indefinite do not work in Medumba.

\[^{49}\] Medumba bare singular nouns are construed as definite in argument positions.
(2) a. Subject

 ámb-ŋ?nì bí, á nò? n-dùn Nù'gè
Agt.SG-school TOP 3SG.H AGR.AUX.T2 N-seen Nuga
T.HL

‘The student, s/he saw Nuga.’

b. Object

 ámb-ŋ?nì bí, Nù'gè nò? n-dùùn í
Agt.SG-school TOP Nuga.H AGR.AUX.T2 N-AGR.see 3SG.H
T.HL V.HL

‘The student, Nuga saw him/her.’

(3) a. Subject

 bú-bá-a-dùm bí, bú n-kòó bú-búù-aŋ-í
PL.child-PL-male TOP 3PL.H N-AGR.like.HAB PL.child-persons-female
v.HL

‘Boys, they like girls.’

b. Object

 bú-bá-a-dùm bí, bú-bùù-aŋ-í n-kòó júbó
PL.child-PL-male TOP PL.child-persons-female N-AGR.like.HAB 3PL.H
v.HL

‘Boys, girls like them.’

And consistent with their topics status, kí-moved XPs in Medumba cannot be non-specific indefinites (4), quantified DPs (5), negative DPs (6), or inherently focused DPs (7).

(4) a. Subject

 *tàʔ mèn-mèn-aŋ-í bí, á nò? n-tjòù?d=ám
Indef. child-person-female TOP 3SG.H AGR.AUX.T2 N-greet=1 PL.H
T.HL

[A girl, s/he greeted me.]

50 For related discussion of Dutch topicalization, see Neeleman & van de Koot 2008:148 (13).
b. Object

*tâʔ mën-mën-ԡʔi ki, mú nôʔ? n-tʃjʊʔd=í
Indef. child-person-female TOP 1SG.H AGR.AUX.T2 N-AGR.greet=3SG.H
T.HL V.HL

[A girl, I greeted her.]

(5) a. Subject

*Kmbà jíìt ʘgɛʔni ló ki, á nôʔ? n-tʃjʊʔd=ám
even which student ? TOP 3SG.H AGR.AUX.T2 N-greet=1PL.H
T.HL

[Each student, s/he greeted me]

b. Object

*Kmbà jíìt ʘgɛʔni ló ki, mú nôʔ? n-tʃjʊʔd=í
even which student ? TOP 1SG.H AGR.AUX.T2 N-AGR.greet=3SG.H
T.HL V.HL

[Each student, I greeted him/her]

(6) a. Subject

*Nsôʔ-mën ki, á nôʔ? n-tʃjʊʔd=ám
Neg-person TOP 3SG.H AGR.AUX.T2 N-greet=1PL.H
T.HL

[Nobody, s/he greeted me]

b. Object

*Nsôʔ-mën ki, mú nôʔ? n-tʃjʊʔd=í
Neg-person TOP 1SG.H AGR.AUX.T2 N-AGR.greet=3SG.H
T.HL V.HL

[Nobody, I greeted him/her]

(7) a. Subject

*Ndôʔ? fín=ám ki, á nôʔ? n-tʃjʊʔd=ám
only friend=1SG.POSS.C1 TOP 3SG.H AGR.AUX.T2 N-greet=1PL.H
T.HL

[Only my friend, s/he greeted me]
b. Object

\[
*\text{dóó} \ f\text{in}=\text{am} \ kí, \ mú \ nóó? \ n-\text{tʃjóó}d=í
\]
only friend=1SG.POSS.C1 TOP 1SG.H AGR.AUX.T2 N-AGR.greet=3SG.H

[Only my friend, I greeted him/her]

A.2 \(kí\)-topicalization walks and talks as \( A'\)-movement

- \( kí\)-topicalization participates in long distance extraction

(8) a. \( Númí \ bùù \ Sëëmí \ kí, \ mú \ jùùn \ jùbó. \)
Numi PL-3 Sami TOP 1SG.H AGR.see 3PL.H

‘[Numi and Saami], I saw them’

b. \( Númí \ bùù \ Sëëmí \ kí, \ mú \ tʃúù̯p \ mbù \ mú \ jùùn \ jùbó \)
Numi PL-3 Sami TOP 1SG.H AGR.say C.L 1SG.H AGR.see 3PL.H

‘[Numi and Saami], I said that I saw them’

- \( kí\)-topicalization supports reconstruction

(9) a. Subject

\[
\text{sóv}^\text{h} \text{dó} \ \text{t}^\text{h} \text{-vúd}-\text{ij} \ \text{kí,} \ \text{Núgè} \ \text{tʃúùp} \ \text{mbù} \ \text{áj} \ \text{nóó?} \ \text{m-\text{-v}húù} \ \text{sí}
\]
picture head-body-3SG TOP Nuga AGR.say C.1 3SG.H AGR.AUX N-fall down

‘Picture of himself, Nuga said that [it] fell down’

b. Object

\[
\text{sóv}^\text{h} \text{dó} \ \text{t}^\text{h} \text{-vúd}-\text{i} \ \text{kí,} \ \text{Núgè} \ \text{nóó?} \ \text{kéé}
\]
picture head-body-3SG TOP Nuga AGR.AUX AGR.choose

‘Picture of himself, Nuga chose [it]’

- \( kí\)-topicalization conditions Strong Crossover

(10) a. Subject

\[
*Núgè \ kí, \ \text{b}^\text{h} \text{ùt}^\text{h} \text{ù} \ \text{tʃúùp} \ \text{mbù} \ \text{á} \ \text{á?} \ \text{3}^\text{wí}
\]
Nuga TOP idiot AGR.say C.L 1SG.L IRR kill Watat

[\( Nuga\), the idiot said that [he] would kill Watat]
b. Object

*Ngìgì b̀úò̀tùúì tʃù̀p mò bù mò à? jù uù jù uù lá
Nuga idiot AGR.say C.L 1SG.L IRR kill C.-Q
V.HL

[*NgìgìFOC the idiot; said that I would kill]

- **kí-topicalization supports weak(est) Crossover**

(11) Subject

a. sóv b̀ú sun-ni jì ǹgè-nàb =i jì tʃù̀p mò bù áj nà àj? m-vòù sì picture AGR-1PROX TOP AGT-make=3SG AGR.say C 3SG.H AGR.AUX N-falldown V.HL T.HL

‘[This picture]i, itsi maker said that it; fell down

b. mèn-3wì jùn-ní jì jì ǹgè-nàb =i jì tʃù̀p mò bù áj nà àj? m-tjììdi=ìjì Nùgìgì person-fem AGR-1PROX TOP friend=3.POSS.C1 AGR.say C.L 3SG.H AGR.AUX.T2 N-AGR.greet Nuga V.HL T.HL V.HL

‘[This woman]i, her; friend said that she; greeted Nuga’

(12) Object

a. sóv b̀ú sun-ní jì ǹgè-nàb =i jì sì ǹwèn picture AGR-1PROX TOP AGT-make=3SG IRR sell

‘[This picture]i, itsi maker will sell’

b. mèn-3wì jùn-ní jì jì ǹgè-nàb =i jì tʃù̀p mò bù áj nà àj? tʃììdi=ìjì person-female AGR-1PROX TOP friend=3.POSS.C1 IRR greet=3SG

‘[This woman]i, her; friend will greet [her]’

- **kí-topicalization shows island effects**

(13) **Wh-island**

a. Nùmì jì kì mú b̀èttò mò bù uù jùun i lá
Numi TOP 1SG.H AGR.ask.H H.C 2SG.H AGR.see 3SG.H C.-Q
V.HL

‘*Numi, I asked [whether you saw him]’

b. *Nùmì jì kì mú b̀ètt-tò mò bù uù jùun ____ lá
Numi TOP 1SG.H AGR.ask.H H.C 2SG.H AGR.see C.-Q
V.HL

[*Numi, I asked [whether you saw ___]]
(14) **Adjunct island**

a. Nùmí ³ki mú lùù á n’dên-ṃbù ụ kùù? kii-n=í
   Numi TOP 1SG.L AGR.leave FOC N-know-C 2SG.L NEG AGR.feed=3SG.H
   V.HL
   ‘*Numi, I left [because you didn't feed him]’

b. *Nùmí ³ki mú lùù á n’dên-ṃbù ụ kùù? kii ___
   Numi TOP 1SG.L AGR.leave FOC N-know-C 2SG.L NEG AGR.feed
   V.HL
   ‘*Numi, I left [because you didn't feed ___]’

(15) **Complex DP** (relative clause)

a. Nùmí ³ki mú læn tsiṭfɛ zɔ à jùun=í ³lá
   Numi TOP 1SG.H AGR.know teacher C.CL1 3SG.L AGR.see=3SG.H C-Q
   V.HL
   ‘*Numi, I know the teacher [who saw him]’

b. *Nùmí ³ki, mú læn tsiṭfɛ zɔ à jùun ___ lá
   Numi TOP 1SG.H AGR.know teacher C.CL1 3SG.L AGR.see C.-Q
   V.HL
   ‘*Numi, I know the teacher [who saw ___]’

(16) **Coordinate structure** (left adjunct)

a. Nùmí ³ki mú jùun í buù Nùŋgɛ
   Numi TOP 1SG.H AGR.see 3SG.H PL.3 Nuga
   V.HL
   ‘*Numi, I saw [him and Nuga]’

b. *Nùmí ³ki mú jùun ___ buù Nùŋgɛ
   Numi TOP 1SG.H AGR.see PL.3 Nuga
   V.HL
   ‘*Numi, I saw [__ and Nuga]’

---

51 In Medumba, rationale ‘because’ clauses are focus-marked *a ndɛn-ṃbù ‘knowing that…’ or ‘having the knowledge of…’*. 

---

351
(17) **Coordinate structure** (right adjunct)

a. Nùmí kí m̀ jùn Nùngé búù jì
   Numi TOP 1SG.H AGR.see Nuga PL.3 3SG.H
   *Numi, I saw [Nuga and him]*

b. *Nùmí kí m̀ jùn Nùngé búù ___*
   Numi TOP 1SG.H AGR.see Nuga PL.3
   *[Numi, I saw [Nuga and ___]]*

- **ki-topicalization conditions A’-agreement**

(18) a. Subject

*Nùmí kí, Nùngé nòò? n-ʧüp n-bù á nòò? n-dʒùn Wàtèt*
   Numi TOP Nuga.H AGR.AUX.T2 N-say C.L 3SG.H AGR.AUX.T2 N-see Watat
   T.HL
   ‘Numi, Nuga said [he] betrayed Watat’

b. Object

*Nùmí kí, Nùngé nòò? n-ʧüp n-bù Wàtèt nòò? n-dʒùn =í*
   Numi TOP Nuga.H AGR.AUX.T2 N-say C.L Watat AGR.AUX.T2 N-AGR.see=3SG.H
   T.HL
   ‘Numi, Nuga said that Watat betrayed [him/her] …’

**Summary**

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<th>Type of A’-movement</th>
<th>Diagnostic:</th>
<th>Topic</th>
<th>Relativization</th>
<th>Focus</th>
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Table A 1: ki-movement as A’-movement
ki-movement is not a well-behaved species of A’-movement

- ki-movement does not allow gapping

(19) *má-ndʒùm ki Wàtèt nôô? n-swéëén ___
     SG-male TOP Watat AGR.AUX.T2 N-AGR.sell ___
     T.HL V.HL

     [The boy, Watat betrayed ___]

- Only ki-movement requires resumption with root object extraction

(20) a. wh-movement

    á wú Wàtèt nôô? n-swéëén=(i) á?
    FOC WH Watat AGR.AUX.T2 N-AGR.sell=3SG.H C.Q.H
    T.HL V.HL

    ‘Who did Watat betray [him/her]?’

b. Focus movement

    á má-ngdʒùm Wàtèt nôô? n-swéëén=(i) .Delay
    FOC SG-male Watat AGR.AUX.T2 N-AGR.sell=3SG.H C.-Q
    T.HL V.HL

    ‘The boy FOC Watat betrayed [him]’

c. Relative clause

    má-ndʒùúm zò Wàtèt nôô? n-swéëén=(i) .Delay ...
    SG-male.H C.CL.1 Watat AGR.AUX.T2 N-AGR.sell=3SG.H C.-Q
    T.HL V.HL

    ‘The boy that Watat betrayed [him] …’

(21) ki-movement

    má-ndʒùm ki Wàtèt nôô? n-swéëén=*i)
    SG.male TOP Watat AGR.AUX.T2 N-AGR.sell=3SG.H
    T.HL V.HL

    ‘The boy, Watat betrayed [him] …’
Only kí-movement requires H-tone resumption with root subject extraction

(22) Wh-movement

|   | a. á wú ___ nőɔ?  n-s̀wé̱en Nùŋgè à?  | b. á wú à nőɔ?  n-s̀wé̱en Nùŋgè à?  | c. á wú á nőɔ?  n-s̀wé̱en Nùŋgè à?  |
|   | T.HL | FOC WH 3SG | AGR.AUX.T2 | N-sell | Nuga | C.Q.L |

‘Who (he) betrayed Nuga?’

(23) Focus movement

|   | a. á má-ⁿdʒ̣̣̣́um ___ nőɔ?  n-s̀wé̱en Nùŋgè lá  | b. á má-ⁿdʒ̣̣̣́um à nőɔ?  n-s̀wé̱en Nùŋgè lá  | c. á má-ⁿdʒ̣̣̣́um á nőɔ?  n-s̀wé̱en Nùŋgè lá  |
|   | T.HL | FOC SG-male. 3SG | AGR.AUX.T2 | N-sell | Nuga | C.-Q |

‘The boy FOC (he) betrayed Nuga’

(24) Relative clause

|   | a. *má-ⁿdʒ̣̣̣́um zò ___ nőɔ?  n-s̀wé̱en Nùŋgè lá …  | b. má-ⁿdʒ̣̣̣́um zò à nőɔ?  n-s̀wé̱en Nùŋgè lá …  | c. má-ⁿdʒ̣̣̣́um zò á nőɔ?  n-s̀wé̱en Nùŋgè lá …  |
|   | T.HL | SG-male.H | C.CL1 3SG | AGR.AUX.T2 | N-sell | Nuga | C.-Q |

‘The boy that (he) betrayed Nuga…’

(25) kí-movement

|   | T.HL | SG-male.H | TOP 3SG | AGR.AUX.T2 | N-sell | Nuga | C.-Q |

‘The boy, (he) betrayed Nuga’

A.4 Copy and scattered deletion derives obligatory resumption with kí-movement

In chapter 6 I argued that resumption in Medumba island and non-island contexts is conditioned by an economy principle of Last Resort that specifies the conditions under which the tail of the A’-chain needs to be spelled out as a resumptive pronoun. Contrary to other A’-moved construals,
resumption is obligatory with topic movement even in contexts in which other A’-moved construals alternate gaps and resumption. I propose that unlike other resumptive chains (classical A’-movement) which are subject to the Last Resort principle, resumptive chains resulting from topic movement in Medumba are derived via a copy mechanism which I refer to as ‘copy anaphora’. This copy mechanism consists of either of copy and non-deletion of the head and the tail of the chain or copy plus scattered deletion of either the head or the tail of the chain (see also Bošković and Nunes 2007; Nunes 2011; 2017). Importantly, with copy anaphora the tail of the chain refers back to the head.

A.5 Copy movement predicts matching effects when antecedent is an R-expression

In Medumba topic movement involving an R-expression, the head and the tail of the A’-chain are identical. This is only possible in a copy system that allows full spell-out of the tail of the chain, contra the classical copy and delete system in which there is copy and deletion of the tail of the chain in most cases and copy and deletion of the head for few. In the example below, the fact that the lower copy of Nuga refers back to the higher copy seems to be an indication that the copy strategy involved here is a sort of anaphora as illustrated in (26).

(26) a. Nùŋgêjì kí Wàtêêt nôʤ? N-AGR.sell Nùŋgêjì
   Nuga TOP Watat.H AGR.AUX.T2 N-AGR.sell
   T.HL V.HL
   ‘As for Nuga Watat betrayed Nuga’

52 There are also instances in which the tail is spelled out as a resumptive pronoun

Nùŋgêjì kí Wàtêêt nôʤ n-sʷéǹ=ìjì
Nuga TOP Watat.H AGR.Aux N-AGR.sell=3SG.H
‘As for Nuga Watat betrayed him’
A.6 Copy + scattered deletion derives matching with pronominal antecedent

Copy anaphora is further visible in Medumba when topic movement involves a complex pronoun. In these structures there is either a phonological match or a feature match between the head and the tail of the A’-chain. When there is phonological match, both the head and the tail are identical. In this context there is copy plus non-deletion. That is copy and full spell-out of both the head and the tail as shown in (29).

(29) Copy and full spell out of the head and the tail

\[
\begin{align*}
\text{[bōg-}^1\text{bōg-à-bú]} & \quad ^1\text{ki}, \quad \text{Nùŋgè́} & \quad \text{fāà} & \quad \text{bō} & \quad \text{[bōg-}^1\text{bōg-à-bú]} \\
\text{1PL-1PL-LNK-3PL} & \quad \text{TOP} & \quad \text{Nuga.} & \quad \text{AGR.give} & \quad \text{bag} & \quad \text{1PL-1PL-LNK-3PL} \\
\text{‘[Us&them], Nuga gave the bag to [us&them],’}
\end{align*}
\]

In some contexts, there is only a feature match between the head and the tail of the chain but no phonological match. I propose that these movement chains are derived via either copy and scattered deletion of the head of the chain; copy and scattered deletion of the tail of the chain or copy and scattered deletion of both the head and the tail of the chain as given in the examples below.
Copy + scattered deletion of the head

\[
[bóg-\mashtab{1}bóg-à-bú] \quad \text{\{kí, Nùgẹ́ fáà bò \}} \quad [bóg-\mashtab{1}bóg-à-bú]
\]

\[\text{1PL TOP Nuga.H AGR.give bag 1PL-1PL-LNK-3PL}\]

‘[Us], Nuga gave the bag to [us&them].’

Copy + scattered deletion of the tail

\[
[bóg-\mashtab{1}bóg-à-bú] \quad \text{\{kí, Nùgẹ́ fáà bò \}} \quad [bóg-\mashtab{1}bóg-à-bú]
\]

\[\text{1PL-1PL-LNK-3PL TOP Nuga.H AGR.give bag 1PL}\]

‘[Us&them], Nuga gave the bag to [us],’

Copy + scattered deletion of the head and the tail

\[
[bóg-\mashtab{1}bóg-à-bú] \quad \text{\{kí, Nùgẹ́ fáà bò \}} \quad [bóg-\mashtab{1}bóg-à-bú]
\]

\[\text{1PL TOP Nuga.H AGR.give bag 1PL}\]

‘[Us], Nuga gave the bag to [us],’

Copy anaphora predicts that any feature mismatch between the head and the tail and the head should be ungrammatical and this is indeed the case as illustrated below.

\[*[bóg-\mashtab{1}bóg-à-bú]\]

\[\text{1PL-1PL-LNK-3PL TOP Nuga.H AGR.give bag 1PL-1PL-LNK-2PL}\]

‘[Us&them], Nuga gave the bag to [us&you].’

The above example is ungrammatical because the head of the chain has the feature composition 1PL-1PL-LNK-3PL whereas the tail has the feature composition 1PL-1PL-LNK-2PL.

A.7 Copy + scattered deletion derives V(P) topicalization

Copy and scattered deletion also derives predicate topicalization in Medumba. It appears that VP topicalization is derived via copy and full spell-out of both the head and the tail whereas V topicalization involves copy plus scattered deletion of the tail of the chain. This is illustrated in the examples below.
To summarize, it appears from the above that resumptive chains resulting from classical A’-movement (i.e. wh/focus movement; relativization) and the ones resulting from topic movement are derived by different mechanisms in Medumba. Although the question why and how is beyond the scope of this dissertation, I hypothesize that syntax forces copy movement and semantics interprets copies as anaphoric or disanaphoric (see Keupdjio and Dechaine (in prep) for more discussion). Disanaphoric copies are deleted (therefore deriving the gapping strategy) or are subject to Agree (therefore deriving the resumptive strategy as Last Resort). This is what seems to happen with classical wh-movement in Medumba. As for topic movement, the copies are always interpreted as anaphoric. Bresnan, (2001) on independent grounds, observes that personal pronouns have different featural make-up. They can be indexical, anaphoric, topical or classificatory.

(36)  
a.  **Indexical:** picks out Speaker and Hearer in utterance situation  
b.  **Anaphoric:** refers back to previously mentioned entity  
c.  **Topical:** picks out topic  
d.  **Classificatory:** picks out features such as
(i) *number*: singular/plural

(ii) *gender*: animate/inanimate, human/non-human, masculine/feminine,…

In Medumba, the possibility of having two different mechanisms to derive resumptive chains arguably reflects the fact that, in topicalized contexts, the pronouns realize all three referential functions of pronominal expressions, that is they are indexical, anaphoric, and topical. Copy anaphora is involved because it is anaphoric. With regard to pronouns involved in classical A’-movement, they are indexical but disanaphoric (see also Williams, 1997), and therefore not compatible with copy anaphora.
Appendix B : Medumba stem allomorphy

B.1 Medumba verb classes and stem allomorphy

As shown in chapter 3, the surface form of Medumba verbs is context dependent. Medumba contrasts four verb tone classes: CV_L vs CV and CVC_L vs CVC. Table B.1 repeating table 3.1 summarizes the different surface tonal allomorphs of Medumba verbs. The Medumba tone inventory given in chapter 3 is repeated in (37).

(37) Medumba tone inventory:  
L-cats: \{L, \emptyset\}  
(surface L/H contrast, \emptyset \rightarrow H)  
F-cats: \{L, H, \mu\}  
(surface L/H contrast, \mu \rightarrow H/L)

<table>
<thead>
<tr>
<th>BASE</th>
<th>Phonological</th>
<th>Morphological</th>
<th>Syntax</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>---,(\Hmu)</td>
<td>N-NMLZ(\L\mu)</td>
<td>---,(\H\mu)</td>
</tr>
<tr>
<td>1 CV_L</td>
<td>CVV(\L\H)</td>
<td>CVV(\L)</td>
<td>CVV(\H)</td>
</tr>
<tr>
<td>2 CV</td>
<td>CV\H</td>
<td>CVV(\L)</td>
<td>CVV(\H)</td>
</tr>
<tr>
<td>3 CVC_L</td>
<td>CVCCV(\L\H)</td>
<td>CVCCV(\L)</td>
<td>CVCCV(\H)</td>
</tr>
<tr>
<td>4 CVC</td>
<td>CVCCV(\L\H)</td>
<td>CVCCV(\L)</td>
<td>CVCCV(\H)</td>
</tr>
</tbody>
</table>

Table B 1: Verb tone classes and their surface tonal allomorphs in Medumba

- Phonologically conditioned verb stem allomorphy: final position

What I call phonologically conditioned verb stem allomorphy is the moraic H-tone added to verbs in final position. This is illustrated in the examples below where L-tone stems surface either as CV\(\L\H\) (38a) or CVC\(\L\H\) (38c) and unmarked stems as CV\(\H\) (38b) or CVCV\(\H\) (38d).

53 Exception to this are the Aux. fô and lù (which appear with a LH contour) and the future marker âʔ which doesn’t change in A-bar context.
In the above examples, the moraic H-tone is hosted by schwa for closed syllables or copies the vowel of the verb-stem for opened syllables (38a above) and closed syllables ending with a glottal stop (39).

- **Morphologically conditioned verb stem allomorphy**

Morphologically conditioned verb stem allomorphs occur in two contexts in Medumba. The prefixal nominalizing N- with suffixal moraic L-tone and the prefix verbal N- with a prefixal H-tone. With regard to the prefixal nominalizing N-, L-tone stems surface in this context either as
CVV\(_{LL}\) (40a) or CVVC\(_{LL}\) (40c). As for unmarked verb stems, they surface either as CVV\(_{HL}\) 40b) or CVVC\(_{HL}\) (409d).

(40) a. \text{nǚŋgɛ́} \text{ɬ ŋ} \text{ɛ́} \text{jún} \ a-\text{kɛ́-zú} \ \text{CV}_L \rightarrow \text{CVV}_L\text{LL}_{\mu}

‘Nuga saw the one who chooses things’

b. \text{nǚŋgɛ́} \text{ɬ ŋ} \text{ɛ́} \text{fə} \text{jún} \ a-\text{kɛ́-zú} \ \text{CV} \rightarrow \text{CVV}_H\text{LL}_{\mu}

‘Nuga saw the one who fries things’

c. \text{nǚŋgɛ́} \text{ɬ ŋ} \text{ɛ́} \text{fə} \text{jún} \ a-\text{kɛ́-g-nà} \ \text{CV}_C \rightarrow \text{CVVC}_L\text{LL}_{\mu}

‘Nuga saw the one who weeds the field’

d. \text{nǚŋgɛ́} \text{ɬ ŋ} \text{ɛ́} \text{fə} \text{jún} \ a-\text{kɛ́-g-nòʔɔ} \ \text{CV} \rightarrow \text{CVVC}_H\text{LL}_{\mu}

‘Nuga saw the one who harvests honey’

The prefix verbal N- with prefixal H-tone is found with non-initial verb (41) and V2 of SVCs (42). Non-initial verbs are analyzed in chapter 4 as V-in-situ, that is when the verb has not moved to T. In these contexts, L-tone stems surface either as CVV\(_{HL}\) (41a & 42a) or CVVC\(_{HL}\) (41c & 42c). With regard to unmarked stems, they surface as CV\(_{H}\) (41b &42b) or as CV\(_{C}\) (41d &42d).

(41) Non-initial V-in-situ

a. \text{nǚŋgɛ́} \text{ɬ ŋ} \text{ɛ́} \text{fə} \ \text{n-\text{kɛ́-bò}} \ \text{CV}_L \rightarrow \text{CVV}_H\text{L}

‘Nuga chose the bag yesterday’

b. \text{nǚŋgɛ́} \text{ɬ ŋ} \text{ɛ́} \text{fə} \text{tò} \ \text{CV} \rightarrow \text{CV}_H\text{H}

‘Nuga fried the cricket yesterday’
c. Nùᵑgɛɛ jùŋ bɔ ọ-kè̀g nà CVCL → CVVC_HL
   Nuga.H see bag N -H.choose
   HL
   ‘Nuga saw the bag and chose it’

b. Nùᵑgɛɛ ʒʷín tò ọ-kè CV → CVH
   Nuga.H buy cricket N-H.fry
   H
   ‘Nuga bought the cricket(s) and fried it/them’

c. Nùᵑgɛɛ ʒʷín nà ọ-kè̀gọ CVCL → CVVC_HL
   Nuga.H buy field N-H.weed
   H- L_H_H#
   ‘Nuga bought the field and weeded it’

d. Nùᵑgɛɛ jùŋ ọ bụ ọ-kè̀gọ CV → CVCH
   Nuga.H see bee N-H.harvest
   H- HH_H_H#
   ‘Nuga saw the bees and harvested them (to get honey)’

• Syntactically conditioned verb stem allomorphy

Syntactically conditioned verb stem allomorphs occur either in contexts in which the verb — whether tensed (43) or infinitival (44) — precedes the direct object and in A’-movement context (45). When the verb precedes a direct object, L-tone stems surface as CVLH (43a & 44a) or as CVVC_LH (43c & 44c). Unmarked stems in these contexts surface as CVH (43b & 44b) or as CVCH (43d & 44d).
(43) Tensed V preceding a direct object

a. Nùⁿğée kèè bò
   Nuga.H choose.H bag
   CV_L → CVV_LH DP
   ‘Nuga chose the bag’

b. Nùⁿğée kè tò
   Nuga.H fry.H cricket
   CV → CV_H DP
   ‘Nuga fry the cricket’

c. Nùⁿğée kèég nà
   Nuga.H weed.H field
   CVCL → CVVCLH DP
   ‘Nuga weeded the field’

d. Nùⁿğée këkŋʷʔɔ
   Nuga.H harvest.H bee
   CVC → CVCH DP
   ‘Nuga harvested honey’

(44) Infinitive V with an object

a. nù kèè bò
   INF choose.H bag
   CV_L → CVV_LH DP
   ‘to choose the bag’

b. nù kè tò
   INF fry.H cricket
   CV → CV_H DP
   ‘to fry the cricket’

c. nù kèég nà
   INF weed.H field
   CVCL → CVVCLH DP
   ‘to weed the field’

d. nù këkŋʷʔɔ
   INF harvest.H bee
   CVC → CVCH DP
   ‘to harvested honey’
In an A’-movement context, there is a complete neutralization of the different verb tone classes. The split found with L-tone stems and unmarked stems has completely disappeared. All stem classes surface with an HL tonal overwrite, which is analyzed in chapter 4 as A’-agreement. The L-tone stems and the unmarked stems all surface as CVV\textsubscript{HL} or CVVC\textsubscript{HL} as illustrated in the following examples for wh-movement.

(45)  

\begin{tabular}{llllll}
\text{a.} & á & wú & Núngè & kêê & á & CV\textsubscript{L} \rightarrow CVV\textsubscript{HL}  \\
FOC & WH & Nuga & & & & HL  \\
agr & choose & C.Q.H &  \\
\text{‘Who did Nuga choose?’} & & & & & & \\
\end{tabular}  

\begin{tabular}{llllll}
\text{b.} & á & kú & Núngè & kêê & á & CV \rightarrow CVV\textsubscript{HL}  \\
FOC & WH & Nuga & & & & HL  \\
agr & fry & C.Q.H &  \\
\text{‘What did Nuga fry?’} & & & & & & \\
\end{tabular}  

\begin{tabular}{llllll}
\text{c.} & á & kú & Núngè & kêêg & á & \text{CVCL} \rightarrow CVVC\textsubscript{HL}  \\
FOC & WH & Nuga & & & & HL  \\
agr & weed & C.Q.H &  \\
\text{‘What did Nuga weed?’} & & & & & & \\
\end{tabular}  

\begin{tabular}{llllll}
\text{d.} & á & kú & Núngè & kêêg & á & \text{CVCC} \rightarrow CVVC\textsubscript{HL}  \\
FOC & WH & Nuga & & & & HL  \\
agr & harvest & C.Q.H &  \\
\text{‘What did Nuga harvest?’} & & & & & & \\
\end{tabular}

B.2 Medumba noun classes and stem allomorphy

- **Medumba morphological noun classes**

Traditionally, Medumba is assumed to have five noun classes. Three classes for singular (cl1, cl3&cl5) and two classes for plural (cl6 & cl4). Class 1 nouns form their plural with class 6 whereas class 3 and class 5 nouns form their plural with class 4. The concord on the possessive determiner is usually used to organize and diagnose nouns that fall into one single class (Voorhoeve 1968). Note that some of the nouns that possibly belonged to different classes in Proto-Bantu are now organized into one single class in Medumba according to their possessive agreement concord.
Following Keupdjio 2016; Keupdjio and Déchaine 2016, the assumed partition is only for a Medumba count noun. A complete picture of the Medumba number marking system needs to take into account not only count and non-count nouns but also the morphological number on nouns independently of their possessive agreement concord. Table B.1 summarizes the noun class system with count nouns in Medumba.

<table>
<thead>
<tr>
<th>CL</th>
<th>SG</th>
<th>PL</th>
<th>‘my child’</th>
<th>CL</th>
<th>SG</th>
<th>PL</th>
<th>‘my children’</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>m-ɛ́n</td>
<td>Ø-ãm</td>
<td>‘my child’</td>
<td>6</td>
<td>b-ún</td>
<td>tʃ-ám</td>
<td>‘my children’</td>
</tr>
<tr>
<td></td>
<td>CL1-child</td>
<td>CL1-1POSS</td>
<td></td>
<td></td>
<td>CL6-child</td>
<td>CL6-1POSS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ø-shùm</td>
<td>Ø-ãm</td>
<td>‘my son’</td>
<td></td>
<td>jùúm-shùm</td>
<td>tʃ-ám</td>
<td>‘my sons’</td>
</tr>
<tr>
<td></td>
<td>CL1-son</td>
<td>CL1-1POSS</td>
<td></td>
<td></td>
<td>CL6A-son</td>
<td>CL6-1POSS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ø-b³hú</td>
<td>Ø-ãm</td>
<td>‘my dog’</td>
<td></td>
<td>Ø-b³hú</td>
<td>tʃ-ám</td>
<td>‘my dogs’</td>
</tr>
<tr>
<td></td>
<td>CL1-dog</td>
<td>CL1-1POSS</td>
<td></td>
<td></td>
<td>CL6-dog</td>
<td>CL6-1POSS</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Ø-b³hú</td>
<td>Ø-ãm</td>
<td>‘my hand’</td>
<td>4</td>
<td>m-b³hú</td>
<td>m-ãm</td>
<td>‘my hands’</td>
</tr>
<tr>
<td></td>
<td>CL3-hand</td>
<td>CL3-1POSS</td>
<td></td>
<td></td>
<td>CL4-hand</td>
<td>CL4-1POSS</td>
<td></td>
</tr>
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<td>5</td>
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<td>s-ãm</td>
<td>‘my tooth’</td>
<td></td>
<td>m-sò</td>
<td>m-ãm</td>
<td>‘my teeth’</td>
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<tr>
<td></td>
<td>CL5-tooth</td>
<td>CL5-1POSS</td>
<td></td>
<td></td>
<td>CL4-tooth</td>
<td>CL4-1POSS</td>
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</tr>
</tbody>
</table>

Table B.2: Number on Medumba count nouns

The above table shows that count nouns in Medumba are organized in two big crossed-classes. Class 1 nouns share the same possessive concord but are divided into 3 sub-classes according to their singular/plural pairing (some members share the m-/ma- singular prefix and b-/ba- plural prefix; others have a zero singular prefix and are totally reduplicated in the plural; while some others are characterized by a zero prefix both in singular and plural). In contrast, class 3 and class 5 nouns form a single class according to their singular/plural pairing by virtue of sharing a zero prefix in the singular and the homorganic nasal in the plural. However, they are divided into 2 sub-classes according to their possessive concord (some have a zero possessive singular prefix and the nasal m- in plural whereas others have the possessive singular prefix s- in the singular and the nasal m- in the plural). While the noun class pairing (1/6, 3/4, 5/4) in Medumba is consistent with Maho’s (1999) typological survey of noun classes within this linguistic area, Keupdjio 2016 opts for the
above presentation because not only does it presents richer information about count nouns namely their singular/plural pairing and their possessive agreement concord; but also highlights some relics of the class prefixes and classes that possibly merged into one single class in Medumba (see for instance, class 1 count nouns which with regard to singular/plural pairing pattern differently and seem to have belonged to different classes but are nowadays sharing the same possessive agreement concord.

Following Keupdjio and Déchaine 2016, non-count (abstract and mass) nouns in Medumba are either inherently singular or inherently plural. Inherently singular non-count nouns fall within class 1, class 3 and class 5 whereas inherently plural non-count nouns fall within with class 6 and class 4 as illustrated in table B.2.

<table>
<thead>
<tr>
<th>CL</th>
<th>SG</th>
<th>CL</th>
<th>PL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ø-ndzəʔ-ʔʉ</td>
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<td>Ø-kākə</td>
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<td></td>
<td>cl1-marrow-</td>
<td></td>
<td>cl6-luggage</td>
</tr>
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<td></td>
<td>head</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Ø-zəd-ŋu</td>
<td>4</td>
<td>mvɛt</td>
</tr>
<tr>
<td></td>
<td>cl3-know-thing</td>
<td></td>
<td>cl4.oil</td>
</tr>
<tr>
<td></td>
<td>s-ám</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Ø-lii</td>
<td>4</td>
<td>m-ám</td>
</tr>
<tr>
<td></td>
<td>cl5-blood</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>'my oil'</td>
</tr>
</tbody>
</table>

Table B 3: Number on Medumba non-count (abstract & mass) nouns

With regard to how these inherently singular or inherently plural non-count nouns are pluralized, inherently singular mass nouns are pluralized with the regular plural-marking (cl6, cl4) while inherently plural mass nouns are pluralized with the associative plural bà (see Keupdjio 2016). These are illustrated in table 1.5 for pluralization of inherently singular non-count nouns, and in table B.3 for pluralization of inherently plural mass nouns.
In addition to morphological classes, nouns are also organized according to their tone classes in Medumba and these tone classes exhibit dialect variation. In the Bazou dialect (which is my dialect) of Medumba there are three noun tone classes: (i) L-tone nouns with a floating H-tone at the right edge (L(H)); (ii) L-tone nouns with a floating L-tone at the right edge (L(L)) and H-tone nouns with a floating H-tone at the right edge (H(H)). All nouns have a floating L-tone at their left edge. These tone classes surface either as low (L); falling low (LL) or high (H). The yes/no question frame below based on Anghelescu 2010 is used to diagnose noun tone classes in Medumba. The tone class of the noun is determined with regard to whether that noun triggers a downstep on the yes/no Q-particle or not. Underlyingly L(H) and L(L) nouns are neutralized on the surface in Medumba. The Q-particle occurs at the same pitch level even though one of the nouns is falling.
(46) Dialect 1: Bazou Medumba: L, LL, ∅ → L(H), L(L), H(H)

a. ú  jún  ndót  kí  L(H) → L
 2SG.H see  cloud C.Q
‘Did you see the cloud?’

b. ú  jún  nvùn  kí  L(L) → LL
 2SG.H see  chief C.Q
‘Did you see the chief?’

c. ú  jún  nhbú  kí  H(H) → ∅
 2SG.H see  dog C.Q
 1H
‘Did you see the dog?’

In the Bangangté dialect, there are four noun tone classes (Anghelescu 2010). Underlyingly L(H) and L(L) nouns are also neutralized on the surface in Medumba with the Q-particle occurring at the same pitch level. Underlyingly H(L) nouns trigger downstep on the Q-particle (47c) whereas underlyingly H(H) nouns do not (47d).

(47) Dialect 2: Bangangté Medumba

a. ú  jún  ndút  gi  L(H) → L₁
 2SG.H see  cloud C.Q
‘Did you see the cloud?’

b. ú  jún  nvùn  gi  L(L) → LL₂
 2SG.H see  chief C.Q
‘Did you see the chief?’

c. ú  jún  nhbú  gi  H(L) → L₂
 2SG.H see  dog C.Q
 1H
‘Did you see the dog?’
d. ú ↓ jùn ↓ jù H(H) → ∅
2SG.H see snake C.Q ↓ H

‘Did you see the snake?’

- Medumba noun stem allomorphy

This sub-section is not an exhaustive list but just an illustration of some contexts in which Medumba nouns (in the Bazou dialect) exhibit stem allomorphy. This includes for instance context in which the noun precedes a demonstrative determiner and nouns in associative context. When they precede a demonstrative determiner, L-tone nouns in Medumba surface as LL regardless of whether they are underlyingly L(H) or L(L) whereas H-tone nouns surface as HL. This is illustrated in the following examples.

(48) Stem allomorphy with demonstrative

a. *dë̀ òt jùn-ì ní L(H) → LL
cloud.L AGR-1PROX
LL
‘This cloud (near the speaker)’

b. *vù̀ òt jùn-ì ní L(L) → LL
chief.L AGR-1PROX
LL
‘This chief (near the speaker)’

c. *bù̀ òt jùn-ì ní H(H) → HL
dog.L AGR-1PROX
HL
‘This dog (near the speaker)’

In associative constructions, L-tone nouns whether underlyingly L(H) or L(L) surface as LH whereas H-tone nouns surface as HL as given below.
Stem allomorphy in associative constructions

a. ⁿd₃́ọ́t  Númí  cloud.L  Numi  L(H)  →  LH  
   ‘The cloud of Numi’

b. ⁿvùúŋ  Númí  chief.L  Numi  L(L)  →  LH  
   ‘This chief of Numi’

c. ⁿbʰúù  Númí  dog.H  Numi  H(H)  →  HL  
   ‘This dog of Numi’

B.3 Medumba functional categories tone classes and stem allomorphy

Functional categories in Medumba seem to show a contrast between H-tone and L-tone and exhibit the following tonal patterns: (i) some surface with an invariable H-tone pattern; (ii) others with an invariable L-tone; (iii) some others surface with a copy-tone in that if the preceding tone is an H-tone, they copy that H-tone and if the preceding tone is an L-tone, they copy that L-tone. In addition to these tone-stable functional categories, there are other functional categories that exhibit stem allomorphy regardless of whether they are underlingly H or L.

- **H-tone functional category (tone-stable)**

Functional categories that always surface with an invariant H-tone are the non-interrogative complementizer (lá); the neutral polar question particle kí and the positive biased question kɔ́ (see Keupdjio and Wiltschko 2018); and demonstrative.

(50) Complementizer lá

zą́  Núngɛ́  ʑʰii  lá
thing  Nuga  AGR.buy  C  
   ‘The thing that Nuga bought…’
(51)  Question particle

a. Neutral polar question ki

ú  yùú  ᖏmbhú  kí
2SG.H  have.H  dog  C.Q  H

‘Do you have a dog?’

b. Biased polar question kɔ

ú  yùú  ᖏmbhú  ᖏkɔ
2SG.H  have.H  dog  C.Q  H

‘Do you have a dog?’

(52)  a. 1PROX lí

mbhúú  jún-lí
dog.L  AGR.CL1-1PROX  H
‘This dog (near the speaker)’

b. 2PROX ná

mbhúú  jún-ná
dog.L  AGR.CL1-2PROX  H
‘This dog (near the addressee)’

c. Distal dʰín

mbhúú  jún-dʰín
dog.L  AGR.CL1-DIST  H
‘That dog (far from speaker and addressee)’

• Low-tone functional category (tone-stable)

Invariably L-tone functional categories include the biased polar question kù; the complementizer ʰndà and the future àʔ as illustrated in the following examples.
(53) Biased polar question kù

kù ú ʒʷín (mb)ú á
C 2SG.H AGR.buy dog C
L
‘So, did you buy the dog then?’

(54) Complementizer n’dà

á bòó n’dà ú ʒʷín mbú lá
3SG.H good.H C 2SG.H buy dog C
L
‘It’s good that you bought the dog’

(55) Irrealis àʔ

Nàŋgè àʔ ʒʷín mbú
Nuga IRR buy dog
L
‘Nuga will buy the dog’

- **Toneless mora functional category**

The functional category that exhibits a toneless mora in Medumba is the Q-particle a which surfaces either with an H-tone when the preceding tone is a high tone or with an L-tone when the preceding tone is low as shown in (56).

(56) a. á wú Nàŋgè bií=i á
FOC WH Nuga AGR.pay=3SG.H C.Q
H
‘Who did Nuga pay [him]?’

b. á wú Nàŋgè bií=i ƙòg á
FOC WH Nuga AGR.pay=3SG.H yesterday C.Q
L
‘Who did Nuga pay [him] yesterday?’

**B.4 Stem allomorphy with functional categories**

Functional categories that exhibit stem allomorphy in Medumba include clause-typing complementizers, negation, the agreement morpheme in demonstrative and auxiliaries. With
regard to clause typing, the complementizer \( ^m b u \) surfaces as low in declarative; as HL in ‘non-commitment’ context and as LH in subjunctive context.

\[(57)\]

a. Watèɛt Ꙕ̀p Ꙅbʉ ꙄNùᵑgɛ̀ Ꙃz̑iŋ Ꙃm̃bʉ ꙂCV_L
   Watat.H say C Nuga.H pay dog L
   ‘Watat said that Nuga bought the dog’

b. Watèɛt Ꙕ̀p Ꙅbʉ̀ ꙄNùᵑgɛ̀ Ꙃz̑iŋ Ꙃm̃bʉ̀ Ꙃlá ꙂCVV_HL
   Watat.H say C Nuga.H pay dog C HL
   ‘Watat said or did not say whether Nuga bought or did not buy the dog’

c. Watèɛt Ꙕ̀p Ꙅbʉ̀ ꙄNùᵑgɛ̀ Ꙃz̑iŋ Ꙃm̃bʉ̀ ꙄCVV_LH
   Watat.H say C Nuga.H pay dog LH
   ‘Watat said that Nuga should buy the dog’

In negative contexts, the form Ꙅkʉ surfaces as low with constituent negation in past contexts; as high with future negation; as HL in proposition negation and as HL with a change in vowel quality with negative imperative.

\[(58)\]

a. Constituent negation in past contexts

\[\&Nùᵑgɛ̀ Ꙅkʉ Ꙃz̑iŋ Ꙃm̃bʉ ꙂCV_L\]
   Nuga.H NEG buy dog L
   (i) ‘Nuga did not BUY the dog’
   (ii) ‘Nuga did not buy the DOG’
   (iii) ‘Nuga did not BUY THE DOG’

b. Future negation

\[\&Nùᵑgɛ̀ Ꙅkʉ Ꙃz̑iŋ Ꙃm̃bʉ ꙂCV_H\]
   Nuga.H NEG buy dog H
   (i) ‘Nuga will not BUY the dog’
   (ii) ‘Nuga will not buy the DOG’
   (iii) ‘Nuga will not BUY THE DOG’
c. Proposition negation

Nùgë ᱂ùŋ ³wìń ³mb³ù CVVC⁺HL
Nuga NEG buy dog HL
‘That Nuga bought the dog is false’

(59) Negative imperative

káà ³wìń ³mb³ù CVV⁺HL
NEG buy dog HL
‘Don’t buy the dog’

With regard to the agreement morpheme found with demonstrative, it surfaces as HL when it precedes the noun in focus context as given below.

(60) 1ªPROX

a. ³mb³ù jùń-ńí
   dog AGR.CL.1-1PROX HL H- H
   ‘This dog (near the speaker)’

b. jùń ³mb³ù ³ljí
   AGR.CL.1 dog 1PROX HL H- H
   ‘THIS dog (near the speaker)’

(61) 2ªPROX

a. ³mb³ù jùń-ńá
   dog AGR.CL.1-2PROX HL H- H
   ‘This dog (near the speaker)’

b. jùń ³mb³ù ³lá
   AGR.CL.1 dog 1PROX HL H- H
   ‘THIS dog (near the addressee)’
(62) **Distal dʰìn**

a. mᵇʰúù jún-₁dʰìn  
  dog.L AGR.CL.1-1PROX  
  HL H- H  
  ‘That dog (far from speaker and addressee)’

b. jùùn mᵇʰú ₁dʰìn  
  AGR.CL.1 dog DIST  
  HL H H  
  ‘That dog (far from speaker and addressee)’

The same stem allomorphy is also found with possessive in Medumba. When they are in post-nominal position, they surface either with a low-tone for class 1 and with a high-tone for class 3, class5, class 4 and class 6. When they are focused, possessives appear in pre-nominal position and are either LL for class 1 and HL for the other classes (c3, c5, c4 & c6) as illustrated in the following examples.

(63) CL₁

a. Nùmì fʰúú mén ȳm  
  Numi fool.H child POSS.CL.1 L  
  ‘Numi fooled the child of mine’

b. Nùmì fʰúú jààm mén  
  Numi fool.H POSS.CL.1 child LL  
  ‘Numi fooled MY child’

(64) CL₃

a. Nùmì bú? kfǔn ȳm  
  Numi break bed POSS.CL.3 H  
  ‘Numi broke the bed of mine’

b. Nùmì bú? jààm kfǔn  
  Numi break POSS.CL.3 bed HL  
  ‘Numi broke MY bed’
(65) CL5

a. Numí ʒú ʧəŋ sáŋ
    Numi  eat  food  POSS.CL5
    H
    ‘Numi ate the food of mine’

b. Numí ʒú sàąm ʧəŋ
    Numi  eat  POSS.CL5  food
    H
    ‘Numi ate MY food’

(66) CL6

a. Numí ʧə uu búnn ʧám
    Numi  fool.H  PL.child.L  POSS.CL1
    H
    ‘Numi fooled the children of mine’

b. Numí ʧə uu ʧəàm  búnn
    Numi  fool.H  POSS.CL6  PL.child
    H
    ‘Numi fooled MY children’

(67) CL4

a. Numí búʔ n-kf’ún mám
    Numi  break  PL-bed  POSS.CL4
    H
    ‘Numi broke the beds of mine’

b. Numí búʔ mám n-kf’ún
    Numi  break  POSS.CL4  PL-bed
    HL
    ‘Numi broke MY beds’
**Tonal overwrite on auxes**

(conditioned by A’-movement, discussed in chapter 3 and 4)

<table>
<thead>
<tr>
<th>(68)</th>
<th>Nùŋgɛ́</th>
<th>kú</th>
<th>ì-n-bí</th>
<th>Watɛ́t</th>
<th>CV_{H}</th>
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<tbody>
<tr>
<td>Nuga.H</td>
<td>IPFV.PST</td>
<td>N-pay</td>
<td>Watat</td>
<td>H</td>
<td>H</td>
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</table>

‘Nuga was paying Watat’

<table>
<thead>
<tr>
<th>b.</th>
<th>á</th>
<th>wú</th>
<th>Nùŋgɛ́</th>
<th>kúú</th>
<th>ì-n-bíí</th>
<th>á</th>
<th>CVV_{HL}</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOC</td>
<td>WH</td>
<td>Nuga</td>
<td>AGR.IPV.PST</td>
<td>N-AGR.pay</td>
<td>C.Q</td>
<td>HL</td>
<td></td>
</tr>
</tbody>
</table>

‘Who was Nuga paying?’

<table>
<thead>
<tr>
<th>(69)</th>
<th>Nùŋgɛ́</th>
<th>zí</th>
<th>ì-n-bí</th>
<th>Watɛ́t</th>
<th>CV_{H}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuga</td>
<td>AUX.α</td>
<td>N-pay</td>
<td>Watat</td>
<td>H</td>
<td>H</td>
</tr>
</tbody>
</table>

‘Nuga paid Watat at night’

<table>
<thead>
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<th>b.</th>
<th>á</th>
<th>wú</th>
<th>Nùŋgɛ́</th>
<th>zíí</th>
<th>ì-n-bíí</th>
<th>á</th>
<th>CVV_{HL}</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOC</td>
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<td>Nuga</td>
<td>AGR.AUX.α</td>
<td>N-AGR.pay</td>
<td>C.Q</td>
<td>HL</td>
<td></td>
</tr>
</tbody>
</table>

‘Who did Nuga pay at night?’

<table>
<thead>
<tr>
<th>(70)</th>
<th>Nùŋgɛ́</th>
<th>tfɔk</th>
<th>ì-n-bí</th>
<th>Watɛ́t</th>
<th>CV_{C H}</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuga.H</td>
<td>AUX.β</td>
<td>N-pay</td>
<td>Watat</td>
<td>H</td>
<td>H</td>
</tr>
</tbody>
</table>

‘Nuga paid Watat in the morning (earlier this morning)’

<table>
<thead>
<tr>
<th>b.</th>
<th>á</th>
<th>wú</th>
<th>Nùŋgɛ́</th>
<th>tfɔ̃k</th>
<th>ì-n-bíí</th>
<th>á</th>
<th>CVVC_{HL}</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOC</td>
<td>WH</td>
<td>Nuga</td>
<td>AGR.AUX.β</td>
<td>N-AGR.pay</td>
<td>C.Q</td>
<td>HL</td>
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</table>

‘Who did Nuga pay in the morning (earlier this morning)’

<table>
<thead>
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<th>Nùŋgɛ́</th>
<th>jɔk</th>
<th>ì-n-bí</th>
<th>Watɛ́t</th>
<th>CV_{C H}</th>
</tr>
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<tbody>
<tr>
<td>Nuga.H</td>
<td>AUX.γ</td>
<td>N-pay</td>
<td>Watat</td>
<td>H</td>
<td>H</td>
</tr>
</tbody>
</table>

‘Nuga paid Watat during the day (earlier today)’

<table>
<thead>
<tr>
<th>b.</th>
<th>á</th>
<th>wú</th>
<th>Nùŋgɛ́</th>
<th>jɔ̃k</th>
<th>ì-n-bíí</th>
<th>á</th>
<th>CVVC_{HL}</th>
</tr>
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<tbody>
<tr>
<td>FOC</td>
<td>WH</td>
<td>Nuga</td>
<td>AGR.AUX.γ</td>
<td>N-AGR.pay</td>
<td>C.Q</td>
<td>HL</td>
<td></td>
</tr>
</tbody>
</table>

‘Who did Nuga pay during the day (earlier today)’

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54 HL overwrite does not affect the auxes ʃə and lù (which surface LH) and the invariant L-tone future prefix ʔə.
(72) a. Nùŋgê fô m-bi Watêt CV_L
    Nuga.H AUX.T3 N-pay Watat L H
    ‘Nuga paid Watat yesterday’

    b. á wú Nùŋgê fôô m-biì á CVV_LH
       FOC WH Nuga AGR.AUX.T3 N-AGR.pay C.Q L H
       ‘Who did Nuga pay yesterday?’

(73) a. Nùŋgê lù m-bi Watêt CV_L
    Nuga.H AUX.T3 N-pay Watat L H
    ‘Nuga paid Watat recently’

    b. á wú Nùŋgê lûû m-biì á CVV_LH
       FOC WH Nuga AGR.AUX.T3 N-AGR.pay C.Q L H
       ‘Who did Nuga pay recently?’