

THE SYNTAX OF A'-DEPENDENCIES IN BAMILEKE MEDUMBA

by

Hermann Sidoine Keupdjio

B.A., University of Yaoundé 1 (Cameroon), 2009

M.A., University of Yaoundé 1 (Cameroon), 2011

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

in

THE FACULTY OF GRADUATE AND POSTDOCTORAL STUDIES

(Linguistics)

THE UNIVERSITY OF BRITISH COLUMBIA

(Vancouver)

March 2020

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The following individuals certify that they have read, and recommend to the Faculty of Graduate and Postdoctoral Studies for acceptance, the dissertation entitled:

The Syntax of A'-dependencies in Bamileke Medumba

submitted by Hermann KEUPDJIO in partial fulfillment of the requirements for

the degree of Doctor of Philosophy

in Linguistics

Examining Committee:

Rose-Marie Déchaine (University of British Columbia)

Supervisor

Hotze Rullmann (University of British Columbia)

Supervisory Committee Member

Martina Wiltschko (University of British Columbia)

Supervisory Committee Member

Marcin Morzycki (University of British Columbia)

University Examiner

Ori Simchen (University of British Columbia)

University Examiner

Chris Collins (New York University)

External Examiner

Additional Supervisory Committee Members:

Michael Rochemont (University of British Columbia; deceased)

Supervisory Committee Member

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; Bošković 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:	1 st person
2:	2 nd person
3:	3 rd 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

FOC:	Focus marker
FUT:	Future
FV:	Final vowel
H:	High tone
HAB:	Habitual
HL:	High low falling tone
HMN:	Human
IM:	Internal merge
INCL:	Inclusive
INF.:	Infinitive
IPFV:	Imperfective
L:	Low tone
LF:	Logical form
LH:	Low high rising tone
LIT.:	Literal
LNK:	Linker
LOC:	Locative
N-:	Homorganic nasal prefix
N:	Noun
NEG:	Negation
NMLZ:	Nominalizer
NOM:	Nominative
OBJ:	Object

OM:	Object marker
P:	Phrase
p:	Proposition
PERS:	Person
PF:	Phonetic form
PFV:	Perfective
PIC:	Phase Impenetrability Condition
PL:	Plural
POSS:	Possessive
PRED:	Predicate
PREP:	Preposition
PRN:	Pronoun
PROG:	Progressive
PROX:	Proximate
PRS:	Present
PRT:	Particle
PST:	Past
Q:	Interrogative
QY/N:	Yes/no question particle
REL:	Relative
SA:	Subject agreement
SG:	Singular
SM:	Subject marker

SPEC:	Specifier
SPKR:	Speaker
SUBJ:	Subject
SUP:	Supremum
SVC:	Serial verb construction
t:	Trace
TNS:	Tense
TOP:	Topic marker
UNMKD:	Unmarked
V:	Verb
WH:	Wh-word

Acknowledgements

“b'úù "f'ú? kúù? mú kfúùt b'ú?”

“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 *mú làbtàà*, ‘thank you’.

First and foremost, I wish to express my sincere gratitude to my supervisory committee. You believed in me since the first day I got to UBC and your guidance, advice, encouragement and support did not cease during these rough years of graduate school. You kept pushing me up towards the goal. Your comments, feedback and many insightful questions throughout the different stages of the writing process of this dissertation not only helped clarifying my ideas but also helped me gain some amount of confidence in the directions I was taking.

Rose-Marie Déchaine, thank you for getting me interested in tone. It was through lengthy hours of meeting with lengthy handouts that I realized that although very complex in Medumba, I should not be afraid using tones for syntactic diagnostics. Your expressions *“on y arrivera”* or *“ça s’envient”* or *“ça se précise”* kept fuelling me up when I felt like I should give up investigating tonal allomorphy in Medumba. You were patient listening to my confusing ideas and helped me see the big picture of what I was doing when I was laser-focused on a particular data set.

Hotze Rullman, thank you for your patience going with me through the various lengthy handouts for each chapter of this dissertation and for your comments and remarks through the

various drafts of each chapter of this dissertation. Your kind words of encouragement were the ammunition I needed to keep soldiering.

Martina Wiltschko, thank you for jumping on board in my supervisory committee after Michael Rochemont's sudden passing away even though you already had a lot on your plate. I am very grateful for your advice and financial support throughout my years in graduate school.

I am also very grateful to the late Michael Rochemont for his comments and guidance at the early stages of this dissertation. It is very sad and very unfortunate that he would never see his favourite chapter (Ch. 2) of this dissertation and that I would never share with him the various implications of tonal allomorphy in Medumba.

To my cohort Adriana Osa G., Emily Sadlier-Brown, Oksana Tkachman (cohort in honour) Erin Guntly, thank you for your support and kind words throughout these years of graduate school. I am particularly thankful to Adriana Osa G., my twin sister from another mother, for cheering me up. You mastered my timetable more than me, you kept reminding me of the different appointments, meetings and deadlines. In all, gracias!

I am also thankful to my fellow graduate students at UBC, especially to the dissertators Andrei Anghelescu, James Crippen, Joash Gambarage and Natalie Weber for your comments and feedback during the meetings. I am particularly grateful to Dzeiwsh (James Crippen) for proofreading this dissertation.

I am particularly very grateful to Ncǎkò', Katie Franich for proofreading this dissertation.

I wish to express my sincere gratitude to the person who inspired and introduced me into syntax, my M.A. thesis supervisor at University of Yaoundé 1, Prof. Edmond Biloa. I am also grateful to my former professors at the University of Yaoundé 1, namely Prof. Philip Nguessimo Mutaka, Prof. Cledor Nseme, Dr. Emmanuel Makasso and the late Prof. Pius Tamanji, for your

devotion in shaping my dream of becoming a linguist at the Department of African Languages and Linguistics of the University of Yaoundé 1.

I am also thankful to the organizers of the African Linguistics School (ALS), and more particularly to Prof. Enoch Aboh, Prof. Chris Collins, Prof. Claire Halpert and Prof. Hilda Koopman for your advice when I was in the process of applying for graduate school.

To all my friends and colleagues in Cameroon, Dr. Constantine Kouankem, Alain Yonkeu Mbiami, Elodie Ngo Ngue, Rebecca Bedim and Guy Merlin Tchagoua, thank you for your encouragement and being part of this journey. To many of you whose names are not listed here, you know who you are; to all, thank you.

To Ian and Barbara Rokeby, thank you for your prayers and for helping me in my integration process in Canada. The skiing and boating experience was amazing.

To Achille and Mireille Fossi, thank you for your words of encouragement, your support and for welcoming me in Canada.

To my family, thank you for believing in my dreams, for your support and encouragement since I left home and throughout these years I have been away and have not seen you. To my parents, I love you and I miss you every day. Mom, I promise I will come back home to see you after graduation. To my elder brother and his wife Basile and Nazareth Nana; to Mr. and Mrs. Tchana, thank you for everything. To papa Henri Toukam, thank you for always encouraging me. To my lovely nieces and nephews, thank you for encouraging your ‘tonton’. I kept going partly because you kept asking me when I will be done with the dissertation.

To my elder brother Henri Innoçant (in memoriam), you are particularly missed.

My dearest, lovely and very supportive wife, Christelle Keupdjio Toukam, ‘ma Madouce’, words are not enough to express my gratitude for putting up with me throughout these years, for

cheering me up, for keeping telling me it is possible, I can do it. I finally finally did it 'lovy lovy'.
To Nolann Myronn Keupdjio Toukam, my little 'Boubounet', thank you for being the light that
brightens my way through the final stages of this dissertation.

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^wéèn*. 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** Wàtèét nòò? n-s^wéèn 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

Wàtèt nó? s^wèn **á** **wú** á
 Watat AUX.T2 sell FOC who C.Q.H
 T.H V.L
 Lit.: Watat betrayed who?

(5) Root-clause wh-ex-situ

a. **á** **wú** Wàtèt **nó?** ⁿ-s^wéèn — á
 b. **á** **wú** Wàtèt **nó?** ⁿ-s^wéèn **í** á
 FOC who Watat AGR.AUX.T2 N-AGR.sell 3SG.H C.Q.H
 T.HL V.HL
 ‘Who did Watat betray (him/her)?’

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

Nù mí nó? tʃúp ^mbù Wàtèt nó? s^wèn **á** **wú** á
 Numi AUX.T2 say C.L Watat AUX.T2x sell FOC who C.Q.H
 T.H V.H T.H V.L
 Lit.: Numi said that Watat betrayed who?

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

á **wú** Nù mí **nó?** ⁿ-tʃúp ^mbù Wàtèt **nó?** ⁿ-s^wéèn **í** á
 FOC who Numi 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 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 *nóʔ* surfaces with a high tone (H) and the verb *sʷèn* ‘sell’ with a low tone (L). In contexts where there is movement of the wh-XP to the clause-initial position, the auxiliary *nóʔ* and the verb *sʷèn* ‘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 *tfúp* ‘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.

Base	Animacy Feature	Form	Gloss	Examples
DP [<i>w-</i> + WH]	Human	<i>w-ú</i> HMN-WH	who	(8a)
DP [<i>k-</i> + WH]		<i>k-ú</i> UNMKD-WH	what	(8b)
PP [<i>ⁿdʒú-</i> DP] [<i>nùúm-</i> DP]	Unmarked	[P <i>ⁿdʒú-</i> [DP <i>k-ú</i>]] way UNMKD-WH	how	(9a)
		[P <i>nùúm-</i> [DP <i>k-ú</i>]] PREP UNMKD-WH	why	(9b)
ADV	Other	<i>s-ú</i> TEMP-WH	when	(10a)
		<i>já</i> LOC.WH	where	(10b)

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. Wàtèt nó? kè á w-ú á
 Watat AUX.T2 choose FOC HMN-WH C.Q.H
 T.H V.L
 Lit.: Watat chose who?

b. Wàtèt nó? kè 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. Wàtèt nó? kèé Nù mí á ^ⁿdʒú-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. Wàtèt nó? kèé Nù mí á ^{nù}úm-k-ú á
 Watat AUX.T2 choose Numi FOC PREP-UNMKD-WH C.Q.H
 T.H V.LH
 Lit.: Watat chose Numi why?

(10) **Wh-Adv**

a. Wàtèt nɔ? kèé Nùmí á s-ú á
Watat AUX.T2 choose Numi FOC TEM-WH C.Q.H
T.H V.LH
Lit.: Watat chose Numi when?

b. Wàtèt nɔ? kèé Nùmí á já á
Watat AUX.T2 choose Numi FOC LOC.WH C.Q.H
T.H V.LH
Lit.: Watat chose Numi where?

1.3 Medumba: the language and the people

Medumba (*Màdúmbà*; *Màjjúmbà*) 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, Ngiemboon, 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).

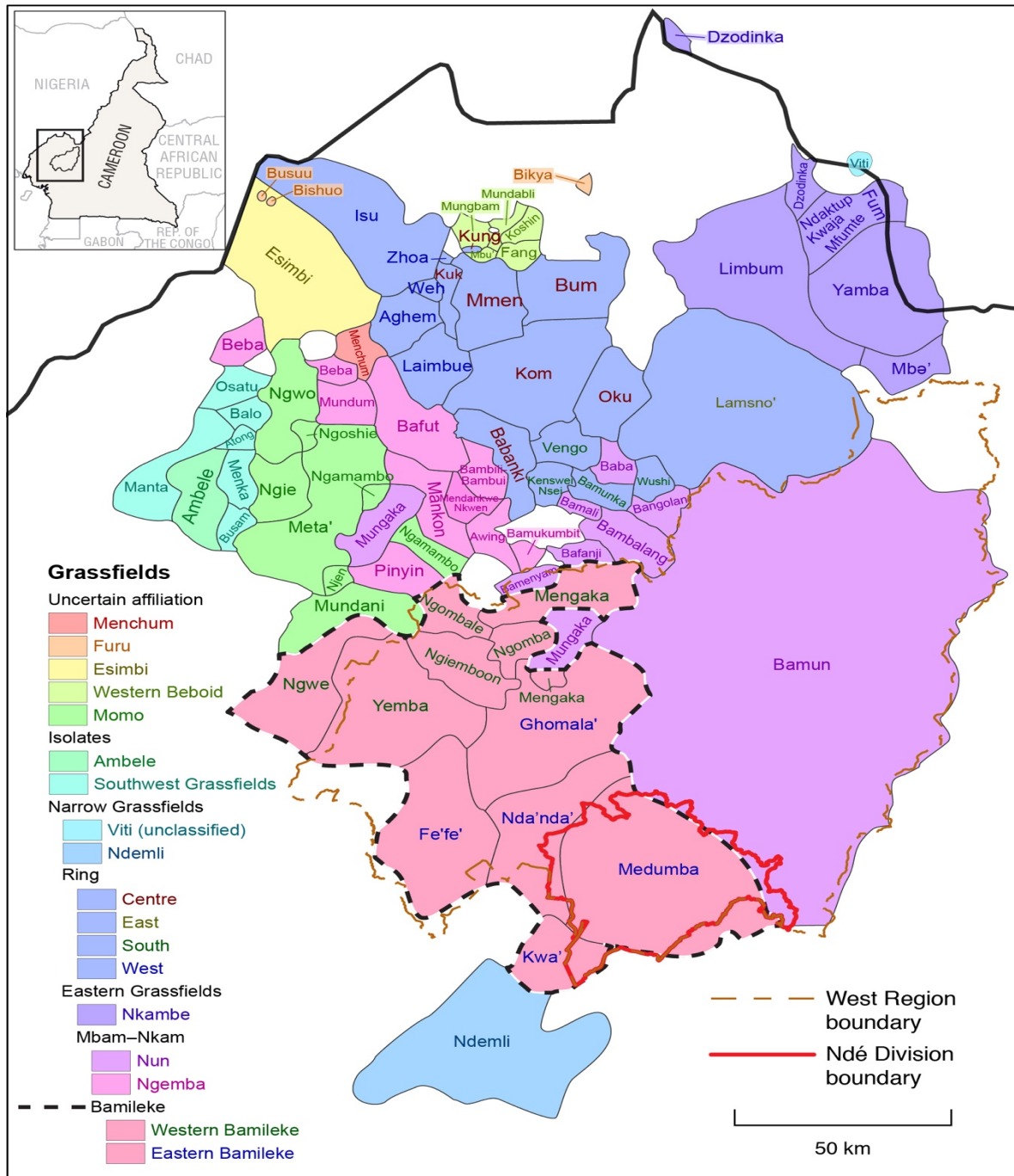


Figure 1. 2: Bamileke Medumba, the language

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’ (Hyman 1970).

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-lú* 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 *"tɔ* ‘market’ and *lú* ‘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 nó? kè á wú á [in-situ wh-question]
 (ii) Wàtèt nó? kè á Nùmí [in-situ focus]
 Watat AUX.T2 choose FOC DP C.Q.H
 T.H V.L
 Lit.: Watat chose who? /Numi.
- a. (i) á wú Wàtèt nóò? ɰ-kéè ____ á [ex-situ wh-question]
 (ii) á Nùmí Wàtèt nóò? ɰ-kéè ____ lá [ex-situ focus]
 FOC DP Watat AGR.AUX.T2 N-AGR.sell C
 T.HL V.HL
 ‘Who did Watat choose? / Numi_{FOC} 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 from 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 wú** Nù mí **nóò?** **ⁿ-tʃúp** ^mbà Wàtèèt **nóò?** **ⁿ-sʷéèn** **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 V.H T.HL V.H
 'Who did Numi say that Watat betrayed [him/her]?'

b. *á wú Nù mí nǒ? tǔp mbà Wàtèét nǒ? sʷèn í á
 FOC WH Numi AUX.T2 say C.L Watat.H AUX.T2 sell 3SG.H C.Q.H
 T.H V.H T.H V.L
 [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. Nù mí nóʔ fə n-tʃók n-ké ɫndʒwén
 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** Nù mí nóʔʔ m-fə́ n-tʃók n-kéè 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).

(14) a. Extraction out of an adjunct island

- (i) ***á** **wú** Nù^{ngè} nóò? néèn ⁿtón [káà Wàtèét tʃóò?dò] à?
(ii) **á** **wú** Nù^{ngè} nóò? néèn ⁿtón káà Wàtèét tʃóò?dì **í** á?
FOC WH Nuga AGR.AUX.T2 N-go market before Watat.H AGR.greet 3SG.H C
‘*who did Nuga go to the market before Watat greeted [him/her]?’

b. Root clause extraction

- (i) **á** **wú** Wàtèt nóò? ⁿ-s^{wé}én á
(ii) **á** **wú** Wàtèt nóò? ⁿ-s^{wé}én **í** 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)?’

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 ___?

English

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

Mandarin

[Cheng 1991: 11, p. 30]

2.1.1 The problem: Medumba uses both ex-situ and in-situ strategies

In Medumba, wh-questions and focus exhibit an in-situ/ex-situ partition in that wh-XPs and focused XPs are either construed in-situ in their base-generated position or are moved to the clause left-peripheral position (ex-situ). In addition, whether in-situ or ex-situ, wh-phrases and focused XPs are always⁵ preceded by the invariable high tone focus particle *á* in Medumba. For wh-questions, there is also a variable (H/L)⁶ Q-particle *a* that surfaces in final-position. These are given (3) and (4) for wh-questions and focus respectively.

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

Wàtét	nó?	s ^w èñ	á	wú	á?
Watat	AUX.T2	sell	FOC	WH	C.Q.H
	T.H	V.L			

Lit.: ‘Watat betray who?’

b. *Ex-situ wh-question*

á	wú	Wàtét	nóò?	n-s ^w éèñ	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*

Wàtét	nó?	s ^w èñ	á	Nù ^g gè
Watat	AUX.T2	sell	FOC	Nuga
	T.H	V.L		

‘Watat betrayed Nuga_{FOC}’

⁵ In some dialects, subject wh-/focus XPs can surface without the focus particle.

⁶ 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 FOC	Nùᵑᵑᵑ Nuga	Wàtét Watat	nóò? AGR.AUX.T2	ⁿ -s ^w éèn N-AGR.sell	lá C.-Q
		T.HL		V.HL	
‘Nuga _{FOC} Watat betrayed’					

The preceding data sets show that there are at least three types of systems⁷ 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).

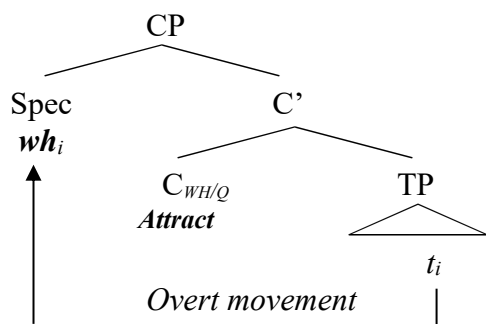
2.1.2.1 Implementation 1: overt versus covert movement

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

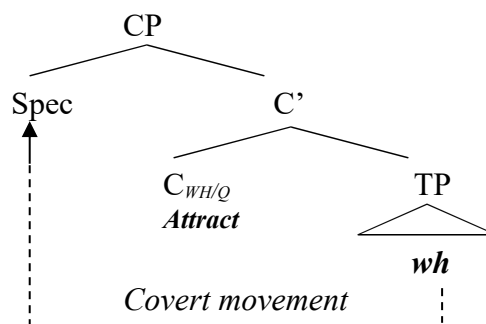
⁷ I abstract away from multiple wh-questions here (see chapter 3, section 3.2.2 for details).

surface configuration is derived by covert movement of the wh-phrase at LF (Huang 1982, Aoun and Li 1993, Pesetsky 2000, Cheng 2009).

(6) a. *Overt movement at S-structure*



b. *Covert movement at LF*



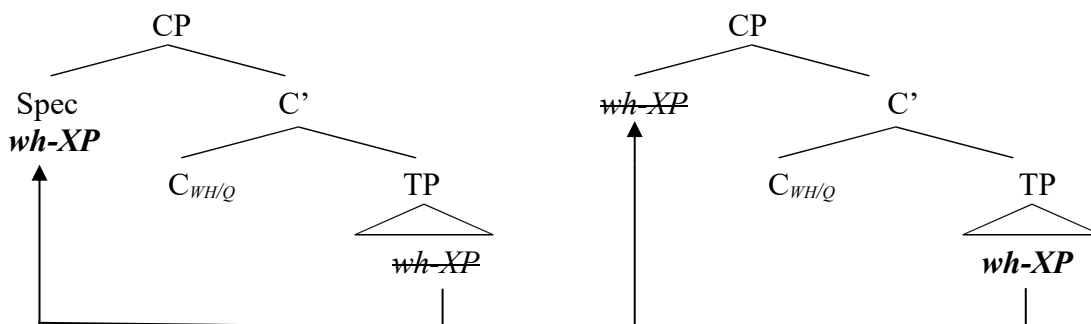
For Medumba-type languages, where both wh-ex-situ and wh-in-situ are possible, it is unresolved how this analysis would apply. We must first determine under which conditions overt and covert movement have applied, and secondly, why they need to be applied at all in a single system.

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.

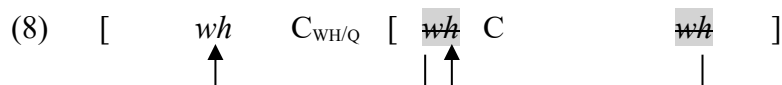
(7) a. *Copy + deletion of the tail of the chain* b. *Copy + deletion of the head of the chain*



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).



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.

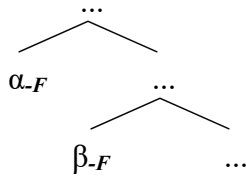
In sum, although feature-driven movement remains a powerful tool in deriving wh-questions in wh-ex-situ and wh-in-situ languages, the structural and semantic differences between in-situ and ex-situ questions in Medumba are challenges for this approach.

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

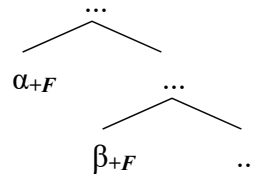
With the advent of the operation *Agree* (Chomsky 2000, 2001, 2007, 2008 and others), feature checking does not necessarily require movement. It is taken care of by *Agree*, a feature-checking operation between a probe and a goal. The operation *Agree* takes place only if the probe and the goal both 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 α serving as a probe and β as a goal.

(9) a. *Feature matching phase*

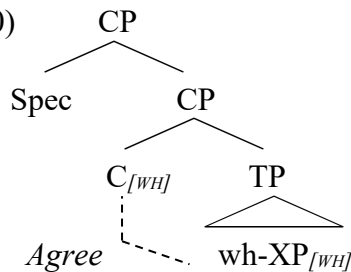


b. *Agree phase*



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)

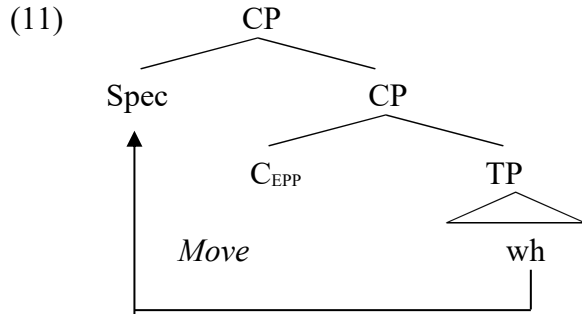


Agree analyses predict no feature-driven movement. In fact, they predict no movement at all and therefore predicts everything in-situ. Therefore, the existence of ex-situ wh-questions becomes a problem and *Agree* analyses must invoke additional mechanisms. It is usually assumed that content questions 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

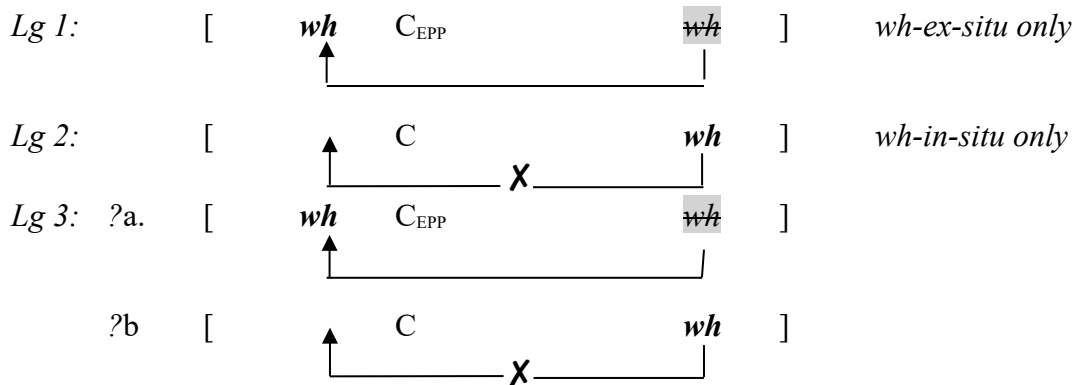
It has been proposed that *Move* only takes place if the head carrying the probe feature is also endowed with an *EPP-feature*. That is, while the feature checking operation is satisfied under

Agree, the presence of an *EPP-feature* at C forces movement of the *wh*-phrase to Spec-C as illustrated in (11).



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*



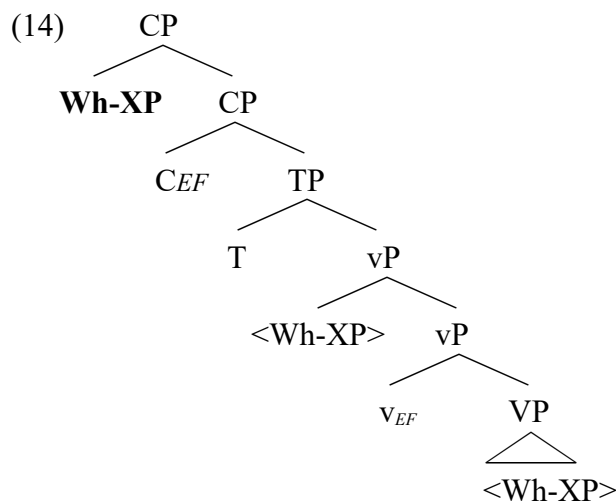
2.1.3.2 Why Agree + Edge-features do not work

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).

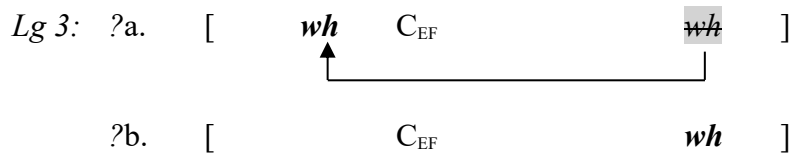
While *A'*-movement is Internal Merge driven by *EFs* of the phase head, *A*-movement is Internal Merge contingent on probe by uninterpretable inflectional features (Chomsky 2007: 24). This is illustrated below as applied to *wh*-movement.



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) *EFs* and *ex-situ* versus *in-situ* languages





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 $[[wh-XP] [C+wh [TP]]]$ 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.

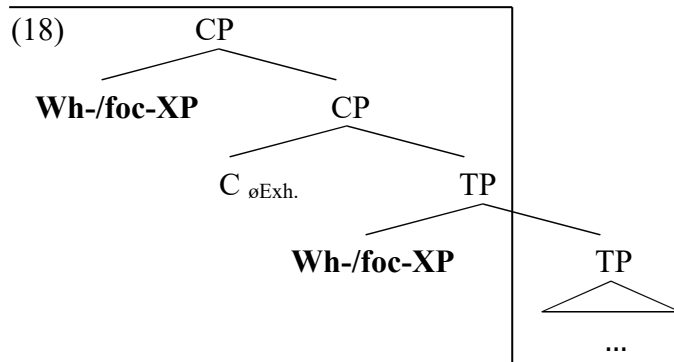
2.1.4.1 Why interpretation-driven movement is conceptually necessary

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* ($\emptyset Exh.$) 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 raf təʃħaT-**o** Zeena mən l-madrise 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 ʔet ha-yeled she-/ʔasher rina ʔohevet **ʔoto**
 saw-I ACC the-boy that Rina loves him
 ‘I saw the boy that Rina loves [him].’

- b. raʔiti ʔet ha-yeled she-/ʔasher rina ʔohevet ____
 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	nóò?	n-s ^w éèn	Nù ^g gè	à?
FOC	WH	AGR.AUX.T2 T.HL	N-sell	Nuga	C.Q.L

‘Who betrayed Nuga?’

b. *Resumption*

á	wú	à	nóò?	n-s ^w éèn	Nù ^g gè	à?
FOC	WH	3SG.L	AGR.AUX.T2 T.HL	N-sell	Nuga	C.Q.L

‘Who [he] betrayed Nuga?’

(23) Subject Focus

a. *Gap*

á	Wàtèét	nóò?	n-s ^w éèn	Nù ^g gè
FOC	Watat.H	AGR.AUX.T2 T.HL	N-sell	Nuga

‘Watat betrayed Nuga?’

b. *Resumption*

á	má-^dzùm	à	nóò?	n-s ^w éèn	Nù ^g gè	lá
FOC	SG-male	3SG.L	AGR.AUX.T2 T.HL	N-sell	Nuga	C.-Q

‘The boy_{FOC} [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).

(24) Subject relativization

a. *Gap*

*má-ⁿdzùúm	zè	_____	nóò?	ⁿ -s ^w éèn	Nùᵐgè	lá ...
SG-male.H	C.CL1		AGR.AUX.T2	N-sell	Nuga	C.-Q
			T.HL			

[The boy that betrayed Nuga...]

b. *Resumption*

má-ⁿdzùúm	zè	à	nóò?	ⁿ -s ^w éèn	Nùᵐgè	lá ...
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 wú* 'who'; (26) shows focus movement of the DP-object *á má-ⁿdzùúm* 'boy_{FOC}' and (27) shows relativization of the object-DP *má-ⁿdzùúm* '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*

á	wú	Wàtét	nóò?	ⁿ -s ^w éèn	_____	á?
FOC	WH	Watat	AGR.AUX.T2	N-AGR.sell		C.Q.H
			T.HL	V.HL		

'Who did Watat betray?'

a. *Resumption*

á	wú	Wàtèt	nóò?	ⁿ -s ^w éèn	í	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]??'

(26) Object Focus

a. *Gap*

á	má-ⁿdʒùm	Wàtèt	nóòʔ	ⁿ -s ^w éèn	—	lá
FOC	SG-male	Watat	AGR.AUX.T2 T.HL	N-AGR.sell V.HL		C.-Q

‘The boy_{FOC} Watat betrayed’

b. *Resumption*

á	má-ⁿdʒùm	Wàtèt	nóòʔ	ⁿ -s ^w éèn	í	lá
FOC	SG-male	Watat	AGR.AUX.T2 T.HL	N-AGR.sell V.HL	3SG.H	C.-Q

‘The boy_{FOC} Watat betrayed [him]’

(27) Object relativization

a. *Gap*

má-ⁿdʒùúm	zè	Wàtèt	nóòʔ	ⁿ -s ^w éèn	—	lá ...
SG-male.H	C.CL1	Watat	AGR.AUX.T2 T.HL	N-AGR.sell V.HL		C.-Q

‘The boy that Watat betrayed...’

b. *Resumption*

má-ⁿdʒùúm	zè	Wàtèt	nóòʔ	ⁿ -s ^w éèn	í	lá ...
SG-male.H	REL.CL1	Watat	AGR.AUX.T2 T.HL	N-AGR.sell V.HL	3SG.H	C.-Q

‘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	Nùmí	nóò?	n-tfúp	ᵐbà	___	nóò?	n-s ^w éèn	Nùᵍgè	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	Nùmí	nóò?	n-tfúp	ᵐbà	á	nóò?	n-s ^w éèn	Nùᵍgè	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?	n-tʃúp	mbù	_____	nóò?	n-sʷéèn	Nùᵐgè	lá
FOC	child	Numi	AGR.AUX.T2	N-say	C.L		AGR.AUX.T2	N-sell	Nuga	C.-Q
			T.HL				T.HL			

[The child_{FOC} Numi said that betrayed Nuga.]

b. *Resumption*

á	mén	Nùmí	nóò?	n-tʃúp	mbù	á	nóò?	n-sʷéèn	Nùᵐgè	lá
FOC	child	Numi	AGR.AUX.T2	N-say	C.L	3SG.H	AGR.AUX.T2	N-sell	Nuga	C.-Q
			T.HL				T.HL			

‘The child_{FOC} Numi said that [he] betrayed Nuga.’

(31) **Relativization**

a. *Gap*

*mén	zè	Nùmí	nóò?	n-tʃúp	mbù	_____	nóò?	n-sʷéèn	Nùᵐgè	lá ...
child	C.CL1	Numi	AGR.AUX.T2	N-say	C.L		AGR.AUX.T2	N-sell	Nuga	C.-Q
			T.HL				T.HL			

[The child that Numi said betrayed Nuga ...]

b. *Resumption*

mén	zè	Nùmí	nóò?	n-tʃúp	mbù	á	nóò?	n-sʷéèn	Nùᵐgè	lá ...
child	C.CL1	Numi	AGR.AUX.T2	N-say	C.L	3SG.H	AGR.AUX.T2	N-sell	Nuga	C.-Q
			T.HL				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 wú** Nùmí nòò? n-tfúp mbù Wàtèét nòò? n-s^wéèn _____ 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 wú Nùmí nòò? n-tfúp mbù Wàtèét nòò? n-s^wéèn **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 HL
‘Who did Numi say that Watat betrayed [him/her]?’

(33) **Focus movement**

a. *Gap*

***á mén** Nùmí nòò? n-tfúp mbù Wàtèét nòò? n-s^wéèn. _____ lá
FOC child Numi 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 mén Nùmí nòò? n-tfúp mbù Wàtèét nòò? n-s^wéèn **í** lá
FOC child Numi 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*

***mén** zè Nùmí nòò? n-tfúp mbù Wàtèét nòò? n-s^wéèn _____ lá ...
child C.CL1 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*

mén zè Nù mí nó? n-tfúp mbù Wàtèét nó? n-s^wéèn í lá ...
 child C.CL1 Numi 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 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*

Nù mí nó? bété mbù á wú (á) nó? n-s^wéèn Nùᵐgè 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*

Nù mí nó? tfúp mbù á mén (á) nó? n-s^wéèn Nùᵐgè 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 nó? tʃúp mbù **mén** zè **á** nóò? n-s^wéèn Nùᵝgè 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 ...”

(36) **Object extraction**

a. *Wh-movement*

Nùmí nó?-béttá mbù **á wú** Wàtèét nóò? n-s^wéèn (**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 nó? tʃúp mbù **á mén** Wàtèét nóò? n-s^wéèn (**i**) lá
 Numí 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 nó? tʃúp mbù **mén** zè Wàtèét nóò? n-s^wéèn **í** 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 anaphor⁹ 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-í* 'himself/herself' is co-indexed with and is c-commanded within its local domain by the antecedent DP *Nùᵑgè*, making binding possible. The (b) examples show that Principle A still holds even though the subject reflexive *tʰú-vúdl-í* (himself/herself) has been moved and now a resumptive pronoun surfaces at the extraction site.

(39) Subject wh-movement

- a. *Nùᵑgèj tʃúp m̀b̀à s̀óv̀h̀òó tʰú-vúdl-í vʰùú sí*
 Nuga say C.L picture head-body-3SG fall.H down
 'Nuga said that the picture of himself fell down'
- b. *á jít s̀óv̀h̀òó tʰú-vúdl-í Nùᵑgèj tʃùùp m̀b̀à áj vʰùú sí á*
 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 tʃúp m̀b̀à á s̀óv̀h̀òó tʰú-vúdl-í nóó? m̀- vʰùú sí*
 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 s̀óv̀h̀òó tʰú-vúdl-í Nùᵑgèj tʃùùp m̀b̀à áj nóó? m̀- vʰùú sí 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. Nùᵑgèj tʃúp ᵐbà sǎvʰǎǎ 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. sǎvʰǎǎ tʰú-vúdl-íj sè Nùᵑgè tʃúup ᵐbà 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. Nùᵑgèj kè á jít sǎvʰǎǎ 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 sǎvʰǎǎ tʰú-vúdl-íj Nùᵑgèj 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. Nùᵑgèj kè á sǎvʰǎǎ tʰú-vúdl=íj
Nuga choose FOC picture head-body=3SG
'Nuga chose [picture of himself/herself]_{FOC}

b. á sǎvʰǎǎ tʰú-vúdl-íj Nùᵑgèj 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. Nùᵑgèj kèè sǎvʰǎǎ tʰú-vúdl=íj
Nuga choose.H picture head-body=3SG
'Nuga chose [picture of himself/herself]_{FOC}

c. *Relative clause*

*Nùḡḡ_i	zè	b ^h úḡt ^h ú _i	tʃúùp	^m bù	à _i	àḡ	ʒ ^w í	Wàtèt	lá
Nuga	C.CL1	idiot	AGR.say	C.L	3SG.L	IRR	kill	Watat	C.-Q
			V.HL						

[*Nuga_i that the idiot_i 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*

*á	wú_i	b ^h úḡt ^h ú _i	tʃúùp	^m bù	mè	àḡ-ʒ ^w í	_____	á
FOC	WH	idiot	AGR.say	C.L	1SG.L	IRR-kill		C.Q.H
			V.HL					

[*who_i did the idiot_i said that I would kill]

b. *Focus movement*

*á	Nùḡḡ_i	b ^h úḡt ^h ú _i	tʃúùp	^m bù	mè	àḡ-ʒ ^w í	_____	lá
FOC	Nuga	idiot	AGR.say	C.L	1SG.L	IRR-kill		C.-Q
			V.HL					

[*Nuga_{FOC*i*} the idiot_i said that I would kill]

c. *Relative clause*

*Nùḡḡ_i	zè	b ^h úḡt ^h ú _i	tʃúùp	^m bù	mè	àḡ-ʒ ^w í	_____	lá ...
Nuga	C.CL1	idiot	AGR.say	C	1SG.L	IRR-kill		C.-Q
			V.HL					

[*Nuga_i that the idiot_i 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*

*á	wú_j	ʃwín-í _j	àʔ-tʃòʔdò	—	à
FOC	WH	friend-3SG.POSS.C1	IRR-greet		C.Q.L
[Lit.: Who _i will his _i friend greet?]					

b. *Focus movement*

*á	Nù⁰gè_j	ʃwín-í _j	àʔ-tʃòʔdò	—	lá
FOC	NUGA	friend-3SG.POSS.C1	IRR-greet		C.-Q
[Lit.: Nuga _i his _i friend will greet.]					

c. *Relativization*

*mén_j	zè	ʃwín-í _j	àʔ-tʃòʔdò	—	lá ...
child	C.CL1	friend-3SG.POSS.C1	IRR-greet		C.-Q
[Lit.: the child _i that his _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*

á	wú_j	ʃwín-í _j	àʔ-tʃòʔdì	í_j	á
FOC	WH	friend-3SG.POSS.C1	IRR-greet	3SG.H	C.Q.H
Lit.: Who _i will his _i friend greet [him _i]?					

b. *Focus movement*

á	Nù⁰gè_j	ʃwín-í _j	àʔ-tʃòʔdì	í_j	lá
FOC	WH	friend-3SG.POSS.C1	IRR-greet	3SG.H	C.-Q
Lit.: Nuga _i his _i friend will greet [him _i]					

c. *Relative clause*

mén_j	zè	ʃwín-í _j	àʔ-tʃòʔdì	í_j	lá
child	C.CL1	friend-3SG.POSS.C1	IRR-greet	3SG.H	C.-Q
Lit.: the child _i that his _i friend will greet [him _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 subjacency¹⁰. 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 Szabolcsi 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 Szabolcsi 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]?

b. [**Whose book**] did you buy [~~whose book~~]? [Boeckx 2007: 7-8, p. 155]

The third context where islandhood is circumvented involves sluicing¹¹. 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-XP¹² cannot be extracted out of the embedded interrogative CP [...^mbáù Wàtèét nòò? n-tfóò?dà ___] ‘...whether Watat greeted ___’. (66) shows that if a wh-XP is extracted out of the adjunct CP [...káà Wàtèét tfóò?dà ___] ‘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) [mén zà à nòò? n-tfóò?dà ___] ‘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*

* á	wú	Nùᵑgè	nòò?	m-béttá	[^m báù	
FOC	WH	Nuga	AGR.AUX.T2	N-ask	C.HL	
			T.HL			
			Wàtèét	nòò?	n-tfóò?dà	___] á
			Watat.H	AGR.AUX.T2	N-AGR.greet	C.Q.H
				HL	V.HL	

‘*Who did Nuga ask whether Watat greeted ___?’

¹² Only wh-movement is illustrated here but the same pattern holds for focus movement and relativization

(66) *Adjunct Island*

***á wú** Nù^ggè nòò? nēèn ⁿtón [káà Wàtèét tʃóòʔdò ____] à?
 FOC WH Nuga AGR.AUX.T2 N-go market before Watat.H AGR.greet C.Q.L
 T.HL V.HL
 ‘*who did Nuga go to the market before Watat greeted?’

(67) *Complex DP (Relative clause)*

***á wú** Nù^ggè nòò? ⁿ-dʒún [mén zè à nòò? ⁿ-tʃóòʔdó ____] 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 T.HL V.HL
 ‘*who did Nuga see the child that greeted?’

(68) a. *The coordinate structure constraint 1*

***á wú** Nù^ggè nòò? ⁿ-tʃóòʔdó [Wàtèt búù ____] à?
 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. *The coordinate structure constraint 2*

***á wú** Nù^ggè nòò? ⁿ-tʃóòʔdó [____ búù Wàtèt] à?
 FOC WH Nuga AGR.AUX.T2 N-AGR.greet PL Watat C.Q.L
 T.HL V.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 Nù^ggè nòò? ^m-béttó [^mbúù
 FOC WH Nuga AGR.AUX.T2 N-ask C.HL
 T.HL
 Wàtèét nòò? ⁿ-tʃóòʔd=**í** á
 Watat.H AGR.AUX.T2 N-AGR.greet=3SG.H C.Q.H
 T.HL V.HL
 ‘*Who did Nuga ask if Watat greeted [him/her]?’

b. *Adjunct island*

á wú Nù^ggè nóò? néèn ⁿtón káà Wàtèét tʃóòʔdì=**í** á?
 FOC WH Nuga AGR.AUX.T2 N-go market before Watat.H AGR.greet=3SG.H C.Q.H
 T.HL V.HL
 ‘*Who did Nuga go to the market before Watat greeted [him/her]?’

c. *Complex DP (Relative clause)*

á wú Nù^ggè nóò? ⁿ-dʒún mén zè à nóò? ⁿ-tʃóòʔdì=**í** 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 T.HL V.HL
 ‘*Who did Nuga see the child that greeted [him/her]?’

d. *The coordinate structure constraint 1*

á wú Nù^ggè nóò? ⁿ-tʃóòʔdó 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]?

e. *The coordinate structure constraint 2*

á wú Nù^ggè nóò? ⁿ-tʃóòʔd [=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?

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

a. *bá-bo* *bí-kulu* *b-á-kás-íl-é* *mwámí* **bi-kí** *mu-mw-ílo*
 2-that 2-woman 2SM-V-give-PFV-FV 1chief 8-what 18-3-village
 lit: those women gave what the chief in the village [Kinyalolo 1991: 13a, p. 21]

b. **bi-kí** **bí-á-kás-íl-é** *bá-bo* *bí-kulu* *mw-ámí* *mu-mw-ílo*
 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?' [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.i wh-movement

á	wú	<i>nóò?</i>	<i>n-dzún</i>	<i>Nù'gè</i>	<i>à?</i>
FOC	WH	AGR.AUX.T2	N-see	Nuga	C.Q.L
		T.HL	V.H		

'Who saw Nuga?'

a.ii

*á	wú	<i>nó?</i>	<i>jún</i>	<i>Nù'gè</i>	<i>à?</i>
FOC	WH	AUX.T2	see	Nuga	C.Q.L
		T.H	V.H		

'Who saw Nuga?'

b.i *focus movement*

á	Wàtèét	nóò?	ⁿ -dʒún	Nùᵘgè
FOC	Watat.H	AGR.AUX.T2	N-see	Nuga
		T.HL	V.H	

‘Watat saw Nuga’

b.ii

*á	Wàtèét	nó?	jún	Nùᵘgè
FOC	Watat.H	AUX.T2	see	Nuga
		T.H	V.H	

‘Watat saw Nuga’

c.i *Relativization*

má-ⁿdʒùúm	zè	à	nóò?	ⁿ -dʒún	Nùᵘgè	lá ...
SG-male.H	C.CL1	3SG.L	AGR.AUX.T2	N-see	Nuga	C.-Q
			T.HL	V.H		

[The boy that saw Nuga...]

c.ii

*má-ⁿdʒùúm	zè	à	nó?	jún	Nùᵘgè	lá ...
SG-male.H	C.CL1	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	Wàtét	nóò?	ⁿ -dʒùún	á?
FOC	WH	Watat	AGR.AUX.T2	N-AGR.see	C.Q.H
			T.HL	V.HL	

‘Who did Watat see?’

a.ii

*á	wú	Wàtét	nó?	jún	á?
FOC	WH	Watat	AUX.T2	see	C.Q.H
			T.H	V.H	

‘Who did Watat see?’

b.i *Focus movement*

á	Nù'ngè	Wàtét	nó?	n-dzùùn	lá
FOC	Nuga	Watat	AGR.AUX.T2	N-AGR.see	C.-Q
			T.HL	V.HL	

‘Nuga_{FOC} Watat saw’

b.ii ***á** **Nù'ngè** Wàtét nó? jún lá
 FOC Nuga Watat AUX.T2 see C.-Q
 T.H V.H
 ‘Nuga_{FOC} Watat saw’

c.i *Relativization*

má-'dzùúm	zè	Wàtét	nó?	n-dzùùn	lá ...
SG-male.H	C.CL1	Watat	AGR.AUX.T2	N-AGR.see	C.-Q
			T.HL	V.HL	

‘The boy that Watat saw...’

c.ii ***má-'dzùúm** zè Wàtét nó? jún lá ...
 SG-male.H C.CL1 Watat AUX.T2 see C.-Q
 T.H V.H
 ‘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:

- ex-situ wh/focus requires exhaustivity (§2.3.1);
- in-situ wh/focus doesn't require exhaustivity (§2.3.2);
- question/answer pairs are conditioned by the in-/ex-situ contrast (§2.3.3);
- fragment answers are conditioned by the in-/ex-situ contrast (§2.3.4);
- subjects are (predictably) different (§2.3.5).

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:

- **A numeration:** a set of lexical items tokens needed for the derivation and which must be exhausted by the end of the derivation
- **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**

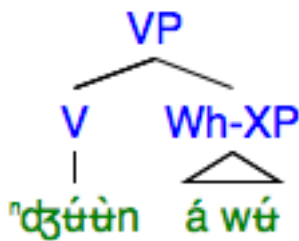
Numeration: { \acute{a}_{FOC} ; $k\acute{u}_{\text{WH}}$; $N\grave{u}m\acute{i}_{\text{N}}$; $n\acute{o}\delta\gamma_{\text{T2}}$; $^n\text{-}k\acute{e}\acute{e}\grave{v}$; $\acute{a}_{\text{C,Q}}$; $v\emptyset$; $D\emptyset$; $C\emptyset_{\text{Exh}}$; $T\emptyset 1$ }

a. vP phase

I. Merge <V; Wh-XP>

The wh-XP is merged as complement of V

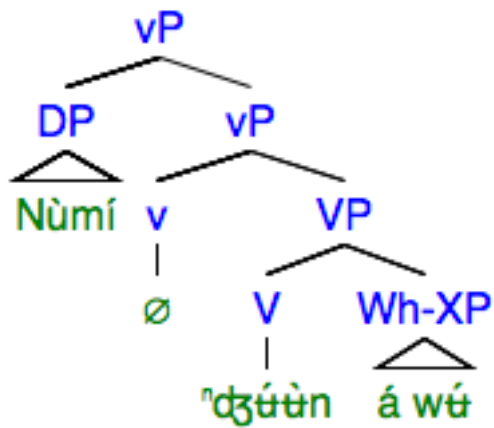
[VP [V $^n\text{d}\acute{z}\acute{u}\grave{u}\grave{n}$] [Wh-XP \acute{a} wú]



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

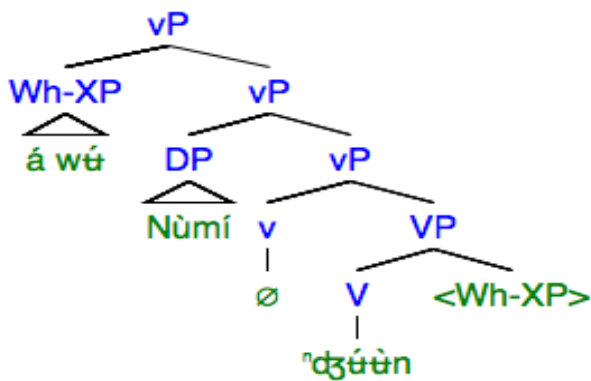
[vP [DP [$N\grave{u}m\acute{i}$]] [v \emptyset] [VP [V $^n\text{d}\acute{z}\acute{u}\grave{u}\grave{n}$] [Wh-XP \acute{a} wú]



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.

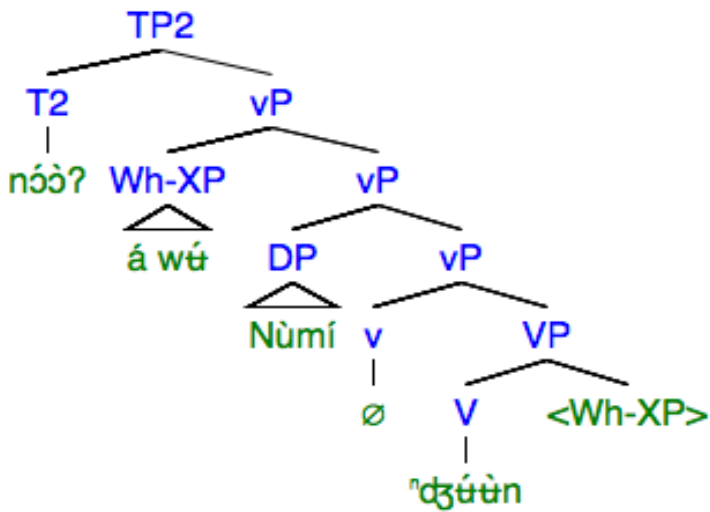
[vP [Wh-XP á wú] [vP [DP [Nùmí]] [vP [v ∅] [VP [V ʼdʒúùn] [<Wh-XP>]]



b. CP phase

I. Merge <T2; vP>

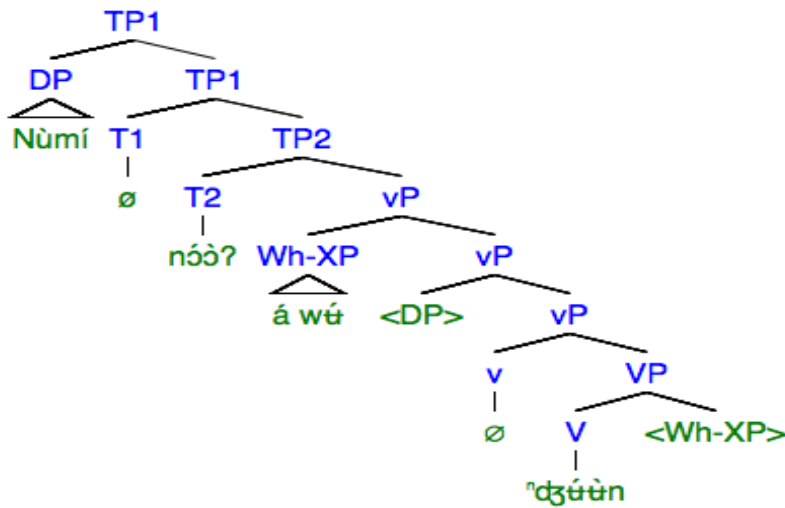
[TP2 [T2 nódʒ?] [vP [Wh-XP á wú] [vP [DP [Nùmí]] [vP [v ∅] [VP [V ʼdʒúùn] [<Wh-XP>]]



II. Merge <T1; TP2>

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

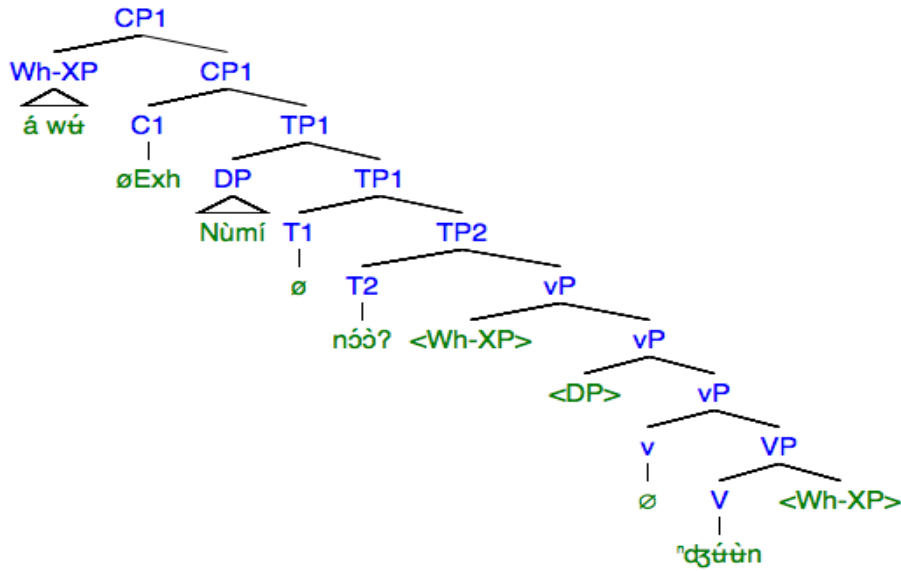
[TP1 [DP [Nùmí]]] [TP1 [T1 ∅]] [TP2 [T2 nóò?]] [vP [Wh-XP á wá]] [vP [<DP>]] [vP [v ∅]] [VP [V ᵀᵀᵀᵀᵀᵀ] [<Wh-XP>]]



III. Merge <C_{Exh}; TP1>

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

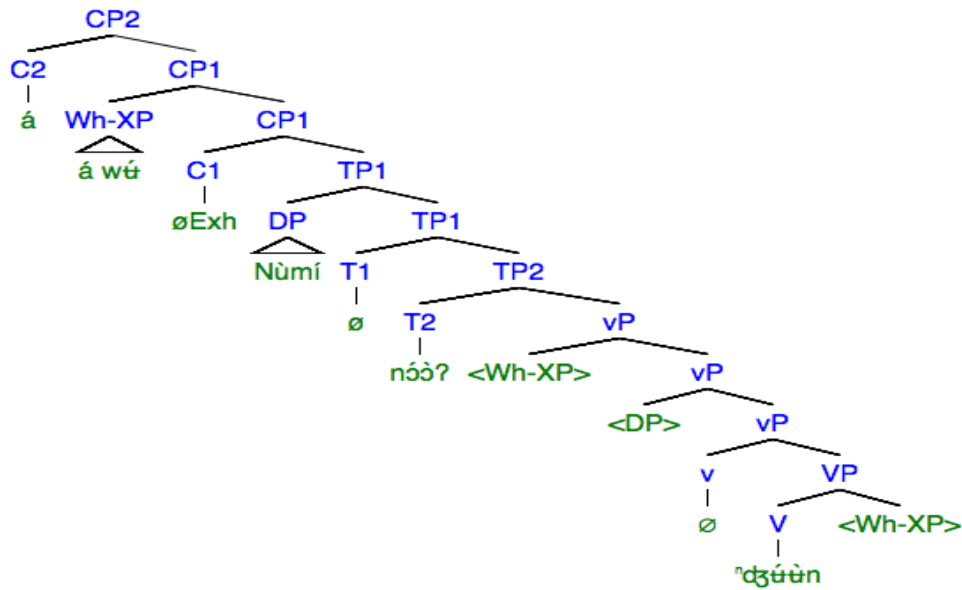
[CP1 [Wh-XP á wá]] [CP1 [C1 ∅Exh]] [TP1 [DP [Nùmí]]] [TP1 [T1 ∅]] [TP2 [T2 nóò?]] [vP [<Wh-XP>]] [vP [<DP>]] [vP [v ∅]] [VP [V ᵀᵀᵀᵀᵀᵀ] [<Wh-XP>]]



IV. Merge <CQ; CP1>

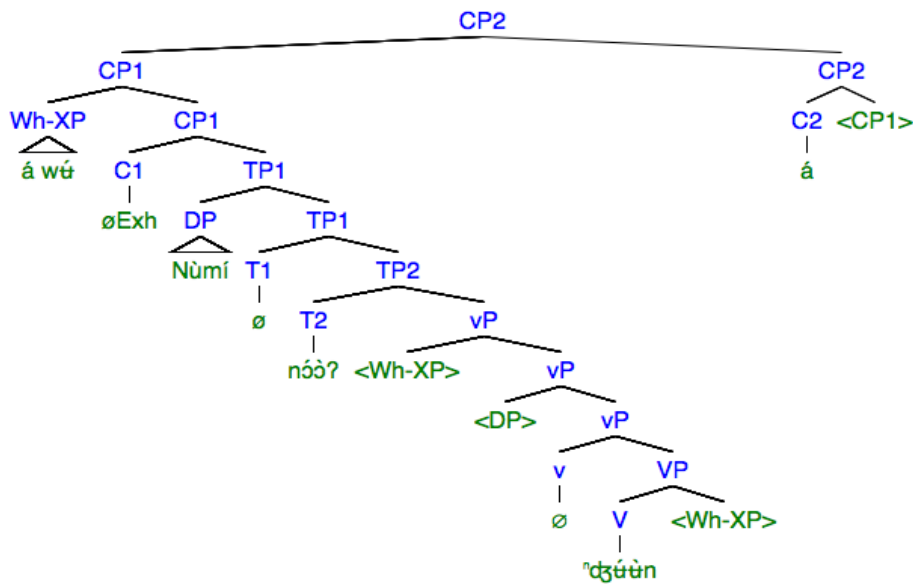
C2 hosting the Q-operator merges with CP1

[CP2 [C2 á] [CP1 [Wh-XP á wú] [CP1 [C1 øExh] [TP1 [DP [Nù mí]]] [TP1 [T1 ø] [TP2 [T2 nò ò?] [vP [<Wh-XP>] [vP [<DP>] [vP [v ø] [VP [V 'dǔ ù ù n] [<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 *nóò?* ‘only’ is illicit with ex-situ wh- and focus construals in Medumba as shown in (74a) and (74b) respectively¹³.

- (74) a. **[á ʰdʒóʔ kú] Nùmí nóò? ʰ-kéè á?*
 FOC only WH Numi AGR.AUX.T2 N-AGR.fry C.Q.H
 [?what only did Numi fry]
- b. **[á ʰdʒóʔ ʰdʒwʰén] Nùmí nóò? ʰ-kéè lá*
 FOC only chips Numi AGR.AUX.T2 N-AGR.fry C.-Q
 [?only chips Numi fried]

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

¹³ I predict the overt exhaustification operator to be compatible with in-situ focus. Details are given in §2.3.2.5)

- b. **A1:** **á** **b̀̀** **búù** **ʔù?** à nóòʔ m-fáà jí 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 b̀̀ búù ʔù?*] ‘[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** **b̀̀** à nóòʔ m-fáà jí 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** **ʔù?** à nóòʔ m-fáà jí 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** **ʃù?** Nùʔgè nóòʔ m-fáà Wàtèt lá
 FOC hat Nuga AGR.AUX.T2 N-AGR.give Watat C.-Q
 T.HL V.HL
 ‘The hat_{FOC} (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** **ʔɔ̀òóŋ ʃù?** **fé** Nùʔgè nóòʔ m-fáà 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]

2.3.1.5 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** **jít** **ᵁgùn** ^mbà jíit fùm ló nóò? ⁿ-tʃóò?dó 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 ᵁgù-máwáp
 FOC girl-mother.3POSS
 ‘His sister’

(91) a. Q: **á** **jít** **ᵁgùn** ^mbà jíit fùm ló nóò? ⁿ-tʃóò?dó 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 Mārjà Pítà nóò? ⁿ-tʃóò?dó lá, á Nù mí Nùᵁgè
 FOC Mary Peter AGR.AUX.T2 N-AGR.greet C.-Q FOC Numi Nuga
 nóò? ⁿ-tʃóò?dó lá
 AGR.AUX.T2 N-AGR.greet C.-Q
 T.HL V.HL
 ‘Peter greeted Mary_{FOC}, Nuga greeted Numi_{FOC}’

(94) Manner

*á	ᵐᵈʒʰú-kú	Nùᵍgè	nóòʔ	n-sʷéèn	Wàtèt	à
FOC	manner-WH	Nuga	AGR.AUX.T2	N-AGR.sell	Watat	C.Q.L
			T.HL	V.HL		

[how did Nuga betrayed Watat?]

(95) Rationale

a. *á	nùúm-kú	Nùᵍgè	nóòʔ	n-sʷéèn	Wàtèt	à
FOC	for-WH	Nuga	AGR.Aux	N-AGR.sell	Watat	C.Q.L
			T.HL	V.HL		

[why did Nuga betrayed Watat?]

b. *á	ᵐᵈḗén-ᵐᵇú	á	bò-n-í	Nùᵍgè	nóòʔ	n-sʷéèn	Wàtèt	lá
FOC	know-that	3SG.H	hate-N-3SG.H	Nuga	AGR.AUX.T2	N-AGR.sell	Watat	C.-Q
					T.HL	V.HL		

[[because s/he hate him/her]_{FOC}, Nuga betrayed Watat]

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

Nùᵍgè	nóʔ	jún	á	wú	á
Nuga	AUX.T2	see	FOC	WH	C.Q.H
	T.H	V.H			

‘Nuga saw who?’

(97) In-situ object focus

Nùᵐᵍè	nóʔ	jún	á	Wàtèt
Nuga	AUX.T2	see	FOC	Watat
	T.H	V.H		

‘Nuga saw Watat_{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.

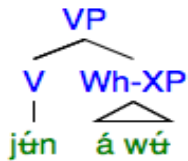
(98) Step-by-step derivation of an in-situ (non-exhaustive) wh-question

Numeration: {á_{FOC}; kú_{WH}; Nùmí_N; nóʔ_{T2}; ʔ-kéè_V; á_{C,Q}; v∅; D∅; T∅}

a. vP phase

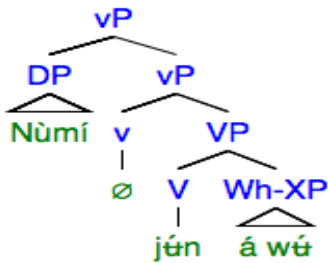
I. Merge <V; Wh-XP>

[VP [V jún] [Wh-XP^ á wá]



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

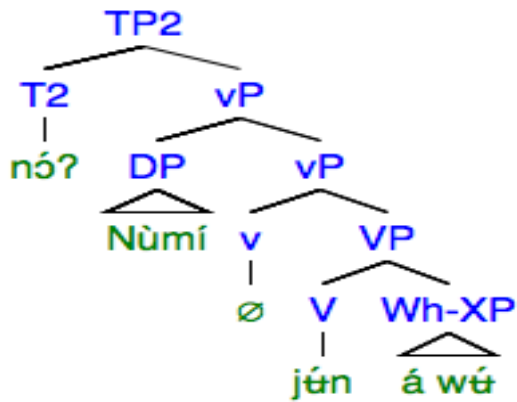
[vP [DP^ [Nùmí]] [vP [v ∅] [VP [V jún] [Wh-XP^ á wá]



b. CP phase

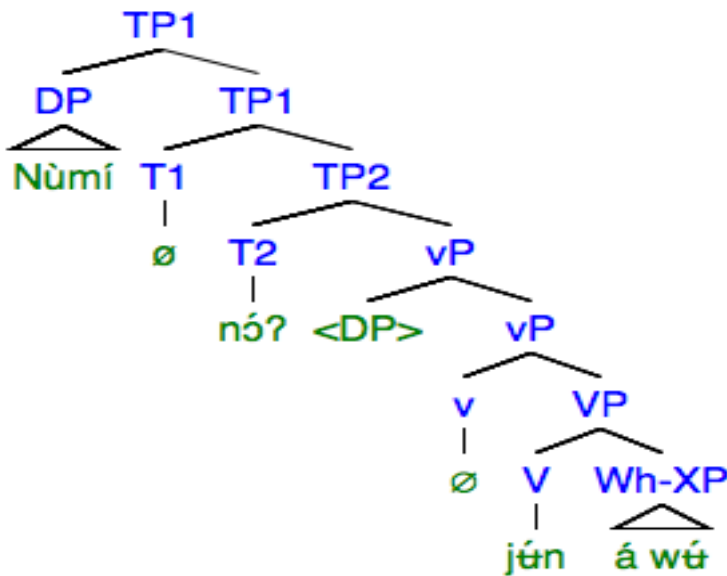
I. Merge <T2; vP>

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



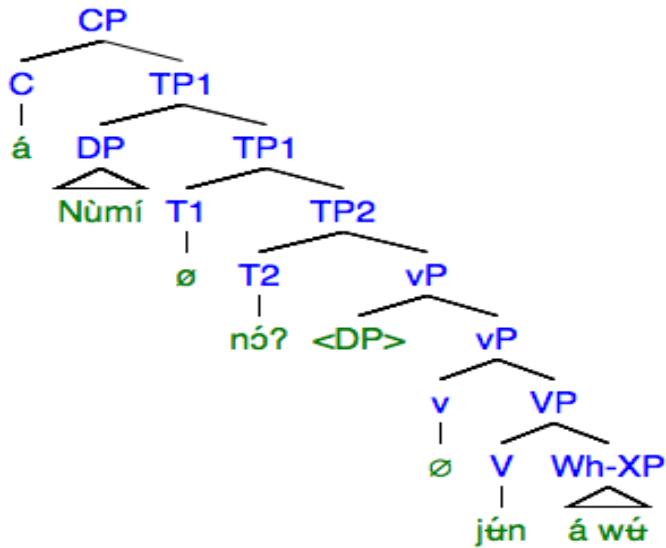
II. Merge <T1; TP2>

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



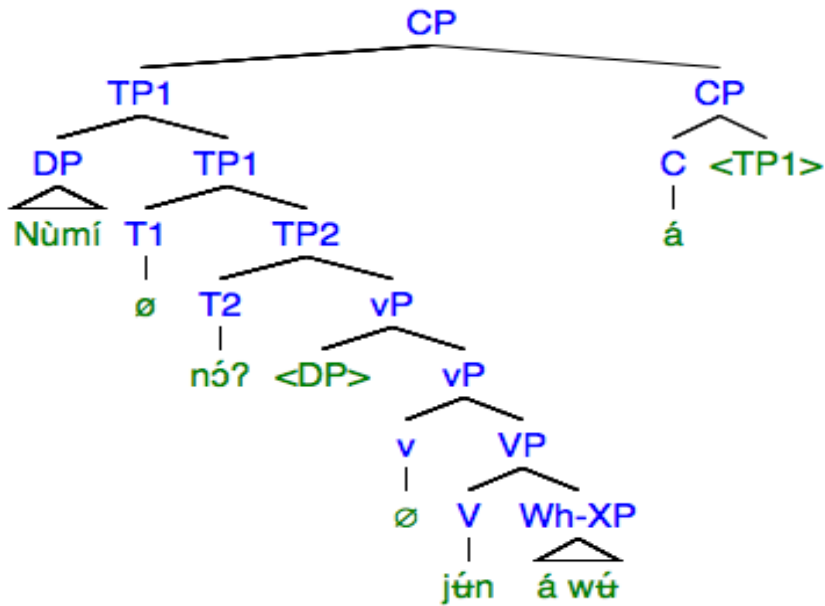
III. Merge <C0; TP1>

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



IV. Move TP1 to Spec-C

[CP [TP1 [DP^ [Nùmí]]] [TP1 [T1 ∅] [TP2 [T2 nó?] [vP [<DP>] [vP [v ∅] [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.

(101) Nù^{ngè} nó? fá á mbà ɸù? Wàtèt
 Nuga AUX.T2 give FOC even hat Watat
 T.H V.H
 ‘Nuga gave [even the hat]_{FOC} to Watat?’

(102) a. Nù^{ngè} nó? fá á ɸù? Wàtèt
 Nuga AUX.T2 give FOC hat Watat
 T.H V.H
 ‘Nuga gave the hat_{FOC} to Watat?’

b. ɸ̀! mbà b̀
 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 jíit jùm ló nó? ɸ̀d̀d̀é á jíit ɸ̀gùn 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. ɸ̀gù-máwáp
 girl-mother.3POSS
 ‘His sister’

(104) a. Q: mbà jíit jùm ló nó? ɸ̀d̀d̀é á jíit ɸ̀gùn 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. A: Pítà nó? ɸ̀d̀d̀é á Màrjà, Nù^{ngè} nó? ɸ̀d̀d̀é á Nùmí
 Peter AUX.T2 greet FOC Mary Nuga AUX.T2 greet FOC Numi
 T.H V.L T.H V.L
 ‘Peter greeted Mary_{FOC}, Nuga greeted Numi_{FOC}’

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.

(105) a. Nù^{ngè} nó? jún á **ᵐdᵐᵐ?** wá á
 Nuga AUX.T2 see FOC only WH C.Q.H
 T.H V.H

‘Nuga saw only who?’

b. Nù^{ngè} nó? jún á **ᵐdᵐᵐ?** Wàtèt
 Nuga AUX.T2 see FOC only Watat
 T.H V.H

‘Nuga saw only Watat_{FOC}’

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. Nù^{ngè} nó? jún Wàtèt á **já** á
 Nuga AUX.T2 see Watat FOC WH C.Q.H
 T.H V.H

‘Nuga saw Watat where?’

b. Nù^{ngè} nó? jún Wàtèt á **ᵐtᵐn**
 Nuga AUX.T2 see Watat FOC market
 T.H V.H

‘Nuga saw Watat at the market_{FOC}’

(107) Temporal

a. Nù^{ngè} nó? jún Wàtèt á **sú** á
 Nuga AUX.T2 see Watat FOC WH C.Q.H
 T.H V.H

‘Nuga saw Watat when?’

b. Nù^{ngè} nó? jún Wàtèt á **ᵐgyú?-mù?**
 Nuga AUX.T2 see Watat FOC year-other
 T.H V.H

‘Nuga saw Watat last year’

(108) Manner

a. Nùᵐgè	nó?	sʷèén	Wàtèt	á	ᵐᵔʰú-kú	á
Nuga	AUX.T2	sell.H	Watat	FOC	manner-WH	C.Q.H
	T.H	V.L				

‘Nuga betrayed Watat how?’

b. Nùᵐgè	nó?	sʷèén	Wàtèt	á	búù	jéè-ᵐᵔʰú
Nuga	AUX.T2	sell.H	Watat	FOC	PL	hurt-heart
	T.H	V.L				

‘Nuga betrayed Watat with anger’

(109) Rationale

a. Nùᵐgè	nó?	sʷèén	Wàtèt	á	nùúm-kú	á
Nuga	AUX.T2	sell.H	Watat	FOC	for-WH	C.Q.H
	T.H	V.L				

‘Nuga betrayed Watat why?’

b. Nùᵐgè	nó?	sʷèén	Wàtèt	á	ᵐᵔḗn-ᵐbú	á	bò-n-í
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).

- (112) a. **Q:** Nù^hgè nó? fá á kú Wàtèt à?
 Nuga AUX.T2 give FOC WH Watat C.Q.L
 T.H V.H
 ‘What did Nuga give to Watat?’
- b. **A1:** à nó? fá á b̀̀ jí
 3SG.L AUX.T2 give FOC bag 3SG.H
 T.H V.H
 ‘He gave the bag_{FOC} to him’
- c. **A2:** #á b̀̀ à nóò? m-fáà jí lá
 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:** Nù^hgè nó? fá b̀̀ 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:** à nó? fá b̀̀ á Wàtèt
 3SG.L AUX.T2 give bag FOC Watat
 T.H V.H
 ‘He gave the bag to Watat_{FOC}’
- c. **A1:** #á múùm Wàtèt à nóò? m-fáà b̀̀ lá
 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** Nù^ggè nóò? m-fàà Wàtèt à?
 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 b̀̀**
 FOC bag
 ‘The bag_{FOC}’
- c. **A2:** #**b̀̀**
 bag
 ‘The bag’
- (115) a. **Q:** **á múùm wú** Nù^ggè nóò? m-fàà b̀̀ à?
 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_{FOC}’
- 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:** Nù^ggè nó? fá **á kú** Wàtèt à?
 Nuga AUX.T2 give FOC WH Watat C.Q.L
 T.H V.H
 ‘What did Nuga give to Watat?’
- b. **A1:** **b̀̀**
 bag
 ‘The bag’

- c. **A2:** #á bò
 FOC bag
 ‘The bag_{FOC}’
- (117) a. **Q:** Nù^{ngè} nó? fá 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 múùm Wàtèt
 FOC PREP Watat
 ‘To Watat_{FOC}’

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] [FocP [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. Wàtèt nóʔ jún á wú á?
 Watat AUX.T2 see FOC WH C.Q.H
 T.H V.H
 ‘Watat saw who?’
- b. Wàtèt nóʔ jún á Nùᵒᵒḡè
 Watat AUX.T2 see FOC Nuga
 T.H V.H
 ‘Watat saw Nuga_{FOC}’

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. *Wàtèt nóòʔ n-dʒúùn á wú á?
 Watat AGR.AUX.T2 N-AGR.see FOC WH C.Q.H
 T.HL V.HL
 [Watat saw who?]
- b. *Wàtèt nóòʔ n-dʒúùn á Nùᵒᵒḡè
 Watat AGR.AUX.T2 N-AGR.see FOC Nuga
 T.HL V.HL
 [Watat saw Nuga_{FOC}]

The second argument in favor of a non-parallelism between ex-situ and in-situ construals in Medumba relates to subjacency and intervention effects. In fact, in-situ wh-questions are not sensitive to islands in Medumba. This is illustrated in the following examples where wh-/focus

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.

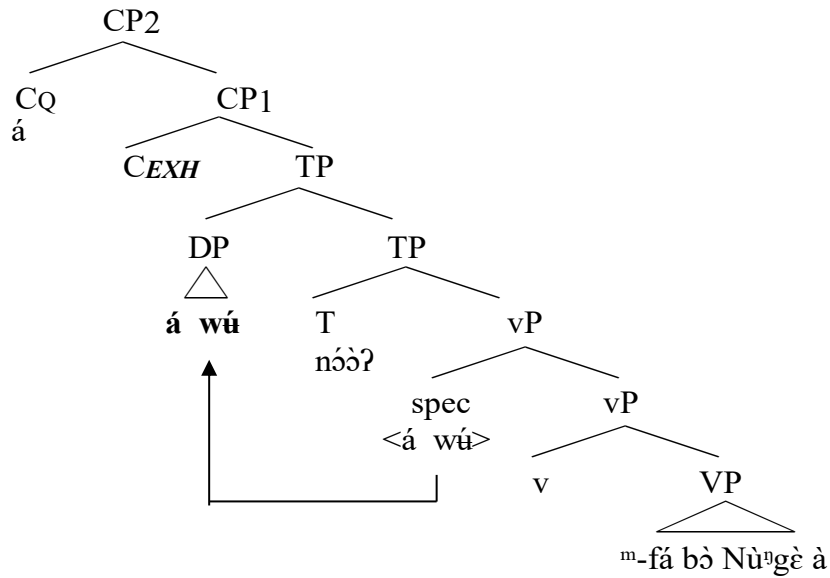
- (125) a. ***á** **wú** kèè ⁿdʒwén á
 FOC WH AGR.fry chips C.Q.H
 V.HL
 [Who fried the chips?]

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	Nùᵑgè	à?
FOC	WH	AGR.AUX.T2	N-give	bag	Nuga	C.Q.L
		T.HL	V.H			

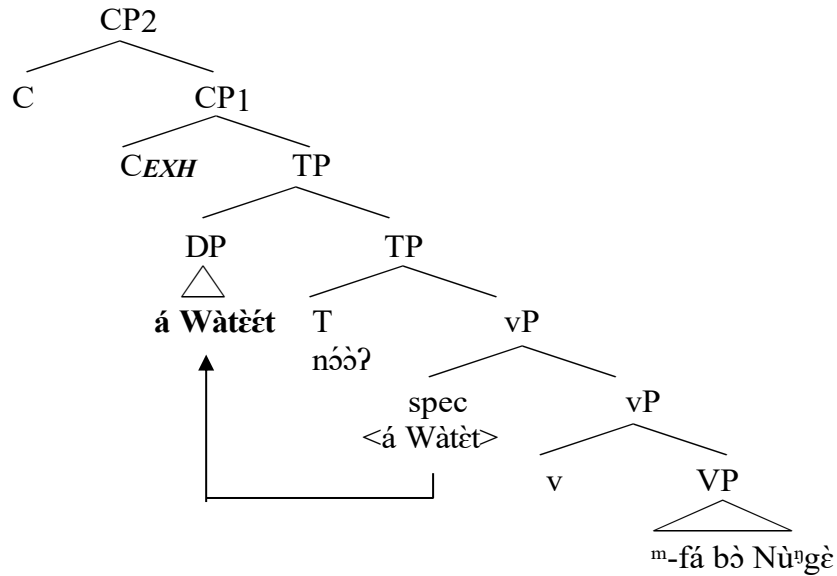
‘Who gave the bag to Nuga?’



(130) Subject focus XP at spec-T

á	Wàtèét	nóò?	m-fá	bò	Nùᵝgè
FOC	Watat.H	AGR.AUX.T2	N-give	bag	Nuga
		T.HL	V.H		

‘Watat_{FOC} gave the bag to Nuga’

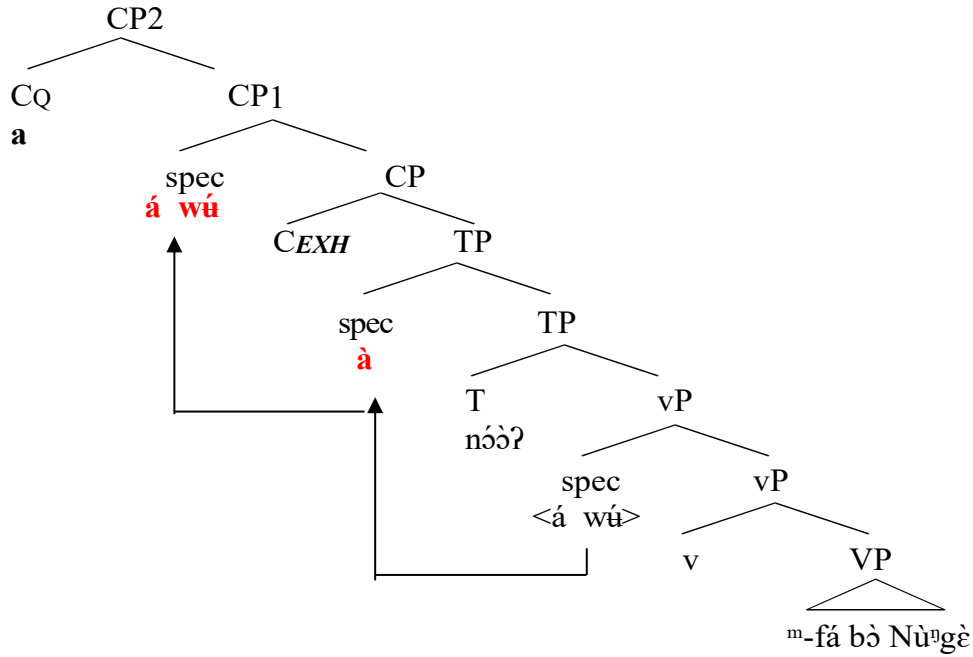


When the subject moves to Spec-C, Spec-T is spelled out as a resumptive pronoun. This is illustrated in (131) and (132) for subject wh-question and subject focus respectively.

(131) Subject wh-XP at Spec-C

á	wú	à	nóò?	m-fá	bò	Nùᵝgè	à?
FOC	WH	3SG.L	AGR.AUX.T2	N-give	bag	Nuga	C.Q.L
			T.HL	V.H			

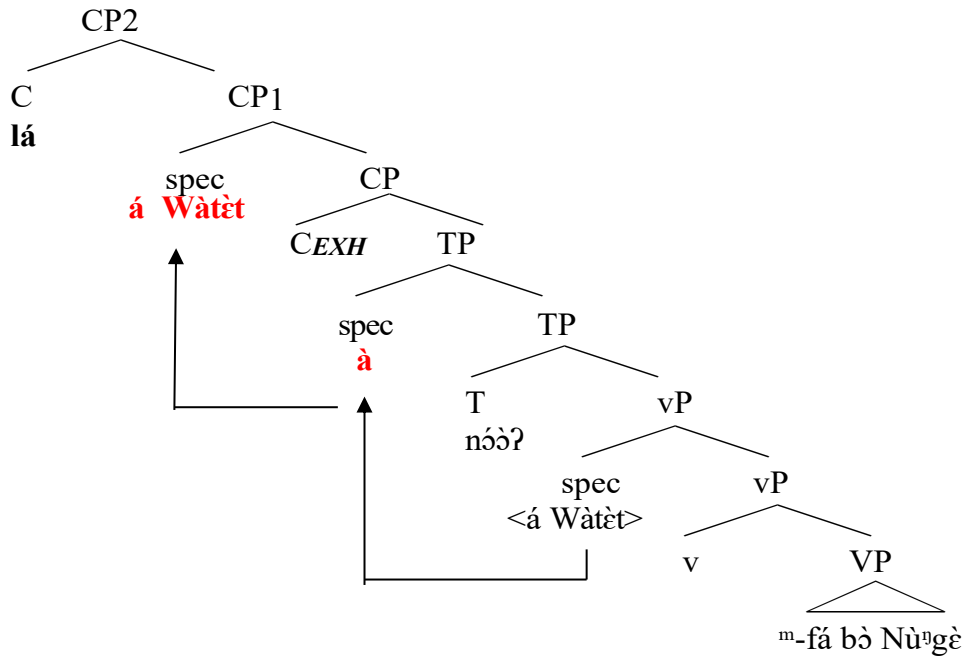
‘who [he] gave the bag to Nuga?’



(132) Subject focus XP at spec-C

á	Wàtèt	à	nóò?	m-fá	bò	Nùᵒgè	lá
FOC	Watat	3SG.L	AGR.AUX.T2	N-give	bag	Nuga	C.-Q
			T.HL	V.H			

Lit: Watat_{FOC} [he] gave the bag to Nuga'



- b. #á ʔgù-máwáp
 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 jít ʔgùn** mbà jít jùm ló ʔúùp mbù à nóòʔ néèn ʔtón 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 ʔúùp mbù á nóòʔ néèn ʔtón lá
 FOC Mary Peter AGR.say C.L 3SG.H AGR.AUX.T2 N-go market C.-Q
 V.HL T.HL

- á Nùmí Nùʔgè ʔúùp mbù á nóòʔ néèn ʔtón lá
 FOC Numi Nuga AGR.say C.L 3SG.H AGR.AUX.T2 N-go market C.-Q
 V.HL T.HL

‘Peter said that Mary_{FOC} went to the market, Nuga said that Numi_{FOC} 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 bú **á wú** zè à nóòʔ m-fá bò Wàtèt à?
 3SG.L BE FOC WH C.CL1 3SG.L AGR.AUX.T2 N-give bag Watat C.Q.L
 T.HL V.H
 ‘Who is it that gave the bag to Watat?’

b. **A1:** à bú á Nù mí bú ù Nù ʔgè nó ò ò ? m-fá bò jí
 3SG.L BE FOC Numi 3PL Nuga AGR.AUX.T2 N-give bag 3SG.H
 T.HL V.H
 ‘It was Numi and Nuga_{FOC} 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 Nù mí nó ò ò ? m-fá bò jí
 3SG.L BE FOC Numi AGR.AUX.T2 N-give bag 3SG.H
 T.HL V.H
 ‘It was Numi_{FOC} who gave the bag to him’

d. **A3:** à bú á Nù ʔgè nó ò ò ? m-fá bò jí
 3SG.L BE FOC Nuga AGR.AUX.T2 N-give bag 3SG.H
 T.HL V.H
 ‘It was Nuga_{FOC} 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 "dʒó ò ò b ù n f é n ó ò ò ? n é è n ʔ t ò n
 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 m b à Nù ʔg è é n ó ò ò ? n é è n ʔ t ò n
 3SG.L BE FOC even Nuga.H AGR.AUX.T2 N-go market
 T.HL
 ‘*It was even Nuga_{FOC} who went to the market’

(145) *Additive follow-up*

à bú á Nù ʔg è é n ó ò ò ? n é è n ʔ t ò n
 3SG.L BE FOC Nuga.H AGR.AUX.T2 N-go market
 T.HL
 ‘It was Nuga_{FOC} who went to the market’

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. **á kú** bìn ʒ^wín ___ ⁿtón á?
FOC WH 2PL.L AGR.buy market C.Q.H
V.HL
'What did you buy at the market?'
- b. #bìn ʒ^wín **á kú** ⁿtón á?
2PL.L buy FOC WH market C.Q.H
V.H
'Lit.: You bought what at the market?'

(150) **Wh-question strategies and their semantics in Medumba**

- a. wh-XP (i.e. wh-in-situ) = inquisitive Q
- b. wh-XP + *dí* = reprise inquisitive Q
- c. wh-XP + Move = inquisitive exhaustive Q
- d. wh-XP + Move + *dí* = 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: Nù^{ng}è nó? jún [inaudible]
Nuga AUX.T2 see
 T.H V.H
'Nuga saw [inaudible]'
- B: Nù^{ng}è nó? jún á wá ↓**dí**
Nuga AUX.T2 see FOC WH C.ECHO
 T.H V.H
'Nuga saw who?'

(152) **Adjuncts**

a. *Locative*

- A: Nù^{ng}è nó? jún Wàtèt [inaudible]
Nuga AUX.T2 see Watat
 T.H V.H
'Nuga saw Watat [inaudible]'

B: Nùᵑgè nó? 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: Nùᵑgè nó? jún Wàtèt [inaudible]
 Nuga AUX.T2 see Watat
 T.H V.H
 ‘Nuga saw Watat [inaudible]’

B: Nùᵑgè nó? 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: Nùᵑgè nó? s^wèén Wàtèt [inaudible]
 Nuga AUX.T2 sell.H Watat
 T.H V.L
 ‘Nuga betrayed Watat [inaudible]’

B: Nùᵑgè nó? s^wèén Wàtèt á ᵑᵑᵑ^hú-kú ↓**dí**
 Nuga AUX.T2 sell.H Watat FOC manner-WH C.ECHO
 T.H V.L
 ‘Nuga betrayed Watat why?’

d. *Rationale*

A: Nùᵑgè nó? s^wèén Wàtèt [inaudible]
 Nuga AUX.T2 sell.H Watat
 T.H V.L
 ‘Nuga betrayed Watat [inaudible]’

B: Nùᵑgè nó? s^wèén Wàtèt á nùúm-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: ^mbù kú ↓dǐ
 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] nóò? ⁿ-dʒún Wàtèt
 AGR.AUX.T2 N-see Watat
 T.HL V.H

‘[inaudible] saw Watat?’

B: á wá nóò? ⁿ-dʒún Wàtèt **dǐ**
 FOC WH AGR.AUX.T2 N-see Watat C.ECHO
 T.HL V.H

‘Who saw Watat?’

b. Object

A: [inaudible] Nùmí nóò? ⁿ-kéè — lá
 Numi AGR.AUX.T2 N-AGR.fry C.-Q
 T.HL V.HL

‘[inaudible] Numi fry’

B: á kú Nùmí nóò? ⁿ-kéè — **dǐ?**
 FOC WH Numi AGR.AUX.T2 N-AGR.fry C.ECHO
 T.HL V.HL

‘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-clefts (160); (see Chan 1997 and Tailleur 2013).

(157) In-situ

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

(158) Simple ex-situ wh-questions

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

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

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

(159) Wh-clefts

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

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

(160) 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 Nù mí júùn á
 FOC WH Numi AGR.see C.Q.H
 V.HL
 ‘Who did Numi see?’
 b. *má-ⁿdžùm wú Nù mí júùn 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 (*zè*) which agrees in noun class 1 with the head noun *má-ⁿdžùm* ‘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-ⁿdžùúm** zè Wàtèt nóò? ⁿ-s^wéèn lá ...
 SG-male.H C.CL1 Watat AGR.AUX.T2 N-AGR.sell C.-Q
 T.HL V.HL
 ‘The boy that Watat betrayed...’

b. má-ⁿdʒùm	Wàtèt	nóòʔ	ⁿ -s ^w éèn	lá ...
SG-male	Watat	AGR.AUX.T2	N-AGR.sell	C.-Q
		HL	HL	

‘The boy Watat betrayed...’

(164a) illustrates the plural exponent (^{tʰ}ə) of the C which agrees in noun class 6 with the head noun

bá-ⁿdʒùm ‘boys’. (164b) lacks the internal C.

(164) a. bá-ⁿdʒùúm	^{tʰ} ə	Wàtèt	nóòʔ	ⁿ -s ^w éèn	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. bá-ⁿdʒùm	Wàtèt	nóòʔ	ⁿ -s ^w éèn	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 *k^hù* ‘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. k^hùú	<i>zə</i>	Wàtèt	nóòʔ	ⁿ -s ^ə əm	lá ...
foot.H	C.CL3	Watat	AGR.AUX.T2	N-AGR.message	C.-Q
			T.HL	V.HL	

‘The foot that Watat massaged...’

b. k^hù	Wàtèt	nóòʔ	ⁿ -s ^ə əm	lá ...
foot	Watat	AGR.AUX.T2	N-AGR.message	C.-Q
		T.HL	V.HL	

‘The foot that Watat massaged...’

(166) a. ⁿ-k^hùú	<i>mì</i>	Wàtèt	nóòʔ	ⁿ -s ^ə əm	lá ...
PL-foot.H	C.CL4	Watat	AGR.AUX.T2	N-AGR.message	C.-Q
			T.HL	V.HL	

‘The feet that Watat massaged...’

b. ⁿ-k^hù	Wàtèt	nóòʔ	ⁿ -s ^ə əm	lá ...
PL-feet	Watat	AGR.AUX.T2	N-AGR.message	C.-Q
		T.HL	V.HL	

‘The feet that Watat massaged...’

b. mì	Wàtèt	nóòʔ	ⁿ -sáəm	lá ...
C.CL4	Watat	AGR.AUX.T2	N-AGR.massage	C.-Q
		T.HL	V.HL	

‘The ones/CL4 that Watat massaged...’

(171) a. sə̀	Wàtèt	nóòʔ	ⁿ -ʃúùʔ	lá ...
C.CL5	Watat	AGR.AUX.T2	N-AGR.remove	C.-Q
		T.HL	V.HL	

‘The one/CL5 that Watat removed...’

b. mì	Wàtèt	nóòʔ	ⁿ -ʃúùʔ	lá ...
C.CL4	Watat	AGR.AUX.T2	NAGR.remove	C-Q
		T.HL	V.HL	

‘The ones/CL4 that Watat removed...’

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 contents¹⁴. 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.

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.

(172) a. mukanda **muye** Poso a-tind-aki ... *Lingala*
 5letter 5REL Poso 3S-send-PST
 ‘The letter that Poso sent ...’ [Henderson 2006: 35a, p. 43]

b. mukanda **muye**
 5letter 5DEM
 ‘this letter’ [Henderson 2006: 35b, p. 43]

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. *má-ⁿdžùúm **zè**
 SG-male.H C.CL1
 [Intended: this man]

b. má-ⁿdʒùm **jún-ní**
 SG-male AGR.CL1-1PROX
 ‘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*

bək	àʔ-fá	ⁿ dòʔ	ᵑgùún	zè	à	ʃ ^h úùm	^m b ^h è	mèn	lá
1PL	IRR-give	gift	girl.H	C.CL1	3SG.L	AGR.come	first	person	C.-Q
						V.HL			

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

(177) *pro-drop relative clause*

bək	àʔ-fá	ⁿ dòʔ	zè	à	ʃ ^h úùm	^m b ^h è	mèn	lá
1PL	IRR-give	gift	C.CL1	3SG.L	AGR.come	first	person	C.-Q
					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. bək àʔ-fá ʔdòʔ mbà wú ɖlɔ à ʃhúùm mbhə mèn 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. bək àʔ-fá ʔdòʔ mbà jít ʔgùn ɖlɔ à ʃhúùm mbhə mèn 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. bək àʔ-fá ʔdòʔ mbà wú ɖlɔ zə à ʃhúùm mbhə mèn 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. bək àʔ-fá ʔdòʔ mbà jít ʔgùn ɖlɔ zə à ʃhúùm mbhə mèn 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 an 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 analysis¹⁶ of tone contrasts in Medumba: I posit that Medumba lexical categories contrast a low versus an unmarked tone (L vs \emptyset), and that the unmarked tone with lexical categories surfaces as a default high tone ($\emptyset \rightarrow H$). 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, \emptyset } | (surface L/H contrast, $\emptyset \rightarrow H$) |
| F-cats: {L, H, μ } | (surface L/H contrast, $\mu \rightarrow H/L$) |

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.

¹⁶ See Barczak 2007; Déchaine 2001 and Déchaine 2015 as a precedent for this type of partition

BASE		Surface tonal allomorphs conditions				
		Phonological	Morphological		Syntax	
		—# ^(Hμ)	N-NMLZ ^(Lμ)	N- ^(H)	— ^(H) DP	HLμ(overwrite) ¹⁷
1	CV _L	CVV _{LH}	CVV _{LL}	CVV _{HL}	CVV _{LH}	CVV _{HL}
2	CV	CV _H	CVV _{HL}	CV _H	CV _H	CVV _{HL}
3	CVC _L	CVCV _{LH}	CVVC _{LL}	CVVC _{HL}	CVVC _{LH}	CVVC _{HL}
4	CVC	CVCV _H	CVVC _{HL}	CVC _H	CVC _H	CVVC _{HL}
Contexts		Final position	Nominalization	(i) non-initial V (ii) V2-form in SVCs	(i) Inf. V DP (ii) V _{TNS} DP	A'-movement

Table 3. 1: Verb tone classes and their surface tonal allomorphs in Medumba

As shown in appendix B, there are four verb tone classes in Medumba: CV_L vs CV and CVC_L 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. Nù^ggèé kè kí CV_L → CV_L
Nuga.H choose C.Q_{Y/N}
V.L
‘Did Nuga choose?’
- b. Nù^ggèé ↓kè kí CV → CV_H
Nuga.H fry C.Q_{Y/N}
V.H
‘Did Nuga fry?’
- c. Nù^ggèé kèk kí CVC_L → CVC_L
Nuga.H weed C.Q_{Y/N}
V.L
‘Did Nuga weed?’
- d. Nù^ggèé ↓kèk kí CVC → CVC_H
Nuga.H harvest C.Q_{Y/N}
V.H
‘Did Nuga harvest (it)?’

¹⁷ Exception to this are the Aux. fə and lù (which appear with a LH contour) and the future marker à? which doesn’t change in A-bar context.

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. Nùᵝgèé kè kí $CV_L \rightarrow CV_L$
 Nuga.H choose C.Q_{Y/N}
 V.L
 'Did Nuga choose?'
- b. **á wú** Nùᵝgèé kèé á $CV_L \rightarrow CVV_{HL}$
 FOC WH Nuga AGR.choose C.Q.H
 V.HL
 'Who did Nuga choose?'

(5) CV verb

- a. Nùᵝgèé kè kí CV $\rightarrow CV_H$
 Nuga.H fry C.Q_{Y/N}
 V.H
 'Did Nuga fry?'
- b. **á kú** Nùᵝgèé kèé á CV $\rightarrow CVV_{HL}$
 FOC WH Nuga AGR.fry C.Q.H
 V.HL
 'What did Nuga fry?'

(6) CVC_L verb

- a. Nùᵐgèé **kèk** kí CVC_L → CVC_L
 Nuga.H weed C.Q_{Y/N}
 V.L
 ‘Did Nuga weed?’
- b. **á kú** Nùᵐgè **kéèg** á CVC_L → CVVC_{HL}
 FOC WH Nuga AGR.weed C.Q.H
 V.HL
 ‘What did Nuga weed?’

(7) CVC verb

- a. Nùᵐgèé **↓kék** kí CVC → CVC_H
 Nuga.H harvest C.Q_{Y/N}
 V.H
 ‘Did Nuga harvest (it)?’
- b. **á kú** Nùᵐgè **kéèg** á CVC → CVVC_{HL}
 FOC WH Nuga AGR.harvest C.Q.H
 V.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*

- a. **á ᵐgùn** Nùᵐgè **kéè** lá CV_L → CVV_{HL}
 FOC girl Nuga AGR.choose C.-Q
 V.HL
 ‘The girl_{FOC} (is the one) Nuga chose’
- b. **á ᵐᵔʷén** Nùᵐgè **kéè** lá CV → CVV_{HL}
 FOC chips Nuga AGR.fry C.-Q
 V.HL
 ‘The chip_{FOC} Nuga fried’

- c. **á** **nà** Nùṅgè **kéèg** lá CVC_L → CVVC_{HL}
 FOC field Nuga AGR.weed C.-Q
 V.HL
 ‘The field_{FOC} Nuga weeded’
- d. **á** **ᶞʷʔʔ** Nùṅgè **kéèg** lá CVC → CVVC_{HL}
 FOC honey Nuga AGR.harvest C.-Q
 V.HL
 ‘The honey_{FOC} Nuga harvested’

(9) *Relativization*

- a. **ᶞgùún** zè Nùṅgè **kéè** lá ... CV_L → CVV_{HL}
 girl.H C.CL1.L Nuga AGR.choose C.-Q
 V.HL
 ‘The girl that Nuga chose ...’
- b. **ᶞᵊʷén** zè Nùṅgè **kéè** lá ... CV → CVV_{HL}
 chips C.CL1.L Nuga AGR.fry C.-Q
 V.HL
 ‘The chip that Nuga fried ...’
- c. **nàá** zè Nùṅgè **kéèg** lá ... CVC_L → CVVC_{HL}
 field.H C.CL1.L Nuga AGR.weed C.-Q
 V.HL
 ‘The field that Nuga weeded ...’
- d. **ᶞʷʔʔ** zè Nùṅgè **kéèg** lá CVC → CVVC_{HL}
 honey C.CL1.L Nuga AGR.harvest C.-Q
 V.HL
 ‘The honey that Nuga harvested ...’

(10) *Topicalization*¹⁸

- a. **ᶞgùn** jùùn-ní kí Nùṅgè **kéè** í CV_L → CVV_{HL}
 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. **ɔ́ɛ́n** ʃúùn-ní kɪ̀ Nùŋgè **kéè** ∅ CV → CVV_{HL}
 chips AGR-1PROX TOP Nuga AGR.fry 3SG.INAM
 V.HL
 ‘These chips, Nuga fried them’
- c. **nà** júùn-ní kɪ̀ Nùŋgè **kéèk** ∅ CVC_L → CVVC_{HL}
 field AGR-1PROX TOP Nuga AGR.weed 3SG.INAM
 HL
 ‘This field, Nuga weeded it?’
- d. **ŋʷʊʊ** júùn-ní kɪ̀ Nùŋgè **kéèk** ∅ CVC → CVVC_{HL}
 honey AGR-1PROX TOP Nuga AGR.harvest 3SG.INAM
 HL
 ‘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.

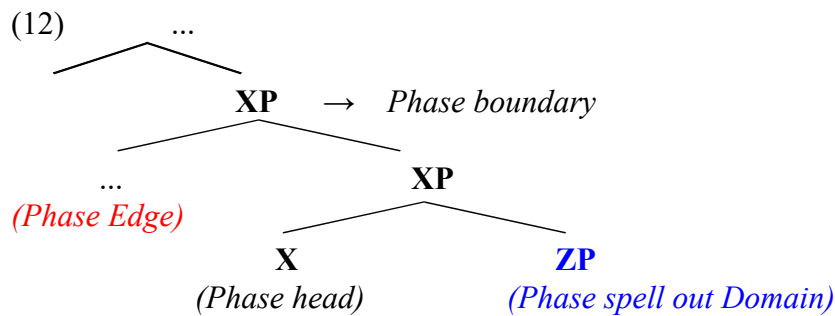
3.1.2 The proposal: Phasal-Agree derives A'-agreement

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 boundaries¹⁹ 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).

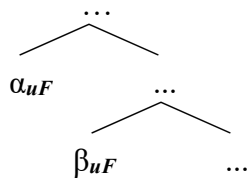


3.1.2.2 A'-agreement is Phasal-Agree

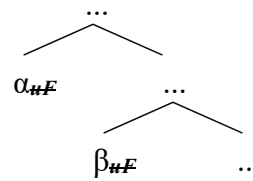
Agree is the basic dependency-building mechanism within the Minimalist framework. It involves an operation of feature checking between a probe and a goal. The operation Agree takes place only if the probe and the goal both bear uninterpretable/unvalued features, which make them active. After the operation 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 α as a probe and β as a goal:

¹⁹ What constitutes a phase is subject to debate. Proposals vary from: every phrase (Müller 2010), CP and vP (van Urk 2015, Georgi 2017), just vP (Rackowski and Richards 2005), or more nuanced possibilities (Den Dikken 2007, Gallego 2007, Wurmbrand 2012, Harwood 2015, Ramchand and Svenonius 2014, Bošković 2014, Sailor 2014, Aelbrecht and Harwood 2015).

(13) a. Feature matching phase



b. Agree phase



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.

(14) *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.*

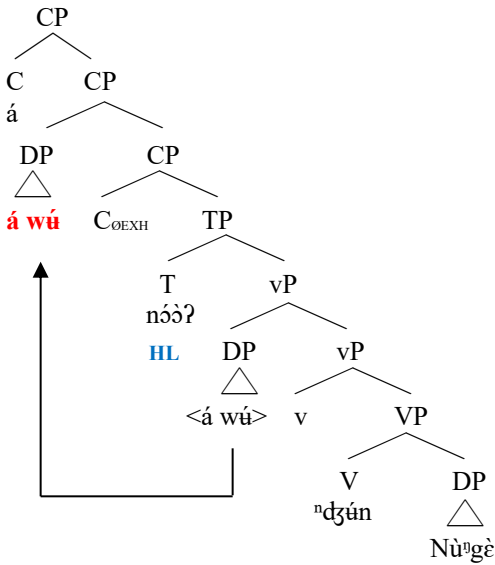
I consider the A'-feature as a feature bundle relating to discourse or information structural features such as focus and topic (see also Lochbihler and Mathieu 2010). In some languages, it also involves ϕ -feature agreement with the moved constituent (see Carstens 2005, Baier 2018). The valuation of 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

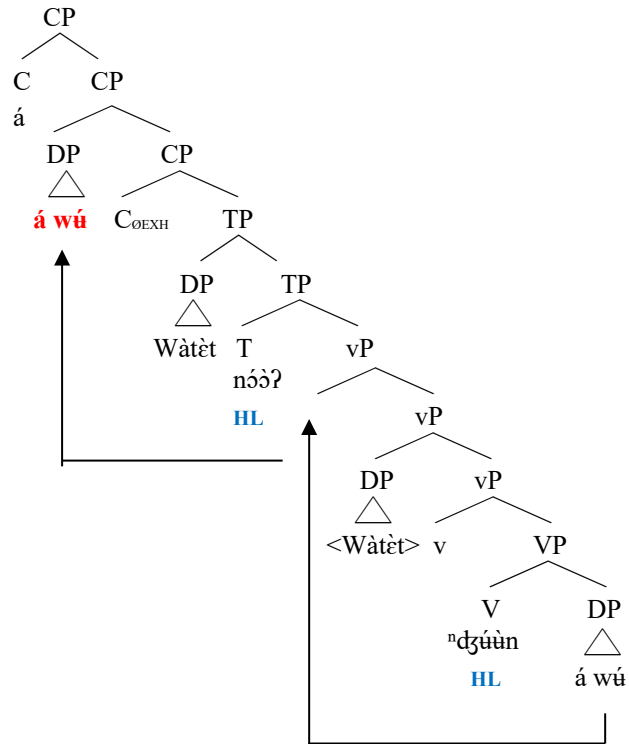
3.2.1 Phasal-Agree predicts subject/non-subject asymmetry

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).

(18) a. Subject



b. Object



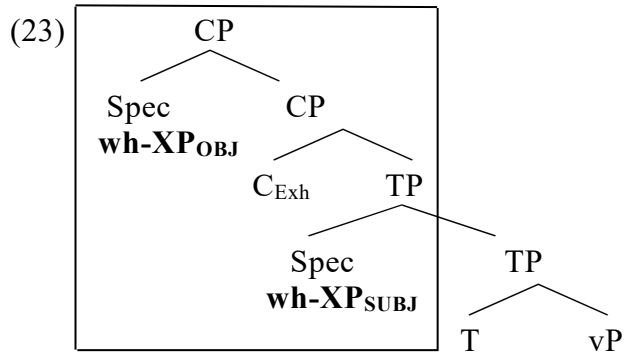
A question that arises is why the subject extraction does not trigger A'-agreement with the verb when the subject first merged at Spec-v. It appears that A'-agreement in Medumba requires movement. So, A'-agreement is not expected at first merge, that is between the verb and the subject at Spec-v. This 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 | nó? | fá | bò | á | wú | á |
| C1-child | AUX.T2 | give | bag | FOC | WH | C.Q.H |
| | T.H | V.H | | | | |
- Lit.: 'the child gave the bag to who(m)?'

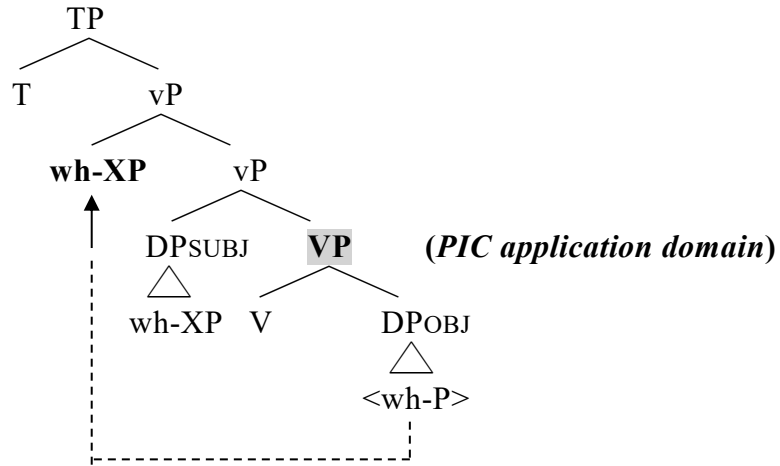
- (22) a. *What did who ate?
 b. *Where did who go?
 c. *To whom did what happen?
 d. *To whom did you give what?

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).



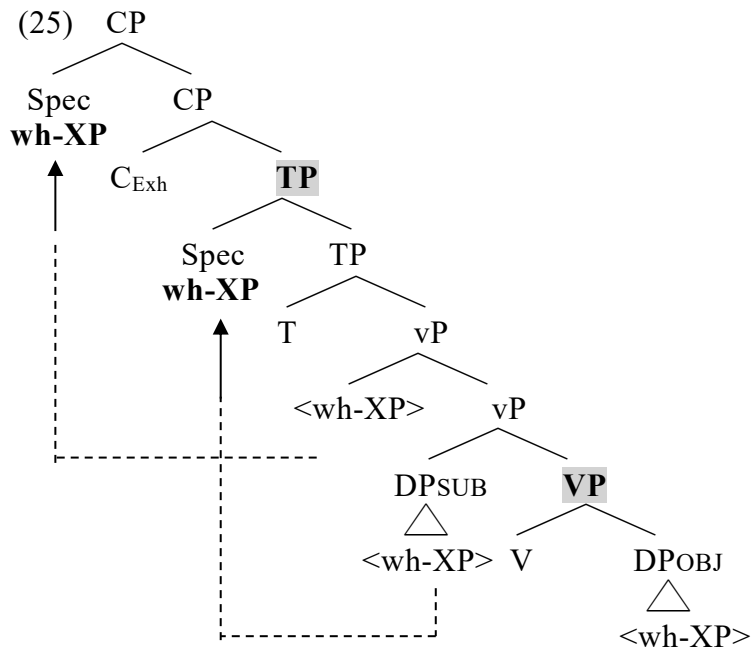
The configuration in (23) predicts the absence of superiority in Medumba. In fact, when the first phase (vP) is built, the object wh-XP can move and adjoins to vP to avoid violating the PIC as illustrated in the structure in (24).

(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.

(25)



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** *nóò?* *m-fá* **á kú** *Wàtèt à?*
 FOC WH AGR.AUX.T2 N-give FOC WH Watat C.Q.L
 T.HL V.H
 ‘Who gave what to Watat?’
- b. **á wú** *nóò?* *m-fá* *bò á wú á?*
 FOC WH AGR.AUX.T2 N-give bag FOC WH C.Q.H
 T.HL V.H
 ‘Who gave the bag to whom?’
- c. **á wú** *nóò?* *m-fá* **á kú wú á?**²⁰
 FOC WH AGR.AUX.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-fronting²¹ 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** *nóò?* *m-fáà* **á wú á?**
 FOC WH FOC WH AGR.AUX.T2 N-AGR.give FOC WH C.Q.H
 HL HL
 ‘*What did who gave to whom?’
- b. **á wú á wú** *nóò?* *m-fáà* **á kú jí á?**
 FOC WH FOC WH AGR.AUX.T2 N-AGR.give FOC WH 3SG.H C.Q.H
 T.HL V.HL
 ‘*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

²⁰ 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.

²¹ 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.

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) a. ***á** **kú** **á** **wú** **á** **wú** **nóò?** **m-fáà** **jí** **á?**
 FOC WH FOC WH FOC WH AGR.AUX.T2 N-AGR.give 3SG.H C.Q.H
- b. ***á** **wú** **á** **kú** **á** **wú** **nóò?** **m-fáà** **jí** **á?**
 FOC WH FOC WH FOC WH AGR.AUX.T2 N-AGR.give 3SG.H C.Q.H
- (29) a. ***á** **kú** **á** **wú** **Nù^{ng}è** **nóò?** **m-fáà** **jí** **á?**
 FOC WH FOC WH Nuga AGR.AUX.T2 N-AGR.give 3SG.H C.Q.H
- b. ***á** **wú** **á** **kú** **Nù^{ng}è** **nóò?** **m-fáà** **jí** **á?**
 FOC WH FOC WH Nuga AGR.AUX.T2 N-AGR.give 3SG.H C.Q.H

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).

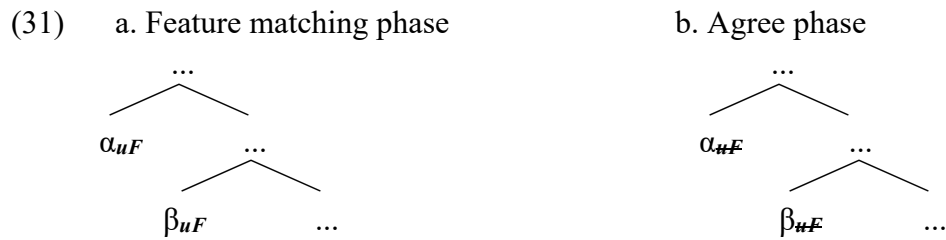
- (30) a. ***á** **kú** **á** **wú** **à** **nóò?** **m-fáà** **Nù^{ng}è** **à?**
 FOC WH FOC WH 3SG.H AGR.AUX.T2 N-AGR.give Nuga C.Q.L
 T.HL v.HL
 [*What did who [he] gave to Nuga?]
- b. ***á** **wú** **á** **wú** **à** **nóò?** **m-fáà** **bò** **jí** **á?**
 FOC WH FOC WH 3SG.H AGR.AUX.T2 N-AGR.give bag 3SG.H C.Q.H
 T.HL v.HL
 [*Who did who [he] gave the bag to [him]?)]

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

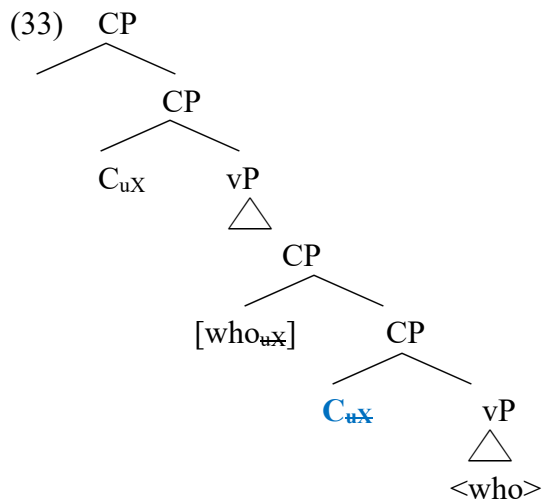
of Agree namely, how can an item enter subsequent Agree relations after valuing its features. After the operation Agree, the unvalued features of the probe and the goal are valued or deleted, making them inactive or invisible for further Agree operations. This is shown below with α as a probe and β as a goal:



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-ténd-ílé b-ána **bi**-á-gúl-ílé 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?’

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).



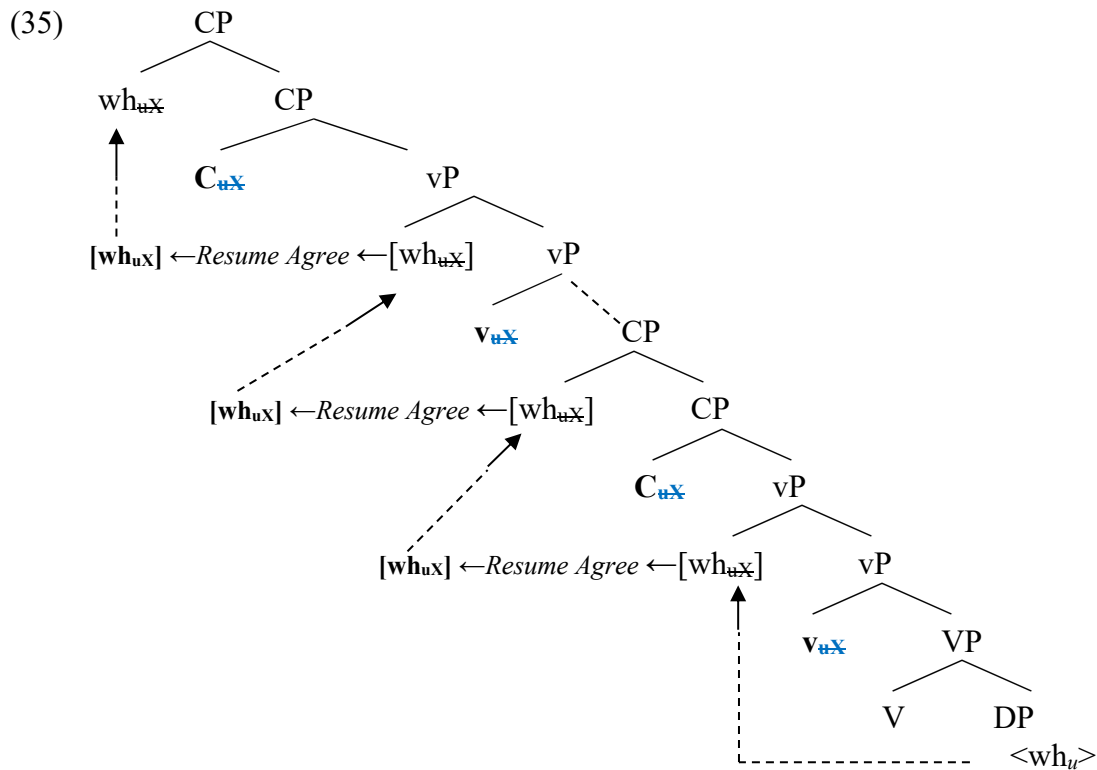
One possibility to account for multiple instances of Agree is to assume that once the moved XP reaches the matrix CP edge, Agree can happen across phase boundaries at the same time with the matrix and embedded CP (see also Zeijlstra 2012). The problem with this view is that if we take the Phase Impenetrability 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*:

(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.*

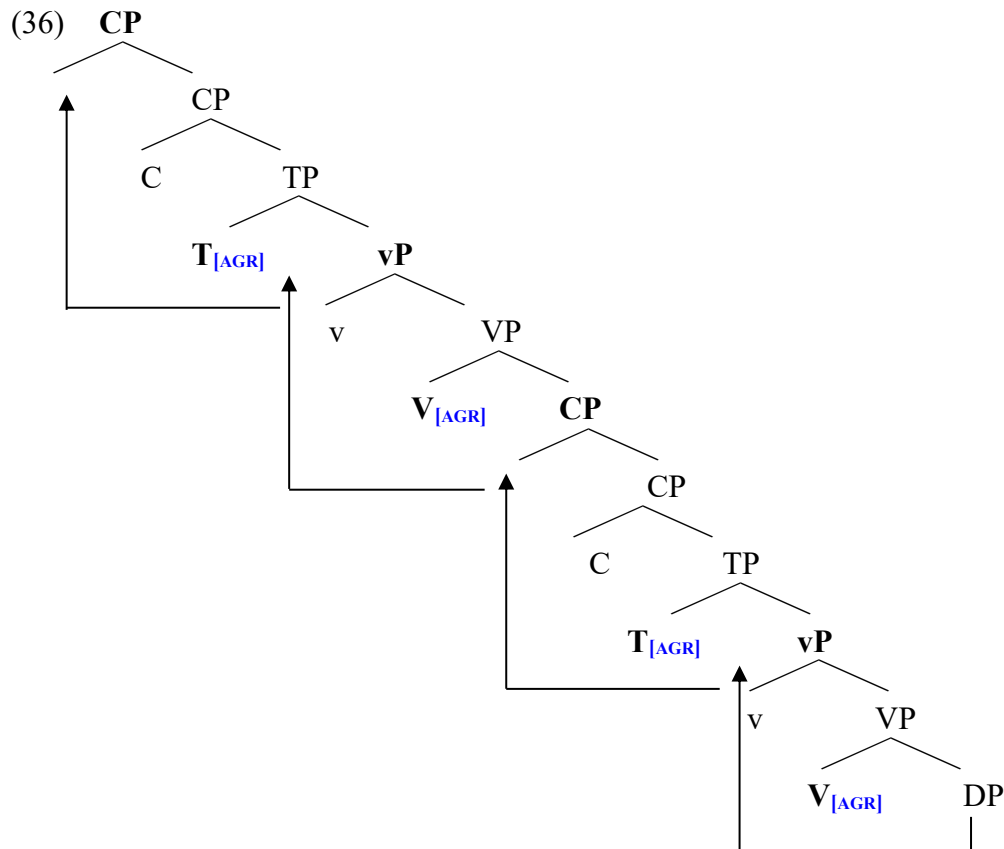
With this condition in mind, when the moved XP first reaches the vP phase edge, the first Phasal-Agree operation takes place and the reflex of Agree surfaces on V. Then, the A'-features of the moved XP are resumed so that it can become an active goal for the next Phasal-Agree operation with the probe C²². 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).



²² 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.

Locus of agreement		Extraction site			
		Embedded Subject		Embedded Object	
		Expected	<i>Attested</i>	Expected	<i>Attested</i>
Matrix	T	✓	✓	✓	✓
	V	✓	✗	✓	✗
Embedded	T	✓	✓	✓	✓
	V	✗	✗	✓	✓

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-tfúp* '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	Sèémí	nóò?	n-tfúp	mbù		
	FOC	WH	Sami	AGR.AUX.T2	N-say	C.L		
				T.HL	V.H			
			á	nóò?	m-fá	bò	Nùᵐgè	à?
			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	Sèémí	nóò?	n-tfúùp	mbù		
	FOC	WH	Sami	AGR.AUX.T2	N-AGR.say	C.L		
				T.HL	V.HL			
			á	nóò?	m-fá	bò	Nùᵐgè	à?
			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*

a.	á	mén	Sèémí	nóò?	ⁿ-tjúp	^m bù		
	FOC	child	Sami	AGR.AUX.T2	N-say	C.L		
				T.HL	V.H			
			á	nóò?	^m -fá		bò	Nù ^g gè lá
			3SG.H	AGR.AUX.T2	N-give		bag	Nuga C.-Q
				T.HL	V.H			

‘The child_{FOC} Sami said that [he] gave the bag to Nuga’

b.	*á	mén	Sèémí	nóò?	ⁿ-tjúùp	^m bù		
	FOC	child	Sami	AGR.AUX.T2	N-AGR.say	C.L		
				T.HL	V.HL			
			á	nóò?	^m -fá		bò	Nù ^g gè lá
			3SG.H	AGR.AUX.T2	N-give		bag	Nuga C.-Q
				T.HL	V.H			

[The child_{FOC} Sami said that [he] gave the bag to Nuga]

(39) *Subject relativization*

a.	mén	zè	Sèémí	nóò?	ⁿ-tjúp	^m bù		
	child	C.CL1	Sami	AGR.AUX.T2	N-say	C.L		
				T.HL	V.H			
			á	nóò?	^m -fá		bò	Nù ^g gè lá
			3SG.H	AGR.AUX.T2	N-give		bag	Nuga C.-Q
				T.HL	V.H			

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

b.	*mén	zè	Sèémí	nóò?	ⁿ-tjúùp	^m bù		
	child	C.CL1	Sami	AGR.AUX.T2	N-AGR.say	C.L		
				T.HL	V.HL			
			á	nóò?	^m -fá		bò	Nù ^g gè lá
			3SG.H	AGR.AUX.T2	N-give		bag	Nuga C.-Q
				T.HL	V.H			

[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-tfúp* ‘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	Sèémí	nóò?	n-tfúp	mbù		
	FOC	WH	Sami	AGR.AUX.T2	N-say	C.L		
				T.HL	V.H			
			Nùᵐgèé	nóò?	n-s ^w éèᵐ	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	Sèémí	nóò?	n-tfúùp	mbù		
	FOC	WH	Sami	AGR.AUX.T2	N-AGR.say	C.L		
				T.HL	V.HL			
			Nùᵐgèé	nóò?	n-s ^w éèᵐ	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	mén	Sèémí	nóò?	n-tfúp	mbù		
	FOC	child	Sami	AGR.AUX.T2	N-say	C.L		
				T.HL	V.H			
			Nùᵐgèé	nóò?	n-s ^w éèᵐ	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	mén	Sèémí	nóò?	n-tfúùp	mbù		
	FOC	child	Sami	AGR.AUX.T2	N-AGR.say	C.L		
				T.HL	V.HL			
			Nùᵐgèé	nóò?	n-s ^w éèᵐ	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** zə Sɛ́émí nóòʔ ⁿ-tʃúʔ mbù
 child C.CL1 Sami AGR.AUX.T2 N-say C.L
 T.HL V.H
 Nùᵐgèé nóòʔ ⁿ-sʷéèn 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** zə Sɛ́émí nóòʔ ⁿ-tʃúʔ mbù
 FOC child C.CL1 Sami AGR.AUX.T2 N-AGR.say C.L
 T.HL V.HL
 Nùᵐgèé nóòʔ ⁿ-sʷéèn 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.

Root clause extraction	Locus of A'-agreement	
	CP	vP
Root	YES	YES
Non-root clause extraction		
	CP	vP
Matrix	YES	NO
Embedded	YES	YES

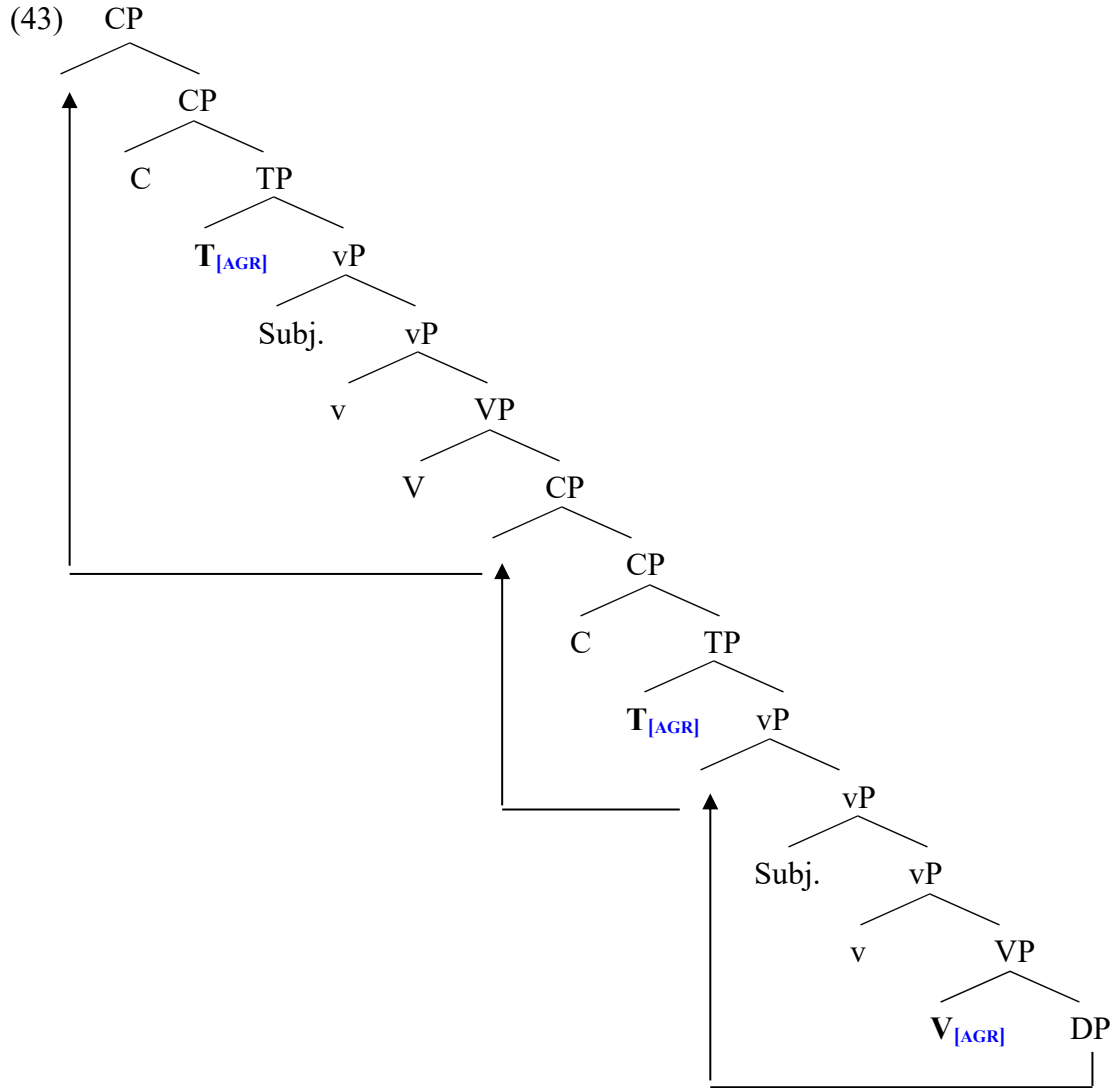
Table 3. 4: Phasal-Agree and clause typing in Medumba

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).



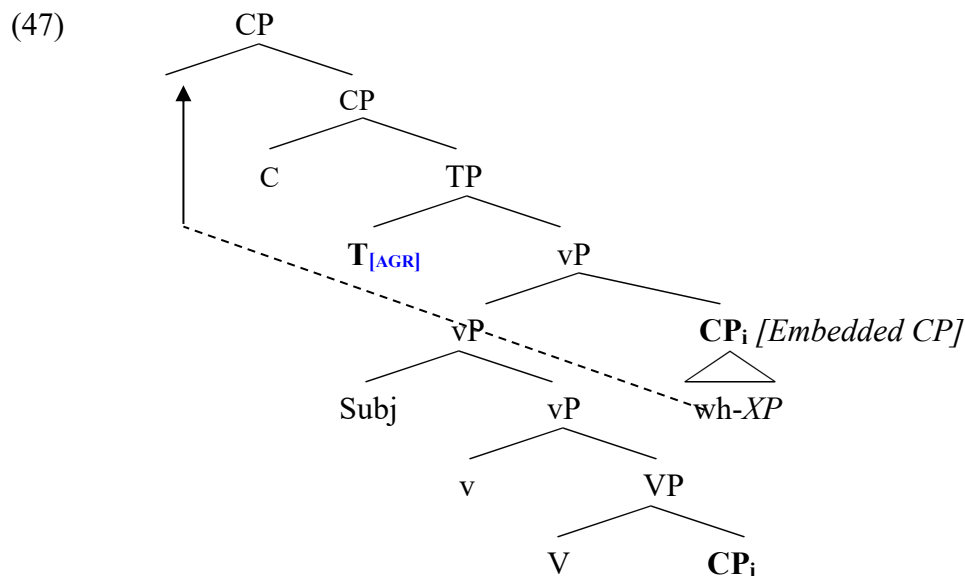
In (44) A'-agreement surfaces with the lowest V *n-s^wéèn* 'sell' and the lowest T *nóò?* with the first CP and with intermediate Ts afterwards.

(44)	á	wú	Sèémí	nóò?	n-tfúp	mbù	Pítàá	nóò?	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
		mbù	Nù ^g gèé	nóò?	<i>n-s^wéèn</i>	í	á?		
		C.L	Nuga.H	AGR.AUX.T2	N-AGR.give	3SG.H	C.Q.H		
				T.HL	V.HL				

'Who did Sami say that Peter said that Nuga betrayed [him/her]?'

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 literature²³. 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.



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*

a.	á	wú	Sèémí	nóò?	ⁿ -tʃúp	^m bù		
b.	*á	wú	Sèémí	nóò?	ⁿ -tʃúp	^m bù		
	FOC	WH	Sami	AGR.AUX.T2	N-say	C.L		
				T.HL	V.H			
			Nùᵐgèé	nóò?	ⁿ -s ^w éèn	í	á?	
			Nùᵐgèé	nóò?	ⁿ -s ^w éèn	_____	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)?’

(49) *Extraction from an adjunct CP*

a.	á	wú	Nùmí	nóò?	néèn	tón		
b.	*á	wú	Nùmí	nóò?	néèn	tón		
	FOC	WH	Nùmí	AGR.AUX.T2	AGR.go	market		
				T.HL	V.HL			
			káà	Nùᵐgèé	fáà	bò	jí	á?
			káà	Nùᵐgèé	fáà	bò	_____	á?
			before	Nùᵐgèè.H	AGR.give	bag	3SG.H	C.Q.H
					V.HL			

‘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 $[CP \pm Q]$ (50), *say* for $[CP -Q]$ (51), and *wonder* $[CP +Q]$ (52).

(50) V $[CP \pm Q]$

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 *béttá* 'ask' when it selects for $[CP +Q]$, only the quotative reading is available but not the embedded interrogative; (55) shows that *ífúp* 'says' is compatible with quotative reading with both $[CP -Q]$ and $[CP +Q]$.

(53) V *lèn* 'know' selects $[CP -Q]$

a. Wàtèt lèn [^mbù Nùmí nó? s^wéén Nù^ggè]
 Watat know C.L Nùmí AUX sell.H Nuga
 Watata knows that Numi betrayed Nuga

b. *Wàtèt lèn [^mbù á wú à nó? ⁿ-s^wéén Nù^ggè à]
 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 bétto* ‘ask’ selects [*CP +Q*]

- a. *Wàtèt nó? bétto [mbù Nù mí nó? s^wéén Nù^{ng}è]
 Watat AUX ask C.L Nù mí AUX sell.H Nuga
 *Watata asked that Numi betrayed Nuga
- b. Wàtèt nó? bétto [mbù **á wú à** nó? n-s^wéén Nù^{ng}è à]
 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 fíip* ‘say’ selects [*CP ±Q*]

- a. &Wàtèt fíip [mbù Nù mí nó? s^wéén Nù^{ng}è]
 Watat say C.L Nù mí AUX sell.H Nuga
 ‘Watat said that Numi betrayed Nuga’
 ‘Watat said: “Numi betrayed Nuga”’
- b. Wàtèt fíip [mbù **á wú à** nó? n-s^wéén Nù^{ng}è à]
 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.

Verbs	Selectional Properties	
	English	Medumba
know	[<i>CP ±Q</i>]	[<i>CP -Q</i>]
wonder/ask	[<i>CP +Q</i>]	[<i>CP+Q</i>]
say	[<i>CP -Q</i>]	[<i>CP ±Q</i>]

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 *béttá* ‘ask’. Crucially, a construal with *fíúp* ‘says’ is ill-formed in this context.

(56) *V lèn* ‘know’

Wàtèét lèn [mèén zè à nódò? n-s^wéèn Nùᵐgè lá]
 Watat.H know person.H C.CL1 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 béttá* ‘ask’

Wàtèt nódò? béttá [mèén zè à nódò? n-s^wéèn Nùᵐgè à]
 Watat AUX.T2 ask person.H C.CL1 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’

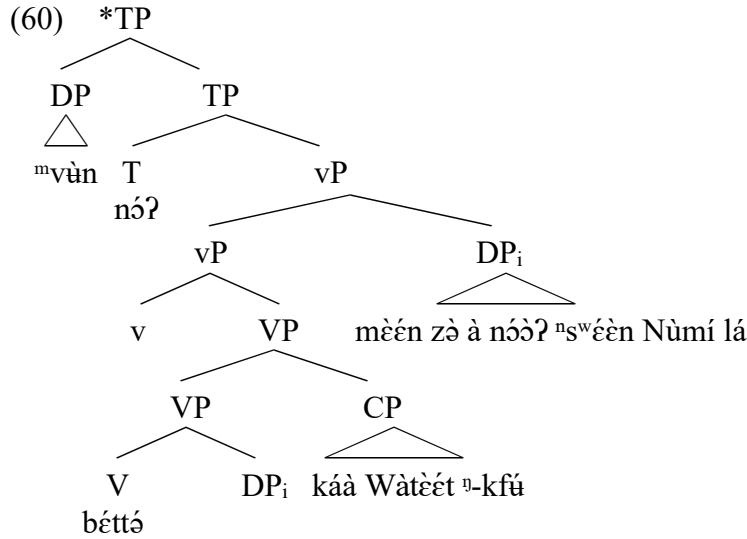
(58) *V fíúp* ‘say’

*Wàtèét fíúp [mèén zè à nódò? n-s^wéèn Nùᵐgè lá]
 Watat.H say person.H C.CL1 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 [mèén zè à nódò? n-s^wéèn Nùᵐí lá] ‘the person that betrayed Numi’ is extraposed — as it follows the VP adjunct [káà Wàtèét n-kfíí] ‘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).

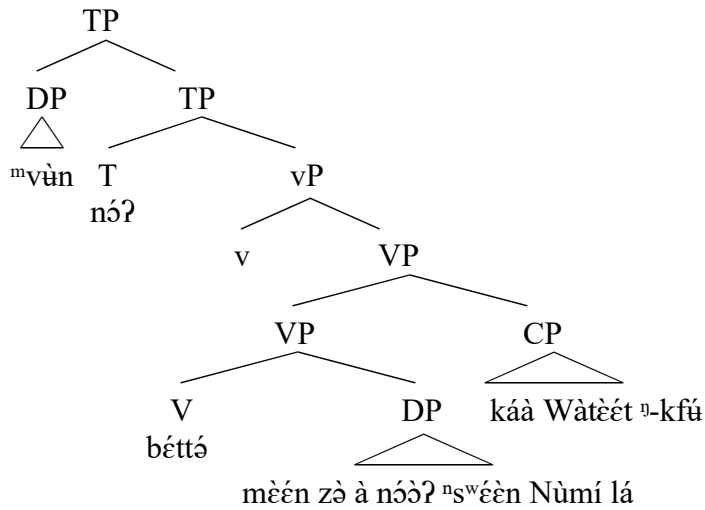
- (59) *^mvùn nóʔ bét̃tá káà Wàtèét kfù
 chief AUX.T2 ask before Watat.H N-die
- [**mèèn** zè à nóòʔ ⁿs^wéèn Nùmí lá]
 person.H C.CL1 3SG.L AGR.AUX.T2 N-AGR.sell Numi C.-Q
- T.HL V.HL
- [Lit.: The chief asked before Watat died who betrayed Nuga]



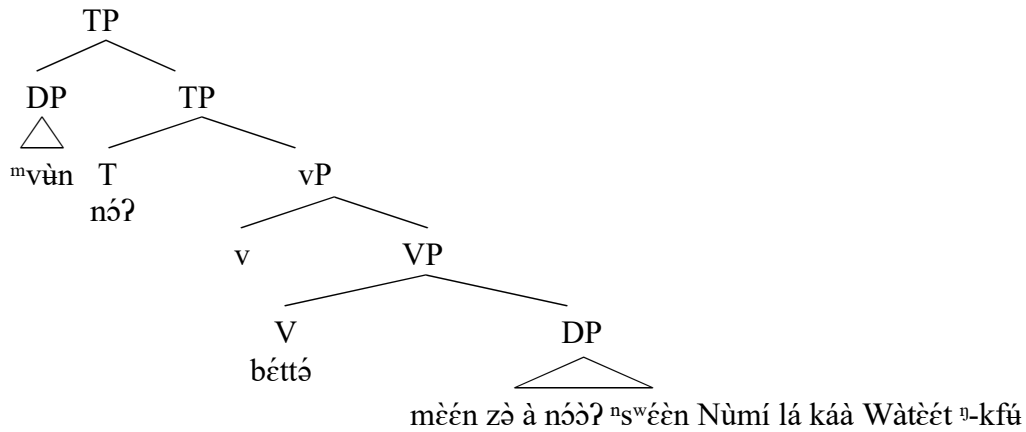
In order to get the intended interpretation, the adjunct clause [*káà Wàtèét ⁿ-kfù*] ‘before Watat died’ must be in final position and the DP DP [*mèèn zè à nóòʔ ⁿs^wéèn Nùmí lá*] ‘the person that betrayed Numi’ in complement to V position (61). Interestingly, the resulting sentence is structurally ambiguous as the adjunct clause can modify either the matrix VP (62a) or the embedded VP (62b).

- (61) &^mvùn nóʔ bét̃tá [**mèèn** zè à nóòʔ ⁿs^wéèn
 chief AUX.T2 ask person.H C.CL1 3SG.L AGR.AUX.T2 N-AGR.sell
- T.HL V.HL
- Nùmí lá] káà Wàtèét kfù
 Numi C.-Q before Watat.H die
- = (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*

(62) a. Adjunct clause modifies matrix VP (i)



b. Adjunct clause modifies embedded VP (ii)

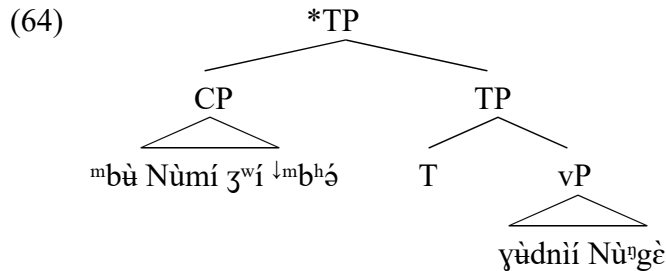


The preceding dataset is of theoretical and typological significance given that indirect questions are introduced as relative clauses in some languages. A thorough cross-linguistic investigation is needed in order to establish whether complement CPs in languages that favor relative clauses in indirect 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

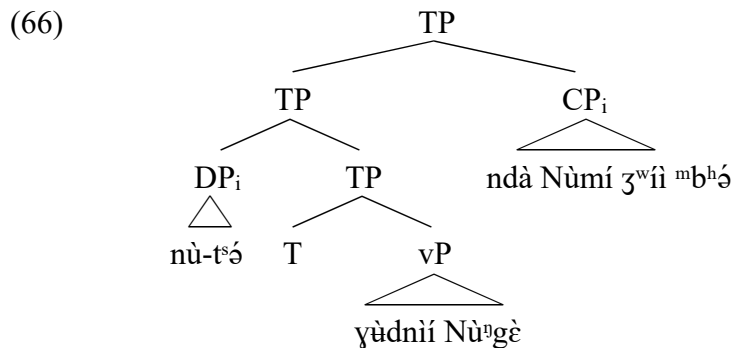
In the previous section I argued that Medumba lacks complement CPs. (63) shows that sentential subjects (subject CPs) are ill-grammatical in Medumba if the CP [*ᵐbù Nù mí ʒwí ᵐbʰó*] ‘that Numi killed the goat’ is introduced in subject position as illustrated in the tree in (64).

- (63) **[ᵐbù Nù mí ʒwí ᵐbʰó]* ʒùdníí Nùᵐgè
 C.L Numi kill goat bother.H Nuga
 [That Numi killed the goat bothered Nuga]



Rather, as shown in (65), a sentential subject is construed by insertion of what I call an “anaphoric expletive” DP (in this context *nù-tʰó* ‘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-tʰó* ʒùdníí Nùᵐgè *ndà* Nù mí ʒwíᵐ ᵐbʰó 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’



(63-66) confirm that CPs are never in argument position in Medumba.

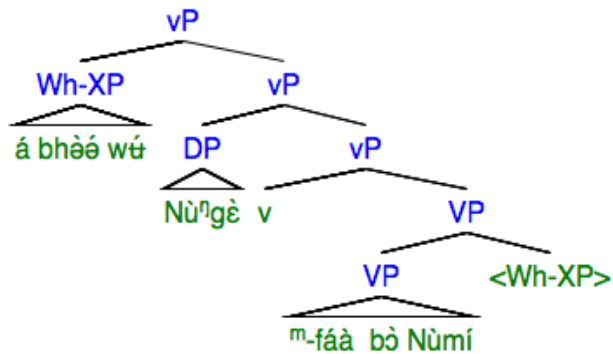
when they reach the vP phase edge. This is confirmed, as VP adjuncts trigger A'-agreement on V and T as shown in (71).

- (71) a. **á** **b^hàó** **wú** Nù^ŋgè nóò? m-fáà bò Nùmí á?
 FOC PREP WH Nuga AGR.AUX.T2 N-AGR.give bag Numi C.Q.H
 T.HL V.HL
 ‘In front of who(m) did Nuga give the bag to Numi ___?’
- b. ***á** **b^hàó** **wú** Nù^ŋgè nóò? m-fá bò Nùmí á?
 FOC PREP WH Nuga AGR.AUX.T2 N-give bag Numi C.Q.H
 T.HL V.H
 [In front of who(m) did Nuga give the bag to Numi ___?]

In (71) when the vP phase is built, the wh-XP *á b^hàó 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).

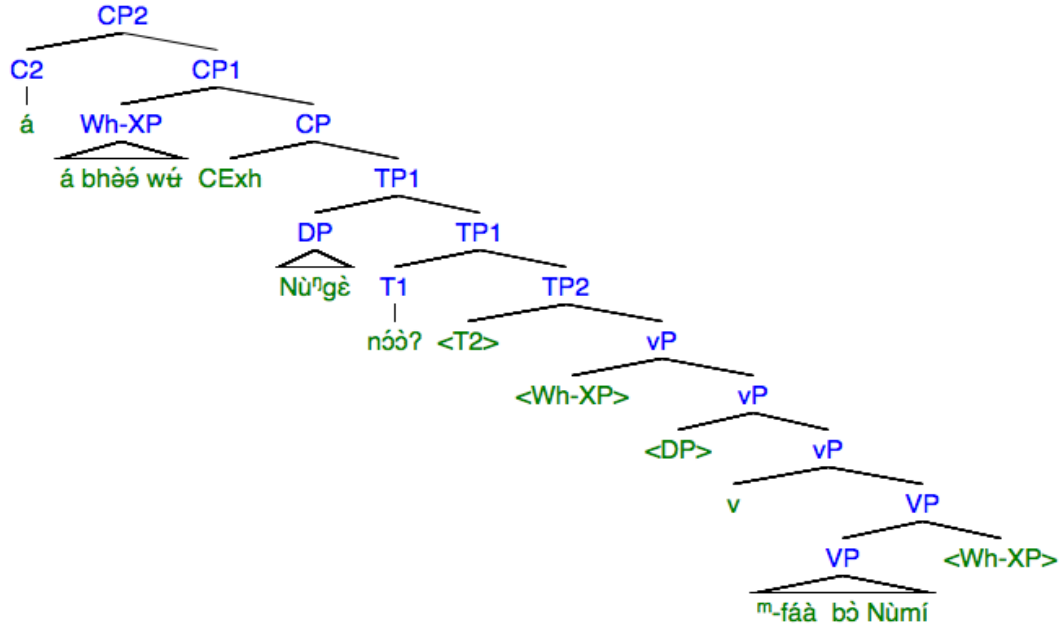
- (72) a. vP phase

[vP [^Wh-XP *á b^hàó wú*] [vP [^DP Nù^ŋgè] [vP [v] [VP[^VP m-fáà bò Nùmí] [<Wh-XP>]]]



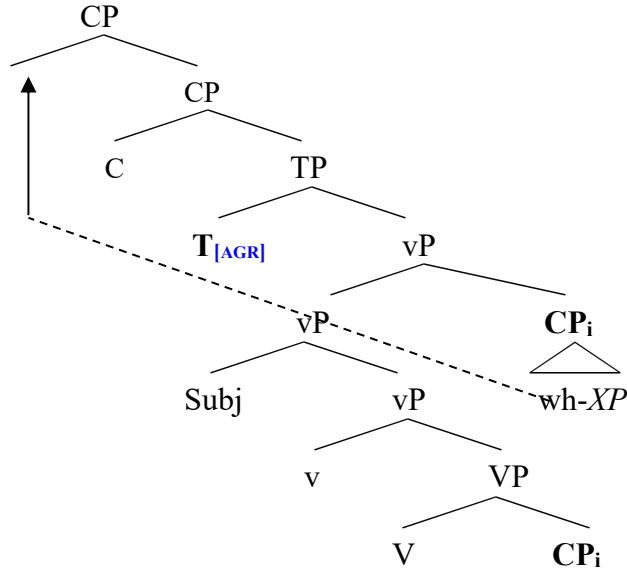
b. CP phase

[CP2 [C2 á] [CP1 [Wh-XP á bhèé wú] [CP [CEXh] [TP1 [DP Nù^{ngè}] [TP1 [T1 nóò?]] [TP2 [<T2>] [vP [<Wh-XP>] [vP [<DP>] [vP [v] [VP[VP ^{m-fáà} bò Nùmí] [<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).

(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 *ᵐkúùbzú* ‘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) Nù mí fə [ᵐ-ʃʊʔdó ᵐvùún] ᵐkòk, Sèémí ʃǒk ____ ᵐkúùbzú
 Numi AUX.T3 N-greet chief.H yesterday Sami morning
 ‘Lit.: Numi greeted the chief yesterday, Sami this morning’

(75) *Nù mí fə [ᵐ-ʃʊʔdó ᵐvùún] ᵐkòk, Sèémí ʃǒk ____ Nùᵐgè ᵐkúùbzú
 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)	Nù mí fə	n-tʃúp	mbù	à	àʔ-nèén	↓nʔón
	Numi AUX.T3	N-say	C.L	3SG.L	IRR-go.H	market
	Sèémí	_____	mbù	à	àʔ-nèén	↓tʃwét
	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 *ndʒɔ̀ɔ̀ŋ bèn fɛ̀*²⁶ ‘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 extraposed 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** Nù^{ngè} nóò? ^{n-tfúp} [n^dʒóòŋ] **bùn** **fé**_i
 FOC WH Nuga AGR.AUX.T2 N-say every people all
 T.HL
- mbù** **bú**_i nóò? ^{n-dʒúùn} **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_i that they_i saw?’

The same reading is true if the quantified expression [*mbà jít ʒùn ló*] ‘each girl’ binds a singular pronoun *á* ‘s/he’ as illustrated in (78).

- (78) **á** **wú** Nù^{ngè} nóò? ^{n-tfúp} [**mbà** **jít** **ʒùn** **ló**]_i
 FOC WH Nuga AGR.AUX.T2 N-say even WH girl ?
 T.HL
- mbù** **á**_i nóò? ^{n-dʒúùn} **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]_i that she_i 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 morpho-syntactic 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.

LOCUS OF A'-AGREEMENT			
	CP	vP	Language
Type 1	<i>YES</i>	<i>NO</i>	Kilega, German
Type 2	<i>NO</i>	<i>YES</i>	Duala, Kikuyu
Type 3	<i>YES</i>	<i>YES</i>	Chamorro, Medumba

Table 3. 6: Formal typology of the locus of A'-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.

	FORM OF AGREEMENT						
	Copy	Concordial Agreement				Other means	
		Morphemes		Tonemes		A'-particle	(Stylistic) inversion
Languages	German	Chamorro	Kilega	Kikuyu	Medumba	Duala	French
	<i>Germanic</i>	<i>Austronesian</i>	<i>Bantu D25</i>	<i>Bantu E50</i>	<i>Grassfields Bantu</i>	<i>Bantu A25</i>	<i>Romance</i>

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.

	LOCUS OF A'-AGREEMENT		Languages
	CP	vP	
Type 1	YES	NO	Kilega, Kinande, Lubukusu, German, French
Type 2		YES	Duala, Kikuyu
Type 3	YES	YES	Chamorro, Medumba

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. nází	ú-kú-kít-ag-a	bubo
b.*nází	á-kú-kít-ag-a	bubo
c.*nází	ú-á-kú-kít-ag-a	bubo
1 who	1.AGR-1SM-Prog-do-Hab-FV	14that
‘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	bí-kulu	bi-á ²⁹ -kás-íl-é	mwámí	bi-kí	mu-mw-ílo
b. bá-bo	bí-kulu	b-á ³⁰ -kás-íl-é	mwámí	bi-kí	mu-mw-ílo
2-that	2-woman	2SM-V-give-PFV-FV	1chief	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	bí-á-kás-íl-é	bá-bo	bí-kulu	mw-ámí	mu-mw-ílo
b. *bi-kí	b-á-kás-íl-é	bá-bo	bí-kulu	mw-ámí	mu-mw-ílo
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-lí	bi-sóga
b. *bi-tondo	b-a-ku-ténd-a	úzo	mw-ána	ta-bí-lí	bi-sóga
8word	8.AGR-V-Prog-say-FV	1that	1-child	Neg-8SM-be	8-good
‘The words that that child is saying are not good’					

[Adapted from Carstens 2005: 19]

²⁹Kinyalolo (1991, 2003) analyzes this vowel ‘A’ as a default vowel in Kilega. I gloss it as V

³⁰Kinyalolo (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-ní | kú -ta-ku-yan-ág-á | b-ána | mu-ki-ndi |
| b. | * kú-ní | 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-ni | bú -mú-ná-kúbul-íl-é | mázi |
| b. | * bú-ni | b-a-mú-ná-kúbul-íl-é | mázi |
| | 14-how | 14.AGR-IIPL-Mod-pour-PFV-FV | 6water |
| | '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-kí | bi -á-ténd-ílé | b-ána | bi -á-gúl-ílé | 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 Hypothesis³¹ (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

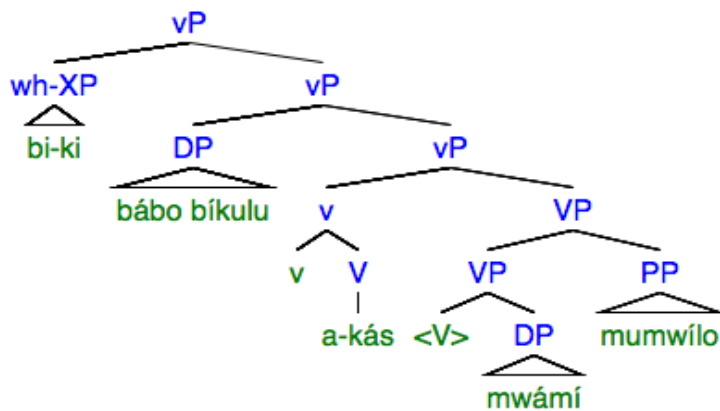
³¹ A mechanism whereby the phi-features are shared between a head and its specifier (Chomsky 1986, Koopman 1987, Carstens and Kinyalolo 1989, Kinyalolo 1991)

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} :

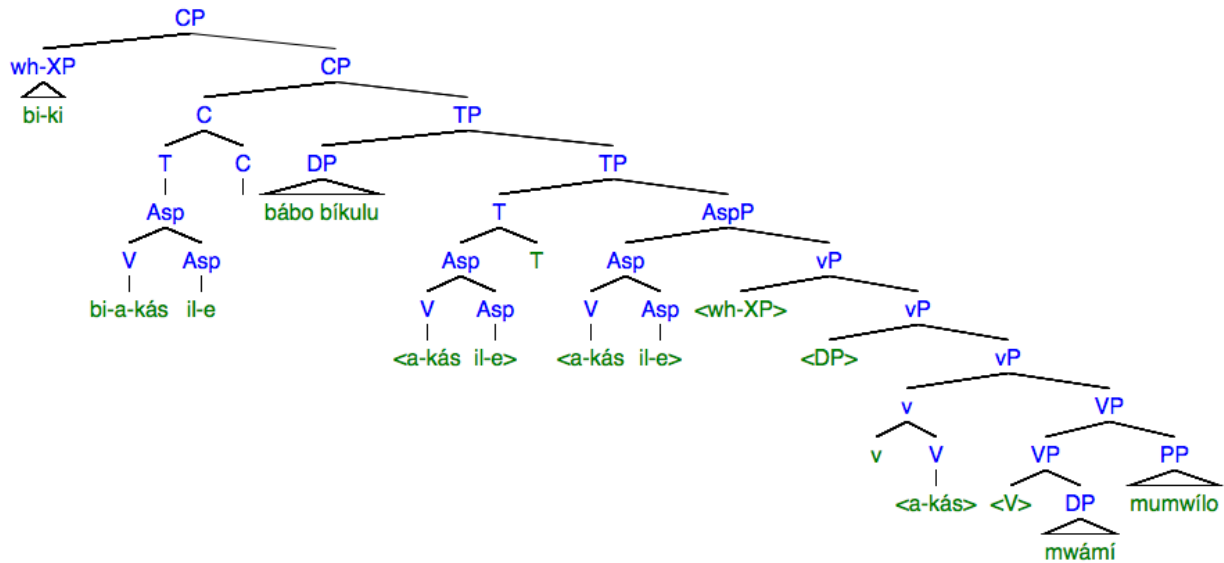
(86) Bantu ϕ_{EPP} : $\mu\phi$ -features have EPP features, in Bantu. [Carstens 2005:6]

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



b. CP phase



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) a. Kambale **a-**langira Marya *Kinande*
 Kambale 3SG-saw Mary
- ‘Kambale saw Mary’
- b. ***iyondi** yo **a-**langira Marya
 1who 1REL 3SG- saw Mary
 [It is who that saw Mary?]
- c. **iyondi** yo **u-**langira Marya
 1who 1REL AGR-saw Mary
 ‘It is who that saw Mary?’
- [Schneider-Zioga 2007:1]

- (89) a. Wafula **a**-a-kw-a *Lubukusu*
 1Wafula 1-pst-fall-fv
 ‘Wafula fell.’
- b. ***Naanu** **a**-w-a-kw-a?
 who AGR-1-pst-fall-fv
 ‘Who fell?’ [Adapted from Wasike 2007]
- c. **Naanu** **o**-w-a-kw-a?
 who AGR-1-pst-fall-fv
 ‘Who fell?’ [Wasike 2007:2, p 16]

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 Lubukusu³² 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

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 WH.COPY 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 WH.COPY 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 WH.COPY 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?'
- 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?'

b. **L'homme** a qui a téléphoné ton ami ...
'The man to whom has phoned your friend ...'

c. Quel beau **visage** a cette personne!
'what nice face has this person'

d. C'est à **Jean** qu'a téléphoné ton ami
'It is to John that has phoned your friend'

[Kayne and Pollock 2001:3]

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.

- (99) a. Qui a-t-elle dit que Paul avait vu?
 who has-C-3SG.FEM say C Paul had see
 ‘Who did she say that Paul has seen?’
- b. **Qui** a-t-elle dit [qu’ avait vu Paul]?
 who has-C-3SG.FEM say C had see Paul
 ‘*Who did she say that had seen Paul?’
- (100) a. **Avec qui** croit-elle que Marie a soupé?
 with who think-3SG.FEM C Marie has dine
 ‘Who does she think that Marie has dined with?’
- b. **Avec qui** croit-elle [qu’ a soupé Marie]?
 with who think-3SG.FEM C has dined Marie
 ‘*Who does she think that has dined Marie with?’ [Kayne and Pollock 1978:13]
- (101) a. **L’homme** qu’ elle a dit que Paul avait vu s’appelle Georges.
 the man C 3SG.FEM has say C Paul had see name Georges
 ‘The man that she said that Paul had seen is named Georges.’
- b. **L’homme** qu’ elle a dit [qu’ avait vu Paul s’appelle Georges].
 the man C 3SG.FEM has say C had see Paul name Georges
 ‘*The man that she said that had seen Paul is named Georges.’
- (102) a. **L’homme** avec lequel je crois que Marie a soupé s’appelle Georges.
 the man with whom 1SG think C Marie has dine name Georges
 ‘The man who I think that Marie has dined with is named Georges.’
- b. **L’homme** avec lequel je crois qu’ a soupé Marie s’appelle Georges.
 the man with whom 1SG think C has dine Marie named Georges
 ‘*The man who I think that has dined Marie with is named Georges.’ [Kayne and Pollock 1978:14]

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.

	LOCUS OF A'-AGREEMENT		Languages
	CP	vP	
Type 1	YES	NO	Kilega, Kinande, Lubukusu, German, French
Type 2	NO	YES	Duala, Kikuyu
Type 3	YES	YES	Chamorro, Medumba

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 (\downarrow) is not deleted, it is realized to the right of the first complement following the verb (in this case *mòtèé* '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)	Kàriòkii	á- \downarrow tém-íré	mòtèé \downarrow
Source	LLLLH- \downarrow	HLHH- \downarrow	LL
Output	LLLLH	H- \downarrow HHH	LLH \downarrow
	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 *mòtè* '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	ò- tèm-íré	mòtè?
Source	HL	LLHH- \downarrow	LL
Output	HL	LLHH- \emptyset	LL
	Foc-who	1SM-cut-PFV	tree
	'who cut a tree?'		

[Clements 1979: 3b]

(105) Subject focus movement

	né	Káriòkíí	ó-tém- [↓] íré	mò-tè	
Source	H	LLLLH- [↓]	LLHH- [↓]	LL	
Output	H	HLLLH	HH [↓] HH-∅	LL	
	Foc	kariuki	1SM-cut-PFV tree		
	‘It’s Kariuki (that) cut a tree’				[Clements 1979: 3c]

(106) Subject relativization

	mòndò	ò-rìàá	ó-tém- [↓] íré	mòtè	
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 *ε:riré* ‘teel’ shifts over to *Ka:nake* (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)	Kàmàú	é:- [↓] r-íré	Kà:náké	áté	Káriókí [↓]	á-tém-íré	mótèé.
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	é:-↓r-íré	Kà:náké	átè	ò-tèm-íré	mòtè
Source	HL	LLH	H↓HH-↓	LHH	LL	LLHH-↓	LL
Output	HL	LLH	H↓HH-∅	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-bodi	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. **nja** a-bodi Kuo moni?
 who SM-give Kuo money
 ‘who gave Kuo the money?’
- b. ***nja** a-bodi **no** Kuo moni
 who SM-give A'.PRT Kuo money
 [who gave Kuo the money?]

[Epée 1976: 4]

It is clear from (110) that the occurrence of the A'-particle *no* with subject extraction renders the resulting sentence ungrammatical. But unlike subject extractions, the A'-particle *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** — kalati kiele
that man Foc Kuo SM-give A'.PRT book yesterday
‘It's that man Kuo gave a book to yesterday.’

[Epée 1976: 1c]

(112) *Indirect object*

- kalati** nde Kuo a-bodi **no** nu moto — kiele
book Foc Kuo SM-give A'.PRT that man yesterday
‘It's a book Kuo gave to that man yesterday.’

[Epée 1976: 1d]

(113) *Time adjunct*

- kiele** nde Kuo a-bodi **no** nu moto kalati —
yesterday Foc Kuo SM-give A'.PRT that man book
‘It's yesterday that Kuo gave a book to that man.’

[Epée 1976: 1e]

The A'-particle *no* does not appear with in-situ construals as illustrated in the following wh-questions examples.

(114) a. *In-situ Object*

- Kuo a-po **njika** ponda?
Kuo SM-come WH- time
‘At what time will Kuo arrive?’

b. *Ex-situ object*

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*

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*

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*

ni	kalati	nde	na	ta	no	na	kwalane
that	book	Foc	I	past	A'.PRT	I	tell
				Kuo	na	a-angamene	wana —
				Kuo	that	SM-must	bring
‘That's the book I told Kuo that he should bring.’							[Epée 1976: 8]

(118) *Time Adjunct*

njika **ponda** o mende **no** pula na
WH- time you will A'.PRT want that
Kuo a-keke wanea wa mo —?
Kuo SM-try bring you it
'When will you want Kuo to try to bring it to you?' [Epée 1976: 11a]

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

kí ni Adé fọ
 WH Foc A. break
 ‘What did Adé break?’

b. Adjunct extraction: Preverbal marker

Nítorí kí ni Adé ɕe fọ àwo
 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.

	LOCUS OF A'-AGREEMENT		Languages
	CP	vP	
Type 1	YES	NO	Kilega, Kinande, Lubukusu, German, French
Type 2	NO	YES	Duala, Kikuyu
Type 3	YES	YES	Chamorro, Medumba

Table 3. 10: Type 3 Phasal-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 constructions 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 C_{REL} AGR.NOM.sell the car
 ‘Did you see the woman who sold the car?’
- (125) hu-fahan **i** **kareta** ni **binde-nña** si Maria
 Agr-buy the car C_{REL} 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** **sin**angane-**nña** si Joaquin nu hagu **binde-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]

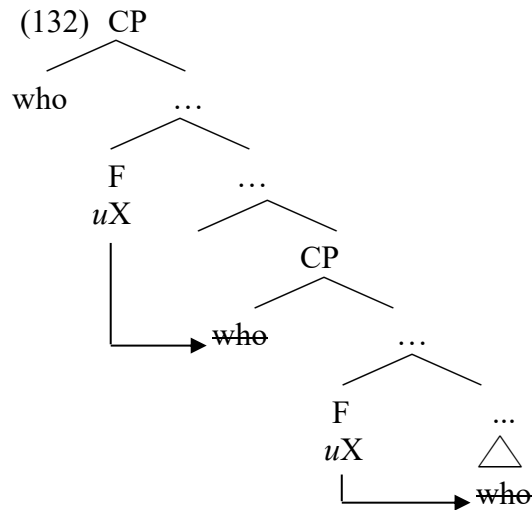
With regard to A'-agreement with C, Reintges et al. (2006) argue that Chamorro operator-C agreement registers the category type of the moved XP as well as its operator feature (the feature that identifies it as an interrogative phrase, a relative DP, or a focus). According to them, this agreement pattern 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.

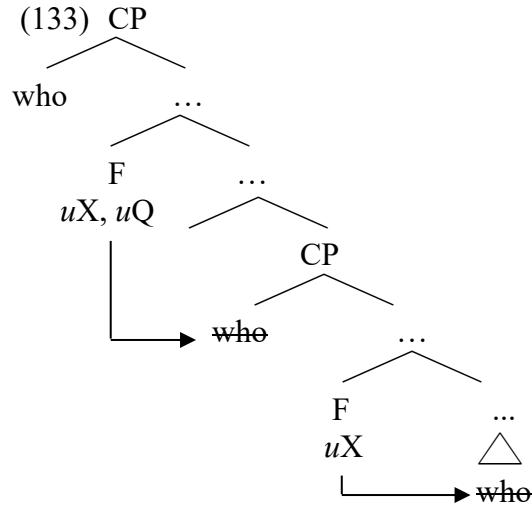
- (130) **amanu na** *ha-tagu'* *si Dolores* *i lahi-ña*
 where C.AGR Wh.Obj₂.Agr-order Dolores the son-Agr
pära u-tohgi
 FUT Agr-stand
 'Where did Dolores tell her son that he should stand?' [Reintges et al. 2006: 10]
- (131) **manggi** *i gima änai* *ma-sangani* *i päli'*
 where the house C.Agr wh.Obj₂.Agr-tell 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.



[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).



[Reintges et al. 2006:12]

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-dzúùn* 'see' and T *nóò?* surface with an Hl tone melody.

(134) Wh-movement

a.	á	wú	Wàtét	nóò?	ⁿ -dzúùn	á?
	FOC	WH	Watat	AGR.AUX.T2	N-AGR.see	C.Q.H
				T.HL	V.HL	
	‘Who did Watat see?’					

- b. ***á wú** Wàtét nó? jún á?
 FOC WH Watat AUX.T2 see C.Q.H
 T.H V.H
 ‘Who did Watat see?’

(135) Focus movement

- a. **á Nùḡè** Wàtét nó? ^{n-dzùùn} lá
 FOC Nuga Watat AGR.AUX.T2 N-AGR.see C.-Q
 T.HL V.HL
 ‘Nuga_{FOC} Watat saw’
- b. ***á Nùḡè** Wàtét nó? jún lá
 FOC Nuga Watat Aux see C.-Q
 T.H V.H
 ‘Nuga_{FOC} Watat saw’

(136) Relativization

- a. **má-dzùúm** zè Wàtét nó? ^{n-dzùùn} 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-dzùúm** zè Wàtét nó? jún lá ...
 SG-male.H C.CL1 Watat AUX see C.-Q
 T.H V.H
 ‘The boy that Watat saw...’

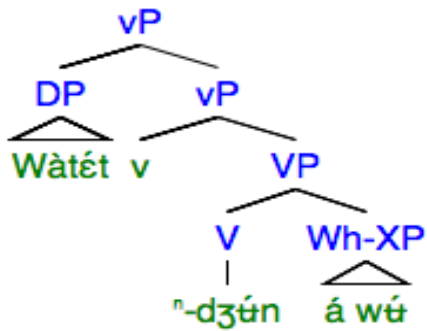
(135) is a step-by-step derivation of an ex-situ wh-question in Medumba.

(137) Step-by-step derivation of an object wh-XP

I. vP phase

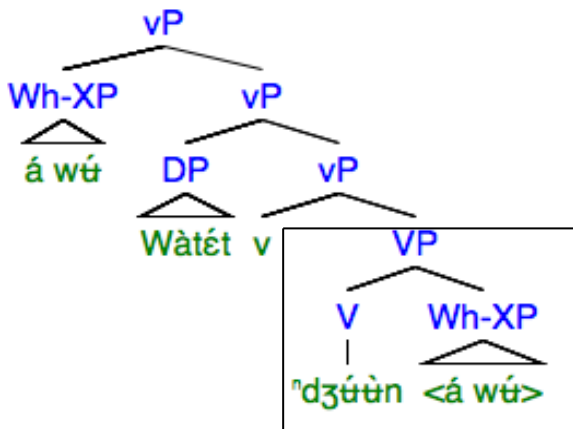
(i) Merge <DP;v> and merge <V; Wh-XP>

[vP [DP Wàtét] [vP [v] [VP [V ʰdʒúùn] [Wh-XP á wú]



(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.

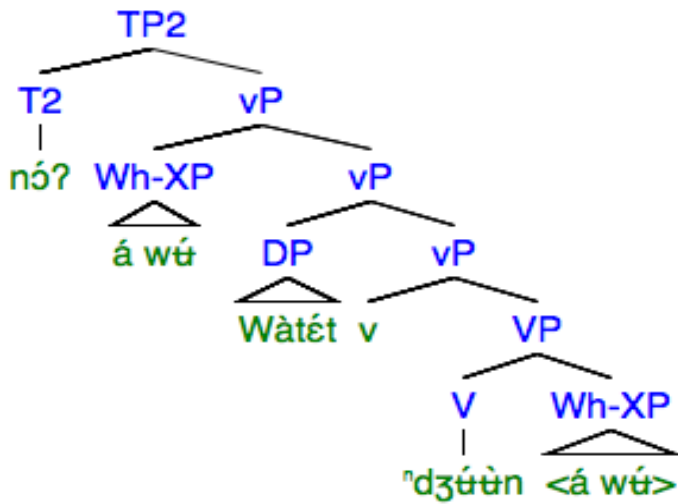
[vP [Wh-XP á wú][vP [DP Wàtét] [vP [v] [VP [V ʰdʒúùn] [Wh-XP <á wú>]



II. CP phase

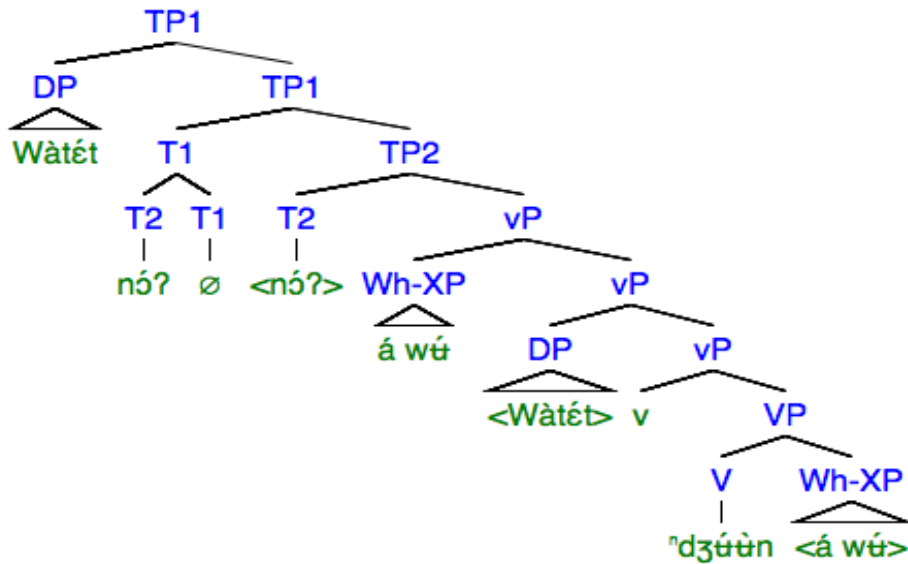
(i) Merge <T2;vP>

[TP2 [T2 nó?] [vP [Wh-XP á wú][vP [DP Wàtét] [vP [v] [VP [V ndzúùn] [Wh-XP <á wú>]]]]]



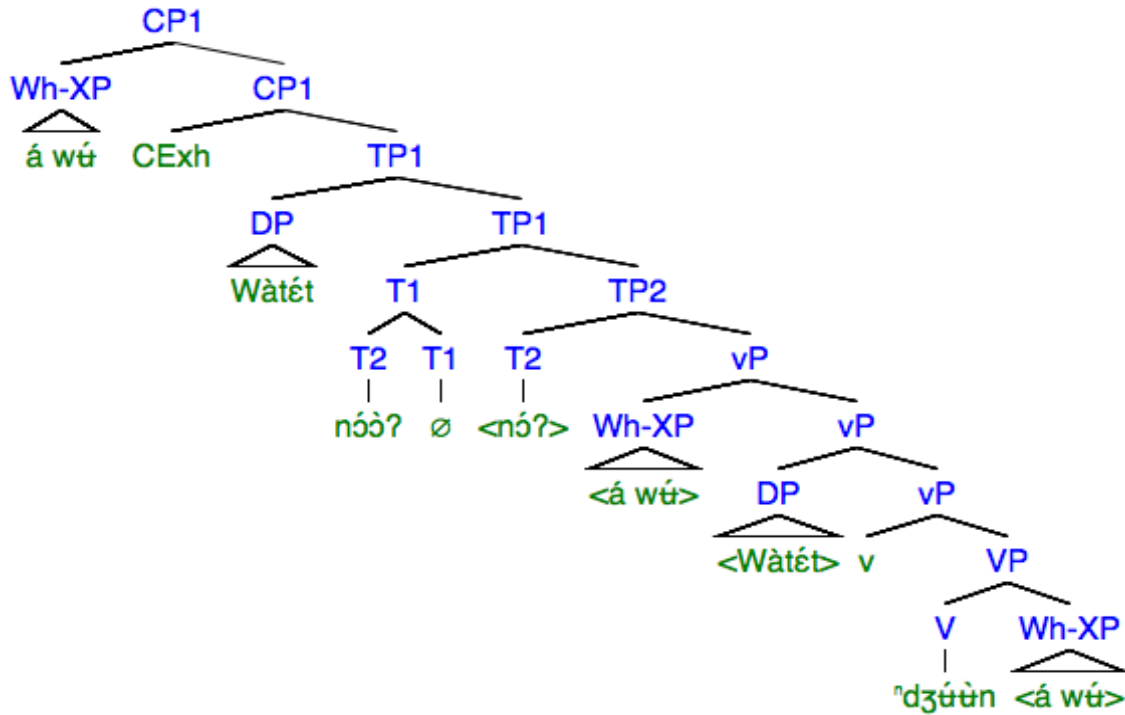
(ii) Merge <T1;TP2>; Re-merge DP subject to Spec-T and move T2 to T1

[TP1 [DP Wàtét] [TP1 [T1 [T2 nó?] [T1 ∅]] [TP2 [T2 nó?] [vP [Wh-XP á wú][vP [DP <Wàtét>] [vP [v] [VP [V ndzúùn] [Wh-XP <á wú>]]]]]]]



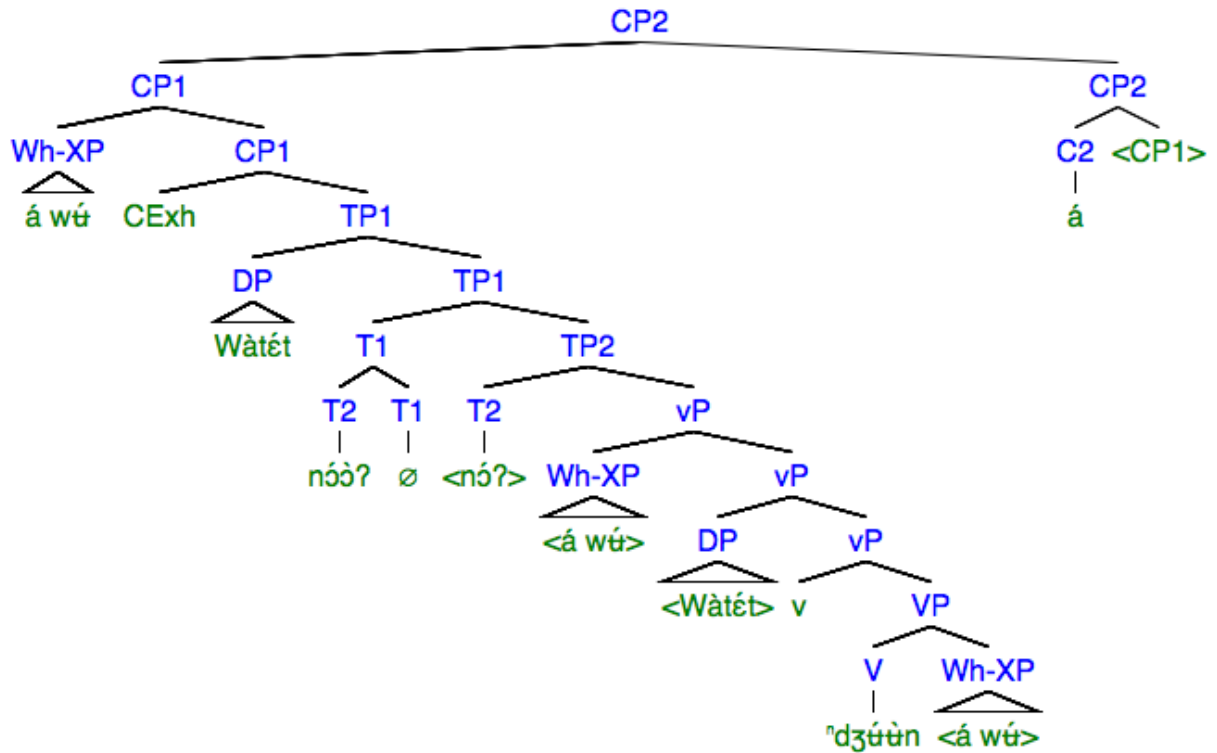
(iii) Merge <C; TP1> and re-merge Wh-XP to Spec-C; A'-agreement with c spelled out as HL on T.

[CP1 [Wh-XP á wú] [CP1 [CEXh] [TP1 [DP Wàtét] [TP1 [T1 [T2 nòò?] [T1 Ø]] [TP2 [T2 <nó?>] [vP [Wh-XP <á wú>] [vP [DP <Wàtét>] [vP [v] [VP [V n'dzúùn] [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 Wátét] [TP1 [T1 [T2 nòò?] [T1 Ø]] [TP2 [T2 <nó?>] [vP [Wh-XP <á wú>] [vP [DP <Wátét>] [vP [v] [VP [V ndzúùn] [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 surfacing 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 *nóʔ*, *fə* and *lù* always show A'-agreement when they appear in A'-construals in Medumba. This is shown in (1) for the temporal auxiliary *nóʔ*; in (2) for the temporal auxiliary *fə*; and in (3) for the temporal auxiliary *lù*. The (a) examples illustrate the base line sentence and the (b) examples, the A'-context.

- (1) a. Nùʔgè **nóʔ** ɲké ↓ⁿdʒwén
 Nuga AUX.T2 fry chips
 T.H V.H
 ‘Nuga fried the chips (long time ago)’
- b. **á** ↓ⁿ**dʒwén** Nùʔgè nóʔ? ɲ-kéè 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. Nùʔgè **fə** ɲké ↓ⁿdʒwén
 Nuga AUX.T3 N-fry chips
 T.L V.H
 ‘Nuga fried the chips (yesterday)’
- b. **á** ↓ⁿ**dʒwén** Nùʔgè fəó ɲ-kéè 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. Nùʔgè **lù** ɲké ↓ⁿdʒwén
 Nuga AUX.T3 N-fry chips
 T.L V.H
 ‘Nuga fried the chips (recently)’

- b. **á** **↓ⁿɔ́w'én** Nùⁿgè lùú ɲ-kéè lá
 FOC chips Nuga AGR. AUX.T3 N-AGR.fry C.-Q
 T.LH V.HL
 Lit.: ‘The chips_{FOC} Nuga fried (recently)’

4.1.1.2 Observation 2: Some temporal auxiliaries show optional A'-agreement

The temporal auxiliaries *zí*, *tʃǎk*, *jók*, and *ɣù* show A'-agreement in retrospective contexts (compatible with past) and no A'-agreement in prospective contexts (compatible with simple future) with *à?*. This is illustrated in (4) for the temporal auxiliary *zí*; in (5) for the temporal auxiliary *tʃǎk*; in (6) for the temporal auxiliary *jók*; and in (7) for the temporal auxiliary *ɣù*. 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** **↓ⁿɔ́w'én** Nùⁿgè zí ɲ-kéè lá
 FOC chips Nuga AUX.α N-AGR.fry C.-Q
 H V.HL
 Lit.: ‘The chips_{FOC} Nuga fried last night’

- b. **á** **↓ⁿɔ́w'én** Nùⁿgè zǐɪ ɲ-kéè lá
 FOC chips Nuga AGR. AUX.α N-AGR.fry C.-Q
 HL V.HL
 Lit.: ‘The chips_{FOC} Nuga fried last night’

- (5) a. ***á** **↓ⁿɔ́w'én** Nùⁿgè tʃǎk ɲ-kéè lá
 FOC chips Nuga AUX.β N-AGR.fry C.-Q
 H V.HL
 Lit.: ‘The chips_{FOC} Nuga fried earlier this morning’

- b. **á** **↓ⁿɔ́w'én** Nùⁿgè tʃǎk ɲ-kéè lá
 FOC chips Nuga AGR. AUX.β N-AGR.fry C.-Q
 HL V.HL
 Lit.: ‘The chips_{FOC} Nuga fried earlier this morning?’

- (6) a. ***á** **↓ⁿɔ́w'én** Nùⁿgè jók ɲ-kéè lá
 FOC chips Nuga AUX.γ N-AGR.fry C.-Q
 H V.HL
 Lit.: ‘The chips_{FOC} Nuga fried earlier today’

b. **á** **↓ⁿɔ́w'én** Nùⁿgè **jók** ⁿ-kéè lá
 FOC chips Nuga AGR. AUX.γ N-AGR.fry C.-Q
 HL V.HL

Lit.: ‘The chips_{FOC} Nuga fried earlier today’

(7) a. ***á** **↓ⁿɔ́w'én** Nùⁿgè γù ⁿ-kéè lá
 FOC chips Nuga AUX.δ N-AGR.fry C.-Q
 L V.HL

Lit.: ‘The chips_{FOC} Nuga fried immediately (after whatever happened)’

b. **á** **↓ⁿɔ́w'én** Nùⁿgè **γúù** ⁿ-kéè lá
 FOC chips Nuga AGR.AUX.δ N-AGR.fry C.-Q
 HL V.HL

Lit.: ‘The chips_{FOC} Nuga fried immediately (after whatever happened)’

The preceding examples establish that the temporal auxiliaries *zí*, *tʃók*, *jók*, and *γù* 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*, *tʃók*, *jók*, and *γù* do not show A'-agreement when they are construed in prospective context with *à?* (the (a) examples). The presence of A'-agreement in this context leads to ungrammaticality (the (b) examples).

(8) a. **á** **↓ⁿɔ́w'én** Nùⁿgè à? zí ⁿ-kéè lá
 FOC chips Nuga IRR AUX.α N-AGR.fry C.-Q
 L H V.HL

Lit.: ‘The chips_{FOC} Nuga will fry’

b. ***á** **↓ⁿɔ́w'én** Nùⁿgè à? zíi ⁿ-kéè lá
 FOC chips Nuga IRR AGR.AUX.α N-AGR.fry C.-Q
 L HL V.HL

Lit.: ‘The chips_{FOC} Nuga will fry’

(9) a. **á** **↓ⁿɔ́w'én** Nùⁿgè à? tʃók ⁿ-kéè lá
 FOC chips Nuga IRR AUX.β N-AGR.fry C.-Q
 L H HL

Lit.: ‘The chips_{FOC} Nuga will fry tomorrow’

- b. ***á** **↓ⁿɔ́wén** Nùⁿgè àʔ tʃòk ɲ-kéè lá
 FOC chips Nuga IRR AGR.AUX.β N-AGR.fry C.-Q
 L HL V.HL
 Lit.: ‘The chips_{FOC} Nuga will fry tomorrow’
- (10) a. **á** **↓ⁿɔ́wén** Nùⁿgè àʔ jók ɲ-kéè lá
 FOC chips Nuga IRR AUX.γ N-AGR.fry C.-Q
 L H V.HL
 Lit.: ‘The chips_{FOC} Nuga fried earlier today’
- b. ***á** **↓ⁿɔ́wén** Nùⁿgè àʔ jók ɲ-kéè lá
 FOC chips Nuga IRR AGR.AUX.γ N-AGR.fry C.-Q
 L HL V.HL
 Lit.: ‘The chips_{FOC} Nuga fried earlier today’
- (11) a. **á** **↓ⁿɔ́wén** Nùⁿgè àʔ γù ɲ-kéè lá
 FOC chips Nuga IRR AUX.δ N-AGR.fry C.-Q
 L L V.HL
 Lit.: ‘The chips_{FOC} Nuga will fry immediately (after whatever happened)’
- b. ***á** **↓ⁿɔ́wén** Nùⁿgè àʔ γúù ɲ-kéè lá
 FOC chips Nuga IRR AGR.AUX.δ N-AGR.fry C.-Q
 L HL V.HL
 Lit.: ‘The chips_{FOC} Nuga will fry immediately (after whatever happened)’

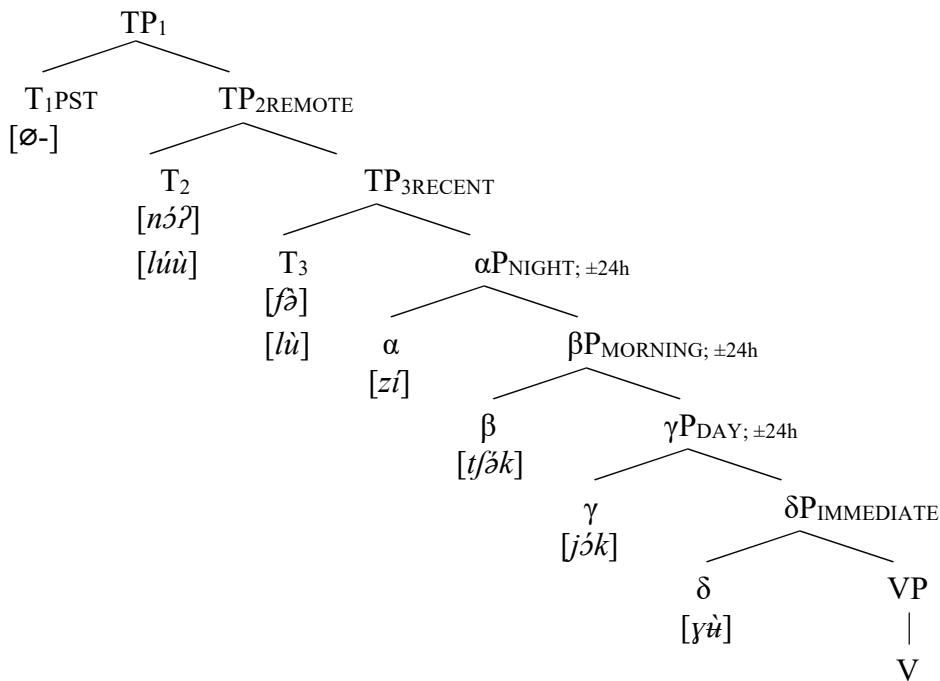
4.1.1.3 Observation 3: Some temporal auxiliaries are incompatible with A'-agreement

The temporal auxiliary *lúù* is incompatible with A'-agreement and does not appear in A'-contexts. However, *àʔ* 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. Nùⁿgè lúù ɲ-ké ↓ⁿɔ́wén
 Nuga AUX.T2 N-fry chips
 T.HL V.H
 ‘Nuga fried the chips (long long time ago)’
- b. ***á** **↓ⁿɔ́wén** Nùⁿgè lúù ɲ-kéè lá
 FOC chips Nuga AUX.T2 N-AGR.fry C.-Q
 T.HL V.HL
 Lit.: ‘The chips_{FOC} Nuga fried (long long time ago)’

- T1 hosts the zero past tense morpheme
- T2 hosts the retrospective temporal shifters *nóʔ* and *lúù* used for remote past
- T3 hosts the retrospective temporal shifters *lù* and *fə* used for recent past
- α hosts the tense-shifter *zi* construed in retrospective as “last night” past
- β hosts the tense-shifter *tʃə́k* construed in retrospective as “this morning” past
- γ hosts the tense-shifter *jók* construed in retrospective as “today” past
- δ hosts the tense shifter *yù* construed in retrospective as immediate past

(14) **Retrospective context**

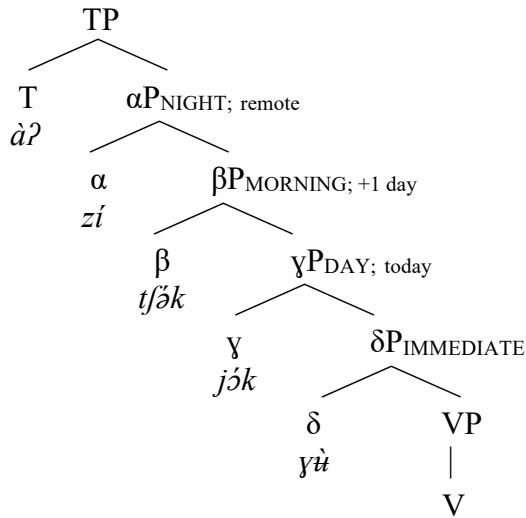


α , β and γ are used to describe events happened within $\pm 24h$. In retrospective, they are not additive and behave as unique restrictors and so, are predicted to not co-occur. The above structure predicts α , β and γ to be compatible with prospective contexts where they behave as additive restrictors and so, can co-occur:

- α in prospective is construed as remote future

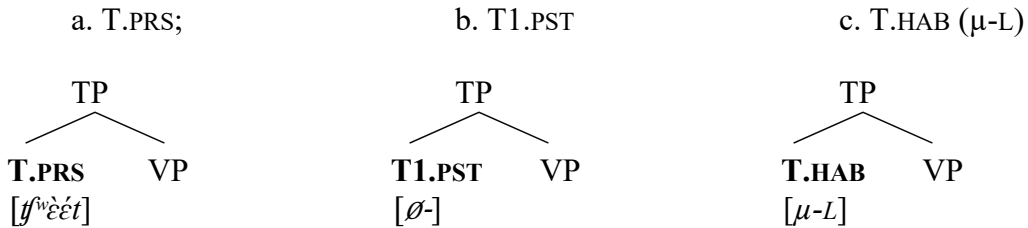
- β in prospective is construed as “+1day” future
- γ in prospective is construed as “today” future
- δ in prospective is construed as immediate future

(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 *fʷɛ̀ɛ̀t* 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. Nùmí	nɔʔ	lù	ɱ-ké	↓ndʒwén
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 fə*

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. Nùmí	nɔʔ	fə	ɱ-ké	↓ndʒwén
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 + α.night zí*

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:

Nùmí	nɔʔ	zí	ɱ-ké	↓ndʒwén
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 tʃɔk*

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 wedding**, Numi fried the chips. So A says:

Nù mí	nɔʔ	tʃɔk	ɱ-ké	↓ndʒwén
Numi	AUX.T2	AUX.β	N -fry	chips
	T.H	H	V.H	

‘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 wedding**, Numi fried the chips. So A says:

Nù mí	nɔʔ	jɔk	ɱ-ké	↓ndʒwén
Numi	AUX.T2	AUX.γ	N -fry	chips
	T.H	H	V.H	

‘Numi fried the chips (during the day in a remote past)’

(22) *Remote T2 nɔʔ + 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 **immediately after Numi finished singing**, he fried the chips. So A says:

Nù mí	nɔʔ	yù	ɱ-ké	↓ndʒwén
Numi	AUX.T2	AUX.δ	N-fry	chips
	T.H	L	V.H	

‘Numi fried the chips (immediately after whatever happened in a remote past)’

(23) *Remote T2 nɔʔ + recent T3 lù + α.night zí + 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:

Nùmí	nɔʔ	lù	ⁿ-zí	ⁿ-gyù	ⁿ-ké	↓ndʒwén
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)’

(24) *Remote T2 nɔʔ + recent T3 lù + β.24hrs.morning ʃók + 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:

Nùmí	nɔʔ	lù	ⁿ-ʃók	ⁿ-gyù	ⁿ-ké	↓ndʒwén
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)’

(25) *Remote T2 nɔʔ + recent T3 lù + γ.today jók + 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:

Nùmí	nɔʔ	lù	ⁿ-dʒók	ⁿ-gyù	ⁿ-ké	↓ndʒwén
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)’

(26) *Remote T2 nɔʔ + recent (yesterday) T3 fə + α.night zɪ + 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 **the day before the wedding, immediately after Numi finished singing at night**, he fried the chips.

So A says:

Nùmí	nɔʔ	fə	ⁿ-zɪ	ⁿ-gyù	ⁿ-ké	↓ndʒwén
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 the day before in a remote past)’

(27) *Remote T2 nɔʔ + recent (yesterday) T3 fə + β.24hrs.morning tʃɔk + 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 **the day before the wedding, immediately after Numi finished singing in the morning**, he fried the chips. So A says:

Nùmí	nɔʔ	fə	ⁿ-tʃɔk	ⁿ-gyù	ⁿ-ké	↓ndʒwén
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)’

(28) *Remote T2 nɔʔ + recent (yesterday) T3 fə + γ.today jɔk + 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 **the day before the wedding, immediately after Numi finished singing during the day**, he fried the chips. So A says:

Nùmí	nɔʔ	fə	ⁿ-dʒɔk	ⁿ-gyù	ⁿ-ké	↓ndʒwén
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 the day before in a remote past)’

(29) *Recent T3 lù + α.night zí + δ.immediate yù*

Nùmí	lù	n-zí	n-gyù	n-ké	↓ndʒwén
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 ʃók + δ.immediate yù*

Nùmí	lù	n-ʃók	n-gyù	n-ké	↓ndʒwén
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 jók + δ.immediate yù*

Nùmí	lù	n-ɖók	n-gyù	n-ké	↓ndʒwén
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 + α.night zí + δ.immediate yù*

Nùmí	fə	n-zí	n-gyù	n-ké	↓ndʒwén
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 ʃók + δ.immediate yù*

Nùmí	fə	n-ʃók	n-gyù	n-ké	↓ndʒwén
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 jók + δ.immediate yù*

Nùmí	fə	n-ɖók	n-gyù	n-ké	↓ndʒwén
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.

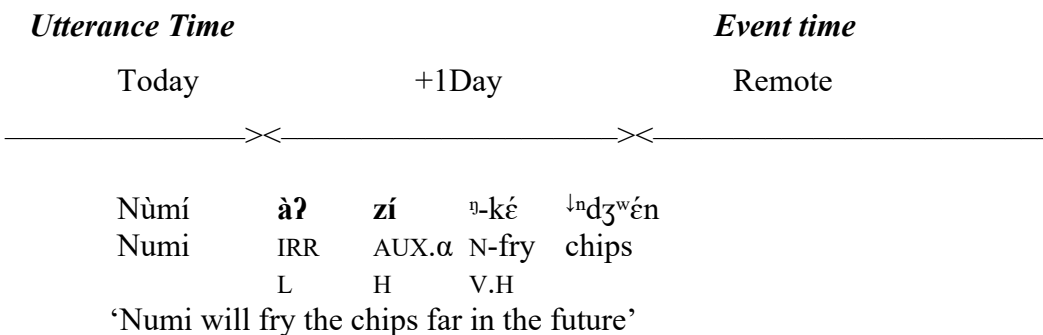
- (35) a. *Nùmí fə n-dù n-ké ↓dʒwén
 Numi AUX.T3 N-AUX.T3 N-fry chips
- b. *Nùmí lù m-fə n-ké ↓dʒwén
 Numi AUX.T3 N-AUX.T3 N-fry chips

Although α , β and γ occupy different projection syntactically, semantically they are used for events happened within ± 24 h 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).

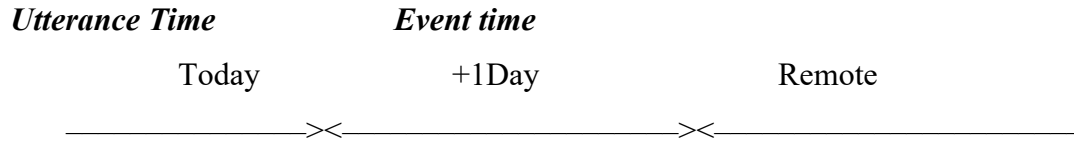
- (36) a. *Nùmí zí n-tʃók n-ké ↓dʒwén
 Numi AUX. α N-AUX. β N-fry chips
- b. *Nùmí zí n-dʒók n-ké ↓dʒwén
 Numi AUX. α N-AUX. γ N-fry chips
- c. *Nùmí tʃók n-dʒók n-ké ↓dʒwén
 Numi AUX. β N-AUX. γ N-fry chips
- d. *Nùmí zí n-tʃók n-dʒók n-ké ↓dʒwén
 Numi AUX. α N-AUX. β N-AUX. γ N-fry chips

However, when construed with the irrealis $\grave{a}?$ 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 $\grave{a}?$ and in (38) for the stacking context.

- (37) a. α .night zí



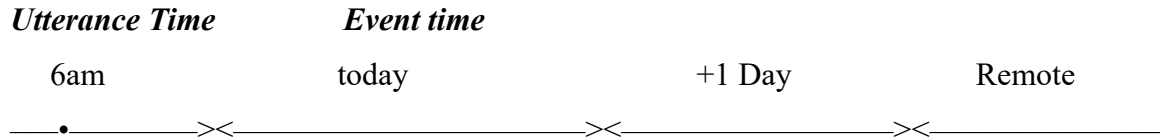
b. β.morning *tʃók*



Nùmí	àʔ	tʃók	ɱ-ké	↓ndʒwén
Numi	IRR	AUX.β	N-fry	chips
	L	H	V.H	

‘Numi will fry the chips tomorrow’

c. γ.today *jók*



Nùmí	àʔ	jók	ɱ-ké	↓ndʒwén
Numi	IRR	AUX.α	N-fry	chips
	L	H	V.H	

‘Numi will fry the chips later day’

(38) a. Nùmí **àʔ** **zí** **ɱ-tʃók** ɱ-ké ↓ndʒwén
 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. Nùmí **àʔ** **zí** **ɱ-dʒók** ɱ-ké ↓ndʒwén
 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. Nùmí **àʔ** **tʃók** **ɱ-dʒók** ɱ-ké ↓ndʒwén
 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. Nùmí **àʔ** **zí** **ɱ-tʃók** **ɱ-dʒók** ɱ-ké ↓ndʒwén
 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 *ké* ‘fry’ occurs without the nasal prefix, meaning that it has moved to T. In (39b), there is the presence of the present tense marker *fʷèét* in the structure and the verb now surfaces with the N-prefix (*ʷ-ké*). Structures are given in (40).

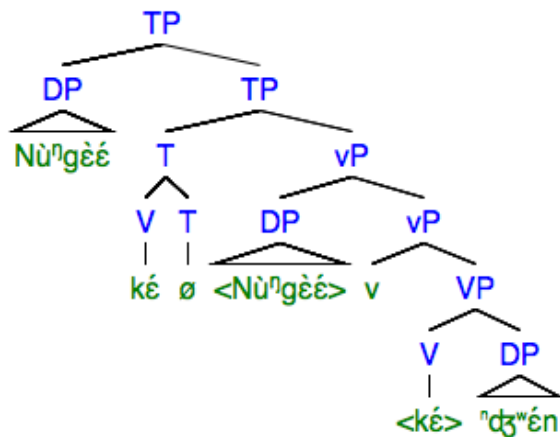
(39) a. No nasal prefix: V-to-T movement

Nùᵑgèé ʷké ʷdʒwén
 Nuga.H fry chips
 ‘Nuga fried the chips’

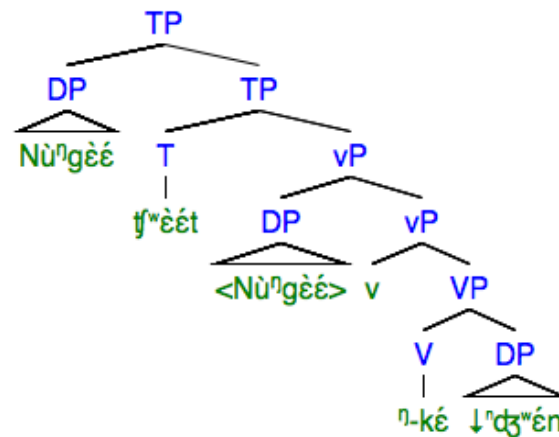
b. Nasal prefix: V in-situ in the presence of Aux

Nùᵑgèé fʷèét ʷ-ké ʷdʒwén
 Nuga.H PRES N-fry chips
 ‘Nuga is frying the chips right now’

(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 *kú* 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 *fʷɛ̀ét* 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).

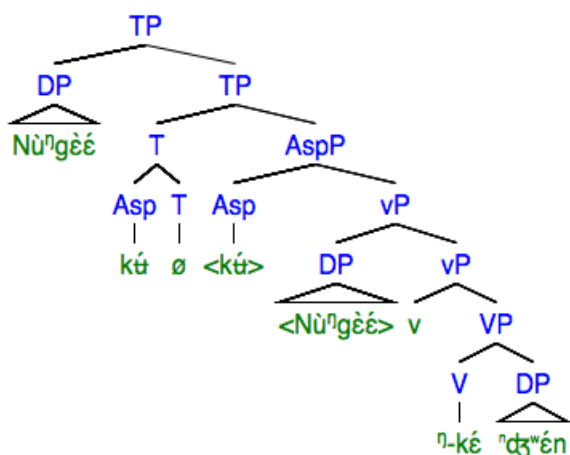
(41) a. No nasal prefix: Asp-to-T movement

Nùᵐgèé kú ᵐ-ké ᵐdʒwén
 Nuga.H IPFV N-fry chips
 ‘Nuga was frying the chips’

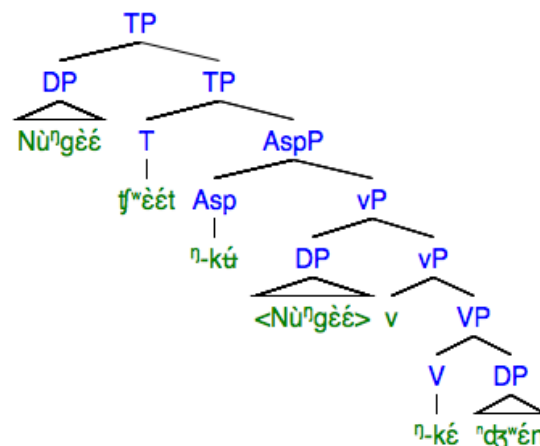
b. Nasal prefix: Asp in-situ in the presence of Aux

Nùᵐgèé fʷɛ̀ét ᵐ-kú ᵐ-ké ᵐdʒwén
 Nuga.H PRES N-IPFV N-fry chips
 ‘Nuga was frying the chips’

(42) a. Asp-to-T movement



b. Asp in-situ



Retrospective *nɔʔ* 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 *nɔʔ* 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).

(43) a. Nù^ŋgè nó? ↓ké ↓ⁿdʒwén
 Nuga AUX.T2 fry chips
 ‘Nuga fried the chips long time ago’

b. *Nù^ŋgè nó? ↓_n-ké ↓ⁿdʒwén
 Nuga AUX.T2 N-fry chips
 [Nuga fried the chips long time ago]

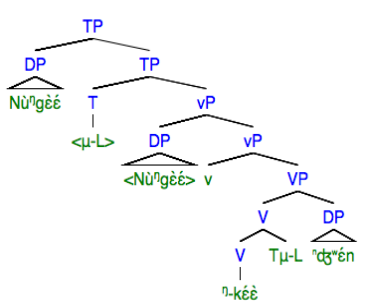
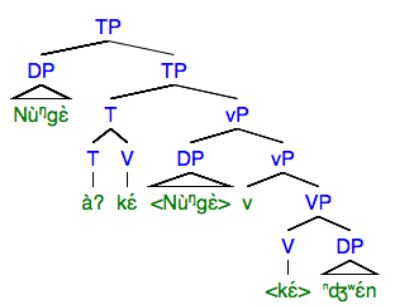
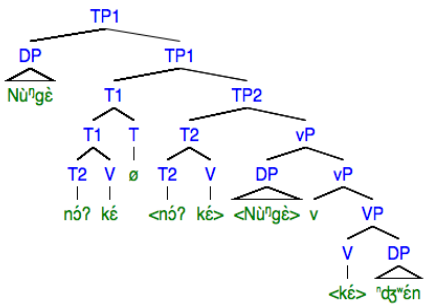
(44) a. Nù^ŋgè à? ké ↓ⁿdʒwén
 Nuga IRR fry chips
 ‘Nuga will fry the chips’

b. *Nù^ŋgè à? _n-ké ↓ⁿdʒwén
 Nuga IRR N-fry chips
 [Nuga will fry the chips]

(45) a. *Nù^ŋgèè kèè ↓ⁿdʒwén
 Nuga.H fry.HAB chips
 μ-L
 [Nuga habitually fries the chips]

b. Nù^ŋgèè _n-kèè ↓ⁿdʒwén
 Nuga.H N-fry.HAB chips
 μ-L
 ‘Nuga habitually fries the chips’

(46) a. retrospective *nó?*: **V-to-T** b. prospective *à?*: **V-to-T** c. L-tone habitual : **T-to-V**



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.

	ALLOMORPHS				FEATURE SPECIFICATION	GLOSS	e.g.
	HEAD IN-SITU		HEAD EX-SITU				
	-AGR	+AGR	-AGR	+AGR			
MOOD	àʔ	àʔ	n/a		Mood: Irrealis	will VERB	(46)
TENSE-MARKING	∅	χ	n/a		T1: Past	VERB-ed	(47)
	tʃʷɛ́ɛ́t	tʃʷɛ́ɛ́t	n/a		T1: Present	is VERB-ing now	(48)
	(μ-L)	χ	n/a		T1: Habitual	always VERB-s	(49)
TENSE-SHIFTING	n/a		lúù	χ	T2: Remote, Past	long, long ago	(50)
	n/a		nóʔ	nóòʔ	T2: Remote, Past, Specific	long ago	(52)
	ᵐdù	ᵐdùú	lù	lùú	T3: 24hrs, Past, Recent	recently	(53)
	ᵐfə	ᵐfəó	fə	fəó	T3: 24hrs, Past, Yesterday	yesterday	(54)
	ᵐzì	ᵐzìì	zì	zìì	α: Night	night/far in time	(55)
	ᵐtʃək	ᵐtʃəkək	tʃək	tʃəkək	β: Morning	this/tmr morning	(56)
	ᵐdzók	ᵐdzókək	jók	jókək	γ: Day	earlier/later today	(57)
	ᵐgyù	ᵐgyùù	yù	yùù	δ: Immediate	immediately	(58)
ASPECT-MARKING	∅	χ	n/a		Asp: Perfective	has/had VERB-en	(59)
	ᵐkú	ᵐkúù	kú	kúù	Asp: Imperfective	is/was VERB-ing	(60)
MAIN VERB	ᵐké	ᵐkéè	ké	kéè	V	‘fry’	(61)

Table 4. 1: Auxiliary allomorphy in Medumba

(47) shows that the irrealis àʔ keeps the same form in non-A' and in A'-contexts.

(47) **Irrealis àʔ**

a. -AGR

Nùᵐgè àʔ ké ↓ᵐɔ́wén
 Nuga IRR fry chips
 L V.H
 ‘Nuga will fry the chips’

b. +AGR

á kú Nùᵐgè àʔ kéè á
 FOC WH Nuga IRR fry C.Q.H
 L V.HL
 ‘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

Nù ^h gèé	↓ ké	↓ ⁿ dʒwén
Nuga.H	fry.PST	chips
	V.H	

‘Nuga fried the chips’

b. +AGR

á	kú	Nù ^h gè	kéè	á
FOC	WH	Nuga	AGR.fry.PST	C.Q.H
			V.HL	

‘What did Nuga fry?’

(49) shows that the present marker *tʃ^wéét* keeps the same form in non-A' and in A'-contexts.

(49) **Present *tʃ^wéét***

a. -AGR

Nù ^h gèé	tʃ^wéét	ⁿ -ké	↓ ⁿ dʒwén
Nuga.H	PRS	N-fry	chips
	t.LH	V.H	

‘Nuga is frying the chips right now’

b. +AGR

á	kú	Nù ^h gèé	tʃ^wéét	ⁿ -kéè	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

Nù ^h gèé	ɱ-kéè	↓ ⁿ ɕwén
Nuga.H	N-fry.HAB	chips
	μ-L	

‘Nuga habitually fries the chips’

b. +AGR

á	kú	Nù ^h gèé	ɱ-kéè	á
FOC	WH	Nuga.H	N-AGR.fry.HAB	C.Q.H
			V.HL	

‘What does Nuga habitually fry?’

(51) shows that the retrospective *lúù* 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 *lúù* in Medumba. Evaluative vowel lengthening with retrospective *lúù* marks degree quantification over temporal span as shown in (52).

(51) **Retrospective *lúù***

a. -AGR

Nù ^h gè	lúù	ké	↓ ⁿ ɕwén
Nuga	AUX.T2	fry	chips
	T.HL	V.H	

‘Nuga fried the chips long long time ago’

b. +AGR

*á	kú	Nù ^h gè	lúù	kéè	á
FOC	WH	Nuga	AGR.AUX.T2	AGR.fry	C.Q.H
			T.HL	V.HL	

[What did Nuga fry long long time ago?]

(52) Evaluative vowel lengthening

- a. Nù⁹gè **lúù** kéké ɲɔ́wén [short]
 Nuga AUX.T2 fry chips
 V.HL V.H
 ‘Nuga fried the chips long long time ago’
- b. Nù⁹gè **lúùùù** kéké ɲɔ́wén [medium]
 Nuga AUX.T2 fry chips
 T.HLLLL V.H
 ‘Lit.: Nuga fried the chips long long long time agoo’
- c. Nù⁹gè **lúùùùùùùù** kéké ɲɔ́wén [long]
 Nuga AUX.T2 fry chips
 T.HLLLLLLL V.H
 ‘Lit.: Nuga fried the chips long long long time agooooo’

(53) shows that the retrospective *nɔʔ* 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 (*nɔ̀ʔ*).

(53) Retrospective *nɔʔ*

a. -AGR

- Nù⁹gè **nɔʔ** kéké ɲɔ́wén
 Nuga AUX.T2 fry chips
 T.H V.H
 ‘Nuga fried the chips long time ago’

b. +AGR

- á kú Nù⁹gè **nɔ̀ʔ** ɲ-kéè 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 *ⁿ-dù* with an L-tone (54a-i), it surfaces as *ⁿ-dùú* 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

Nù ^{ng} è	lùù	ⁿ-dù	ⁿ-ké	↓ ⁿ dʒwén
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	Nù ^{ng} è	nóò?	ⁿ-dùú	ⁿ-kéè	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

Nù ^{ng} è	lù	ⁿ-ké	↓ ⁿ dʒwén
Nuga	AUX.T3	N-fry	chips
	T.L	V.H	

‘Nuga fried the chips recently’

ii. +AGR

á	kú	Nù ^{ng} è	lùú	ⁿ-kéè	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 *f̂*. In an in-situ context, it surfaces with the nasal prefix. While in a non-agreement context it surfaces as ^m-*f̂* with an L-tone (55a-i), in an A'-agreement context, it surfaces as ^m-*f̂* with an LH contour (55a-ii). When ex-situ (i.e head-movement to T), it surfaces

without the nasal prefix as *fâ* with an L-tone in a non-agreement context (55b-i) and as *fâá* with an LH contour in an A'-agreement context (55b-ii).

(55) Retrospective *fâ*

a. In-situ

i. -AGR

Nù ^u gè	lù	m-fâ	ɲ-ké	ɓ ^u ɗ ^w én
Nuga	AUX.T2	N-AUX.T3	N-fry	chips
	T.HL	T.L	V.H	

‘Nuga fried the chips the day before long long time ago’

ii. +AGR

á	kú	Nù ^u gè	nóò?	m-fâá	ɲ-kéè	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 the day before long time ago?’

b. Ex-situ

i. -AGR

Nù ^u gè	fâ	ɲ-ké	ɓ ^u ɗ ^w én
Nuga	AUX.T3	N-fry	chips
	T.L	V.H	

‘Nuga fried the chips yesterday’

ii. +AGR

á	kú	Nù ^u gè	fâá	ɲ-kéè	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 *zí*. In an in-situ context, it surfaces with the nasal prefix as ⁿ-*zí* with an H-tone in a non-agreement context (56a-i) and as ⁿ-*zì* 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 *zí* with an H-tone in a non-agreement

context (56b-i) and as *zî* with the HL A'-agreement tone melody in an A'-agreement context (56b-ii).

(56) Retrospective tense-shifting *zí*

a. In-situ

i. -AGR

Nù ^{ng} è	lù	n-zí	ɲ-ké	ɲ ⁿ ɖʒwén
Nuga	AUX.T2	N-AUX.α	N-fry	chips
	T.HL	H	V.H	

‘Nuga fried the chips at night long long time ago’

ii. +AGR

á	kú	Nù ^{ng} è	nóò?	n-zî	ɲ-kéè	á
FOC	WH	Nuga	AGR.AUX.T2	N-AGR.AUX.α	N-AGR.fry	C.Q.H
			T.HL	HL	V.HL	

‘What did Nuga fry at night long time ago?’

b. Ex-situ

i. -AGR

Nù ^{ng} è	zí	ɲ-ké	ɲ ⁿ ɖʒwén
Nuga	AUX.α	N-fry	chips
	H	V.H	

‘Nuga fried the chips last night’

ii. +AGR

á	kú	Nù ^{ng} è	zî	ɲ-kéè	á
FOC	WH	Nuga	AGR.AUX.α	N-AGR.fry	C.Q.H
			HL	V.HL	

‘What did Nuga fry last night?’

In an in-situ context, the retrospective time shifting *fʒək* surfaces with the nasal prefix as *n-fʒək* with an H-tone while in a non-agreement (57a-i), and as *n-fʒək* 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 *fǎk* with an H-tone in a non-agreement context (57b-i) and as *fǎ̀ǎ̀k* with the overwrite HL A'-agreement tone melody in an A'-agreement context (57b-ii).

(57) Retrospective tense-shifting *fǎk*

a. In-situ

i. -AGR

Nù ^u gè	lù	ⁿ-fǎk	ⁿ-ké	ᵐdʒwén
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

á	kú	Nù ^u gè	nóò?	ⁿ-fǎ̀ǎ̀k	ⁿ-kéè	á
FOC	WH	Nuga	AGR.AUX.T2	N-AGR.AUX.β	N-AGR.fry	C.Q.H
			T.HL	HL	V.HL	

‘What did Nuga fry in the morning long time ago?’

b. Ex-situ

i. -AGR

Nù ^u gè	fǎk	ⁿ-ké	ᵐdʒwén
Nuga	AUX.β	N-fry	chips
	H	V.H	

‘Nuga fried the chips in the morning’

ii. +AGR

á	kú	Nù ^u gè	fǎ̀ǎ̀k	ⁿ-kéè	á
FOC	WH	Nuga	AGR.AUX.β	N-AGR.fry	C.Q.H
			HL	V.HL	

‘What did Nuga fry in the morning?’

In an in-situ context, the retrospective time shifting *jǎk* surfaces with the nasal prefix as *ⁿ-dʒǎk* with an H-tone in non-agreement (58a-i), and as *ⁿ-dʒǎ̀ǎ̀k* 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 *jók* with an H-tone in a non-agreement context (58b-i) and as *jók* with the overwrite HL A'-agreement tone melody in A'-agreement context (58b-ii).

(58) Retrospective tense-shifting *jók*

a. In-situ

i. -AGR

Nùᵐgè	lù	ᵐ-dʒók	ᵐ-ké	ᵐ-dʒwén
Nuga	AUX.T2	N-AUX.γ	N-fry	chips
	T.HL	H	V.H	

‘Nuga fried the chips during the day long long time ago’

ii. +AGR

á	kú	Nùᵐgè	nóò?	ᵐ-dʒók	ᵐ-kéè	á
FOC	WH	Nuga	AGR.AUX.T2	N-AGR.AUX.γ	N-AGR.fry	C.Q.H
			T.HL	HL	V.HL	

‘What did Nuga fry during the day long time ago?’

b. Ex-situ

i. -AGR

Nùᵐgèé	jók	ᵐ-ké	ᵐ-dʒwén
Nuga.H	AUX.γ	N-fry	chips
	H	V.H	

‘Nuga fried the chips during the day’

ii. +AGR

á	kú	Nùᵐgè	jók	ᵐ-kéè	á
FOC	WH	Nuga	AGR.AUX.γ	N-AGR.fry	C.Q.H
			HL	V.HL	

‘What did Nuga fry during the day?’

(59) illustrates the retrospective tense-shifting *ɣɛ̀*. In an in-situ context, it surfaces with the nasal prefix as *ᵐ-ɣɛ̀* with an H-tone in a non-agreement context (59a-i) and as *ᵐ-ɣɛ̀* 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 *ɣɛ̀* with an H-tone in a non-agreement

context (59b-i) and as *ɣúú* with the HL A'-agreement tone melody in an A'-agreement context (59b-ii).

(59) Retrospective tense-shifting *ɣú*

a. In-situ

i. -AGR

Nù ^ɔ gè	lúù	ɱ-gyù	ɱ-ké	↓ ⁿ dʒwén
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

á	kú	Nù ^ɔ gè	nóò?	ɱ-gyúú	ɱ-kéè	á
FOC	WH	Nuga	AGR.AUX.T2	N-AGR.AUX.δ	N-AGR.fry	C.Q.H
			T.HL	HL	V.HL	

‘What did Nuga fry immediately long time ago?’

b. Ex-situ

i. -AGR

Nù ^ɔ gèé	ɣù	ɱ-ké	↓ ⁿ dʒwén
Nuga.H	AUX.δ	N-fry	chips
	H	V.H	

‘Nuga fried the chips immediately’

ii. +AGR

á	kú	Nù ^ɔ gè	ɣúú	ɱ-kéè	á
FOC	WH	Nuga	AGR.AUX.δ	N-AGR.fry	C.Q.H
			HL	V.HL	

‘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

Nù ⁹ gèé	↓ ké	↓ ⁿ dʒ ^w én
Nuga.H	fry.PST.PFV	chips
	V.H	

‘Nuga fried the chips’

b. +AGR

á	kú	Nù ⁹ gè	kéè	á
FOC	WH	Nuga	AGR.fry.PST.PFV	C.Q.H
			V.HL	

‘What did Nuga fry?’

(61) illustrates the imperfective aspectual auxiliary *kú*. In an in-situ context, it surfaces with the nasal prefix as ⁿ-*kú* with an H-tone in a non-agreement context (61a-i) and as ⁿ-*kúù* 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 *kúù* with the HL A'-agreement tone melody in an A'-agreement context (61b-ii).

(61) Imperfective *kú*

a. In-situ

i. -AGR

Nù ⁹ gè	lúù	ⁿ-kú	ⁿ -ké	↓ ⁿ dʒ ^w én
Nuga	AUX.T2	N-IPFV	N-fry	chips
	T.HL	H	V.H	

‘Nuga was frying the chips long long time ago’

ii. +AGR

á	kú	Nù ⁹ gè	nóò?	ⁿ-kúù	ⁿ -kéè	á
FOC	WH	Nuga	AGR.AUX.T2	N-AGR.IPFV	N-AGR.fry	C.Q.H
			T.HL	HL	V.HL	

‘What was Nuga frying long time ago?’

b. Ex-situ

i. -AGR

Nù ^ɔ gèé	kú	ɱ-ké	↓ ⁿ dʒwén
Nuga.H	IPFV	N-fry	chips
	H	V.H	

‘Nuga was frying the chips’

ii. +AGR

á	kú	Nù ^ɔ gè	kúù	ɱ-kéè	á
FOC	WH	Nuga	AGR.IPFV	N-AGR.fry	C.Q.H
			HL	V.HL	

‘What was Nuga frying?’

(62) shows that in an in-situ context, the main verb *ké* ‘fry’ surfaces with the nasal prefix as *ɱ-ké* with an H-tone in a non-agreement context (62a-i) and as *ɱ-kéè* 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 *kéè* with the HL A'-agreement tone melody in an A'-agreement context (62b-ii).

(62) Main verb *ké*

a. In-situ

i. -AGR

Nù ^ɔ gè	lúù	ɱ-ké	↓ ⁿ dʒwén
Nuga	AUX.T2	N-fry	chips
	T.HL	V.H	

‘Nuga fried the chips long long time ago’

ii. +AGR

á	kú	Nù ^ɔ gè	nóò?	ɱ-kéè	á
FOC	WH	Nuga	AGR.AUX.T2	N-AGR.fry	C.Q.H
			T.HL	V.HL	

‘What did fry long time ago?’

on the properties of the irrealis *à?* 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 intervals³³ 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) Context: What happened with Numi in the village?

A1: Nù mí ʒ^wín bòʔ
Numi buy house
'Numi bought the house'

A2: Nù mí lèén ʔèé-ŋ^wòʔnì
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.

Diagnostic	Unmarked Event V	What this tell us	
		Past	Perfective
Testing for ordering relation			
1. Default past interpretation	✓	✓	✓
Testing for past tense			
2a. Always construed as past	✓	✓	✗
2b. Required for context that force past	✓	✓	✗
3. Compatible with imperfective	✓	✓	✗
4. Uncompleted event time	✗	✓	✗

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 yaw.n.H
 ‘He yawned’
- b. Past imperfective: # á kú ⁿ-dʒégó
 3SG.H IPFV N-yaw.n.H
 ‘He was yawning’
- c. Present progressive: # á tʃ^wèét ⁿ-kú ⁿ-dʒégó
 3SG.H PRS N-IPFV N-yaw.n.H
 ‘He is yawning’
- d. Habitual: # á ⁿ-dʒéègó
 3SG.H N-yaw.n.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 yaw.n.H
 ‘He yawned’
- b. Past imperfective: ✓ á kú ⁿ-dʒégó
 3SG.H IPFV N-yaw.n.H
 ‘He was yawning’
- c. Present progressive: # á tʃ^wèét ⁿ-kú ⁿ-dʒégó
 3SG.H PRS N-IPFV N-yaw.n.H
 ‘He is yawning’
- d. Habitual: # á ⁿ-dʒéègó
 3SG.H N-yaw.n.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 tʃ^wéét n-kú n-dzégó
3SG.H PRS N-IPFV N-yawn.H
'He is yawning'
- d. Habitual: # á n-dzégó
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 tʃ^wéét n-kú n-dzégó
3SG.H PRS N-IPFV N-yawn.H
'He is yawning'
- d. Habitual: ✓ á n-dzégó
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).

- (69) mú yé
 1SG.H refuse
 ‘I refused’

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 fé
 3SG.H drink all
 ‘S/he drank (it) all’

- (71) a. ⁿzi k^húʔú jé ám
 envy taro hurt 1SG.H
 Lit.: ‘the envy of taro hurt me’
 ‘I was hungry’

- b. ⁿzi k^húʔú tʃ^wéét ⁿ-dzé ám
 envytaro 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 nɔ̀zùʔ-ɲkʰá
 3SG.H IPFV drink wine-palm
 ‘S/he was drinking palm wine’

○ **Unmarked verbs do not have a completed event time**

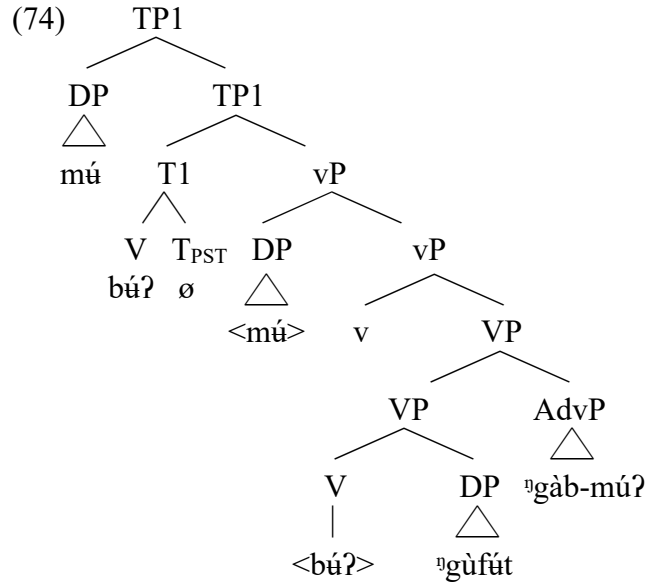
In Medumba, unmarked verb forms do not have a completed event time. That is, they are used in contexts where the event time is not contained within the temporal boundary of an adverbial modifier. This confirms that unmarked construals involve a zero past tense morpheme at T in Medumba. If this was a 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 búʔ ɲgùfút ɲgàb-múʔ
 1SG.H harvest corn week-other
 ‘I harvested corn last week’

b. # mú lù m-búʔ ɲgùfút fé ɲgàb-múʔ
 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’

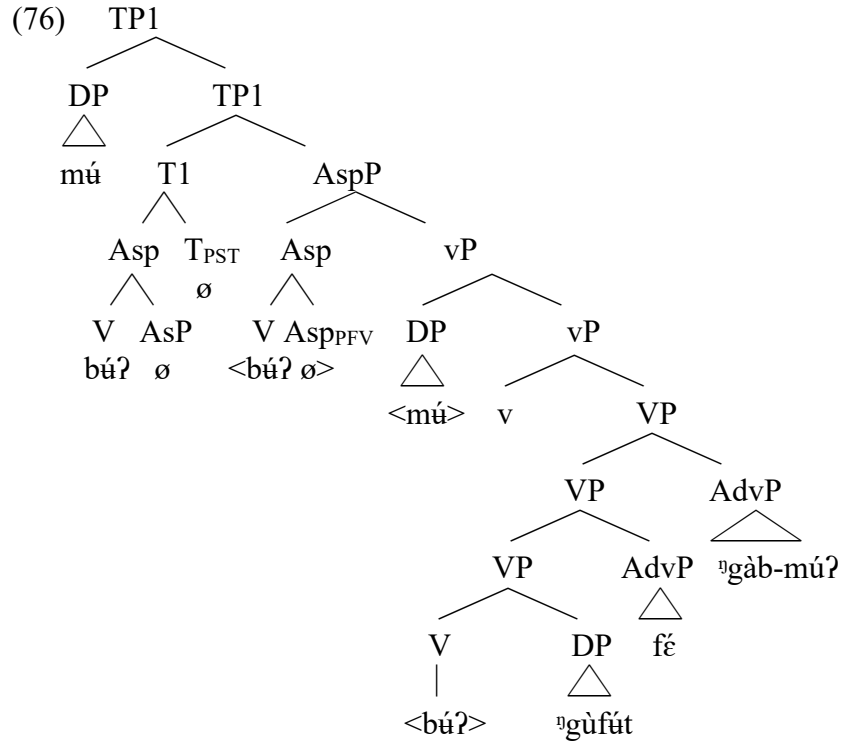
(73a) involves a structure with no aspectual projection; so, the verb raises from V to T as shown in the tree in (74)



(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 *fě* ‘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. | # | mú | bú? | ʔgùfút | ʔgàb-mú? | |
| | | 1SG.H | harvest | corn | week-other | |
| | | ‘I harvested corn last week’ | | | | |
| | | | | | | |
| b. | ✓ | mú | bú? | ʔgùfút | fě | ʔgàb-mú? |
| | | 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 $\text{ɲ}^w\text{ɛ}^t$

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 $\text{ɲ}^w\text{ɛ}^t$ 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 $\text{ɲ}^w\text{ɛ}^t$ n- ɲ^w b h^w ú?- η^w ò?nì
 3SG.H PRES N-read packet-school
 ‘He is reading the book’

b. Change-of-state verb

á $\text{ɲ}^w\text{ɛ}^t$ n-déèn $\gamma^w\text{é}^t$ - η^w ò?nì
 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

Nùmí àʔ nèén ɪŋwét
Numi IRR go.H N-palace
'Numi will go to the palace'

b. Change-of-state verb

Nùmí àʔ lèén γèé-ŋwòʔnì
Numi IRR become_familiar.H AGT.PL-school
Lit.: Numi will become familiar with the students
'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).

- (79)

bù	nóʔ	b ^h é	mén	zè	à=àʔ	zí	^m -bú	^m vùn	lá
IPL.L	AUX.T2	born	child	C.CL1	3SG.L=IRR	AUX.α	N-be	king	C.-Q

Lit.: They born the child that would be a king
‘A child was born that would become a king’

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-tfók 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.

Nùmí	àʔ	ké	↓ _n dʒwén
Numi	IRR	fry	chips
	L	V.H	

‘Numi will fry the chips (I am strongly certain about that)’
- b.

Nùmí	àʔ	jók	ɱ-ké	↓ _n dʒwén
Numi	IRR	AUX.γ	N-fry	chips
	L	H	V.H	

‘Numi will fry the chips (I am certain about that)’
- c.

Nùmí	àʔ	tfók	ɱ-ké	↓ _n dʒwén
Numi	IRR	AUX.β	N-fry	chips
	L	H	V.H	

‘Numi will fry the chips (I am certain about that)’
- d.

Nùmí	àʔ	zí	ɱ-ké	↓ _n dʒwén
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. Nù mí **kù** ké ʎndʒwén
 Numi NEG.L fry chips
 ‘Numi did not fry the chips’
- b. Nù mí nóʔ **kù** ké ʎndʒwén
 Numi AUX.T2 NEG.L fry chips
 ‘Numi did not fry the chips’

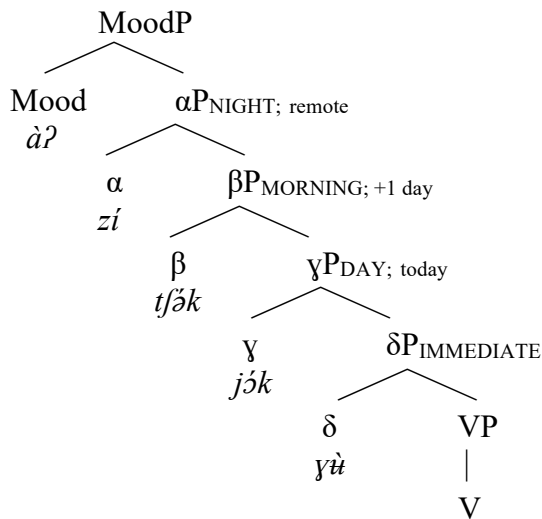
(82) Future Neg

- a. *Nù mí **àʔ** **kù** ké ʎndʒwén
 Numi IRR NEG.L fry chips
 [Numi will not fry the chips]
- b. Nù mí **kú** ké ʎndʒwén
 Numi NEG.H fry chips
 ‘Numi will not fry the chips’
- c. *Nù mí **àʔ** **kú** ké ʎndʒwén
 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**



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 degraded³⁵. 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. Nù mí **fə** ɲ-ké ↓ndʒwén
 Numi AUX.T3 N-fry chips
 ‘Numi fried the chips yesterday’

b. Nù mí ↓ké ↓ndʒwén ɲkòk
 Numi fry chips yesterday
 ‘Numi fried the chips yesterday’

(85) Time of the day: night

a. Nù mí ↓zì ↓ɲ-ké ↓ndʒwén
 Numi AUX.α N-fry chips
 ‘Numi fried the chips at night’

b. Nù mí ↓ké ↓ndʒwén tèt-tʰwáʔ
 Numi fry chips middle-night
 ‘Numi fried the chips at night’

(86) Time of the day: morning

a. Nù mí ↓tʃók ↓ɲ-ké ↓ndʒwén
 Numi AUX.β N-fry chips
 ‘Numi fried the chips in the morning/earlier in the morning’

b. Nù mí ↓ké ↓ndʒwén ɲ-kúùb-zú
 Numi 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. Nù mí ↓jók ↓ɲ-ké ↓ndʒwén
 Numi AUX.γ N-fry chips
 ‘Numi fried the chips during the day/earlier today’

b. Nù mí ↓ké ↓ndʒwén ɲbʰók-tʰú
 Numi 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 fə ɲ-ké ɲdʒwén ɲkòk
 Numi AUX.T3 N fry chips yesterday
 ‘Numi fried the chips yesterday’
- b. ?Nùmí ɲzɪ ɲ-ké ɲdʒwén tèt-tʰwəʔ
 Numi AUX.α N -fry chips middle-night
 ‘Numi fried the chips at night’
- c. ?Nùmí ɲtʃək ɲ-ké ɲdʒwén ɲ-kúùb-zú
 Numi AUX.β N fry chips Nom-cut-day
 ‘Numi fried the chips in the morning/earlier in the morning’
- d. ?Nùmí ɲjók ɲ-ké ɲdʒwén ɲbʰók-tʰú
 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 ɲké ɲdʒwén á sú á
 Numi fry chips FOC WH C.Q.H
 Lit: Numi fried the chips when?
- A1: a. ɲkòk [yesterday]
 b. *fə [yesterday]
- A2: a. tèt-tʰwəʔ [at night]
 b. *zɪ [at night]
- A3: a. ɲ-kúùb-zú [in the morning or earlier in the morning]
 b. *tʃək [in the morning or earlier in the morning]
- A4: a. ɲbʰók-tʰú [during the day or earlier today]
 b. *jók [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. Nùmí ↓ké ↓ⁿdʒwén **á** **ᵐᵇʰᵛk-ᵍʰá**
 Numi fry chips FOC fire-up
 ‘Numi fried the chips [during the day]_{FOC}’
- b. *Nùmí **á** **jók** ↓_n-ké ↓ⁿdʒwén
 Numi FOC AUX.γ N-fry chips
 [Numi fried the chips [during the day]_{FOC}’

Moreover, overtly focused temporal adverbs cannot be contrasted with temporal auxes as shown in (91).

- (91) a. *Nùmí ↓ké ↓ⁿdʒwén **á** **ᵐᵇʰᵛk-ᵍʰá**,
 Numi fry chips FOC fire-up

 Nù^ugèé **fə** _n-ké ↓ⁿdʒwén
 Nuga.H AUX.T3 N-fry chips
 [Numi fried the chips [during the day]_{FOC} but Nuga fried the chips yesterday]
- b. Nùmí ↓ké ↓ⁿdʒwén **á** **ᵐᵇʰᵛk-ᵍʰá**,
 Numi fry chips FOC fire-up

 Nù^ugèé ké ↓ⁿdʒwén **á** **ᵐkək**
 Nuga.H fry chips FOC yesterday
 ‘Numi fried the chips [during the day]_{FOC} but Nuga fried the chips [yesterday]_{FOC}’
- c. *Nùmí **jók** ↓_n-ké ↓ⁿdʒwén,
 Numi AUX.γ N-fry chips

 Nù^ugèé ké ↓ⁿdʒwén **á** **ᵐkək**
 Nuga.H fry chips FOC yesterday
 [Numi fried the chips during the day but Nuga 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.

Temporal auxiliaries		Verbal forms	
I. EARLY STAGE: AUX AND VERBAL FORM AND MEANING PRESERVED			
γù	immediately	nù γù-ú	to do/have/to have finished
zí	at night	nù zí	to sleep
II. LATER STAGE: VERBAL FORM AND MEANING RECOVERABLE			
ʃók	in the morning	nù ʃók-ó	to spend the morning
jók	during the day	nù jók-ó	to spend the day
ʃwèét	right now	nù ʃwèéd-l ó	to happen at the moment
III. FINAL STAGE: VERBAL MEANING LOST			
fə	yesterday past	nù fə-ó	to destroy (les billons)
lù	recent past	nù lù-ú	to leave/to be well
nóʔ	long time ago	nù nóʔ-ó	?
lúù	long long time ago	nù lù-ú nù lú	to leave/to be well to ask for/to beg/to rain
àʔ	prospective	nù àʔ-á	?

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) $\gamma\grave{u}$

a. & Nù^gèé $\gamma\grave{u}$ -ú
 Nuga.H V-H
 = (a) ‘Nuga did (it)’
 = (b) Nuga finished (it)
 = (c) Nuga had (it)

b. Nù^gèé $\gamma\grave{u}$ η -ké $\downarrow n$ dʒwén
 Nuga.H AUX.δ N-fry chips
 ‘Nuga fried the chips immediately (after whatever happened)’

(93) $z\acute{i}$

a. Nù^gèé $z\acute{i}$
 Nuga.H sleep
 ‘Numi slept’

b. Nù^gèé $z\acute{i}$ η -ké $\downarrow n$ dʒwén
 Nuga.H AUX.α N-fry chips
 ‘Nuga fried the chips at night’

○ **Later stage of grammaticalization: verbal meaning can be recovered**

(94) $\text{ʃ}\acute{a}k$

a. [Nù^gèé $\text{ʃ}\acute{a}g$ -ó]
 Nuga.H V-H
 ‘Nuga spent the morning’

b. Nù^gèé $\text{ʃ}\acute{a}k$ η -ké $\downarrow n$ dʒwén
 Nuga.H AUX.β N-fry chips
 ‘Nuga fried the chips in the morning’

(95) $j\acute{o}k$

a. [Nù^gèé $j\acute{o}g$ -ó]
 Nuga.H V-H
 ‘Nuga spent the day’

b. Nùᵐgèé **jók** ᵐ-ké ↓ᵐdʒwén
 Nuga.H AUX.γ N-fry chips
 ‘Nuga fried the chips during the day’

(96) ɸwèét

a. [Nùᵐgèé **ɸwèdl-ó**]
 Nuga.H V-H
 ‘Something is happening with Nuga right now’

b. Nùᵐgèé **ɸwèét** ᵐ-ké ↓ᵐdʒwén
 Nuga.H PRS N-fry chips
 ‘Nuga is frying the chips right now’

○ **Final stage of grammaticalization: verbal meaning lost**

(97) fə

a. Nùᵐgèé **fə-ó** nà
 Nuga.H destroy-H field
 ‘Nuga destroyed the field’

b. Nùᵐgèé **fə** ᵐ-ké ↓ᵐdʒwén
 Nuga.H AUX.T3 N-fry chips
 ‘Nuga fried the chips yesterday’

(98) lù

a. Nùᵐgèé **lù-ú**
 Nuga.H leave/be_well-H
 ‘Nuga left/was well’

b. Nùᵐgèé **lù** ᵐ-ké ↓ᵐdʒwén
 Nuga.H AUX.T3 N-fry chips
 ‘Nuga fried the chips recently’

(99) nòʔ

a. [Nùᵐgèé **nóʔ-ó**]
 Nuga.H V-H

b. Nùᵐgèé **nóʔ** ᵐ-ké ↓ᵐdʒwén
 Nuga AUX.T2 N-fry chips
 ‘Nuga fried the chips long time ago’

(100) lùù

- a. [Nùᵝgèé **lùù**]
Nuga.H V
- b. Nùᵝgè **lùù** ᵝ-ké ↓ᵝᵝwén
Nuga AUX.T2 N-fry chips
'Nuga fried the chips long long time ago'

(101) àʔ

- a. [Nùᵝgèé **àʔ-á**]
Nuga.H V-H
- b. Nùᵝgè **àʔ** ké ↓ᵝᵝwén
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. Underscored XPs are selected as subject and “/” is used between the types of complement a head can select.

Phonological feature	Formal feature	Semantic feature
zí	V	{ <u>DP</u> }
	AUX.α	{βP/γP/δP/AspP/VP} night/far in time
tʃók	V	{ <u>DP</u> }
	AUX.β	{γP/δP/AspP/VP} this/tomorrow morning
jók	V	{ <u>DP</u> }
	AUX.γ	{δP/AspP/VP} earlier/later today
yù	V	{ <u>DP</u> ; (DP)}
	AUX.δ	{AspP/VP} immediately
tʃwèt	V	{ <u>DP</u> }
tʃwèét	T1[+TENSE]	{ <u>DP</u> ; AspP/VP} happening right now
fə	V	{ <u>DP</u> ; DP}
	AUX.T3	{αP/βP/γP/δP/AspP/VP} “yesterday past”
lù	V	{ <u>DP</u> }
	AUX.T3	{αP/βP/γP/δP/AspP/VP} recent past
nɔʔ	V	{ <u>DP</u> }
	AUX.T2	{TP3/αP/βP/γP/δP/AspP/VP} long ago
lúù	V	{ <u>DP</u> }
	AUX.T2	{TP3/αP/βP/γP/δP/AspP/VP} long long ago
àʔ	V	{ <u>DP</u> }
	MOOD	{αP/βP/γP/δP/AspP/VP} prospective

Table 4. 4: Lexical entries of aux usages and main verb usage in Medumba

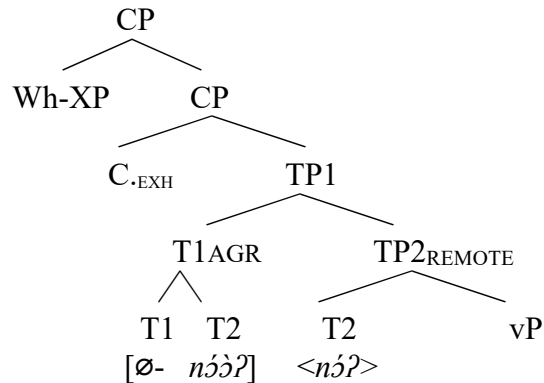
4.3 Why some temporal auxiliaries are compatible with A'-agreement

This section focuses on temporal auxiliaries that are compatible with A'-agreement in Medumba; namely the retrospective temporal-shifters *nɔʔ*, *lù* and *fə* and the neutral tense-shifters *zí*, *tʃók*, *jók* 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.

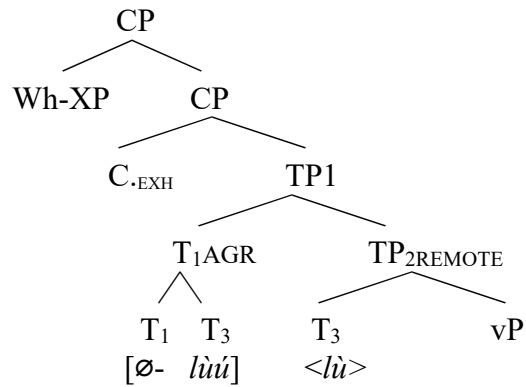
4.3.1 Why retrospective temporal-shifters are compatible with A'-agreement

In this section, I show that the presence of A'-agreement with the retrospective temporal-shifters *nóʔ*, *lù* and *fə̃* 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 *nóʔ*, *lù* and *fə̃* 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).

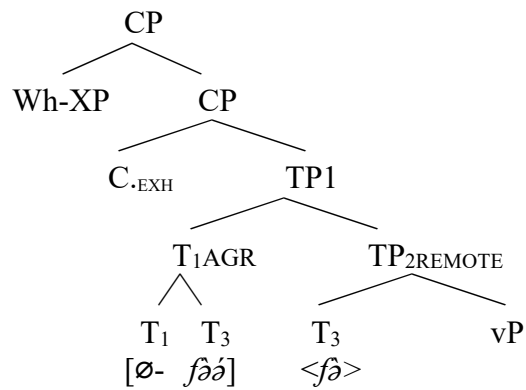
(102) a. T2 remote past *nóʔ*



b. T3 recent past *nɔʔ*



c. T3 recent past specific (yesterday) *lù*



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 *fà*. 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 *fà* takes the form of a polar tone. These two auxiliaries surface with an LH contour in A’-contexts.

- (103) a. Nù mí **nɔʔ** ké ɓdʒwén
 Numi AUX.T2 fry chips
 T.H V.H
 ‘Numi fried the chips (long time ago)’

b. **á kú** Nùmí **nóʔ** ɱ-kéè á
 FOC WH Numí AGR.AUX.T2 N-AGR.fry C.Q.H
 T.HL V.HL

‘What did Numi fry?’

(104) a. Nùmí lù ɱ-ké ɲdʒwén
 Numí AUX.T3 N-fry chips
 T.L V.H

‘Numi fried the chips recently’

b. **á kú** Nùmí **lùú** ɱ-kéè á
 FOC WH Numí AGR.AUX.T3 N-AGR.fry C.Q.H
 T.LH V.HL

‘What did Numi fry recently?’

(105) a. Nùmí fə ɱ-ké ɲdʒwén
 Numí AUX.T3 N-fry chips
 T.LH V.HL

‘Numi fried the chips yesterday’

b. **á kú** Nùmí **fəʔ** ɱ-kéè á
 FOC WH Numí AGR.AUX.T3 N-AGR.fry C.Q.H
 T.LH V.HL

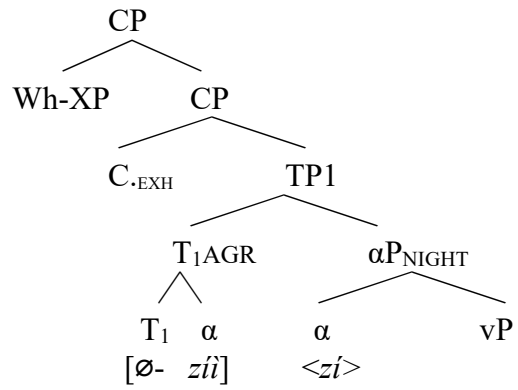
‘What did Numi fry yesterday?’

(103-105) establish that the temporal-shifters *nóʔ*, *lù* and *fə* can raise to t whereby they surface with A'-agreement.

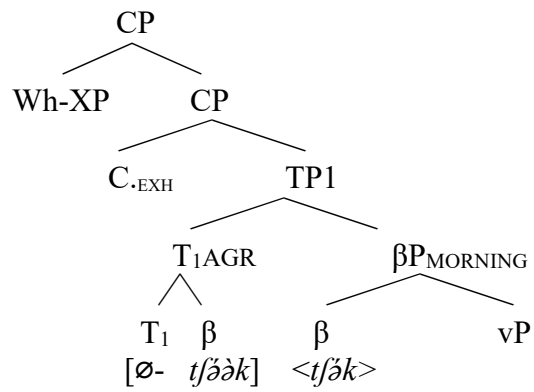
4.3.2 Why neutral tense-shifters permit A'-agreement in retrospective contexts

The neutral tense-shifters *zí*, *tʃə́k*, *jók* and *yɛ̀* 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*, *tʃə́k*, *jók* 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*, *tʃə́k*, *jók* and *yɛ̀* when they move to T, the locus of A'-agreement with the CP phase as shown in the configurations in (106).

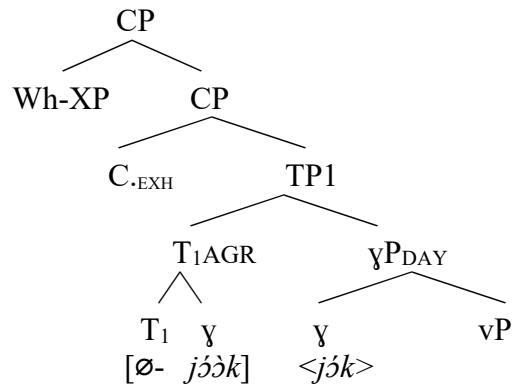
(106) a. Retrospective α .night *zi*



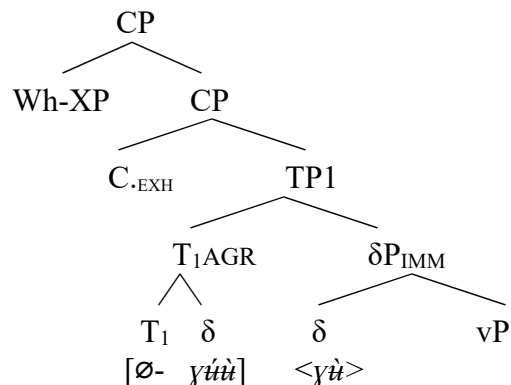
b. Retrospective β .morning *tʃək*



c. Retrospective γ .day *jək*



d. Retrospective δ .immediate $\gamma\grave{u}$



This prediction is confirmed in Medumba as the neutral tense-shifters *zĩ*, *tʃǎk*, *jók* and $\gamma\grave{u}$ surface with the HL A'-agreement overwrite tone melody in retrospective context. This is shown in (107) for the retrospective α .night *zĩ*; in (108) for the retrospective β .24hrs.morning *tʃǎk*; and in (109) for the retrospective γ .today *jók* and in (110) for the retrospective δ .immediate $\gamma\grave{u}$. 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**

<i>Event time</i>		<i>Utterance Time</i>			
8pm		6am		after 6am	
<-----><----->					
a. Nù mí	zĩ	ɲ-ké	↓ndʒwén		
Numi	AUX.α	N-fry	chips		
	H	V.H			
‘Numi fried the chips at night time/last night’					
b. á	kú	Nù mí	zĩ	ɲ-kéè	á
FOC	WH	Numi	AGR.AUX.α	N-AGR.fry	C.Q.H
			T.HL	V.HL	
‘What did Numi fry last night?’					

(108) **Context**

<i>Event time</i>		<i>Utterance Time</i>	
6am	10am	after 10am	
<hr/>			
<----->			
a.	Nùmí tfók	ɲ-ké	↓ndʒwén
	Numi AUX.β	N-fry	chips
	H	V.H	
	‘Numi fried the chips this morning/earlier this morning’		
b.	á kú	Nùmí tfók	ɲ-kéè 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**

<i>Event time</i>		<i>Utterance Time</i>	
11am	6pm	after 6pm	
<hr/>			
<----->			
a.	Nùmí jók	ɲ-ké	↓ndʒwén
	Numi AUX.γ	N-fry	chips
	H	V.H	
	‘Numi fried the chips during the day/earlier today’		
b.	á kú	Nùmí jók	ɲ-kéè 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 γù	ɲ-ké	↓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 γùù	ɲ-kéè á
	FOC WH	Numi AGR.Aux	N-AGR.fry C.Q.H
		HL	V.HL
	‘What did Numi fry immediately?’		

b. **á kú** Nùmí nòò? m-fə́ə n-tʃə́k n-kéè 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

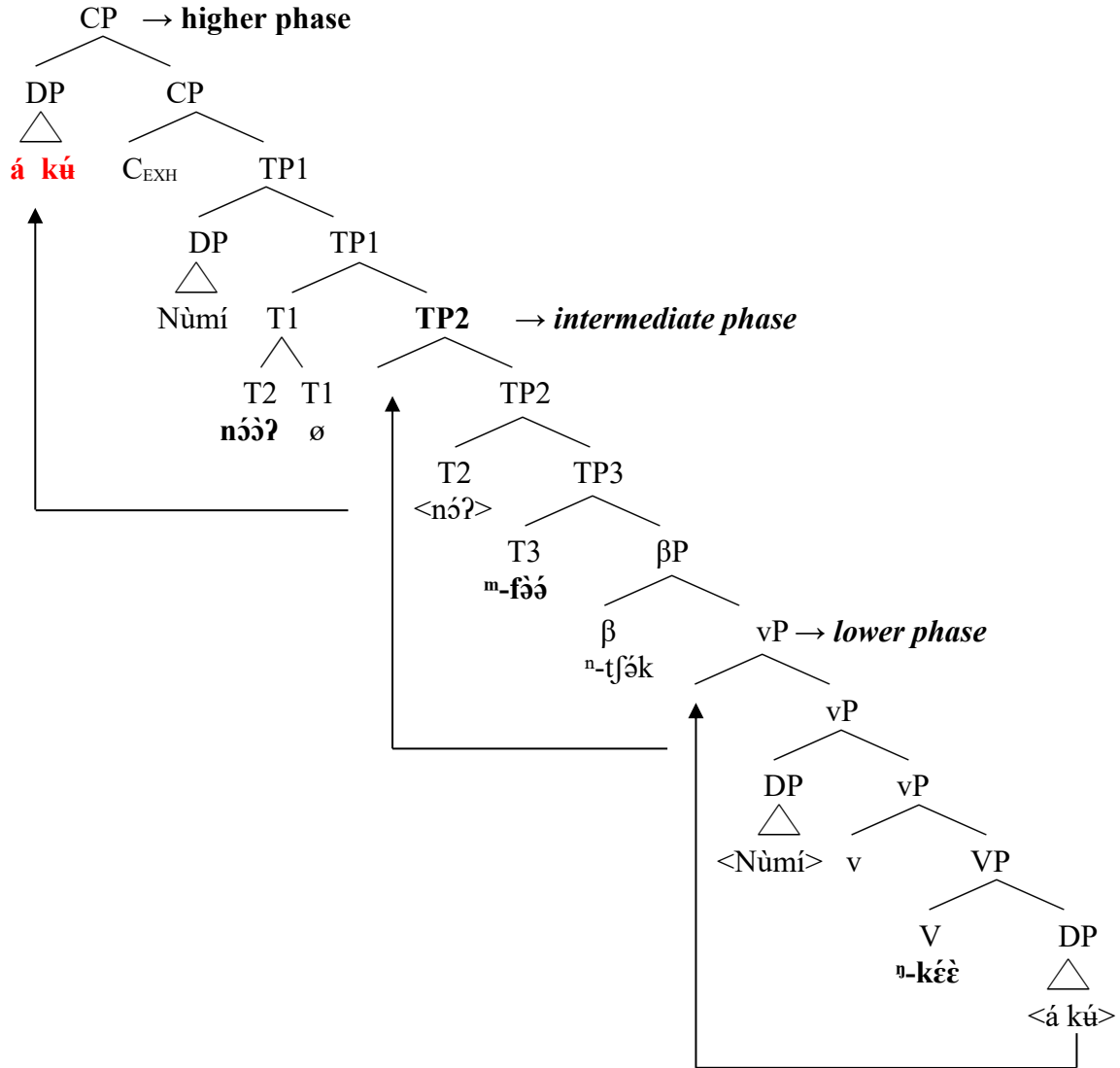
‘What did Numi fry (long ago in the morning of the day before)’

(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** Nùmí nòò? m-fə́ə n-tʃə́k n-kéè 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 *kú*

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 zí*, *β.24hrs.morning fǎǎk*, *γ.today jók* 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 zí*; in (117) for *β.24hrs.morning fǎǎ*; in (118) for *γ.today jók*; and in (119) for *δ.immediate yù*. The (a) examples show the baseline sentences and the (b) examples, the A'-contexts.

- (116) a. Nù mí nów? zí ɲ-ké ɽdʒwén
 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** Nù mí nów? **ɲ-zí** ɲ-kéè á
 FOC WH Numi AGR.AUX.T2 N-AGR.AUX.α N-AGR.fry C.Q.H
 T.HL HL V.HL
 ‘What did Numi fry at night long time ago?’
- (117) a. Nù mí nów? ʃók ɲ-ké ɽdʒwén
 Numi AUX.T2 AUX.β N-fry chips
 T.H H V.H
 ‘Numi fried the chips in the morning long time ago’
- b. **á kú** Nù mí nów? **ɲ-ʃók** ɲ-kéè á
 FOC WH Numi AGR.AUX.T2 N-AGR.AUX.β N-AGR.fry C.Q.H
 T.HL HL V.HL
 ‘What did Numi fry in the morning long time ago?’
- (118) a. Nù mí nów? jók ɲ-ké ɽdʒwén
 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** Nù mí nów? **ɲ-dʒók** ɲ-kéè á
 FOC WH Numi AGR.AUX.T2 N-AGR.AUX.γ N-AGR.fry C.Q.H
 T.HL HL V.HL
 ‘What did Numi fry during the day long time ago?’
- (119) a. Nù mí nów? ɣù ɲ-ké ɽdʒwén
 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** Nù mí nów? **ɲ-gyù** ɲ-kéè á
 FOC WH Numi AGR.AUX.T2 N-AGR.AUX.δ N-AGR.fry C.Q.H
 T.HL HL 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).

- (120) a. Nù mí nóʔ kú ɲ-ké ʔndʒwén
 Numi AUX.T2 IPFV N- fry chips
 T.H H V.H
 ‘Numi frying the chips long time ago’
- a. á kú Nù mí nóʔʔ ɲ-kúù ɲ-kéè á
 FOC WH Numi AGR.AUX.T2 N-AGR.IPFV N-AGR.fry C.Q.H
 T.HL HL V.HL
 ‘What was Numi frying long time ago?’

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

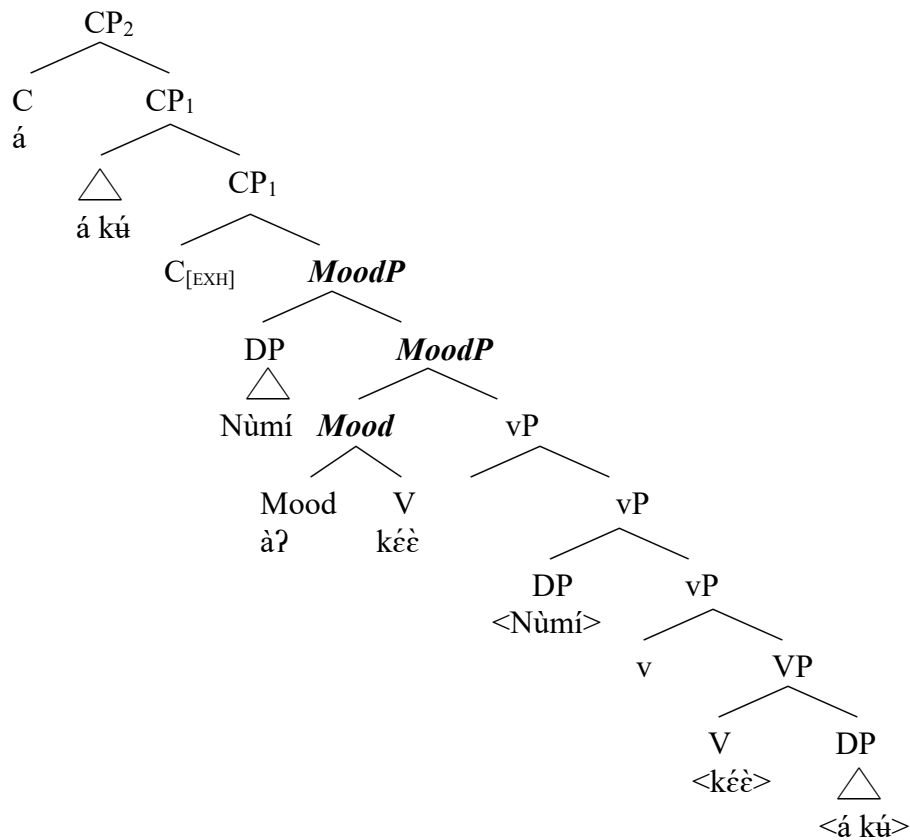
Syllable size, syllables can be V, CV or CVC in Medumba. The affix *àʔ* seems to be the only VC syllable in initial position in Medumba. That is, an onsetless syllable. This is not just a property of Medumba. It has been argued that word initial or phrase initial onsetless syllables have limited distribution 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. In this section, I propose that CPs taking MoodP as a complement are defective phases in that they lack the tense

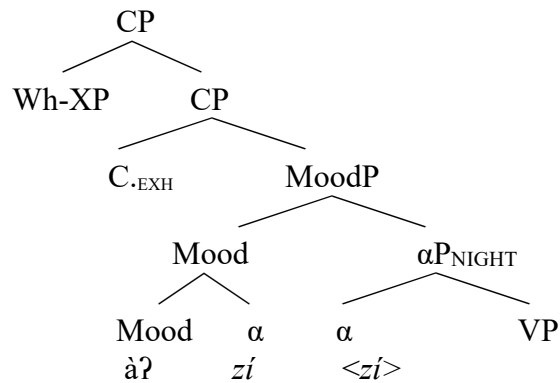
projection. So far, we have seen that any given head that ends up in T within the CP phase shows A'-agreement. It is tempting to postulate that failure to show A'-agreement by the irrealis *àʔ* is due to the fact that *àʔ* is not actually in T so that there is no T in the structure involving the irrealis *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** Nùmí **àʔ** kékè á
 FOC WH Numi IRR AGR.fry C.Q.H
 L V.HL
 ‘What will Numi fry?’

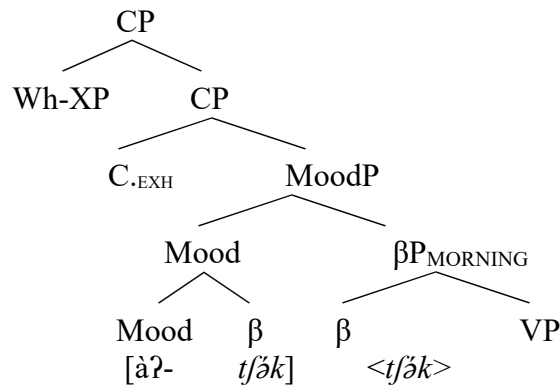


The claim that only heads in T within the CP phase can show A'-agreement predicts that the construal of neutral tense-shifters with irrealis *àʔ* in prospective contexts will also lack A'-agreement as shown in (122).

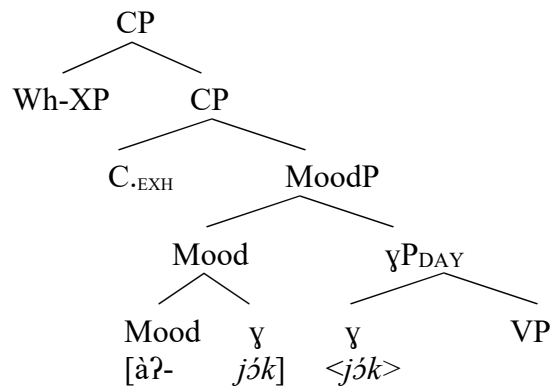
(122) a. Prospective α .night *zì*



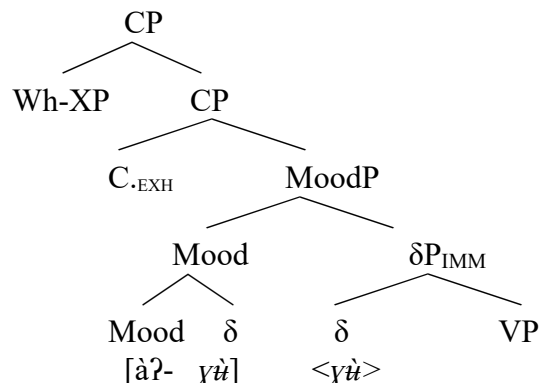
b. Prospective β .morning *tʃək*



c. Prospective γ .day *jók*



d. Prospective δ .immediate $y\grave{h}$



This prediction is confirmed as neutral tense-shifters do not show A'-agreement when construed in prospective context with irrealis $\grave{a}?$. This is illustrated in (123) for α .night $z\acute{i}$; in (124) for β .morning $t\acute{f}\acute{o}k$; in (125) for γ .day $j\acute{o}k$; and in (126) for δ .immediate $y\grave{h}$. 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 $z\acute{i}$

a.	Nùmí	à?	z\acute{i}	ᵐ-ké	↓ᵐdʒwén
	Numi	IRR	AUX.α	N-fry	chips
		L	H	V.H	

‘Numi will fry the chips’

b.	á	kú	Nùmí	à?	z\acute{i}	ᵐ-kéè	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 $t\acute{f}\acute{o}k$

a.	Nùmí	à?	t\acute{f}\acute{o}k	ᵐ-ké	↓ᵐdʒwén
	Numi	IRR	AUX.β	N-fry	chips
		L	H	V.H	

‘Numi will fry the chips tomorrow’

b. **á kú** Nùmí **àʔ** **tʃók** ɱ-kéè 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 *jók*

a. Nùmí **àʔ** **jók** ɱ-ké ɽdʒwén
 Numi IRR AUX.γ N-fry chips
 L H V.H
 ‘Numi will fry the chips later today’

b. **á kú** Nùmí **àʔ** **jók** ɱ-kéè á
 FOC WH Numi IRR AUX.δ N-AGR.fry C.Q.H
 L H V.HL
 ‘What will Numi fry later today?’

(126) Prospective δ.immediate *γù*

a. Nùmí **àʔ** **γù** ɱ-ké ɽdʒwén
 Numi IRR AUX.δ N-fry chips
 L L V.H
 ‘Numi will fry the chips immediately’

b. **á kú** Nùmí **àʔ** **γù** ɱ-kéè á
 FOC WH Numi IRR AUX.δ N-AGR.fry C.Q.H
 L L HL
 ‘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 bǎ 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 bòó Patrick
 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) Nùᵍgèé lèén Nùmí
 Nuga.H become_familiar.H Numi
 Lit.: ‘Nuga became familiar with Numi, therefore he knows Numi (implicature)

(130) Implicature cancellation

Nùᵍgèé lèén Nùmí, ᵐdòóʔ-ᵐdʒú à kúùʔ bèn ᵐ-déèn í
 Nuga.H become_familiar.H Numi CONJ 3.SG.L NEG ITER N- become_familiar 3.SG.H
 = ‘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	Unmarked change-of-state V	What this tell us		
		Past	PFV	State V
Testing for ordering relation				
1. Default past interpretation	✓	✓	✓	✗
Testing for past tense				
2a. Always construed as past	✓	✓	✗	✗
2b. Required for context that force past	✓	✓	✗	✗
3. Compatible with imperfective	✓	✓	✗	✗
Testing for perfective				
4. Uncompleted event time	✗	✓	✗	✗

Table 4. 5: Diagnosing past tense with the construal of change-of-state verbs in Medumba

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.

(131) **Context for past perfective**

Who did Sami know in the village?

- a. Past perfective: ✓ á lèèn Nùmí
3SG.H become_familiar.H Numi
Lit.: ‘He became familiar with Numi’
‘He knew Numi’
- b. Past imperfective: # á kú ⁿ-dèèn Nùmí
3SG.H IPFV N-become_familiar Numi
Lit.: he was becoming familiar with Numi
- c. Present tense: # á tʃ^wèét ⁿ-ká ⁿ-dèèn Nùmí
3SG.H PRS N-IPFV N- become_familiar Numi
Lit.: he is becoming familiar Numi
- d. Low-tone habitual: # á ⁿ-dèèn Nùmí
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 lèèn Nùmí
3SG.H become_familiar.H Numi
Lit.: ‘He became familiar with Numi’
‘He knew Numi’
- b. Past imperfective: ✓ á kú ⁿ-dèèn Nùmí
3SG.H IPFV N-become_familiar Numi
Lit.: he was becoming familiar with Numi
- c. Present progressive: # á tʃ^wèét ⁿ-ká ⁿ-dèèn Nùmí
3SG.H PRS N-IPFV N- become_familiar Numi
Lit.: he is becoming familiar Numi
- d. Low-tone habitual: # á ⁿ-dèèn Nùmí
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 lèén Nùmí
3SG.H become_familiar.H Numi
Lit.: ‘He became familiar with Numi’
‘He knew Numi’
- b. Past imperfective: # á kú n-déèn Nùmí
3SG.H IPFV N-become_familiar Numi
Lit.: he was becoming familiar with Numi
- c. Present progressive: ✓ á tʃwèét n-kú n-déèn Nùmí
3SG.H PRS N-IPFV N-become_familiar Numi
Lit.: he is becoming familiar Numi
- d. Low-tone habitual: # á n-déèn Nùmí
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 lèén Nùmí
3SG.H become_familiar.H Numi
Lit.: ‘He became familiar with Numi’
‘He knew Numi’
- b. Past imperfective: # á kú n-déèn Nùmí
3SG.H IPFV N-become_familiar Numi
Lit.: he was becoming familiar with Numi
- c. Present progressive: # á tʃwèét n-kú n-déèn Nùmí
3SG.H PRS N-IPFV N-become_familiar Numi
Lit.: he is becoming familiar Numi
- d. Low-tone habitual: ✓ á n-déèn Nùmí
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) Nùmí sègó
 Numi lengthen/become_tall.H
 Lit.: Numi lengthened/became tall; therefore, he is tall.

(136) ʔhú Nùmí 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-déèn Nùmí
 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. ✓ mǎ lèén Nùmí ʔgàb-mú?
 1SG.H become_familiar Numi week-other
 Lit.: I became familiar with Numi last week
 ‘I knew Numi last week’
- b. # mǎ lù n-dèén Nùmí ʔgàb-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. # mǎ lèén Nùmí ʔgàb-mú?
 1SG.H become_familiar Numi week-other
 Lit.: I became familiar with Numi last week
 ‘I knew Numi last week’
- b. ✓ mǎ lù n-dèén Nùmí ʔgàb-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	Unmarked V	What this tell us				
		PST	PFV	Event V	change-of-state V	State V
Testing for ordering relation						
1. Default past interpretation	✓	✓	✓	✓	✓	✗
Testing for past tense						
2a. Always construed as past	✓	✓	✗	✓	✓	✗
2b. Required for past contexts	✓	✓	✗	✓	✓	✗
3 Compatible with imperfective	✓	✓	✗	✓	✓	✗
Testing for perfective						
4. uncompleted event	✗	✓	✗	✓	✓	✗

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	
		Siamou	Medumba	<i>consistent with</i>		<i>consistent with</i>	
		L-Tone V	Unmarked V	Past	Perfective	Past	Perfective
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 Ngomba³⁷; and (143) for Awing.

(140) Bamileke Southern Ndà'ndà' (Bazou dialect)

a. Náàná	yàá	l ⁿ tá	b. Náàná	mú	n-gáà	n ⁿ tá
Nana	go.H	market	Nana	IPFV	N-go	market
'Nana went to the market'			'Nana is going to the market'			

(141) Bamileke Eastern Ndà'ndà' (Batoufam dialect)

a. Nònó	lè	n-kák	kəlòk	b. *Nònó	lè	kák	kəlòk
Nono	P1	N-fry	plantain	Nono	P1	fry	plantain
'Nono fried plantains (yesterday)'				[Nono fried plantains (yesterday)]			

(142) Bamileke Ngomba

Pekɛ	ɣĩ	n -tsũɲ	ǎ -fěʔne	n -kúí:	tú-n-dá	lɔʔne
1P.INCL	go(F1)	N-AUX _{really}	N-AUX _{quickly}	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)

Alambah	a	zá	n-túʔə	ɱk'ə	
Alambah	SM	HAB	N-fetch	water	
'Alambah 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.

n-būʔ	ǎ -fú
N-pierce	N-come from
'to pierce'	'to come from'
n-tó	ǎ -sɔp
N-come	N-prick
'to come/arrive'	'to prick'
n-gu	ǎ -ʃɔt
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.

(144)	PAST	PRESENT	FUTURE
	7 6 5 4 3 2 1 0		0 1 2 3 4
	{lúù – nɔʔ – lù – fə – zí – tʃók – jók – Ø}	{tʃʷèét}	{àʔ – àʔ-ɣù – àʔ-jók - àʔ-tʃók - àʔ-zí}

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 *zí – tʃók – jók*. 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, lúù, fə,* and *lù* which are always construed as past; and neutral tense-shifter *zí, tʃók, jók,* and *ɣù*³⁸ 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 *tʃʷèét* as present tense. These temporal auxiliaries lead to an exploded tense projection. In a retrospective context:

³⁸ Note that previous analysis didn't mention the construal of *δ.ɣù* in retrospective context

- T₁ hosts the zero past tense morpheme
- T₂ hosts the retrospective temporal shifters *nɔʔ* and *lúù* used for remote past
- T₃ hosts the retrospective temporal shifters *lù* and *fə̂* used for recent past
- α hosts the tense-shifter *zi* construed in retrospective as “last night” past
- β hosts the tense-shifter *tʃə̂k* construed in retrospective as “this morning” past
- γ hosts the tense-shifter *jɔ̂k* construed in retrospective as “today” past
- δ hosts the tense shifter *yù* construed in retrospective as immediate past

In prospective context:

- Irrealis *àʔ* is in Mood not tense and is compatible with future certainty
- Irrealis is in *àʔ + α.zi* in prospective is construed as remote future uncertainty
- Irrealis is in *àʔ + β.tʃə̂k* in prospective is construed as “+1day” future certainty
- Irrealis is in *àʔ + γ.jɔ̂k* in prospective is construed as “today” future certainty
- Irrealis is in *àʔ + 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 (*m̀̀, m̀́*), 2sg (*ù, ú*), 3sg (*à, á*), and 3pl (*b̀̀, b̀́*). In contrast, CVC forms surface as CVC_L or CVVC_LH; this holds for 1pl (*b̀̀k, b̀̀́k*) and 2pl (*b̀̀n, b̀̀́n*). Direct object forms surface with an invariant H-tone: 1sg *ám*, 1pl *ják/jág-á*, 2sg *ú*, 2pl *jín(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 *b̀̀́k*, 2pl *b̀̀́n*, 3sg.anim *jí*, 3pl *b̀̀́*) or L-tone (1sg *m̀̀*, 2sg *ẁ̀*). The table below summarizes the simplex pronoun paradigm in Medumba.

- (2) a. Nù^gè nó? s^wèn **ú**
 Nuga AUX.T2 sell 2SG.H
 T.H V.L
 ‘Nuga betrayed you’
- b. **wù** kí, Nù^gèé nóò? ⁿ-s^wéèn **ú**
 1SG.L TOP Nuga.H AGR.AUX.T2 N-AGR.sell 1SG.H
 T.HL V.HL
 ‘You, Nuga betrayed you’
- (3) a. Nù^gè nó? s^wèn **í**
 Nuga AUX.T2 sell 3SG.H
 T.H V.L
 ‘Nuga betrayed him’
- b. **jí** kí, Nù^gèé nóò? ⁿ-s^wéèn **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. Nù^gè nó? s^wèn **jóg-ó**
 Nuga AUX.T2 sell 1PL.H-H
 T.H V.L
 ‘Nuga betrayed us’
- b. **bàk** kí, Nù^gèé nóò? ⁿ-s^wéèn **jóg-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. Nù^gè nó? s^wèn **jín-ó**
 Nuga AUX.T2 sell 2PL.H-H
 T.H V.L
 ‘Nuga betrayed you’
- b. **bìn** kí, Nù^gèé nóò? ⁿ-s^wéèn **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. Nù^gè nó? s^wèn **júb-ó**
 Nuga AUX.T2 sell 3PL.H-H
 T.H V.L
 ‘Nuga betrayed them’

- b. **bú** kí, Nùᵐgèé nóòʔ ⁿ-s^wéèn **júb-ó**
 3PL.H TOP Nuga.H AGR.AUX.T2 N-AGR.sell 3PL.H-H
 T.HL V.HL
 ‘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)⁴⁰. Table 5.2 illustrates the 1st plural denotation of complement forms⁴¹ 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-à-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 *jág-bág-à-bín* ‘us & y’all’; 1PL+3 *jág-bág-jí* ‘us & him’; 1PL+3PL *jág-bág-à-bú* ‘us & them’; 1PL+2PL+3PL *jág-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

(8) [1+3]

- a. Nùᵘgè nó? sʷèn **ám-bóg-jí**
Nuga AUX.T2 sell 1SG-[1PL-3SG]
T.H V.L
Lit.: Nuga betrayed us (me&him).
- b. **mà-bóg-jí** kí, Nùᵘgèé nóò? ⁿ-sʷéèn **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+2_{PL}]

- a. Nùᵘgè nó? sʷèn **ám-bóg-à-bìn**
Nuga AUX.T2 sell 1SG-[1PL-LNK-2PL]
T.H V.L
Lit.: Nuga betrayed us (me&y'all).
- b. **mà-bóg-à-bìn** kí, Nùᵘgèé nóò? ⁿ-sʷéèn **ám-bóg-à-bìn**
1SG-[1PL-LNK-2PL] TOP Nuga.H AGR.AUX.T2 N-AGR.sell 1SG-[1PL-LNK-2PL]
T.HL V.HL
Lit: Us (me&y'all), Nuga betrayed us (me&y'all).

(10) [1+3_{PL}]

- a. Nùᵘgè nó? sʷèn **ám-bóg-à-bú**
Nuga AUX.T2 sell 1SG-[1PL-LNK-3PL]
T.2 V.L
Lit.: Nuga betrayed us (me&them)
- b. **mà-bóg-à-bú** kí, Nùᵘgèé nóò? ⁿ-sʷéèn **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+2_{PL}+3_{PL}]

- a. Nùᵘgè nó? sʷèn **ám-bóg-à-bìn-à-bú**
Nuga AUX.T2 sell 1SG-[1PL-LNK-2PL-LNK-3PL]
T.2 V.L
Lit.: Nuga betrayed us (me,y'all,them)

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-ⁿdžùm* 'boy/FOC' associated with a gap at the extraction site and (17b) the resumptive structure. (18) shows that the relativized DP *má-ⁿdžùm* 'boy' is compatible with a gap (18a) or a resumptive pronoun (18b) at the extraction site.

(16) Wh-movement

- a. **á** **wú** Nùᵐgè nóòʔ ⁿ-s^wéèᵐ _____ á?
 FOC WH Nuga AGR.AUX.T2 N-AGR.sell C.Q.H
 HL V.HL
 'Who did Nuga betray?'
- b. **á** **wú** Nùᵐgè nóòʔ ⁿ-s^wéèᵐ **í** á?
 FOC WH Nuga AGR.AUX.T2 N-AGR.sell 3SG.H C.Q.H
 T.HL V.HL
 'Who did Nuga betray [him/her]?'

(17) Focus movement

- a. **á** **má-ⁿdžùm** Nùᵐgè nóòʔ ⁿ-s^wéèᵐ _____ lá
 FOC SG-male Nuga AGR.AUX.T2 N-AGR.sell C.-Q
 T.HL V.HL
 'The boy_{FOC} Numi betrayed'
- b. **á** **má-ⁿdžùm** Nùᵐgè nóòʔ ⁿ-s^wéèᵐ **í** lá
 FOC SG-male Nuga AGR.AUX.T2 N-AGR.sell 3SG.H C.-Q
 T.HL V.HL
 'The boy_{FOC} Numi betrayed [him]'

(18) Relative clause

- a. **má-ⁿdžùúm** zè Nùᵐgè nóòʔ ⁿ-s^wéèᵐ _____ lá ...
 SG-male C.CL1 Nuga AGR.AUX.T2 N-AGR.sell C.-Q
 T.HL V.HL
 'The boy that Nuga betrayed...'

- b. **má-ⁿdʒùúm** zè Nùⁿgè nòòʔ ⁿ-s^wéèn **í** lá ...
 SG-male C.CL1 Nuga AGR.AUX.T2 N-AGR.sell 3SG.H C.-Q
 T.HL V.HL
 ‘The boy that Nuga betrayed [him] ...’

(16-18) establish that resumption is optional in Medumba root clauses.

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 subjacency 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** Nùᵍgè nóò? m-béttó [ᵐbúù
FOC WH Nuga AGR.AUX.T2 N-ask C.HL
T.HL V.H
Wàtèét nóò? n-tʃóò?dó ____] 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** Nùᵍgè nóò? m-béttó [ᵐbúù
FOC WH Nuga AGR.AUX.T2 N-ask C.HL
HL V.H
Wàtèét nóò? n-tʃóò?d **í** 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** Nùᵍgè nóò? néèn n-ton [káà Wàtèét tʃóò?dò ____] 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** Nùᵍgè nóò? néèn n-ton káà Wàtèét tʃóò?dì **í** 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)*

- a. ***á** **wú** Nùᵍgè nóò? n-dzún [mén zè à nóò? n-tʃóò?dó ____] 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 V.H T.HL V.H
‘*Who did Nuga see the child that greeted?’

- b. **á** **wú** Nùᵍgè nóò? n-dzún mén zè à nóò? n-tʃóò?d **í** 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)*

a. ***á** **wú** Nùᵝgè nóò? zú? ʃò ᵐbà Nùmí nóò? n-sʷéèn — á
 FOC WH Nuga AGR.AUX.T2 hear rumour C.L Numi 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** Nùᵝgè nóò? zú? ʃò ᵐbà Nùmí nóò? n-sʷéèn **í** à
 FOC WH Nuga AGR.AUX.T2 hear rumour C.L Numi 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** Nùᵝgè nóò? n-tʃóò?dó [Wàtèt búu —] à?
 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** Nùᵝgè nóò? n-tʃóò?dó Wàtèt búu **jí** à?
 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)*

a. ***á** **wú** Nùᵝgè nóò? n-tʃóò?dó [— búu Wàtèt] à?
 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** Nùᵝgè nóò? n-tʃóò?d [**í** búu Wàtèt] à?
 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-

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** Nùmí nóò? n-tfúp mbù ____ nóò? n-dzún Nùᵑgè 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** Nùmí nóò? n-tfúp mbù **á** nóò? n-dzún Nùᵑgè à
 FOC WH Numi AGR.AUX.T2 N-say C.L 3SG.H AGR.AUX.T2 N-see Nuga C.Q.L
 T.HL V.HL V.H
 ‘Who did Numi say that [s/he] saw Nuga?’

(28) Focus-movement of subject of complement clause

- a. ***á mén** Nùmí nóò? n-tfúp mbù ____ nóò? n-dzún Nùᵑgè lá
 FOC child 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_{FOC} Numi said that saw Nuga.]

- b. **á mén** Nùmí nóò? n-tfúp mbù **á** nóò? n-dzún Nùᵑgè lá
 FOC child 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_{FOC} Numi said that [s/he] saw Nuga.’

(29) **Relativization of subject of complement clause**

a. ***mén** zè Nù mí nóò? n-tfúp mbù _____ nóò? n-dzún Nùᵐgè 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** zè Nù mí nóò? n-tfúp mbù **á** nóò? n-dzún Nùᵐgè 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. ***Nù mí** kí, Nùᵐgèé nóò? n-tfúp mbù _____ nóò? n-dzún Wàtèt
 Numi TOP Nuga.H AGR.AUX.T2 N-say C.L AGR.AUX.T2 N-sell Watat
 T.HL V.H V.HL V.H
 [Numi, Nuga said that saw Watat]

b. **Nù mí** kí, Nùᵐgèé nóò? n-tfúp mbù **á** nóò? n-dzún Wàtèt
 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 wú** Nù mí nóò? n-tfúp mbù Wàtèt nóò? n-dzún _____ 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.HL
 [Who did Numi say that Watat saw?]

b. **á wú** Nù mí nóò? n-tfúp mbù Wàtèt nóò? n-dzún **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.HL
 ‘Who did Numi say that Watat saw [him/her]?’

(32) **Focus-movement of object of complement clause**

- a. ***á** **mén** Nùmí nóò? ⁿ-tʃúp m̀b̀ Wàtèét nóò? ⁿ-dʒúùn ____ 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.HL
 [The child_{FOC} Numi said that Watat saw]

- b. **á** **mén** Nùmí nóò? ⁿ-tʃúp m̀b̀ Wàtèét nóò? ⁿ-dʒúùn **í** 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.HL
 ‘The child_{FOC} Numi said that Watat saw [him/her]’

(33) **Relativization of object of complement clause**

- a. ***mén** z̀ Nùmí nóò? ⁿ-tʃúp m̀b̀ Wàtèét nóò? ⁿ-dʒúùn ____ lá
 child C.CL1 Numi AGR.AUX.T2 N-say C.L Watat.H AGR.AUX.T2 N-AGR.see C.-Q
 T.HL V.H T.HL V.HL
 [The child that Numi said Watat saw]

- b. **mén** z̀ Nùmí nóò? ⁿ-tʃúp m̀b̀ Wàtèét nóò? ⁿ-dʒúùn **í** lá
 child C.CL1 Numi 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.HL
 ‘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):

(34) Ralph believes that someone is a spy

(i) **De dicto reading:** Ralph believes there are spies (Ralph believes: $\exists x$ (x is a spy))

(ii) **De re reading:** Someone is such that Ralph believes that s/he is a spy ($\exists x$ (Ralph believes that x 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:

(35) 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 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 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).

(36) a. dani yimca et [ha-iša še-hu mexapes ____] (*de re/de dicto*)
b. dani yimca et [ha-iša še-hu mexapes ota] (*de re*)
Dani find.FUT ACC the-woman C-3SG searches 3SG.FEM
'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)

Nùmí àʔ-jún b^hó-!k^húʔ tsè á tʃ^wèét ɱ-kú n-djòàk __ lá
 Numi Fut-see pl.child-Dim C.CL6 3sg.H PRS N-IPFV N-AGR.search C.-Q
 HL

‘Lit: Nimi will see the children that he is looking for’

- (i) ***De dicto reading***: Nimi is just looking for some random children (maybe to help him)
- (ii) ***De re reading***: Nimi is looking for a specific group of children

(38) Relative clause (resumptive strategy)

Nùmí àʔ-jún b^hó-!k^húʔ tsè á tʃ^wèét ɱ-kú n-djòàk júb lá
 Numi Fut-see pl.child-Dim C.CL6 3SG.H PRS N-IPFV N-AGR.search 3PL.H C-Q
 HL

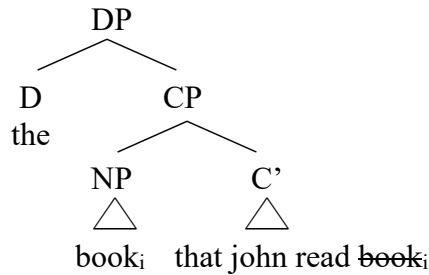
‘Lit: Nimi will find the children that he is looking for them’

- (i) **#*De dicto reading***: Nimi is just looking for some random children
- (ii) ***De re reading***: Nimi 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

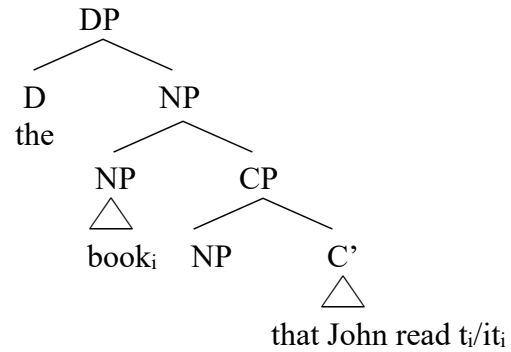
relative clause head is related to the pronoun via binding (see also Safir 1984, 1986, McCloskey 1990, Aoun, Choueiri, and Hornstein 2001).

(39) a. Raising structure



the λx . John read the_x book

b. Head-external structure



the book λx . John read it_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 *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-iša še-ha-itonA'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'.

- (42) **búù** **tʰj** tʰə Nùᵐgèj tóò? **júp** lá nèén jún ᵐvùn
 child.pl 1POSS.CL6 C.CL6 Nuga AGR.chase 3PL.H C.-Q go.H see king
 V.HL

Lit: His children that Nuga banished [them] went to see the king.

- (43) **búù** **tʰj** tʰə Nùᵐgèj sʷéèn **júp** lá nèén jún ᵐvùn
 child.pl 1POSS.CL6 C.CL6 Nuga AGR.sell 3PL.H C.-Q go.H see king
 V.HL

= (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) Nù mí à?-jún b^hó-↓k^há? tsə̀ Nù^ggè tʃúùp m̀bà
 Numi Fut-see PL.child-DIM C.CL6 Nuga N-AGR.say C.L

á tʃ^wèét n-kú n-djòòk **júb** 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) Nùmí à? jún **b^hó-!k^hú?** tsə Nùᵐgè nóò?
 Numi IRR see PL.child-DIM C.CL6 Nuga AGR.AUX.T2

ⁿ-tʃóò?dó ʃ^wín=**jùp** lá
 N-AGR.greet friend=3PL.L C.-Q

*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) Nùmí à? jún **b^hó-!k^hú?** tsə Nùᵐgè nóò?
 Numi IRR see PL.child-DIM C.CL6 Nuga AGR.AUX.T2

^m-fáà bə Wàtèét ^mb^hə **bú** ↓lá
 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).

(47)	á	wú	Nù ^{ngè}	tʃùùp	ᵐbà	ᵐbà	jíit	má- ^{ndzùm}	ló
	FOC	WH	Nuga	AGR.say	C.L	even	which	SG-male	?
				V.HL					
			nóò?	n-tʃóò?dó	í	á			
			AGR.AUX.T2	N-AGR.greet	3SG.H	C.Q.H			
			T.HL	V.HL					

Lit: who did Nuga say that 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

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)**

á	wú	ᵐbà	jíit	má- ^{ndzùm}	ló	nóò?	n-tʃóò?dó	á
FOC	WH	even	which	SG-male	?	AGR.AUX.T2	N-AGR.greet.H	C.Q.H

Lit: who did each man greet?

- (i) *de dicto*: Spkr wants to know who each man greeted
- (ii) *de re*: Spkr wants to know someone specific that each man greeted

(49) **Wh-movement (resumptive strategy)**

á	wú	ᵐbà	jíit	má- ^{ndzùm}	ló.	nóò?	n-tʃóò?d= í	á
FOC	WH	even	which	SG-male	?	AGR.AUX.T2	N-AGR.greet=3SG.H	C.Q.H

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 objects⁴², each of which is interpretable at either LF or PF (Collins 2001:45). In other words, the

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)

principle of Last Resort requires that every operation applies for a reason (Bošcović 2011:1). The principle of Last Resort is defined as follows:

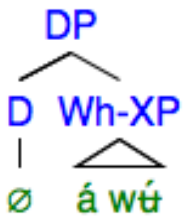
(50) An operation OP may apply only if the derivation would otherwise result in an ungrammatical representation (at PF or LF) (Collins 2001:46).

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).

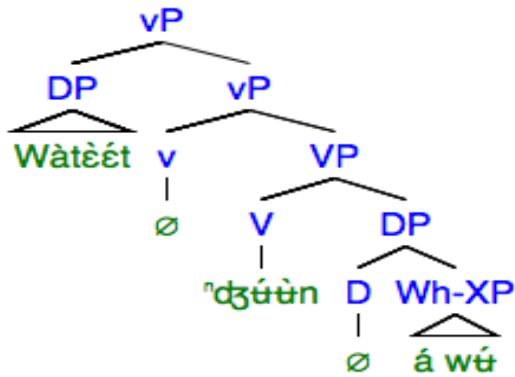
(51) **Which boy** did Lucy laugh after Mary kissed **him**.

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 up 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,



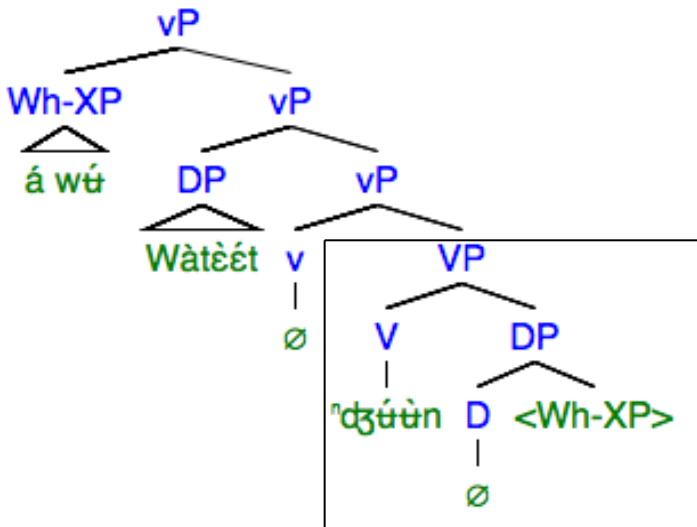
II. Merge <DP; vP> and <V; DP>

[vP [DP^ [Wàtèét]] [vP [v Ø] [VP [V ndzúùn] [DP [D Ø] [Wh-XP^Wh wú]]]



III. Merge Wh-XP to Spec-v to avoid PIC; VP sent to transfer

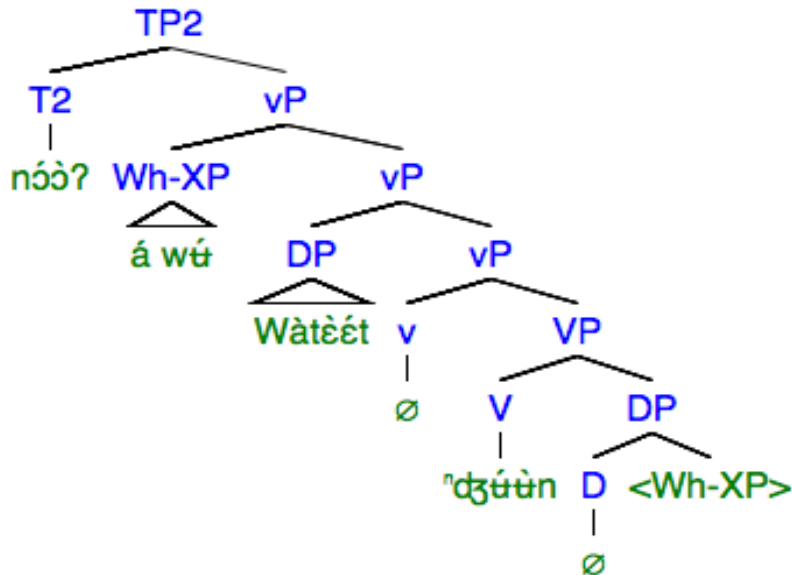
[vP [Wh-XP^ á wú] [vP [DP^ [Wàtèét]] [vP [v Ø] [VP [V ndzúùn] [DP [D Ø] [<Wh-XP>]]]



b. Embedded CP-phase

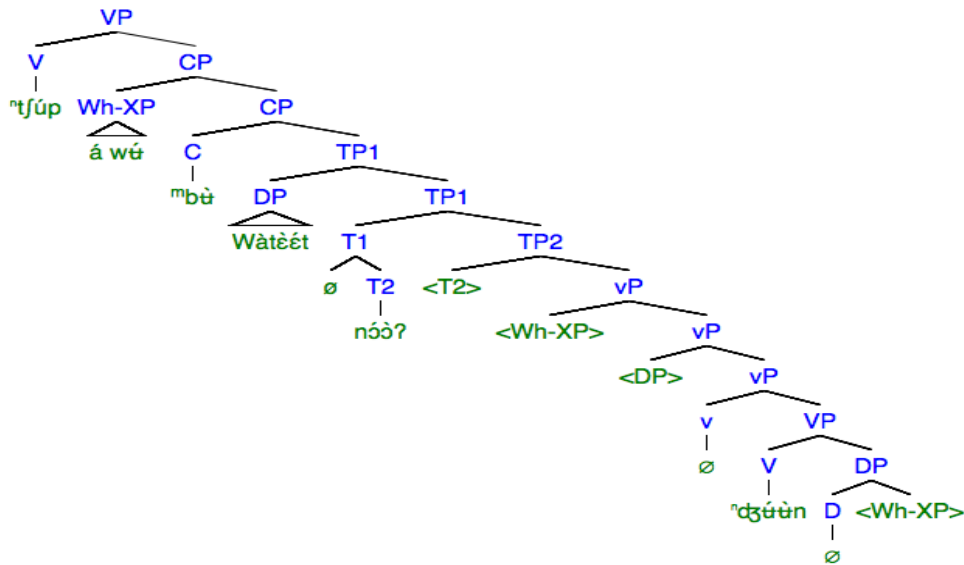
I. Merge <T1; vP>

[TP2 [T2 *nóò?*] [vP [Wh-XP[^] *á wú*] [vP [DP[^] [Wàtèét]] [vP [v \emptyset] [VP [V *ⁿdʒúùn*] [DP [D \emptyset]] [<Wh-XP>]]]]]]



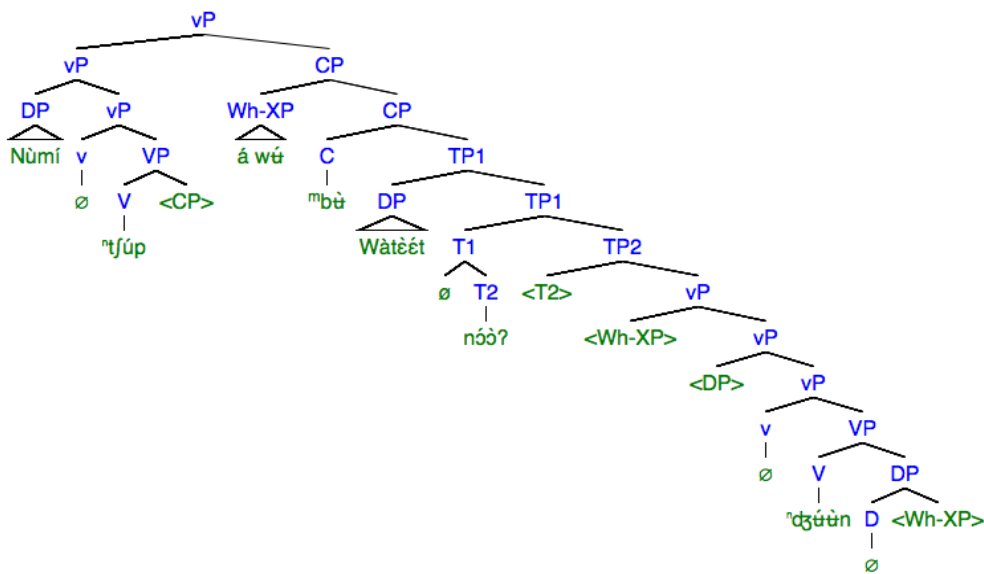
II. Merge <T₀1; TP2>; Subject DP moves to Spec-T1 and t₂ moves to T1

[TP1 [DP[^] [Wàtèét]] [TP1 [T1 \emptyset [T2 *nóò?*]]] [TP2 [<T2>] [vP [Wh-XP[^] *á wú*] [vP [<DP>] [vP [v \emptyset] [VP [V *ⁿdʒúùn*] [DP [D \emptyset]] [<Wh-XP>]]]]]]



II. Merge <v; VP> + extraposition of CP as vP-adjunct; VP sent to transfer

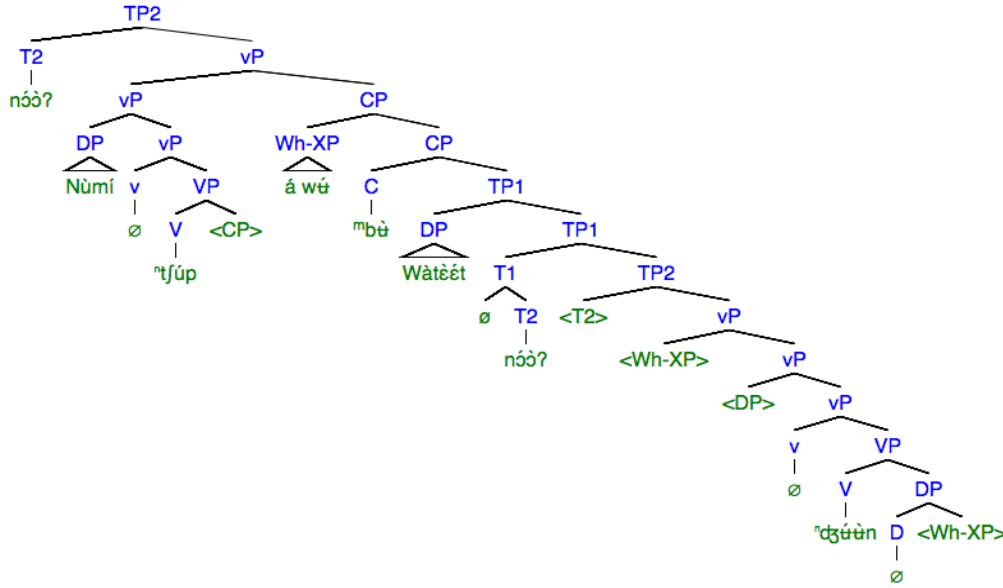
[vP [vP [DP^ Nù mí] [vP [v ø] [VP [V ntfúp] [<CP>]]]] [CP [Wh-XP^ á wú] [CP [C mbù] [TP1 [DP^ Wàtèét] [TP1 [T1 ø [T2 nóò?]] [TP2 [<T2>] [vP [<Wh-XP>] [vP [<DP>] [vP [v ø] [VP [V dʒúùn] [DP [D ø] [<Wh-XP>]]]]]]]]]]



d. Matrix vP-phase

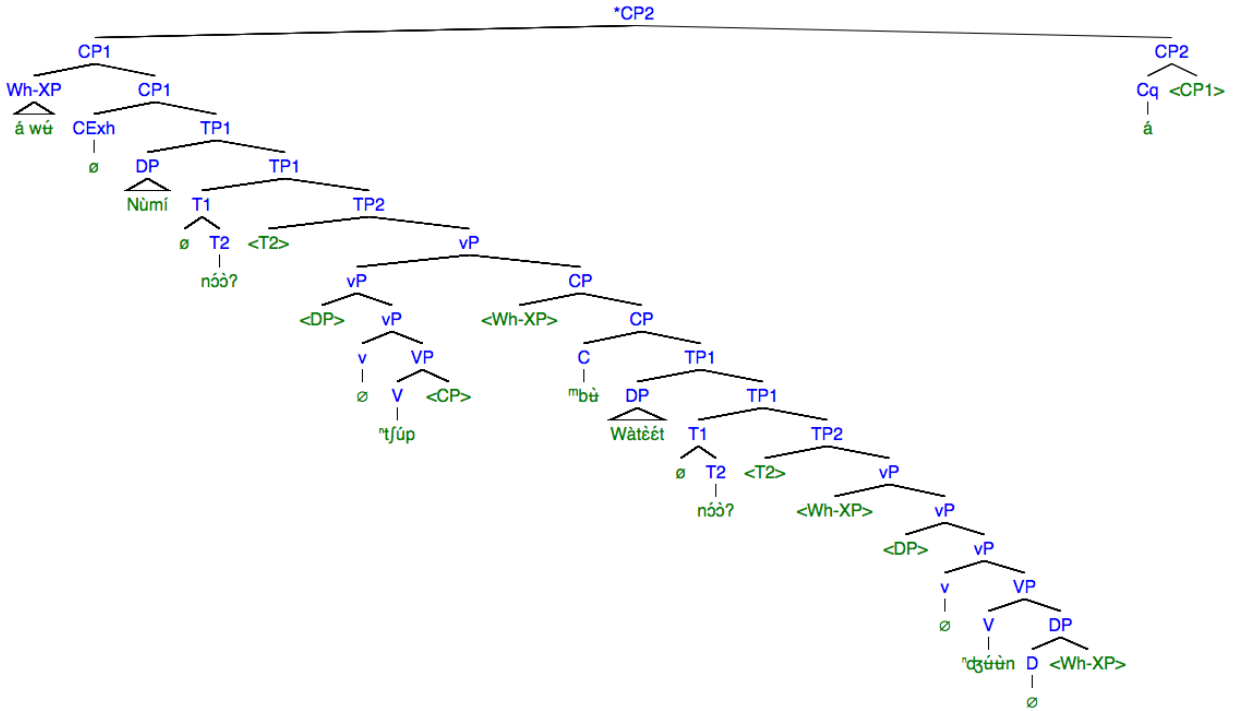
I. Merge < T2; vP >

[TP2 [T2 nòò?] [vP [vP [DP^ Nùmí] [vP [v Ø] [VP [V n̄t̄f̄úp] [<CP>]]]]] [CP [Wh-XP^ á wú]
 [CP [C m̄b̄ù] [TP1 [DP^ [Wàt̄è̄ét]]] [TP1 [T1 Ø [T2 nòò?]]] [TP2 [<T2>]] [vP [<Wh-XP>]] [vP
 [<DP>]] [vP [v Ø] [VP [V n̄d̄z̄úùn] [DP [D Ø] [<Wh-XP>]]]



II. Merge < T02; TP2 >

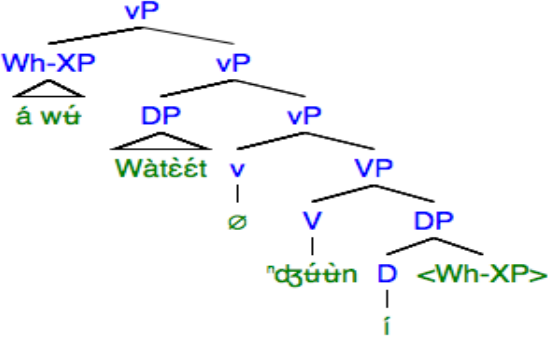
[TP [DP^ Nùmí] [TP1 [T1 Ø [T2 nòò?]]] [TP2 [<T2>]] [vP [vP [<DP>]] [vP [v Ø] [VP [V n̄t̄f̄úp]
 [<CP>]]]]] [CP [Wh-XP^ á wú] [CP [C m̄b̄ù] [TP1 [DP^ [Wàt̄è̄ét]]] [TP1 [T1 Ø [T2 nòò?]]] [TP2
 [<T2>]] [vP [<Wh-XP>]] [vP [<DP>]] [vP [v Ø] [VP [V n̄d̄z̄úùn] [DP [D Ø] [<Wh-XP>]]]



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

[vP [Wh-XP^ á wú][vP [DP^ [Wàtèét]] [vP [v ø] [VP [V ʔdʒúùn] [DP [D í]] [<Wh-XP>]



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 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	Nùᵝgè	nóò?	n-s ^w éèn	—	á?
	FOC	WH	Nuga	AGR.AUX.T2 T.HL	N-AGR.sell V.HL		C.Q.H

(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	Nùᵝgè	nóò?	n-s ^w éèn	í	á?
	FOC	WH	Nuga	AGR.AUX.T2 T.HL	N-AGR.sell V.HL	3SG.H	C.Q.H

(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.

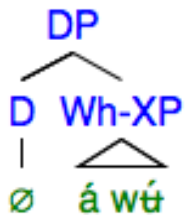
(58) Numeration of the gap structure in (58a)

{Nùᵝgè_N; nóò?_{T1}; n^{s^w}éèn_v; á_{C.Q}; C_{EXh}; v; D₁; D₂; T_ø; á_{FOC}; wú_N}

a. vP-phase

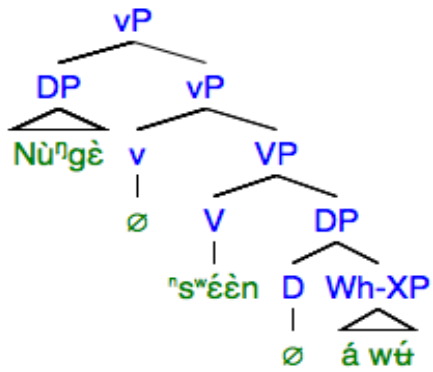
I. Merge <D; Wh-XP >

[DP [D \emptyset] [Wh-XP[^] á wú]]



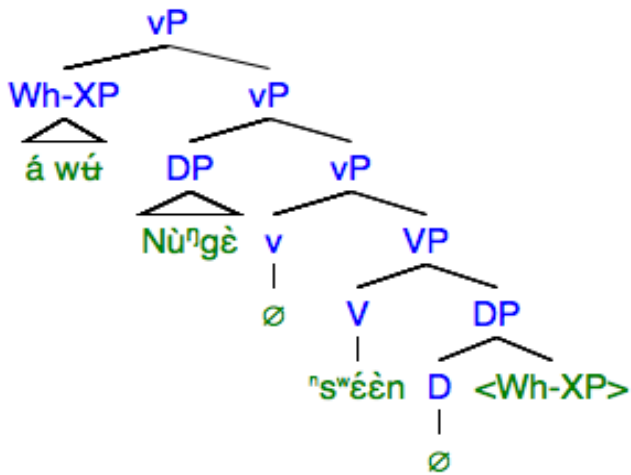
II. Merge <DP; vP> and <V; DP>

[vP [DP[^] [Nùᵝgè]]] [vP [v \emptyset] [VP [V n^{s^w}éèn] [DP [D \emptyset] [Wh-XP[^] á wú]]]



III. Merge Wh-XP to Spec-v to avoid PIC; VP sent to transfer

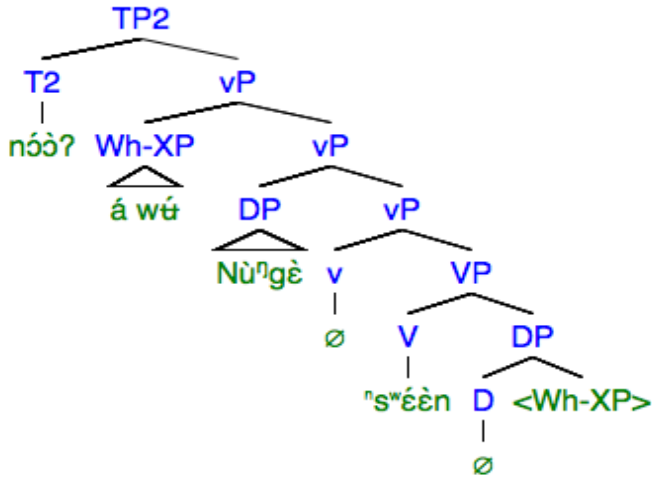
[vP [Wh-XP[^] á wú][vP [DP[^] [Nùᵑgè]] [vP [v ∅] [VP [V ⁿsʷéèᵑ] [DP [D ∅] [<Wh-XP>]]



b. CP-phase

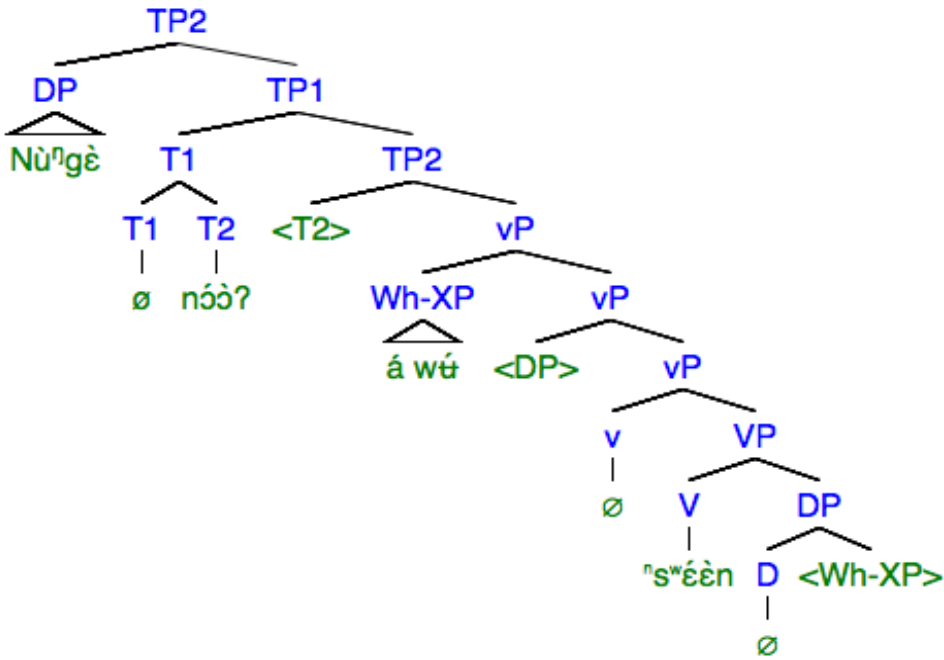
I. Merge <T2;vP>

[TP2 [T2 nóᵑ?] [vP [Wh-XP[^] á wú][vP [DP[^] [Nùᵑgè]] [vP [v ∅] [VP [V ⁿsʷéèᵑ] [DP [D ∅] [<Wh-XP>]]



II. Merge < T_∅; TP2>

[TP2 [DP[^] [Nùᵑgè]] [TP1 [T1 [T1 ∅] [T2 nóò?]] [TP2 [<T2>]] [vP [Wh-XP[^] á wú] [vP [<DP>]] [vP [v ∅] [VP [V sʷéèᵑ] [DP [D ∅] [<Wh-XP>]]



III. Merge < C_{Exh}; TP>

[CP1 [Wh-XP[^] á wú][CP1 [C_{Exh} ∅] [TP2 [DP[^] [Nùᵑgè]] [TP1 [T1 [T1 ∅] [T2 nóò?]] [TP2 [<T2>]] [vP [<Wh-XP>]] [vP [<DP>]] [vP [v ∅] [VP [V sʷéèᵑ] [DP [D ∅] [<Wh-XP>]]

5.3.3 Implications of the economy (of derivation versus interpretation) partition

In the preceding section we saw that resumption in 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 result in ungrammaticality whereas semantic economy or economy of interpretation is used for configurations that would result 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.

	Individual	Natural function	Pair-list
Non-plural wh-XP	YES	NO	NO
Plural wh-XP	NO	NO	YES

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-ⁿdzùm ló nòò? ⁿ-tʃòò?dó — 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 Nù^gè
 FOC Nuga
 ‘Nuga’
 b. á Nù^gè búù Sèémí
 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-ⁿdžùm
FOC pl-male
'The men'
- b. á bá-ⁿdžùm bú à bùú-[↓]žwí
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.

Question Strategies			INDIVIDUAL	NATURAL FUNCTION	PAIR LIST
<i>Bare wh</i>	<i>Gap</i>		✓	✗	✗
	<i>Resumption</i>	<i>Simplex PRN</i>	✓	✗	✗
		<i>Complex PRN</i>	✓	✗	✗
<i>Sg. D-linked</i>	<i>Gap</i>		✓	✗	✗
	<i>Resumption</i>	<i>Simplex PRN</i>	✓	✗	✗
		<i>Complex PRN</i>	✓	✗	✗

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)**

á wú mbà jít má-ndzùm ló nóò? n-tʃóòʔdó ___ 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)

á wú mbà jít má-ndzùm ló nóò? n-tʃóòʔd **í** 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)

á wú mbà jít má-ndzùm ló nóò? n-tʃóòʔdó **jóg-bóg-à-bú** 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 Nùᵐgè
 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 jîit mèn-zwí mbà jîit má-ndzùm ló nóò? n-tʃóòʔdó 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?

Q2 (with simple pronoun)

á jîit mèn-zwí mbà jîit má-ndzùm ló nóò? n-tʃóòʔd=í á
 FOC SG.which pers-female even SG.which SG-male ? AGR.AUX.T2 N-AGR.greet=3SG.H C.Q.H
 T.HL V.HL

Lit.: which woman did each man greet her yesterday?

Q3 (with complex pronoun)

á jîit mèn-zwí mbà jîit má-ndzùm ló nóò? n-tʃóòʔdó **jóg-bóg-à-bú** á
 FOC which pers-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?

(65) A: á Nùᵐgè
 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-XP⁴³, the answer *á máuyáp* ‘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 wú** mbà jîit má-ndzùm ló nóò? n-tʃóòʔdó ___ 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 wú** mbà jîit má-ndzùm ló nóò? n-tʃóòʔd=í 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 wú** mbà jîit má-ndzùm ló nóò? n-tʃóòʔdó **jóg-bóg-à-bú** á

(66) Q1 (with gap)

á jîit mèn-zwí mbà jîit má-ⁿdzùm ló nóò? ⁿ-tʃóò?dó 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?

Q2 (with simple pronoun)

á jîit mèn-zwí mbà jîit má-ⁿdzùm ló nóò? ⁿ-tʃóò?d=**í** á
 FOC SG.which pers-female even SG.which SG-male ? AGR.AUX.T2 N-AGR.greet=3SG.H C.Q.H
 T.HL V.HL

Lit.: which woman did each man greet her yesterday?

Q3 (with complex pronoun)

á jîit mèn-zwí mbà jîit má-ⁿdzùm ló nóò? ⁿ-tʃóò?d=**í** á
 FOC SG.which pers-female even SG.which SG-male ? AGR.AUX.T2 N-AGR.greet=3SG.H C.Q.H
 T.HL V.HL

Lit.: which woman did each man greet her yesterday?

(67) A: #á máuáp
 FOC mother.3POSS
 ‘His mother’

In the above examples, the answer *á máuáp* ‘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 máuáp* ‘his mother’ in the above examples is infelicitous as it leaves open the set of alternatives that can be used as

(ii) 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 [us&them] yesterday?
 #á máuáp
 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. *mbà jíit má-ⁿdzùm ló nó? tʃòʔdèé á jíit mèn-^zwí 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. *máwáp*
 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-phrase⁴⁴.

(69) Q1 (with gap)

- á jíit mèn-^zwí mbà jíit má-ⁿdzùm ló nóʔ n-tʃòʔdèé 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 wú mbà jíit má-ⁿdzùm ló nóʔ n-tʃòʔdèé — á*
 Q2 (simple PRN): *á wú mbà jíit má-ⁿdzùm ló nóʔ n-tʃòʔdèé=i á*
 Q3 (complex PRN): *á wú mbà jíit má-ⁿdzùm ló nóʔ n-tʃòʔdèé jóg-bóg-à-bú 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: *#[súù? m-bá-^lá Wàtèt lá, Pità nóʔ n-tʃòʔdèé=i;*
súù? m-bá-^lá Nùgè lá, Màrjà nóʔ n-tʃòʔdèé=i]
 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 jít mèn-zwí m̀bà jít má-ndzùm ló nòò? n-tʃɔ̀ɔ̀d=i á
 FOC SG.which pers-female even SG.which SG-male ? AGR.AUX.T2 N-AGR.greet=3SG.H C.Q.H
 T.HL V.HL
 Lit.: which woman did each man greet her yesterday?

Q3 (with complex pronoun)

á jít mèn-zwí m̀bà jít má-ndzùm ló nòò? n-tʃɔ̀ɔ̀dɔ́ **jóg-bóg-à-bú** á
 FOC which pers-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?

(70) A: #[sùù? m̀bá-↓á **Wàtèt** lá, Pità nòò? n-tʃɔ̀ɔ̀d=i;
 come N-be-FOC Watat C Peter AGR.AUX.T2 N-greet=3SG.H

 sùù? m̀bá-↓á **Nùgè** lá, Màrjà nòò? n-tʃɔ̀ɔ̀d=i]
 come N-be-FOC Nuga C Mary AGR.AUX.T2 N-AGR.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.

Question Strategies			INDIVIDUAL	NATURAL FUNCTION	PAIR LIST
<i>bà wh-XP</i>	<i>Gap</i>		✗	✗	✓
	<i>Resumption</i>	<i>Simplex PRN</i>	✗	✗	✓
		<i>Complex PRN</i>	✗	✗	✓
<i>PL. D-linked</i>	<i>Gap</i>		✗	✗	✓
	<i>Resumption</i>	<i>Simplex PRN</i>	✗	✗	✓
		<i>Complex PRN</i>	✗	✗	✓

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-linked⁴⁵ 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** mbà jíit má-ndzùm ló nóò? ⁿ-tʃóò?dó ___ 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** mbà jíit má-ndzùm ló nóò? ⁿ-tʃóò?d=**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?
- Q3 (complex PRN): **á** **bà-wú** mbà jíit má-ndzùm ló nóò? ⁿ-tʃóò?dó **jóg-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 did each man greet them/[us&them] yesterday?
- (ii) A: #á Nùᵐgè
 FOC Nuga

(71) Q1 (with gap)

á **tfiit** **bùú-zwí** ^mbà jiiit má-ⁿdzùm ló nóò? ⁿ-tʃóòʔdǎ 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 **tfiit** **bùú-zwí** ^mbà jiiit má-ⁿdzùm ló nóò? ⁿ-tʃóòʔd=**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 **tfiit** **bùú-zwí** ^mbà jiiit má-ⁿdzùm ló nóò? ⁿ-tʃóòʔdǎ **jóg-bóg-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?

(72) A: #á Nù^ggè
 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.

(73) Q1 (with gap)

á **tfiit** **bùú-zwí** ^mbà jiiit má-ⁿdzùm ló nóò? ⁿ-tʃóòʔdǎ 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 **tfiit** **bùú-zwí** ^mbà jiiit má-ⁿdzùm ló nóò? ⁿ-tʃóòʔd=**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?

Q2 (with simple pronoun)

á **tʃiit** **bùú-zwí** ^mbà jiiit má-ⁿdzùm ló nóò? ⁿ-tʃóò?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** **bùú-zwí** ^mbà jiiit má-ⁿdzùm ló nóò? ⁿ-tʃóò?dó **jóg-bóg-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 them/[us&them] yesterday?

(76) A: #á ⁿgù-má-júp
 FOC girl-mother.3POSS
 ‘Their sisters’

5.4.2.3 Pair-list denotation possible with bare wh-XP

Unlike non-plural wh-XPs, the pair-list denotation is available with plural wh-XPs 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-phrases⁴⁷ 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 bà-marked wh-phrase

(i) Q1 (gap): **á** **bà-wú** ^mbà jiiit má-ⁿdzùm ló nóò? ⁿ-tʃóò?dó 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** ^mbà jiiit má-ⁿdzùm ló nóò? ⁿ-tʃóò?d=**í** 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** ^mbà jiiit má-ⁿdzùm ló nóò? ⁿ-tʃóò?dó **jóg-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: [sùù? ^m-bá-^lá **Wàtèt** lá, Pità nóò? ⁿ-tʃóò?d=í;
 come N-be-FOC Watat C Peter AGR.AUX.T2 N-AGR.greet=3SG
 sùù? ^m-bá-^lá **Nùgè** lá, Màrjà nóò? ⁿ-tʃóò?d=í]
 come N-be-FOC Nuga C Mary AGR.AUX.T2 N-AGR.greet=3SG
 Lit: As for Watat, Peter greeter him/her; as for Nuga, Mary greeted him/her’

(77) Q1 (with gap)

á **tfiit** **bùú-zwí** ^mbà jíit má-ⁿdzùm ló nóò? ⁿ-tʃóò?dó 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 **tfiit** **bùú-zwí** ^mbà jíit má-ⁿdzùm ló nóò? ⁿ-tʃóò?d=**júp** 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 **tfiit** **bùú-zwí** ^mbà jíit má-ⁿdzùm ló nóò? ⁿ-tʃóò?dó **jóg-bóg-à-bú** á
 FOC which people-female even which SG-male ? AGR.AUX.T2 N-AGR.greet 1PL[1PL+3PL] C.Q.H
 HL HL

Lit.: which woman did each man greet [us&them] yesterday?

(78) A: [súù? ^m-bá-**á** **Wàtèt** lá, Pitàá nóò? ⁿ-tʃóò?d=i;
 come N-be-FOC Watat C Peter.H AGR.AUX.T2 N-AGR.greet=3SG.H
 súù? ^m-bá-**á** **Nùgè** lá, Màrjàá nóò? ⁿ-tʃóò?d=i]
 come N-be-FOC Nuga C Mary.H AGR.AUX.T2 N-AGR.greet=3SG.H
 Lit: As for Watat, Peter greeter 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.

QUESTION STRATEGIES			ANSWER DENOTATION		
Non-plural wh-XPs			INDIVIDUAL	NATURAL FUNCTION	PAIR LIST
<i>Bare wh</i>	<i>Gap</i>		✓	✗	✗
	<i>Resumption</i>	<i>Simple PRN</i>	✓	✗	✗
		<i>Complex PRN</i>	✓	✗	✗
<i>Sg. D-linked</i>	<i>Gap</i>		✓	✗	✗
	<i>Resumption</i>	<i>Simple PRN</i>	✓	✗	✗
		<i>Complex PRN</i>	✓	✗	✗
Plural wh-XPs			INDIVIDUAL	NATURAL FUNCTION	PAIR LIST
<i>bà wh-XP</i>	<i>Gap</i>		✗	✗	✓
	<i>Resumption</i>	<i>Simple PRN</i>	✗	✗	✓
		<i>Complex PRN</i>	✗	✗	✓
<i>PL. D-linked</i>	<i>Gap</i>		✗	✗	✓
	<i>Resumption</i>	<i>Simple PRN</i>	✗	✗	✓
		<i>Complex PRN</i>	✗	✗	✓

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.

	Q-SEMANTICS			
	Inquisitive Q	Exhaustive Q	Reprise Q	Reprise exhaustive Q
Medumba	<i>wh-XP (i.e. in-situ)</i>	<i>wh-XP + Move</i>	<i>wh-XP + dī</i>	<i>wh-XP + Move + dī</i>
English	<i>wh-XP + Move (i.e. ex-situ)</i>	<i>wh-XP + Move + only</i>	<i>wh-XP</i>	<i>wh-XP + only</i>

Table 6. 1: The broader landscape of wh-questions: strategies and 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-/foci 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

[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] [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).

	FORM OF AGREEMENT						
	Copy	Concordial Agreement				Other means	
		Morphemes		Tonemes		A'-particle	(Stylistic) inversion
Languages	German	Chamorro	Kilega	Kikuyu	Medumba	Duala	French
	<i>Germanic</i>	<i>Austronesian</i>	<i>Bantu</i> <i>D25</i>	<i>Bantu</i> <i>E50</i>	<i>Grassfields</i> <i>Bantu</i>	<i>Bantu</i> <i>A25</i>	<i>Romance</i>

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 other 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 diagnostics⁴⁸ 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 DPs⁴⁹ (2), and generics (3).

(1) a. Subject

bú	kí,	bú	nóò?	n-tʃóò?dó	Nùᵐgè
3PL	TOP	3PL.H	AGR.AUX.T2	N-greet.H	Nuga
			T.HL		

‘Them, they greeted Nuga.’

b. Object

bú	kí,	Nùᵐgèé	nóò?	n-tʃóò?dó	júbó
3PL	TOP	Nuga.H	AGR.AUX.T2	N-AGR.greet.H	3PL.H
			T.HL	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

ᵐgè-ᵐᵗᵗᵐ kí, **á** nóᵔᵗ ᵐ-dzún Nùᵐgè
 Agt.sg-school TOP 3SG.H AGR.AUX.T2 N-see Nuga
 T.HL

‘The student, s/he saw Nuga.’

b. Object

ᵐgè-ᵐᵗᵗᵐ kí, Nùᵐgèé nóᵔᵗ ᵐ-dzún **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-ᵐdzùm kí, **bú** ᵐ-kóò bú-bàú-ᵐᵗᵗᵐ
 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-ᵐdzùm kí, bú-bàú-ᵐᵗᵗᵐ ᵐ-kóò **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, *ki*-moved XPs in Medumba cannot be non-specific indefinites (4), quantified DPs (5), negative DPs⁵⁰ (6), or inherently focused DPs (7).

(4) a. Subject

*tàᵗ mèn-mèn-ᵐᵗᵗᵐ kí, á nóᵔᵗ ᵐ-tfóᵔᵗd=ám
 Indef. child-person-female TOP 3SG.H AGR.AUX.T2 N-greet=1PL.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

*tàʔ	mén-mèn- ⁿ ʒwí	kí,	mú	nóòʔ	ⁿ -tʃóòʔd=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

*mbà	jít	ⁿ gèŋwòʔnì	ló	kí,	á	nóòʔ	ⁿ -tʃóòʔd=ám
even	which	student	?	TOP	3SG.H	AGR.AUX.T2	N-greet=1PL.H
						T.HL	

[Each student, s/he greeted me]

b. Object

*mbà	jít	ⁿ gèŋwòʔnì	ló	kí,	mú	nóòʔ	ⁿ -tʃóòʔd=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

*sòò-mèn	kí,	á	nóòʔ	ⁿ -tʃóòʔd=ám
Neg-person	TOP	3SG.H	AGR.AUX.T2	N-greet=1PL.H
			T.HL	

[Nobody, s/he greeted me]

b. Object

*sòò-mèn	kí,	mú	nóòʔ	ⁿ -tʃóòʔd=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

*ndòòʔ	ʃwín=àm	kí,	á	nóòʔ	ⁿ -tʃóòʔd=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]

(14) **Adjunct island**

a. Nùmí ↓kí mù lúù á n-dèn-mbù ù kúù? kî-n=í
Numi TOP 1SG.L AGR.leave FOC N-know-C 2SG.L NEG AGR.feed=3SG.H
V.HL V.HL

‘*Numi_i, I left [because you didn't feed him_i]’⁵¹

b. *Nùmí ↓kí mù lúù á n-dèn-mbù ù kúù? kî _____
Numi TOP 1SG.L AGR.leave FOC N-know-C 2SG.L NEG AGR.feed _____
V.HL V.HL

[*Numi_i, I left [because you didn't feed _____]]

(15) **Complex DP** (relative clause)

a. Nùmí ↓kí mú lèén tsítʃɛ zè à júùn=í ↓lá
Numi TOP 1SG.H AGR.know teacher C.CL1 3SG.L AGR.see=3SG.H C-Q
V.HL

‘*Numi_i, I know the teacher [who saw him_i]’

b. *Nùmí ↓kí, mú lèén tsítʃɛ zè à júùn _____ lá
Numi TOP 1SG.H AGR.know teacher C.CL1 3SG.L AGR.see _____ C.-Q
V.HL

[*Numi_i, I know the teacher [who saw _____]]

(16) **Coordinate structure** (left adjunct)

a. Nùmí ↓kí mú júùn í búù Nùᵘgè
Numi TOP 1SG.H AGR.see 3SG.H PL.3 Nuga
V.HL

‘*Numi_i, I saw [him_i and Nuga]’

b. *Nùmí ↓kí mú júùn _____ búù Nùᵘgè
Numi TOP 1SG.H AGR.see _____ PL.3 Nuga
V.HL

[*Numi_i, I saw [____ and Nuga]]

⁵¹ In Medumba, rationale ‘because’ clauses are focus-marked *a ndèn-mbù* ‘knowing that...’ or ‘having the knowledge of...’.

(17) **Coordinate structure** (right adjunct)

a. Nù mí kí mú jùùn Nùᵑgè búù jí
 Numi TOP 1SG.H AGR.see Nuga PL.3 3SG.H
 V.HL

‘*Numi_i, I saw [Nuga and him_i]

b. *Nù mí kí mú jùùn Nùᵑgè búù ____
 Numi TOP 1SG.H AGR.see Nuga PL.3
 V.HL

[*Numi_i, I saw [Nuga and ____]]

- **kí-topicalization conditions A'-agreement**

(18) a. Subject

Nù mí kí, Nùᵑgèé nódò? n-tfùp m̀b̀ù á nódò? n-dzún Wàtèt
 Numi TOP Nuga.H AGR.AUX.T2 N-say C.L 3SG.H AGR.AUX.T2 N-see Watat
 T.HL T.HL

‘Numi, Nuga said [he] betrayed Watat’

b. Object

Nù mí kí, Nùᵑgèé nódò? n-tfùp m̀b̀ù Wàtèt nódò? n-dzún =í
 Numi TOP Nuga.H AGR.AUX.T2 N-say C.L Watat AGR.AUX.T2 N-AGR.see=3SG.H
 T.HL T.HL V.HL

‘Numi, Nuga said that Watat betrayed [him/her] ...’

Summary

Diagnostic:	Type of A'-movement			
	Topic	Relativization	Focus	Wh
Long-distance movement	✓	✓	✓	✓
Reconstruction	✓	✓	✓	✓
Strong Crossover	✓	✓	✓	✓
Weakest Crossover	✓	✓	✓	✓
Island requires resumption	✓	✓	✓	✓
A'-agreement	✓	✓	✓	✓

Table A 1: *kí*-movement as A'-movement

A.3 *ki*-movement is not a well-behaved species of A'-movement

- *ki*-movement does not allow gapping

(19) ***má-ndzùm** kí Wàtèt nóò? n-s^wéèn ____
 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 nóò? n-s^wéèn=(**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-ⁿdzùm** Wàtèt nóò? n-s^wéèn=(**i**) ↓lá
 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-ndzùúm zè Wàtèt nóò? n-s^wéèn=(**i**) ↓lá ...
 SG-male.H C.CL1 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-ndzùm kí Wàtèt nóò? n-s^wéèn=*(**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	<u> </u>	nóò?	ⁿ -s ^w éèn	Nù ^g è	à?
b.	á	wú	à	nóò?	ⁿ -s ^w éèn	Nù ^g è	à?
c.	á	wú	á	nóò?	ⁿ -s ^w éèn	Nù ^g è	à?
	FOC	WH	3SG	AGR.AUX.T2 T.HL	N-sell	Nuga	C.Q.L

‘Who (he) betrayed Nuga?’

(23) Focus movement

a.	á	má-ⁿdžùm	<u> </u>	nóò?	ⁿ -s ^w éèn	Nù ^g è	lá
b.	á	má-ⁿdžùm	à	nóò?	ⁿ -s ^w éèn	Nù ^g è	lá
c.	á	má-ⁿdžùm	á	nóò?	ⁿ -s ^w éèn	Nù ^g è	lá
	FOC	SG-male	3SG	AGR.AUX.T2 HL	N-sell	Nuga	C.-Q

‘The boy_{FOC} (he) betrayed Nuga’

(24) Relative clause

a.	*má-ⁿdžùúm	zè	<u> </u>	nóò?	ⁿ -s ^w éèn	Nù ^g è	lá ...
b.	má-ⁿdžùúm	zè	à	nóò?	ⁿ -s ^w éèn	Nù ^g è	lá ...
c.	má-ⁿdžùúm	zè	á	nóò?	ⁿ -s ^w éèn	Nù ^g è	lá ...
	SG-male.H	C.CL1	3SG	AGR.AUX.T2 HL	N-sell	Nuga	C.-Q

‘The boy that (he) betrayed Nuga...’

(25) *kí*-movement

a.	*má-ⁿdžùm	kí	<u> </u>	nóò?	ⁿ -s ^w éèn	Nù ^g è	lá ...
b.	*má-ⁿdžùm	kí	à	nóò?	ⁿ -s ^w éèn	Nù ^g è	lá ...
c.	má-ⁿdžùm	kí	á	nóò?	ⁿ -s ^w éèn	Nù ^g è	lá ...
	SG-male.H	TOP	3SG	AGR.AUX.T2 T.HL	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,

- b. *Nùᵘgè kí Wàtèét nòòʔ n-sʷéèn —
 Nuga TOP Watat.H AGR.AUX N-AGR.sell

The same copy strategy is involved in classical anaphora as shown in (27) and (28):

- (27) Nùᵘgèéj jún Nùᵘgèj
 Nuga.H see Nuga
 Lit: Nuga saw Nuga
 ‘Nuga saw himself’

- (28) Nùᵘgèj kí Nùᵘgèéj jún Nùᵘgèj
 Nuga Top Nuga.H AGR.see Nuga
 Lit: Nuga, Nuga saw Nuga
 ‘As for Nuga, he saw himself’

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

[bág-↓bág-à-bú] ↓kí, Nùᵘgèé fáà bò [bág-↓bág-à-bú]
 1PL-1PL-LNK-3PL TOP Nuga.H AGR.give bag 1PL-1PL-LNK-3PL
 ‘[Us&them]_i, Nuga gave the bag to [us&them]_i’

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.

(30) Copy + scattered deletion of the head

[bóg- bóg-à-bú]	↓kí,	Nùᵐgèé	fáà	bò	[bóg-↓bóg-à-bú]
1PL	TOP	Nuga.H	AGR.give	bag	1PL-1PL-LNK-3PL

‘[Us]_i, Nuga gave the bag to [us&them]_i’

(31) Copy + scattered deletion of the tail

[bóg-↓bóg-à-bú]	↓kí,	Nùᵐgèé	fáà	bò	[bóg- bóg-à-bú]
1PL-1PL-LNK-3PL	TOP	Nuga.H	AGR.give	bag	1PL

‘[Us&them]_i, Nuga gave the bag to [us]_i’

(32) Copy + scattered deletion of the head and the tail

[bóg- bóg-à-bú]	↓kí,	Nùᵐgèé	fáà	bò	[bóg- bóg-à-bú]
1PL	TOP	Nuga.H	AGR.give	bag	1PL

‘[Us]_i, Nuga gave the bag to [us]_i’

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.

(33) *[bóg-↓bóg-à-**bú**]

↓kí,	Nùᵐgèé	fáà	bò	[bóg-↓bóg-à- bín]	
1PL-1PL-LNK-3PL	TOP	Nuga.H	AGR.give	bag	1PL-1PL-LNK-2PL

‘[Us&them]_i, Nuga gave the bag to [us&you]_i’

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.

(34) Copy and full spell-out of the head and the tail (**VP topicalization**)

nù	tfɔ̃ʔdǎ́	nùᵒᵒᵍè	kí	Wàtèét	nóòʔ	n-tfɔ̃ʔdǎ́	Nùᵒᵒᵍè
Inf	greet.H	Nuga	TOP	Watat.H	AGR.AUX.T2	N-AGR.greet.H	Nuga
					T.HL	V.HL	

‘As for [greeting Nuga], Watat greeted Nuga’

(35) Copy and scattered deletion of the tail (**V topicalization**)

nù	tfɔ̃ʔdǎ́	Nùᵒᵒᵍè	kí	Wàtèét	nóòʔ	n-tfɔ̃ʔdǎ́	Nùᵒᵒᵍè
Inf	greet.H	Nuga	TOP	Watat.H	AGR.AUX.T2	N-AGR.greet.H	
					T.HL	V.HL	

‘As for [greeting], Watat greeted Nuga’

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

BASE		Surface tonal allomorphs conditions				
		Phonological	Morphological		Syntax	
		— ^{#(Hμ)}	N-NMLZ ^(Lμ)	N- ^(H)	— ^(H) DP	HLμ(overwrite) ⁵³
1	CV _L	CVV _{LH}	CVV _{LL}	CVV _{HL}	CVV _{LH}	CVV _{HL}
2	CV	CV _H	CVV _{HL}	CV _H	CV _H	CVV _{HL}
3	CVC _L	CVCV _{LH}	CVVC _{LL}	CVVC _{HL}	CVVC _{LH}	CVVC _{HL}
4	CVC	CVCV _{HH}	CVVC _{HL}	CVC _H	CVC _H	CVVC _{HL}
Contexts		Final position	Nominalization	(i) non-initial V (ii) V2-form in SVCs	(i) Inf. V DP (ii) V _{TNS} DP	A'-movement

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_{LH} (38a) or CVC_{LH} (38c) and unmarked stems as CV_H (38b) or CVCV_H (38d).

⁵³ Exception to this are the Aux. fə and lù (which appear with a LH contour) and the future marker à? which doesn't change in A-bar context.

- c. Nùᵝgèé fà ᵝ-kéèg nà CVC_L → CVVC_{HL}
 Nuga.H AUX.T3 N -H.weed field
HL
 ‘Nuga weeded the field yesterday’
- d. Nùᵝgèé fà ᵝ-kék ηᵝóᵝó CVC → CVC_H
 Nuga.H AUX.T3 N -H.harvest bee
H
 ‘Nuga harvested honey yesterday’

(42) V2 of SVCs

- a. Nùᵝgèé jún bò ᵝ-kéè CV_L → CVV_{HL}
 Nuga.H see bag N-H.choose
HL
 ‘Nuga saw the bag and chose it’
- b. Nùᵝgèé ᵝwín tò ᵝ-ké CV → CV_H
 Nuga.H buy cricket N-H.fry
H
 ‘Nuga bought the cricket(s) and fried it/them’
- c. Nùᵝgèé ᵝwín nà ᵝ-kéègᵝ CVC_L → CVVC_{HL}
 Nuga.H buy field N-H.weed
H- LHμ#
 ‘Nuga bought the field and weeded it’
- d. Nùᵝgèé jún ηᵝóᵝó ᵝ-kéᵝᵝ CVC → CVC_H
 Nuga.H see bee N-H.harvest
H- HHμ#
 ‘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 CV_{LH} (43a & 44a) or as CVVC_{LH} (43c & 44c). Unmarked stems in these contexts surface as CV_H (43b & 44b) or as CVC_H (43d & 44d).

(43) Tensed V preceding a direct object

- a. Nù^{ng}èé **kèé** bò CV_L → CVV_{LH} DP
Nuga.H choose.H bag
 LH
‘Nuga chose the bag’
- b. Nù^{ng}èé **ké** tò CV → CV_H DP
Nuga.H fry.H cricket
 H
‘Nuga fry the cricket’
- c. Nù^{ng}èé **kèég** nà CVC_L → CVVC_{LH} DP
Nuga.H weed.H field
 LH
‘Nuga weeded the field’
- d. Nù^{ng}èé **kék** η^wó[’]o CVC → CVC_H DP
Nuga.H harvest.H bee
 H
‘Nuga harvested honey’

(44) Infinitive V with an object

- a. nù **kèé** bò CV_L → CVV_{LH} DP
INF choose.H bag
 LH
‘to choose the bag’
- b. nù **ké** tò CV → CV_H DP
INF fry.H cricket
 H
‘to fry the cricket’
- c. nù **kèég** nà CVC_L → CVVC_{LH} DP
INF weed.H field
 LH
‘to weed the field’
- d. nù **kék** η^wó[’]o CVC → CVC_H DP
INF harvest.H bee
 H
‘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_{HL} or CVVC_{HL} as illustrated in the following examples for wh-movement.

- (45) a. á wú Nùṅgè kḗḗ á CV_L → CVV_{HL}
 FOC WH Nuga AGR.choose C.Q.H
 HL
 ‘Who did Nuga choose?’
- b. á kú Nùṅgè kḗḗ á CV → CVV_{HL}
 FOC WH Nuga AGR.fry C.Q.H
 HL
 ‘What did Nuga fry?’
- c. á kú Nùṅgè kḗḗg á CVC_L → CVVC_{HL}
 FOC WH Nuga AGR.weed C.Q.H
 HL
 ‘What did Nuga weed?’
- d. á kú Nùṅgè kḗḗg á CVC → CVVC_{HL}
 FOC WH Nuga AGR.harvest C.Q.H
 HL
 ‘What did Nuga harvest?’

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.

CL	SG			CL	PL		
1	<i>m-én</i> CL1-child	∅-àm CL1-1POSS	‘my child’	6	<i>b-ún</i> CL6-child	<i>tf-ám</i> CL6-1POSS	‘my children’
	∅-shùm CL1-son	∅-àm CL1-1POSS	‘my son’		<i>fùúm-shùm</i> CL6 _A -son	<i>tf-ám</i> CL6-1POSS	‘my sons’
	∅- ^m b ^h ú CL1-dog	∅-àm CL1-1POSS	‘my dog’		∅- ^m b ^h ú CL6-dog	<i>tf-ám</i> CL6-1POSS	‘my dogs’
3	∅- ^b hú CL3-hand	∅-ám CL3-1POSS	‘my hand’	4	<i>m-^bhú</i> CL4-hand	<i>m-ám</i> CL4-1POSS	‘my hands’
5	∅-sò CL5-tooth	<i>s-ám</i> CL5-1POSS	‘my tooth’		<i>n-sò</i> CL4-tooth	<i>m-ám</i> CL4-1POSS	‘my teeth’

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.

CL	SG			CL	PL		
1	Ø-ndzàʔ-t ^h ú cl1-marrows-head	Ø-ám cl1-1poss	‘my brain’ (lit. marrow of head)	6	Ø-kákù cl6-luggage	tʃ-ám cl6-1poss	‘my luggage’
3	Ø-zàà-nù cl3-know-thing	Ø-ám cl3-1poss	‘my intelligence’	4	mvét cl4.oil	m-ám cl4-1poss	‘my oil’
5	Ø-lúù cl5-blood	s-ám cl5-1poss	‘my blood’				

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.

CL	SG			CL	PL		
1	Ø-ndzàʔ-t ^h ú	Ø-ám	‘my brain’ (lit. marrow of head)	6	#Ø-ndzàʔ-t ^h ú	tf-ám	[my brains]
	CL1-marrow-head	CL1-1POSS			CL6-marrow-head	CL6-1POSS	
3	Ø-záà-nù	Ø-ám	‘my intelligence’	4	#n-záà-nù	m-ám	[my types of intell.]
	CL3-know-thing	CL3-1POSS				CL4-know-thing	CL4-1POSS
5	Ø-lúù	s-ám	‘my blood’		%n-dúù	m-ám	‘my types of blood’
	CL5-blood	CL5-1POSS			CL4-blood	CL4-1POSS	

Table B 4: Pluralization of Medumba inherently singular non-count nouns

CL	SG			CL	APL+ PL		
1	—	—	—	6	bà Ø-kákù	tf-ám	‘my pieces of luggage’
					A.PL CL6-luggage	CL6-1POSS	
3	—	—	—	4	bà mvét	m-ám	‘my kinds of oil’
5	—	—	—			A.PL CL4.oil	CL4-1POSS

Table B 5: Pluralization of Medumba inherently plural mass nouns

- **Medumba noun tone classes**

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 Angheliescu 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.

d. ú	↓jún	↓nú	gí	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. ᵐᵈᵈᵈᵗ | jún-↓ní | L(H) | → | LL |
| cloud.L | AGR-1PROX | | | |
| LL | | | | |
| ‘This cloud (near the speaker)’ | | | | |
| b. ᵐᵛᵘᵘᵐ | jún-↓ní | L(L) | → | LL |
| chief.L | AGR-1PROX | | | |
| LL | | | | |
| ‘This chief (near the speaker)’ | | | | |
| c. ᵐᵇᵘᵘᵐ | jún-↓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.

(49) Stem allomorphy in associative constructions

- | | | | | |
|----|---|---------------|--------|-----------|
| a. | ᵐᵈᵈᵐ
cloud.L
LH
‘The cloud of Numi’ | Nù mí
Numi | L(H) → | LH |
| b. | ᵐᵛùún
chief.L
LH
‘This chief of Numi’ | Nù mí
Numi | L(L) → | LH |
| c. | ᵐᵇʰúù
dog.H
HL
‘This dog of Numi’ | Nù mí
Numi | H(H) → | HL |

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 underlyingly 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 *kó* (see Keupdjio and Wiltschko 2018); and demonstrative.

(50) Complementizer *lá*

- | | | | |
|---------------------------------|---------------|-----------------|---------------------|
| zú
thing | Nùngè
Nuga | ʒʷíi
AGR.buy | lá
C
H |
| ‘The thing that Nuga bought...’ | | | |

(51) Question particle

a. *Neutral polar question kí*

ú yùú ↓mb^hú **kí**
2SG.H have.H dog C.Q
H

‘Do you have a dog?’

b. *Biased polar question kó*

ú yùú ↓mb^hú ↓**kó**
2SG.H have.H dog C.Q
H

‘Do you have a dog?’

(52) a. *1PROX lí*

^mb^húù jún-↓ní
dog.L AGR.CL1-1PROX
H

‘This dog (near the speaker)’

b. *2PROX ná*

^mb^húù jún-↓**ná**
dog.L AGR.CL1-2PROX
H

‘This dog (near the addressee)’

c. *Distal d^hín*

^mb^húù jún-↓**d^hín**
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 *n^dà* and the future *à?* as illustrated in the following examples.

(53) Biased polar question *kù*

kù **ú** ʒwíin ɔ̃mbʰú **á**
C 2SG.H AGR.buy dog C
L
‘So, did you buy the dog then?’

(54) Complementizer *ndà*

á bʰòó **ndà** **ù** ʒwíin ɔ̃mbʰú **lá**
3SG.H good.H C 2SG.H buy dog C
L
‘It’s good that you bought the dog’

(55) Irrealis *à?*

Nùᵛgè **à?** ʒwíin ɔ̃mbʰú
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** wá Nùᵛgè bii=í **á**
FOC WH Nuga AGR.pay=3SG.H C.Q
H
‘Who did Nuga pay [him]?’

b. **á** wá Nùᵛgè bii=í ʰkòg **à**
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

c. Proposition negation

Nùᵑgè kúù?	ʒwín	↓mbʰú	CVVC _{HL}
Nuga NEG	buy	dog	
HL			
‘That Nuga bought the dog is false’			

(59) Negative imperative

káà	ʒwín	↓mbʰú	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) *1PROX*

a. mbʰúù	jún-↓ní		
dog	AGR.CL1-1PROX		
HL	H-	H	
‘This dog (near the speaker)’			

b. júùn	mbʰú	↓lí	
AGR.CL1	dog	1PROX	
HL	H-	H	
‘THIS dog (near the speaker)’			

(61) *2PROX*

a. mbʰúù	jún-↓ná		
dog	AGR.CL1-2PROX		
HL	H-	H	
‘This dog (near the speaker)’			

b. júùn	mbʰú	↓lá	
AGR.CL1	dog	1PROX	
HL	H-	H	
‘THIS dog (near the addressee)’			

- *Tonal overwrite on auxes*⁵⁴ (conditioned by A'-movement, discussed in chapter 3 and 4)

- (68) a. Nùṅgèé **kú** m-bí Watèt CV_H
 Nuga.H IPFV.PST N-pay Watat
 H H
 ‘Nuga was paying Watat’
- b. á wá Nùṅgè **kúù** m-bíí á CVV_{HL}
 FOC WH Nuga AGR.IPFV.PST N-AGR.pay C.Q
 HL
 ‘Who was Nuga paying?’
- (69) a. Nùṅgèé **zí** m-bí Watèt CV_H
 Nuga AUX.α N-pay Watat
 H H
 ‘Nuga paid Watat at night’
- b. á wá Nùṅgè **zî** m-bíí á CVV_{HL}
 FOC WH Nuga AGR.AUX.α N-AGR.pay C.Q
 HL
 ‘Who did Nuga pay at night?’
- (70) a. Nùṅgèé **ʈʂók** m-bí Watèt CVC_H
 Nuga.H AUX.β N-pay Watat
 H H
 ‘Nuga paid Watat in the morning (earlier this morning)’
- b. á wá Nùṅgè **ʈʂòk** m-bíí á CVVC_{HL}
 FOC WH Nuga AGR.AUX.β N-AGR.pay C.Q
 HL
 ‘Who did Nuga pay in the morning (earlier this morning)?’
- (71) a. Nùṅgèé **jók** m-bí Watèt CVC_H
 Nuga.H AUX.γ N-pay Watat
 H H
 ‘Nuga paid Watat during the day (earlier today)’
- b. á wá Nùṅgè **jòk** m-bíí á CVVC_{HL}
 FOC WH Nuga AGR.AUX.γ N-AGR.pay C.Q
 HL
 ‘Who did Nuga pay during the day (earlier today)?’

⁵⁴ HL overwrite does not affect the auxes *fə* and *lù* (which surface LH) and the invariant L-tone future prefix *à*?

- (72) a. Nùngèé **fə** m-bí Watèt CV_L
 Nuga.H AUX.T3 N-pay Watat
 L H
 ‘Nuga paid Watat yesterday’
- b. á wá Nùngè **fə́** m-bî á CVV_{LH}
 FOC WH Nuga AGR.AUX.T3 N-AGR.pay C.Q
 LH
 ‘Who did Nuga pay yesterday?’
- (73) a. Nùngèé **lù** m-bí Watèt CV_L
 Nuga.H AUX.T3 N-pay Watat
 L H
 ‘Nuga paid Watat recently’
- b. á wá Nùngè **lù́** m-bî á CVV_{LH}
 FOC WH Nuga AGR.AUX.T3 N-AGR.pay C.Q
 LH
 ‘Who did Nuga pay recently?’