

A'-movement dependencies and their reflexes in Igbo



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Abbreviations and Glosses

Abbreviations

ATR	Advanced Tongue Root
H	high tone
Ⓜ	floating high tone
HTV	high tone verb
L	low tone
LTV	low tone verb
OVS	open vowel suffix
PSC	pronominal subject clitic
SVC	serial verb construction
V ₂	second verb in a SVC

Glosses

1	first person
2	second person
3	third person
ACC	accusative
AUX	auxiliary
C	complementizer
CL	clitic
COP	copula
DEM	demonstrative
DET	determiner
DIR	directional
FOC	focus marker
FUT	future
GEN	genitive
IC	inherent complement
ICV	inherent complement verb
IMP	imperative
IPFV	imperfective
LOC	locative
NEG	negative
NOM	nominative
NZML	nominalizer
SFX	suffix
P	preposition
PL	plural
PFV	perfective
PRT	particle
Q	question particle
SG	singular
WH	wh-particle

Chapter 1

Introduction

1.1 Overview

This dissertation examines the morphosyntax of A'-movement dependencies, and reflexes of movement in Igbo, a Benue-Congo language spoken in Nigeria. I present an in-depth study of the morphosyntax of *it*-clefts, relativization and *wh*-questions. The reason for the present study is because not much work has been done on *it*-clefts in the language, and no detailed comparison of various A'-dependencies in the language. Each of the A'-constructions examined reveals novel Igbo data which provide insights into the complementizer domain of the language. The dissertation also makes important contributions as it works out the rather complex pattern of tone under A'-extractions, explores the role of polarity under extraction, and observes the extraction restriction in the perfective morphology.

The first construction considered is cleft sentences. I provide empirical evidence in Chapter 2 for the claim that Igbo has two distinct cleft constructions. I argue that these two cleft constructions not only differ with respect to the morphosyntax their cleft clause, but also that the cleft pronoun and the copula in the two clefts are different. Hence I postulate different analyses for the two cleft constructions in the language. Cleft constructions, in which the cleft pronoun is an expletive and the copula is a copula of specification involve focus fronting of the clefted constituent. Using a range of diagnostics including the presence of a focus marker, the absence of a relative clause structure, the lack of further focus movement of the clefted constituent (Abels, 2008; Reeve, 2012b) and the incompatibility of focus with adverbial clauses (Haegeman et al., 2014), I argue that this cleft type should be subsumed under a focus-based analysis of clefts, with focus movement of an XP inside the cleft clause (see É.Kiss (1998b, 1999) on English and Hungarian clefts). For the other cleft construction, for which I show that the cleft clause is a relative clause, I demonstrate that the cleft pronoun is non-expletive and forms a discontinuous definite description with the cleft clause. I also show that that the copula is a predicational linking verb. I argue that the clefted constituent in this type of cleft is base-generated, and there is movement of an empty operator inside the cleft clause. Thus, I posit a specificational analysis (Hedberg, 2000) for the clefts involving relativization. In the course of examining the cleft constructions, I also investigate the syntax of relative clauses in the language and argue for a head external analysis. The distinction observed between the two cleft constructions in the language are mirrored in the different *wh*-question formation strategies attested in Igbo, which form the focus of Chapter 3. Three *wh*-question formation strategies are

investigated. It is observed that wh-questions in the language are often biclausal, with an initial (pro)nominal element that surfaces with a low tone, followed by the copula. I argue that the low tone on the initial (pro)nominal element realizes the Interrogative head in the C domain. One of the three wh-question formation strategies involves focus fronting, and the other two strategies are based on relativization. So we find the same options for the formation of A'-dependencies in question and in cleft clauses. For wh-questions with focus fronting, I follow Goldsmith (1981b) and Amaechi and Georgi (2019) in assuming that this question formation involves overt movement of the wh-phrase (except for the local subject) to the left periphery of the clause. I argue that the copula in this kind of wh-question is a copula of specification. For the other question formation strategies that contain relative clauses, I show that the copula in one of these wh-questions (referred to as *kèdú* questions in what follows) is a predicational copula, and I argue that the predicative element in the other wh-question (referred to as *òlè'è* questions in this dissertation), which is the imperative of the verb *look* (Nwachukwu, 1995), is being grammaticalized to a copula. A questionnaire study was conducted on the use conditions of the various wh-question strategies. I report on the results of this survey at the end of the wh-question chapter.

The third part of this dissertation (Chapter 4) investigates reflexes of A'-movement dependencies, where it is demonstrated that Igbo exhibits a number of morphological patterns of cyclicity effects. Some of these movement reflexes involve tonal overwriting, and I provide an analysis that unifies some of them. I also provide an account of the positions in which the tones are realized in the clause structure of Igbo. A well established tonal reflex observed in the language is the downstep tone on the finite verb under subject relativization (Green and Igwe, 1963; Welmers and Welmers, 1969; Nwachukwu, 1976; Emenanjo, 1978). I show that this downstep tone on the verb is not a quirk of subject relativization but of subject extraction in general. In fact, the effect under relativization, as claimed by previous authors, is only found with local subject relativization. I postulate that under subject extraction, a floating high tone realizes the gap position in Spec-TP. This floating high tone surfaces on the verb to its right overwriting the low tone on the verb. I demonstrate that the downstep tone on the verb is the result of the phonetic implementation of two contiguous high tones (Clark, 1990), that is, the high tone of Fin (assuming a split-CP system à la Rizzi (1997)) in the C domain and that on the verb. Yet another reflex reported in the language is the final high tone on relativized subjects (Green and Igwe, 1963; Nwachukwu, 1976; Emenanjo, 1978), and the final H tone on crossed-over subjects (Tada, 1995; Manfredi, 2018). I propose a unification of these final H tones on the subject. I demonstrate that the final high tone on crossed-over subjects is the high tone that realizes the Fin head in the C domain. This high tone on Fin appears on the subject in Spec-TP, given that the preferred direction of floating tones in Igbo is rightwards. But in the case of the final high tone on a relativized subject, this rightward movement of the high tone on Fin is blocked given that the element in Spec-TP is also a floating high tone that realizes a gap in the subject position (Spec-TP). As a result of this blockade, the floating high tone of Fin associates with the closest overt element to its left, which is the relativized subject. Furthermore, I discuss the effect of negation under A'-extraction, where I argue that the particle that occurs after the subject under A'-movement from negative clauses (Igwe and Green, 1964) is a complementizer element that also realizes the Fin head, but in negative context. I posit that the unusual low surface position of this particle after the subject results from postsyntactic lowering of Fin-to-T. Lastly, an extraction

restriction found in perfective constructions (Nwachukwu, 1976) is investigated. It is demonstrated that the ‘special’ nominalization present in the perfective causes this extraction restriction in the language. In the course of the discussion, a variety of new data regarding the syntactic status of the so-called open vowel suffix (OVS) in Igbo are presented. The status of the OVS is debated, and I argue that it is a polarity marker.

In the rest of this chapter, I provide an overview of the basic grammatical properties of Igbo that are necessary as a background for later chapters. In Section 1.2 basic information on the phonology, morphology and syntax of Igbo is provided. I also discuss previous research on A'-movement dependencies in the language. I continue with a note on the data sources used in the dissertation in Section 1.3. A sketch of the theoretical framework is presented in Section 1.4. Section 1.5 provides an outline of the dissertation.

1.2 General background on Igbo

Igbo is the second most populous indigenous language of southern Nigeria (Ezè and Manfredi, 2001). The language is a Benue-Congo language spoken by about 30 million people. There are dozens of geographical dialects. These dialects differ in certain grammatical, lexical and phonological details (Ikekeonwu, 1985; Manfredi, 1991; Emenanjo, 2015). The standard dialect is based mainly on Owerri, Umuahia and Onitsha dialects (Emenanjo, 1978). In general, Igbo is quite well documented. There are grammars such as Swift et al. (1962), Green and Igwe (1963), Igwe and Green (1964), Welmers and Welmers (1968), and Emenanjo (1978, 2015). The above-mentioned grammars are descriptive. One of the aims of this present work is to broaden the empirical basis by adding new observations on the distribution of elements and constructions, especially A'-constructions in the language.

1.2.1 Morphophonology

Igbo is a tone language and tone has both lexical and grammatical functions in the language. I will only concentrate on the grammatical functions in this dissertation. There are three tones, high (´), low (`) and downstep (´´). The downstep is a drop in pitch between adjacent high tones (Clark, 1990). The downstep plays a very important role in Igbo grammar. Ezè and Manfredi (2001) note that the downstep is part of the structure of infinitives, negatives, perfectives and genitives, and also occurs in a few underived nouns as well as in countless lexicalized phrases (p. 323). Igbo exhibits vowel harmony based on the feature Advanced Tongue Root ([ATR]). The language distinguishes between [+ATR] vowels (i, u, o, e) and [-ATR] vowels (i, u, o, a). Within a simple uncompounded word, only vowels from an ATR set may co-occur. Consider the examples in (1).

- (1) *ATR harmony*
- a. [+ATR] *itè* ‘pot’, *ùbé* ‘pear’
 - b. [-ATR] *úẓò* ‘road’, *ákpì* ‘scorpion’

Most inflectional affixes are ‘harmonizing’, in that they take on the ATR value of the preceding vowel, in the case of a suffix, or of the following vowel in the case of a prefix. Consider (2) below. The suffix (one of the so-called *-rV* suffix) on the verb in (2-a,b)

plement of the verb in (3-d), often called the inherent complement (IC) is obligatorily required by the verb. The clause-final nominalized verbal element in (3-e) is the so-called bound complement that adds emphasis to the sentence. (3-e) also demonstrates that auxiliaries precede the lexical verb in Igbo. This example (3-e) also shows that the languages has some separate words (not affixes) to express inflection.

1.2.2 Syntax

The canonical word order in an all-new context (answer to ‘What happened?’) in Igbo is SVO (4-a). Adjuncts appear in clause-final position (4-b). And in a ditransitive clause, the indirect object precedes the direct object (4-c). When the subject is the first person singular pronoun, the pronoun may appear before (4-d) or after the verb (4-e) in matrix clauses but other pronouns always occur in pre-verbal position.

(4) *Basic sentences*

- a. Àdá hù-rù Òbí.
Ada see-SFX Obi
‘Ada saw Obi.’
- b. Àdá rì-rì jí n’úzdò.
Ada eat-SFX yam P-road
‘Ada ate yam on the road.’
- c. Àdá nyè-rè Òbí àkwá.
Ada give-SFX Obi egg
‘Ada gave Obi an egg.’
- d. Ḿ rì-rì jí.
1SG eat-SFX yam
‘I ate yam.’
- e. É rì-rì ḿ jí.
E eat-SFX 1SG yam
‘I ate yam.’

Goldsmith (1981a) and Eze (1995) referred to the element before the verb in (4-e) as a dummy element. The data in (4-b) shows that Igbo is prepositional.

Usually, the grammatical function of arguments is based on word order. The pre-verbal NP in (4-a), *Àdá* is the subject (here, agent argument) of the verb and occurs in nominative case; the postverbal NP *Òbí* is the object (here, patient argument) of the verb and bears accusative case. A third case, genitive is found with direct objects of nominalized nouns (Déchaine, 1993; Déchaine and Manfredi, 1998). Genitive case is only expressed by tone changes, a certain tone pattern on nominal elements. This is illustrated with nouns which bear high tones. For instance, a bisyllabic noun such as *anu* ‘meat’ bears a high-high tone in both nominative and accusative, and a high and downstep tone in genitive. Consider the following paradigm in (5).

(5) *Nominal case distinction*

- a. **Ánú** s̀-̀r̀-̀r̀ n’ókú.
meat.NOM cook-SFX P-fire
‘Some meat is cooking (on the fire).’
- b. Àdá s̀-̀r̀-̀r̀ **ánú**.
Ada cook-SFX meat.ACC
‘Ada cooked some meat.’

- c. Àdá gà-èsí **á'nú.**
 Ada FUT-NMZL.cook meat.GEN
 'Ada will cook some meat.'

Case distinctions (nominative-accusative-genitive alignment) can be detected in the 2nd and 3rd singular personal pronouns. This is illustrated below with the 3rd singular pronoun in (6).

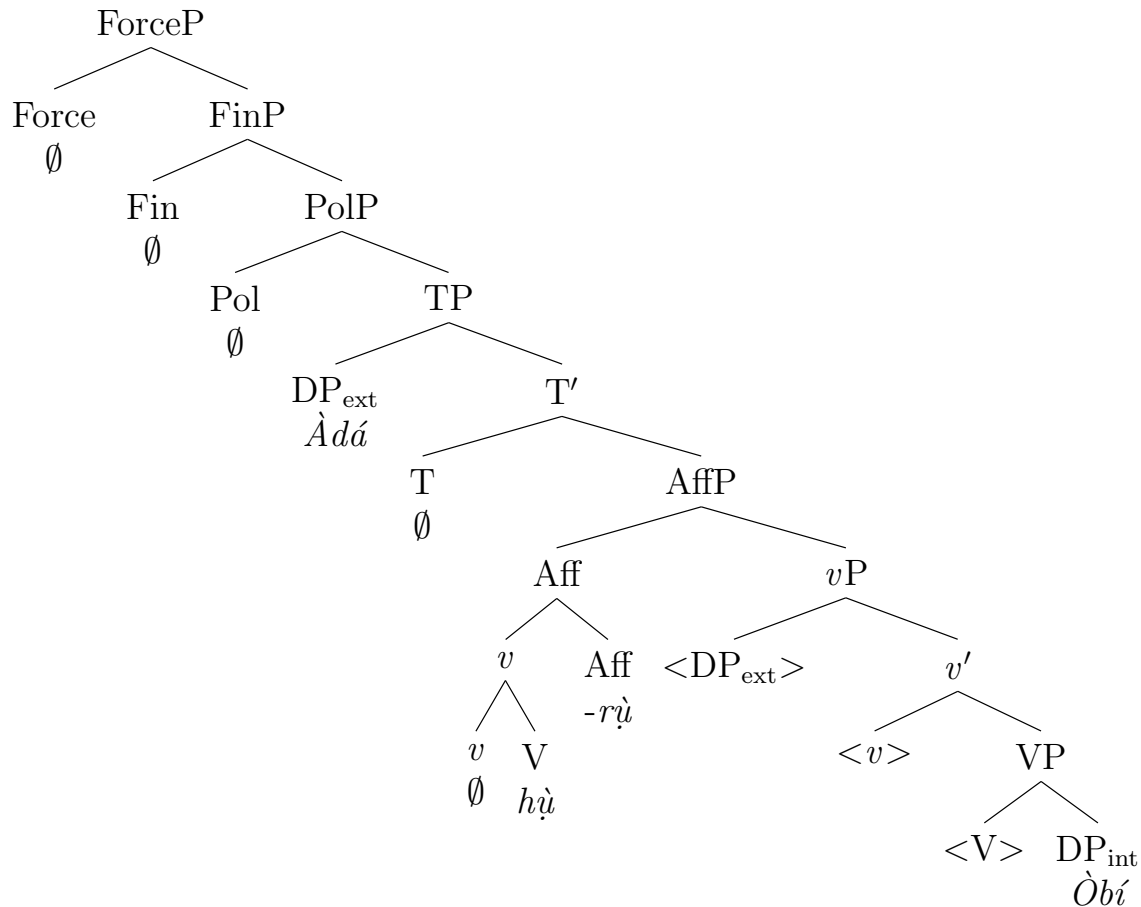
(6) *3rd singular pronoun case distinction*

- a. **Ó** sù-rì ánú.
 3SG.NOM cook-SFX meat.ACC
 'S/he cooked meat.'
- b. Àdá sù-rì **yá.**
 Ada cook-SFX 3SG.ACC
 'Ada is cooked it.'
- c. Àdá gà-èsí **'yá.**
 Ada FUT-NMZL.cook 3SG.GEN
 'Ada will cook it.'

The subject pronoun in (6-a) is argued to be a clitic as it is dependent on a following verb; for example, it undergoes ATR-harmony with the verb stem (Eze, 1995; Anyanwu, 2012). The case distinction exemplified in (5) and (6) will serve as an important test as we will see in later chapters.

I assume the structure in (8) as the basic clause structure for a declarative sentence (traces are represented in < >). The structure is for example (4-a), repeated here as (7).

- (7) Àdá hù-rù Òbí.
 Ada see-SFX Obi
 'Ada saw Obi.'

(8) *Basic clause structure*

The external argument (DP_{ext}) obligatorily undergoes EPP-movement to Spec-TP; this is motivated by the observations that the subject in Igbo precedes aspectual/temporal auxiliaries (cf. (6-c)), and there are no subjectless clauses in the language. Spec-TP must be occupied by an expletive if no XP moves there (Amaechi and Georgi, 2019). I assume, following Déchaine (1993), that the verb does not move to T, but rather the verb moves cyclically to Aff(irmative), a head below T, which heads its own projection, and which is the instantiation of affirmative or negative polarity. A piece of evidence for this is that the *-rV* suffix on the verb does not indicate tense. Further arguments which support the structure in (8) are discussed in Chapter 4, where I also investigate the structure of negative clauses. Also see the discussions on the different projections above the TP projection in the following chapters.

1.2.3 A'-movement in Igbo

A'-movement displaces a phrase into a position where a fixed grammatical function is not assigned. This is movement in constructions such as *wh*-questions, relativization and focus constructions. A decent amount of work has been done on A'-movement in Igbo, especially on *wh*-questions involving focus and *kèdù* *wh*-questions (Emenanjo, 1979; Goldsmith, 1981b; Ikekeonwu, 1987; Uwalaka, 1991; Ogbulogo, 1995; Mmaduagwu, 2012; Nwankwegu, 2015). Some of these works (cf. Goldsmith (1981b); Uwalaka (1991); Ogbulogo (1995); Nwankwegu (2015)) have considered the structure of these *wh*-questions, and have either argued for a movement and/or a base-generation analysis of the *wh*-questions. The descriptive grammars on the language such as Swift et al.

(1962), Green and Igwe (1963) and Emenanjo (1978) have explored relative clauses, and the tonal changes found under relativization. Some of these tone changes have been considered as reflexes of movement by Robinson (1974) (cited in Tada (1995)), Tada (1995) and Manfredi (2018).

Despite all these works, this dissertation provides a detailed study of A'-movement dependencies other than wh-questions. The study also systematically shows which A'-dependencies involve movement and which don't. The emphasis of this study is on the A'-dependencies that involve movement, and these are the constructions where the movement reflexes occur. Based on this, I argue that the tonal changes are reflexes of A'-movement. Furthermore, I investigate two other morphological reflex of A'-movement. Another contribution of the present study is that the focus has not only being on the structure of the clauses (that is, focus fronting or relativization) that most of these A'-constructions are based on but also on the structure of the embedding (main) clauses. I provide an account of the nature of the elements in the embedding clauses, and in the course of this, I consider copulas in the language.

1.3 Data

Unless stated otherwise, the data for the present study were drawn from the standard dialect. Most of the data were based on introspective judgments of the author, who is a native speaker of the language. The data and judgements were also checked with 3 other native speakers. Data from the literature are acknowledged accordingly. The discussion in Section 3.5.1, where I investigate the pragmatic usage conditions for the various wh-constructions is based on data gained in a questionnaire/elicitation study with 9 native speakers in Aba, Enugu, and Dikenafai, Imo State. The data were collected in September 2018.

With regards to tone marking, there are two main tone marking conventions. One is that of Swift et al. (1962), Welmers and Welmers (1968) and Nwachukwu (1976), where both high and low tones are marked, but a tone mark is restricted to the first of the maximal sequence of syllables on the same pitch level. In other words, an unmarked syllable shares the tone of the preceding syllable. And a sequence of two high tone marks indicates a downstep at the second mark. The other tone marking convention is that of Williamson (1972) and Emenanjo (1978). In their system, high tone is unmarked, low tone is marked (˘) and downstep is marked (ˉ). The present study adopts the tone marking conventions from Clark (1990), where there is a full tone marking, that is, all tones are marked. High tone is marked (ˊ), low tone is indicated as (˘) and downstep is marked as (ˊ˘).

1.4 Theoretical background

For the formalization of the analyses in this study, I adopt the Minimalist Program as syntactic framework (Chomsky, 2000, 2001, 2004). Of particular importance is the notion of Agree, the formalization of agreement relations, which involves feature transmission from a goal to a probe. According to Chomsky (2000, 2001), uninterpretable features of a probe seek a goal with interpretable features within its c-command domain. Agree is established when the probe's search is successful resulting in the valuation of the uninterpretable features of the probe. Another important notion is Merge, an op-

eration that puts two items together to create a new item. Merge is feature-driven, that is, elements must have some feature that allows them to be ‘merged’. Movement of a syntactic item from one part of a given structure to another is also considered a Merge operation, that is, ‘Internal Merge’. Thus, a movement-triggering feature will cause an XP in its *c*-command domain with the same feature to move. These notions are discussed further in the relevant sections in the dissertation.

As for the modeling of the interface between syntax and morphophonology, I adopt the framework of Distributed Morphology (DM) (Halle and Marantz, 1993; Harley and Noyer, 1999; Embick and Noyer, 2001, 2007), where morphological operations are assumed to apply postsyntactically, in the PF branch. In DM it is assumed that structures are built in syntax, where syntactic operations manipulate bundles of morphosyntactic features. These features lack morphophonological content in the syntax. The feature bundles are sent to PF after the syntactic derivation is complete, where they are given morphophonological content (Kramer, 2009). This process of pairing abstract morphosyntactic features with morphophonological content is called vocabulary insertion. At this point, certain morphological operations that manipulate feature bundles can occur. One of such operations is lowering, an operation which lowers one feature bundle to adjoin to another. In other words, it lowers a head to the head of its complement. This lowering operation will be crucial in the discussion of the surface position of the *ná* particle that occurs under *A'*-extraction from negative clauses in Section 4.5. Vocabulary Items (exponents) are inserted next, that is, phonological contents are supplied to abstract terminal nodes, and the structure is linearized. Some operations such as local dislocation can still apply after vocabulary insertion.

1.5 Organization of the dissertation

Chapter 2 investigates cleft constructions and relative clauses in Igbo. Cleft constructions have received a wide variety of treatments in the syntactic literature, ranging from the status of the initial pronoun of the cleft to the function of the copula. The nature of the focused constituent, as well as the structure of the final clause in a cleft, that is, the cleft clause are also considered. I show that Igbo has two distinct cleft constructions. I argue that these two cleft constructions not only differ with respect to their cleft clause, but also that the cleft pronoun and the copula in the two clefts are different. I provide evidence for the following analyses: For cleft constructions, in which the cleft pronoun is expletive and the copula is a copula of specification, the cleft type involves focus fronting of the clefted constituent inside the cleft clause. I argue that this cleft type is best analyzed under a focus-based analysis of clefts (É.Kiss, 1998b, 1999). For the other cleft construction, where the cleft clause is a relative clause, I demonstrate that the cleft pronoun is non-expletive and forms a discontinuous definite description with the cleft clause. I also show that the copula is a predicational linking verb. I argue that the clefted constituent in this type of cleft is base-generated, and there is movement of an empty operator inside the cleft clause. Thus, I posit a specificational analysis (Hedberg, 2000) for this cleft. I also examine the syntax of relative clauses in Chapter 2 (to compare their syntax to the syntax of the cleft clauses in the language).

In **Chapter 3**, I demonstrate that the distinction made between the two cleft constructions in Igbo are mirrored in the the different *wh*-question formation strategies attested in the language. I provide a detailed study of the morphosyntax of these *wh*-question formation strategies. *Wh*-questions in the language are biclausal, with an

initial (pro)nominal element that surfaces with a low tone, followed by the copula. I argue that the low tone realizes an Interrogative head in the CP domain. One of the wh-question formation strategies involves focus fronting, and the other two strategies involve relativization. For wh-questions involving focus fronting, I argue that the wh-phrase (except for local subject) moves to its left peripheral surface position, viz. to the specifier of the focus phrase. I argue that the copula in this kind of wh-question is a copula of specification. For the other wh-questions that contain relative clauses, I show that the copula is either predicational (in *kèdú* questions) or the imperative of *look* grammaticalized to a copula (in *òlé'é* questions). I also investigate copular clauses, and I report a survey on the aspect of use of these wh-question formation strategies.

Chapter 4 focuses on five morphophonological effects that occur in A'-dependencies. I argue that these effects are cyclicity effects, viz., reflexes of A'-movement. Some of these movement reflexes involve tonal overwriting. I provide an analysis that unifies some of these overwriting effects, and account for the position that the tones surface in the complementizer domain. I also consider extraction from negative clauses. I argue that the *ná* particle found under extraction from negative sentences is a reflex of movement. I provide a postsyntactic lowering analysis to account for the post-subject position of the particle. Lastly, I examine the extraction restriction found under perfective clauses.

Chapter 5 summarizes and concludes the dissertation.

Chapter 2

The syntax of clefts and relative clauses in Igbo

2.1 Introduction

The focus of this chapter is on cleft constructions in Igbo. Clefts are often bi-clausal copulative constructions which consist of a pronoun followed by a copula, the informationally prominent phrase and an embedded clause. This embedded clause is often a restrictive relative clause (Reeve, 2012b; Hartmann and Veenstra, 2013). In this chapter I show that Igbo attests two kinds of cleft constructions: one based on focus fronting and the other based on relativization. I argue that the cleft construction based on focus fronting is best accounted for using the expletive analysis of clefts. For the cleft construction that involves relative clauses, I show that this cleft type exhibits properties of specificational analysis of clefts. These cleft types are exemplified in (1) below.

- (1) *Cleft constructions in Igbo*
- a. Ó bù jí kà Àdá rì-rì.
3SG COP yam FOC Ada eat-SFX
'It is yam that Ada ate.'
- b. Ó bù jí Àdá rì-rì.
3SG COP yam Ada eat-SFX
'It is the yam that Ada ate.'

I will discuss the morphosyntactic properties of each of the clefts. I postulate that the cleft construction in (1-a) involves overt focus movement of the clefted phrase to Spec-FocP of the cleft clause, that is, the clause following the copula. This is argued for in Section 2.2. I discuss the syntax of relative clauses in Igbo in Section 2.3. In Section 2.4 I demonstrate that the clause after the focused phrase in (1-b) is a relative clause, and I argue that the focused phrase is not moved from inside of the relative clause, but it is rather base-generated. Section 2.5 outlines the interpretative differences between the two cleft constructions, and Section 2.6 concludes the chapter.

2.2 Clefts involving focus fronting

In this section, I present a syntactic analysis of clefts of the type exemplified in (1-a). This type of cleft involves a bi-partition structure consisting of the cleft pronoun, the copular verb, and the cleft clause, in which the clefted XP occupies a position in its left periphery. Not many detailed studies have been carried out on clefts in declarative sentences in Igbo. Most studies on clefts have focused on its use in interrogative sentences (Goldsmith, 1981b; Uwalaka, 1991; Ogbulogo, 1995; Nwankwegu, 2015). These authors argue that there is *wh*-movement involved in Igbo clefts. The clefted XP moves to the specifier of C. Ogbulogo (1995) and Nwankwegu (2015) observe that when the cleft XP is a subject, the movement applies vacuously. The authors also argue that the complementizer which occurs in clefted non-subjects serves to join the two parts of a cleft. Nwankwegu (2015) suggests that the cleft pronoun is pleonastic and observes the phonological simplification present in the cleft. I follow Nwankwegu in assuming that the cleft pronoun is expletive, and here I present empirical evidence for this assumption. I show that this type of Igbo cleft does not involve a relative clause, but rather the cleft clause shows evidence of overt focus movement. As a result of this, I argue for an expletive analysis (É.Kiss, 1998a) of this cleft in Igbo. I also present data that shows that the cleft exhibits properties of movement dependencies. I argue that the complementizer that appears in this construction is a focus marker that realizes the Foc head when an XP moves to Spec-FocP, and not a complementizer joining the two parts of the cleft as claimed by Ogbulogo and Nwankwegu.

This section is organized as follows: I start by presenting the basic picture of this cleft construction in Section 2.2.1. In Section 2.2.2, I argue that the cleft pronoun in this construction is expletive. Section 2.2.3 is concerned with the copula, where I show that the copula in this type of cleft construction is a copula of specification, and it links the cleft pronoun to the cleft clause (Hedberg, 2000). Section 2.2.4 discusses data from standard movement diagnostics that show that this kind of cleft involves movement. A focus-based analysis is proposed in Section 2.2.5, and Section 2.2.6 summarizes and concludes.

2.2.1 The basic properties

The kind of cleft examined here at first sight looks like the prototypical English *it*-cleft, consisting of a pronoun, a copular verb, the clefted XP, and the cleft clause. The data in (2) illustrate this cleft construction for subjects (2-a) and non-subjects (2-b). Both cleft sentences in (2) contain an initial pronoun *ó*, which I will argue is expletive in this kind of cleft construction in Igbo. After the pronoun is the copular verb. There is an observed morphological extraction marking in the data in (2). Apart from the displacement of the object to the left edge of the cleft clause in (2-b), a focus marker appears after this object. This *ká* focus marker is not compatible with the subject cleft in (2-a). The *kà*-marking difference is an instance of a more general asymmetry between subjects and non-subjects in ex-situ focus constructions in the language (Ndimele, 1991; Tada, 1995; Amaechi and Georgi, 2019). See also Chapter 3 for further discussion of this extraction asymmetry. Subject and non-subject clefts differ essentially in that the complementizer *kà* is obligatory for clefted non-subjects but incompatible with (locally) clefted subjects inside the cleft clause.

(2) *Clefts involving focus fronting*

- a. **Ó** bù **Àdá** rìrì jí.
 3SG COP Ada ate yam
 ‘It is Ada that ate yam.’ *subject cleft*
- b. Ó bù **jí** kà Àdá rìrì.
 3SG COP yam FOC Ada ate
 ‘It is yam that Ada ate.’ *non-subject cleft*

The boldfaced constituents in (2) are the clefted XPs, which occur right after the copula in the sentences. In (2-a), the focus marker *kà* is banned. I assume, following Ndimele (1991) and Amaechi and Georgi (2019), that local subjects do not move to the left periphery of FocP but stay in their canonical Spec-TP position. For non-subjects, which moves to Spec-FocP position, *kà* realizes the Foc head when an XP is moved to Spec-FocP (ex-situ focus). There is no focus marking with local subjects since the subject does not move to Spec-FocP.

2.2.2 The cleft pronoun as expletive

The initial cleft pronoun in (2) is the third person singular nominative pronoun in the language. This pronoun can be used referentially, as exemplified in (3). The subject pronoun in the second clause refers back to *Obi* in the first clause.

- (3) Òbí mà ákwúkwó. Ó nà-àsú ásùsù ìsé.
 Obi know book 3SG IPFV-NMZL.speak language five
 ‘Obi is intelligent. He speaks five languages.’

The same third person singular pronoun is also used in other constructions where it is obvious that it is an expletive (4).

(4) *Expletive use of 3sg pronoun*

- a. Ó wè-rè ányá nà há mà Òbí.
 3SG perceive-SFX eye that 3PL know Obi
 ‘It is obvious that they know Obi.’
- b. Ó ò ò kà rímí’rí nà-ézò.
 3SG COP that water IPFV-NMZL.rain
 ‘It seems that it is raining.’

What is important for the present concerns is whether the cleft pronoun in (2) is referential or expletive. A major argument against treating the *it* in English clefts as an expletive is that often *it* can be replaced with a demonstrative in English (cf. Hedberg (2000); Reeve (2012b); Frascarelli and Ramaglia (2013)).

- (5) It/This/That was JOHN that I saw. (Reeve, 2012b, 11)

Hedberg (2000) argues that the cleft pronoun is referential as it allows for alternation with the demonstrative in English and in other European languages. But this alternation is not found in other instance of *it*, such as in raising structures (6-a) and weather predicates (6-b).

- (6) a. It/*this/*that seems to me that you’re wrong.
 b. It/*this/*that is snowing. (Reeve, 2012b, 11)

In Igbo, it is not possible to alternate the cleft pronoun with demonstratives. This is demonstrated with the ungrammatical sentences in (7) below, where the cleft pronouns in (2) in this chapter are replaced with the proximal and distal demonstratives respectively.¹ The data in (7) show that the cleft pronoun in Igbo is non-referential, as one would expect under an expletive approach to cleft structures (É.Kiss, 1998a, 1999).

- (7) *Cleft pronoun is expletive*
- a. *Ñkè á bù Àdá rìrì jí.
 the.one this COP Ada ate yam
 Lit: ‘This is Ada that ate yam.’
- b. *Ñkè áhù bù jí kà Àdá rìrì.
 the.one that COP yam FOC Ada ate
 Lit: ‘That is yam that Ada ate.’

The claim that I make here is that in this type of cleft involving focus-fronting in Igbo, the cleft pronoun is clearly expletive. The only instance where the cleft pronoun is to be understood as referential is in cases where the cleft clause is a relative clause. In this other type of cleft construction involving relative clauses, which I will consider in Section 2.4, the cleft pronoun can be replaced with the demonstrative. I argue that the referential status of the cleft pronoun is made possible by the relative clause in the cleft sentence. See also Borkin (1984), cited in Hedberg (2000) for claim that ‘the introductory *it* of cleft sentences is referential, although the intended nature of this referent is clearly understood only as it is characterized by the relative-like subordinate clause that somewhat distantly follows’ (p.120).

2.2.3 The copula as non-expletive

The examples in (2) in Section 2.2.1 demonstrate that the *kà* focus marker in clefts involving focus fronting is different from the copula. The focus marker in Igbo is not a copula as it has no resemblance to any of the three copulas in the language.² See Chapter 3 for discussion of copulas in Igbo. The copulas are full verbal elements as they can combine with tense and negation, which is not possible with the focus marker.

¹The nominal element *ñkè* in (7) is required in Igbo as demonstratives cannot occur independently, even as an answer to a question in the language. Consider the question-answer pair below. See Chapter 3 for the discussion on the nature of the the nominal element *ñkè*.

- (i) a. Kedu nke i choro?
 WH.COP the.one 2SG want
 ‘Which one do you want?’
- b. *(Ñkè) á.
 the.one this
 ‘This.’

²There are languages where it has been shown that the copula and focus marker are the same. See, for instance, Hartmann and Zimmermann (2012) for the argument that the *an* particle in Bura, which occurs in subject focus and in ex-situ non-subject focus, is a focus copula, as it is found in predicative constructions, when the subject is focused. Consider the examples below (i).

- (i) Mdá nghíndà nì àn mdí-r hyípà.
 man DEM DEF FCOP man-LINK teach
 ‘THAT MAN OVER THERE is a teacher.’ (Hartmann and Zimmermann, 2012, ex. 24a)

For a sentence like (i) in Igbo, the copula is used, and not the focus marker *kà* (ii).

(8-a) is the negative counterpart of (2-b). As shown, the negative inflection occurs on the copula. (Note that there are other tonal processes going on in the negative sentence in (8-b) but these are not discussed as they are not relevant for the present purpose. See Chapter 4 for the treatment of the syntax of negation in Igbo.) (8-b) is an attempt to have the inflection on the focus marker, and this turns out to be unacceptable.

- (8) *Copula is verbal but focus marker is not*
- a. Ò bú-'ghí jí kà Àdá rìrì.
 3SG COP-NEG yam FOC Ada ate
 'It is not yam that Ada ate.'
- b. *Ò bú jí kà-'ghí Àdá rìrì.
 3SG COP yam FOC-NEG Ada ate
 intended: 'It is not yam that Ada ate.'

Furthermore, both focus marker and copula can co-occur in a clause as already indicated by the examples given in this section. Here, I assume that the copula occurring in clefts is a full verb and has selectional properties (Hedberg, 2000). The copula *bú* that is found in clefts involving focus movement is type flexible as it occurs in both specificational and predicational copular clauses, as I will show in Chapter 3. Important for the argument here is that the copula *dí* in the language, which subcategorizes for adjective-like nouns (Nwachukwu, 1987), only occurs in predicational copular sentences; and it is found in a kind of *wh*-cleft involving relative clauses (see Chapter 3). One can make sense of this distinction in copula by the different semantic types of CP complement they combine with. Relative clauses, which involve sets of properties, combine with the predicational copula *dí*, and focus/*wh*-questions, on the other hand, are propositions (Šimík, 2018) and combine with *bú*. So the fact that we do not find the copula *dí* in this cleft construction is another argument for focus fronting (and not relativization) in the embedded cleft clause.

Hedberg (2000) argues that analyzing the copula as a linking verb, mediating between the cleft pronoun and the cleft clause, accounts for the distinction of specificational (in Hedberg's term, identificational) and predicational interpretation in copular sentences.

- (9) a. It was an odd televised ceremony that I watched from my living room, and a touching one ...
 b. The televised ceremony that I watched from my living room was an odd one. (Hedberg, 2000, ex.46)

According to Hedberg, the sentence in (9-a) is a paraphrase of (9-b), where it is clear that *an odd one* is being predicated of the constituent occurring before the copula. In Igbo different copulas are used in the specificational and predicational sentences similar to those in (9) above. See (10). In the predicational copular sentence in (10-b), the *dí* copula is used, while the *bú* copula appears in the cleft in (10-a).

(ii) Nwóke áhù **bù**/*kà ónyénkúzi.
 man DEM COP/FOC teacher
 'That man is a teacher.'

(10) *Specificational vs predicational sentences*

- a. \acute{O} **bù** égwùrégwu óhùrụ kà m lèrè n'ímé ùlò m.
 3SG COP play new FOC 1SG watch P-inside house 1SG
 'It was a new play that I watched in my room.'
- b. Égwùrégwu m lèrè n'ímé ùlò m **dì**/*bù óhùrụ.
 play 1SG watch P-inside house 1SG COP new
 'The play that I watched in my room is new.'³

In the structure that I propose for clefts involving focus movement, the copula in V takes FocP as complement. That the copula in Igbo may select for a CP complement is evident by the sentence in (11).

- (11) \acute{N} sògbú bù [_{CP} nà Òbì é-'sì-ghí jí.]
 problem COP that Obi é-cook-NEG yam
 'The problem is that Obi didn't prepare yam.'

I take it that the copula that appears in clefts involving focus fronting is a copula of specification. This copula is verbal, and it takes the cleft clause as a complement.

2.2.4 Movement properties of the clefted constituent

In this section, I demonstrate that the cleft clause shows a typical embedded focus structure, where the focused constituent is fronted to the left periphery of FocP, and the complementizer *kà* is placed after the focused XP. I argue for a promotion analysis of the clefted constituent for non-subjects clefted XPs. This is because the dependency exhibits diagnostics for movement such as island-sensitivity and reconstruction effects. The clefted item undergoes overt movement to Spec-FocP. Following Amaechi and Georgi (2019), I assume that (local) subjects do not move to Spec-FocP but remain in their Spec-TP position.

2.2.4.1 Island sensitivity

The different island tests illustrated by the CNPC island (12), and adjunct island (13) show that clefting in Igbo is sensitive to islands.

(12) *CNPC island*

- a. Úché mà nwátà [OP_i _i 'rì-'rì jí.]
 Uche know child eat-SFX yam
 'Uche knows the child that ate yam.'
- b. * \acute{O} bù jí_j kà Úché mà nwátà [OP_i _i 'rì-'rì _j.]
 3SG COP yam FOC Uche know child eat-SFX
 Lit: 'It is yam that Uche knows the child that ate.'

(13) *Adjunct island*

- a. Àdá sì-rì ófé [túpú ò síé 'jí.]
 Ada cook-SFX soup before 3SG cook yam
 'Ada cooked the soup before she cook the yam.'

³The type flexible copula *bù* is only possible in the sentence if *óhùrụ* 'new' provides the value of the precopular subject, as in it is the title of the play.

- b. * \acute{O} bù jí kà Àdá sì-rì ófé [túpú ò síé .]
 3SG COP yam FOC Ada cook-SFX soup before 3SG cook
 Lit: ‘It is yam that Ada cooked soup before she cook.’

The island tests show that it is not possible to have the clefted constituents associated with gaps in the various island structures.

2.2.4.2 Reconstruction effects

Reconstruction has been one of the strong pieces of evidence for the promotion analysis. A reconstruction effect obtains when a moved phrase behaves as if it were in the (lower) position it moved from for semantic interpretation (Sportiche, 2005). The reason is that the moved phrase is interpreted in a lower position because it was in that lower position at an earlier stage in the derivation (Torrence, 2013c). This effect is exemplified with binding, scope, and idiom reconstructions in what follows.

2.2.4.2.1 Binding In Igbo, the reflexive *ònwé* is subject to Condition A, in that it must be bound by a local c-commanding antecedent (14). Under clefting, the reflexive interpretation is available as the anaphoric element *ònwé ya*, which is the clefted constituent, is bound by the subject in the embedded clause. The promotion analysis is able to account for this since this reconstruction shows that the reflexive originates in the embedded clause from where it is moved to the left periphery surface position.

(14) *Principle A*

- a. Àdá tù-rù ònwé 'yá mbó
 Ada ICV-SFX self 3SG finger
 ‘Ada pinched herself.’
- b. \acute{O} bù [ònwé 'yá]_i kà Àdá_i tù-rù mbó
 3SG COP self 3SG FOC Ada ICV-SFX finger
 ‘It is herself that Ada pinched.’

Further evidence for reconstruction comes from variable binding. The variable contained in the clefted constituent (15) is bound by the universal quantifier, which supports the fact that the clefted item is reconstructed. This means that in order for a bound reading to obtain, the expression containing the bound pronoun must reconstruct to some position below the quantified expression.

(15) *Variable binding*

- a. Íné ọ́bùlá_i nà-éché [DP ọ́dímma nwá ya_{i/j}.]
 mother every IPFV-NMLZ.think well-being child 3SG
 ‘Every mother thinks about the well-being of her child.’
- b. \acute{O} bù [DP ọ́dímma nwá ya_{i/j}.] kà íné ọ́bùlá_i
 3SG COP well-being child 3SG FOC mother every
 nà-éché .
 IPFV-NMLZ.think
 ‘It is the well-being of her child that every mother thinks about.’

It is also important to note that variable binding is not only found in a monoclausal environment. It is also available under non-local extraction, as (16) shows.

- (16) a. Ónyé òbùl̀à mà nà òné òbùl̀á_i nà-éché [DP òdímma
 person every know that mother every IPFV-NMLZ.think well-being
 nwá ya_{i/j}.]
 child 3SG
 ‘Everyone knows that every mother thinks about the well-being of her
 child.’
- b. Ó bù [DP òdímma nwá ya_{i/j}.] kà ónyé òbùl̀à mà [CP nà
 3SG COP well-being child 3SG FOC person every know that
 òné òbùl̀á_i nà-éché ____].]
 mother every IPFV-NMLZ.think
 ‘It is the well-being of her child that everyone knows that every mother
 thinks about.’

2.2.4.2.2 Scope reconstruction Cleft constructions have been noted to have a connectivity effect with regards to scope reconstruction. See Reeve (2012b, Section 2.4.3.6) for an overview of this effect in English. The availability of wide scope interpretations of clefted items with a universal quantifier is assumed to involve reconstruction of the clefted item to a position below the quantifier.

(17) *Scope reconstruction*

- a. Àdá ch̀è-r̀è nà nwátà òbùl̀à r̀ì-r̀ì jí
 Ada think-SFX that child every eat-SFX yam
 ‘Ada thinks that every child ate yam.’
- b. Ó bù jí kà Àdá ch̀è-r̀è nà nwátà òbùl̀à r̀ì-r̀ì ____
 3SG COP yam FOC Ada think-SFX that child every eat-SFX
 ‘It is yam that Ada thinks that every child ate.’

The sentences in (17) permit both a wide and narrow scope reading of the (universal) quantified subject *nwátà òbùl̀à* ‘every child’—the narrow scope reading, where there is potentially a different yam eaten by each child (i.e., the pair-list/distributive reading); as well as a narrow scope reading, in which there is a single piece of yam eaten by every child. The narrow scope reading suggests that the clefted XP reconstructs into its base object position in the cleft clause.

2.2.4.2.3 Idiom reconstruction A further diagnostic for reconstruction of moved items comes from the interpretation of idioms. Idiom reconstruction has been noted as a strong argument for a promotion analysis of relative clauses (Schachter, 1973; Vergnaud, 1974; Sauerland, 2000; Hulsey and Sauerland, 2006). The standard assumption is that the verb and object of VO idioms such as *make headway* and *keep track* must be base-generated as a constituent. This captures the fact that the idiomatic use of the object is dependent on the presence of the verb. However, it is possible for the object of the VO idiom to undergo A'-movement and yet retain its idiomatic meaning, as shown in (18-b).

(18) *Idiom reconstruction*

- a. Há nà-àkù ògàjì n'ézé
 3PL IPFV-NMZL.hit spoon P-teeth
 ‘They are eating.’
 Lit. ‘They are hitting their teeth with the spoon.’

- b. Ó bù ògàjì kà há nà-àkú _____ n'ézé
 3SG COP spoon FOC 3PL IPFV-NMZL.hit P-teeth
 'They are EATING.'
 Lit. 'It is spoon that they are hitting their teeth with.'

In (18-b), the direct object of the verb is clefted and moved to the left periphery position with the non-literal, idiomatic interpretation still available. It follows that the direct object of the verb must have reconstructed to its base position in order to receive this interpretation. That these various reconstruction effects are present in clefts show that a movement derivation involving promotion is appropriate for these clefts in Igbo.

In addition to the classic movement tests discussed above, there are also some language-specific cyclicity effects which show evidence for A'-movement in the language. One of these reflexes is the final high tone on crossed-over subjects (Tada, 1995; Manfredi, 2018). Subjects that are crossed under A'-movement surface with a final high tone. I illustrate this with long-distance extraction in (19). In the declarative sentence in (19-a), both the matrix subject *Úchè* and the embedded subject *Ézè* have final low tones, but in the long-object cleft construction example in (19-b) the final low tones on the subject surface as high.

(19) *Final high tone on crossed-over subject*

- a. **Úchè** chè-rè nà **Ézè** mà Àdá.
 Uche think-SFX that Eze know Ada
 'Uche thinks that Eze know Ada.'
- b. Ó bù Àdá kà **Úché** chè-rè nà **Ézé** mà _____
 3SG COP Ada FOC Uche think-SFX that Eze know
 'It is Ada that Uche thinks that Eze knows.'

Another cyclicity effect is the extraction restriction found in perfective clauses. As shown in (20) A'-movement out of a perfective clause is unacceptable. The example in (20-b) involves a wh-question and clefting is illustrated in (20-c).

(20) *Perfective extraction restriction*

- a. Àdá è-rí-é-lá 'jí.
 Ada NMZL-eat-Á-PFV yam.GEN
 'Ada has eaten yam.'
- b. *Gí'ní kà Àdá è-rí-é-lá _____?
 what FOC Ada NMZL-eat-Á-PFV
 intended: 'What has Ada eaten?'
- c. *Ó bù jí kà Àdá è-rí-é-lá _____.
 3SG COP yam FOC Ada NMZL-eat-Á-PFV
 intended: 'It is yam that Ada has eaten.'
- d. Jí, Àdá è-rí-é-lá 'yá.
 yam Ada NMZL-eat-Á-PFV 3SG.GEN
 'Yam, Ada has eaten it.'

Example (20-d) illustrates topicalization, which is grammatical. An analysis for this is that topicalization involves base-generation and not movement. Topicalization has been widely shown in the literature to be derived by base-generation (Collins, 1993; Neeleman and Vermeulen, 2012; Korsah and Murphy, 2019). Note that for topicalization, there is always a resumptive pronoun at the bottom of the topic-dependency.

One important difference between the island tests and extraction from perfective is that while some island violations can be repaired by inserting a resumptive pronoun in the gap positions (such as coordination islands (21-a)), insertion of a resumptive pronoun in the ungrammatical sentences in (20) does not make the sentences better; cf. (21-b). See Chapter 4 for a detailed discussion of these cyclicity effects and other reflexes of A'-movement in the language.

(21) *Island repair*

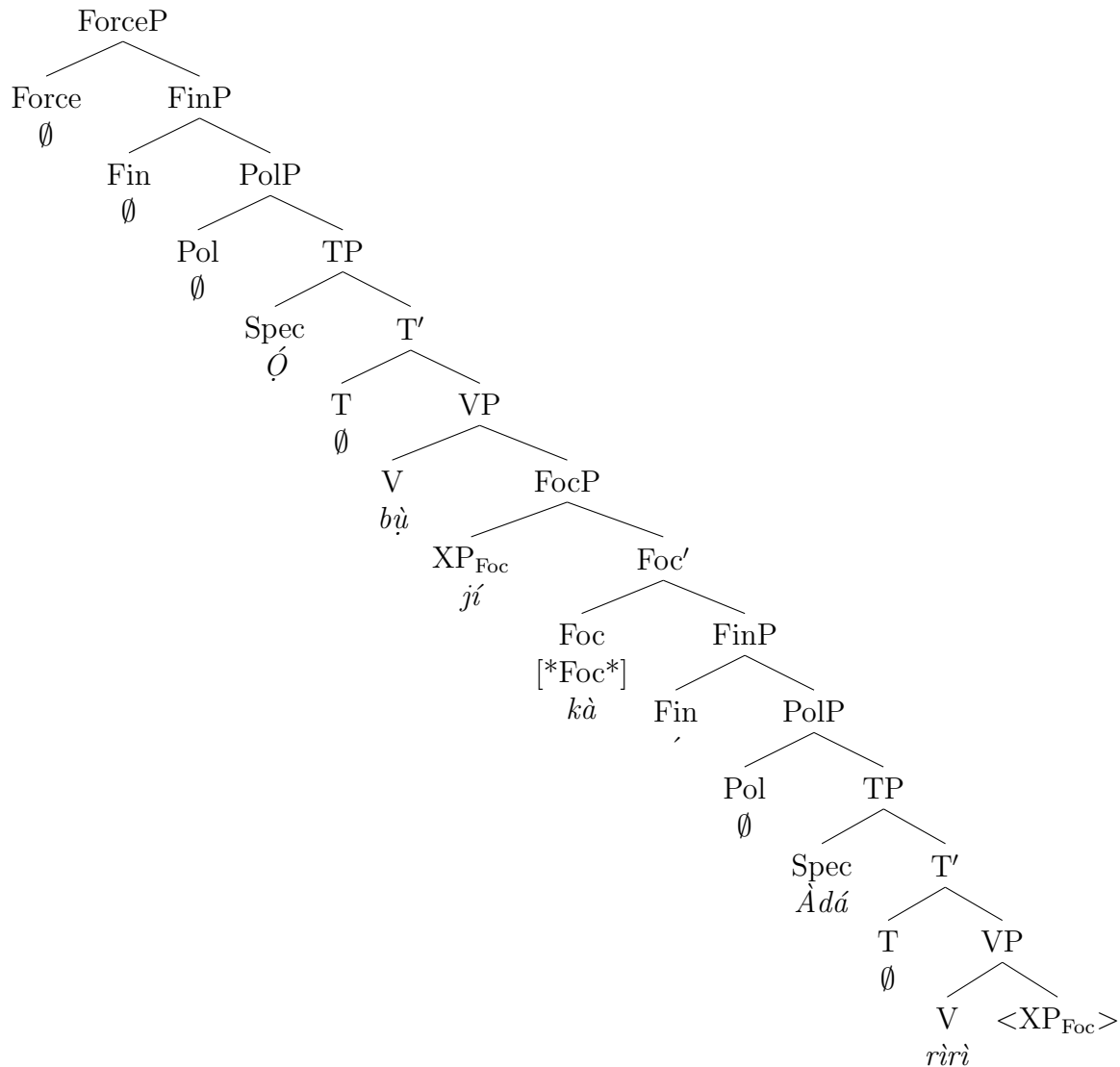
- a. Ó bù Àdá kà Úché hù-rù [yá nà Òbí.]
 3SG COP Ada FOC Uche see-SFX 3SG and Obi
 'It is Ada that Uche saw her and Obi.'
- b. *Ó bù jí kà Àdá è-rí-é-lá 'yá.
 3SG COP yam FOC Ada PFX-eat-SFX-PFV 3SG.GEN
 Lit: 'It is yam that Ada has eaten it.'

I have provided evidence from island and reconstructions effects that show clefts with focus fronting in Igbo involve movement. I also presented two language-specific cyclicity effects. In the next section, I posit a focus-based analysis for this cleft type in the language.

2.2.5 A focus-based analysis

The analysis that I adapt here is in line with the focus-based approach to the structure of clefts; see É.Kiss (1998a, 1999) and Meinunger (1998).⁴ This analysis strengthens the relation between focus movement and clefting as I show in this section. Under the focus-based approach, the structure of the cleft is dissociated from the structure of specificational sentences, of which clefts are sometimes considered a subclass (Akmajian, 1970; Percus, 1997; Reeve, 2012b). The type of cleft in Igbo covered in this chapter shows that the cleft is practically built on ex-situ focus in the language. The structure I propose for this Igbo cleft is as in (22). The lower copy of the XP is indicated using < >. The structure is for the sentence in (1-a). The verb movement is left out in the structure, but cf. Chapter 4 for a detailed discussion of this in Igbo. Below the Foc projection is FinP, which I will later argue in Chapter 4 is realized (by a floating high tone) when an XP overtly moves to Spec-FocP (or Spec-ForceP as in the case of relativization).

⁴While É.Kiss (1998a) assumes a biclausal structure, Meinunger (1998) argues for a monoclausal structure with TopP above FocP.

(22) *Structure of Igbo cleft sentence*

The cleft pronoun is the specifier position of the higher TP, and the copula, I argue is a linking verb, as proposed by Hedberg (2000), and not an expletive, as it was treated by É.Kiss (1998a). The copula selects the focus phrase (FocP). And the clefted constituent is moved overtly from the lower TP to the Spec-FocP (for non-subject). This analysis differs from É.Kiss's in claiming that the FocP is not selected by T head (I in É.Kiss's term). As pointed out by Hedberg (2000), É.Kiss's analysis is faced with the problem of accounting for clefts containing modal auxiliary verbs. Another point of departure from É.Kiss's proposal is that she views the copula as an expletive head of a focus phrase, which moves to T. The focus head is responsible for assigning identificational focus to the clefted constituent. Under the present analysis, I argue that the Foc head does not move to T in Igbo, but this functional head carries an exhaustivity presupposition and contrastiveness that is present in both cleft and ex-situ focus in the language.

In what follows, I provide a number of arguments for treating the cleft clause as focus fronting and not as a (restrictive) relative clause. These arguments provide support for the analysis proposed in this section.

2.2.5.1 Evidence for cleft clause as focus-fronting

The present analysis of the structure of Igbo clefts shown in (22) assumes that the element following the copula will behave in a way parallel to focus-fronting in which the focused constituent occurs in the clause-initial position. In this section, I show that these predictions are borne out. The material occurring after the copula is not a relative clause but ex-situ focus. This supports the analysis of this type of Igbo cleft along the focus-based approach.

2.2.5.1.1 Presence of the focus marker Perhaps, the direct evidence that the focus-based approach works for the Igbo cleft examined in this section is that the Spec-FocP is occupied by a focused XP, and there is an element that lexicalizes the Foc head. This is clear when one compares the ex-situ focus in (23-a) to the object focus in (2-b), repeated here as (23-b).

- (23) a. Jí kà Àdá rì-rì.
yam FOC Ada eat-SFX
'Ada ate YAM.'
- b. Ó bù jí kà Àdá rì-rì.
3SG COP yam FOC Ada eat-SFX
'It is yam that Ada ate.'

We can make sense of the commonalities between the focus in (23-a) and cleft sentence in (23-b) by assuming that the focus is basic and that clefts are built up from focus clauses plus the extra pronoun and copula preceding it. The focus marker is also found in wh-questions (24). The same marker present in focus fronting and wh-movement has been taken as evidence that a wh-phrase and focused fronted XP occupy the same position in the left periphery. See, for instance, Aboh (2004, 2006) for Gungbe and Korsah and Murphy (2019) for Asante Twi. This also follows that wh-phrases are interpreted via the same mechanism that also interprets focus (Beck, 2006; Haida, 2007).

- (24) *Wh-question involving focus fronting*
- a. Gí'ńí kà Àdá rì-rì?
what FOC Ada eat-SFX
'What did Ada eat?'
- b. Ò bù gí'ńí kà Àdá rì-rì?
3SG COP what FOC Ada eat-SFX
'What is it that Ada ate.'

The Foc head is lexicalized by *kà* when the constituent in focus, in this case the clefted XP in (23-a), occupies its specifier. For subject clefts and focus in general, the focus marker is absent. See Ndimele (1991) and Amaechi and Georgi (2019) for arguments that wh-/foc subjects do not move to Spec-FocP but stay in their Spec-TP position. Consider the sentences in (25).

- (25) *Focus marker is incompatible with wh-/foc subject*
- a. Ònyé (*kà) rì-rì jí?
who FOC eat-SFX yam
'Who ate yam?'

- b. Àdá (*kà) rì-rì jí?
 Ada FOC eat-SFX yam
 ‘Ada ate yam?’

Subject focus is expressed with the in-situ focus without the focus marker (25-b), or with a cleft sentence as in (2). Note that the subject cleft also lacks the focus marker.

2.2.5.1.2 No relative clause structure Cross-linguistically, it has been shown that in many languages clefts contain a restrictive relative clause. This has been one of the strong arguments of analyzing cleft sentences as specificational copular clauses. But the Igbo cleft sentences considered here do not contain relative clauses. One of the arguments is that in Igbo, relative clauses do not contain the focus marker *kà* (regardless of the grammatical function of the relativized XP —subject or non-subject) or any relative complementizer or pronoun. Consider the relative clause in (26) below.

- (26) Ànyí rì-rì jí [OP_i Àdá sì-rì ____i]
 3PL eat-SFX yam Ada cook-SFX
 ‘We ate the yam that Ada prepared.’

The absence of tonal reflexes of movement that are attested in relative clauses also indicate that the clefts in (2) do not involve relative clauses. In Igbo, subject relative clauses are signaled by a downstep tone on the finite verb (Green and Igwe, 1963; Nwachukwu, 1976; Goldsmith, 1976; Emenanjo, 1978). The downstep tone has been shown to indicate subject extraction as it is observed under long-subject wh-/focus (Amaechi and Georgi, 2019). Important for the argument here is that this downstep tone is absent in cleft sentences where the clefted XP is the (local) subject. Consider the sentences in (27) below. (27-b) contains a subject relative clause.

- (27) *Tone overwriting under subject relativization*
- a. Ó bù nwáányì rì-rì jí.
 3SG COP woman eat-SFX yam
 ‘It is the woman that ate yam.’
- b. nwáányí [OP_i ____i ’rì-’rì jí] à-sá-á-lá éfére.
 woman eat-SFX yam NMZL-wash-Á-PFV plate
 ‘The woman that ate yam has washed the dishes.’

Another tonal reflex found in local subject relative clauses is on the relativized subject. This is observable when the subject DP ends with a low or downstep tone; see (28-b). Under relativization, the final low tone of the subject surfaces as high. The relativized subject in (28-b) has an underlying final low tone, but under relativization, the final tone is raised. Crucially, this tonal reflex is absent in the cleft sentences under investigation here; see (28-a).

- (28) *Final high tone on local relative subject head noun*
- a. Ó bù àchàlà dà-rà.
 3SG COP bamboo fall-SFX
 ‘It is a bamboo tree that fell.’
- b. Àchàlá ’dà-’rá bù-rù íbù.
 bamboo fall-SFX ICV-SFX bigness
 ‘The bamboo tree that fell is big.’

Also see Chapter 4 for an analysis of this tone and other tonal reflexes found in A'-movement dependencies.

2.2.5.1.3 No further focus movement The lack of further focus movement is one of the pieces of empirical evidence presented by Reeve (2012a,b) against a focus-based approach to clefts in English and Russian. Reeve argues that since the focus-based approach posits focus-movement of the clefted XP, they predict that further focus-movement of clefted XPs should always be impossible. And this is because A'-movement of a particular type does not iterate (Abels, 2008). The same idea is proposed in Rizzi's (2006) Criterial Freezing, where a phrase meeting a criterion is frozen in place, and its chain cannot extend further. This prediction is borne out in Igbo, as indicated in (29) below.

- (29) *No further focus movement*
- a. Ó bù jí kà Àdá rì-rì.
3SG COP yam FOC Ada eat-SFX
'It is yam that Ada ate.'
- b. *Jí kà ó bù Àdá rì-rì.
yam FOC 3SG COP Ada eat-SFX
Lit: 'YAM, it is that Ada ate.'
- c. *Gí'ní kà ó bù Àdá rì-rì?
what FOC 3SG COP Ada eat-SFX
Lit: 'What it is that Ada ate.'

The clefted constituent *jí* 'yam' in (29-a) may not be further focused or wh-questioned. Since XPs that are focused and wh-moved ex-situ occur in the same Spec-FocP position in the language, this explains why the further wh-question of the clefted XP is unacceptable in (29-c). But it is grammatical to have the wh-phrase after the copula, as in (24-b) in the preceding subsection. The category of the clefted XP does not seem to matter as further wh-movement of PPs is illicit. See (30) below.

- (30) a. Ó bù n'anyí kà ó nwè-rè íchèkwúbé.
3SG COP P-1PL FOC 3SG have-SFX trust
'It is in us that he placed his trust.' (Emenanjo, 1978, 64)
- b. *N'ònyé kà ó bù ó nwè-rè íchèkwúbé?
P-who FOC 3SG COP 3SG have-SFX trust
Lit: 'In who it is that he placed his trust?'

Even subextraction from the clefted constituent is illicit, as shown in (31) below.

- (31) *Ònyé_i kà ó bù [fòtó (ya_i)] (kà) Àdá hù-rù?
who FOC 3SG COP picture 3SG FOC Ada see-SFX
Lit: 'Who is it [a picture of] that Ada saw?'

Reeve (2012a) shows that in English further movement of the clefted XPs is possible; see (32). He argues that focus movement and wh-movement are distinct A'-movement in English (Abels, 2008). The following sentences in (32) are from (Reeve, 2012a, 182).

- (32) *Further focus movement in English* (Reeve, 2012a, 182)
- a. JOHN it was that Mary saw.

- b. ?IN LONDON it was that I saw a rat.
- c. Who was it that Mary saw?
- d. In which city was it that you saw a rat?

In (32-a,b), the clefted XP is focused, while (32-c,d) illustrates *wh*-movement of the clefted phrase. Similar arguments of further movement of the clefted constituent is presented by (Haegeman et al., 2014, Section 4) against a monoclausal analysis advocated by Meinunger (1998) and Frascarelli and Ramaglia (2013) of the *it*-cleft in English. They also show that subextraction from the clefted XP is allowed in English. The Igbo data presented here demonstrate that there is indeed focus movement in these clefts in Igbo unlike in English *it*-clefts.

2.2.5.1.4 Adverbial clauses The claim that both focused XPs in focus fronting and clefts occur in the same specifier position is further supported by their compatibility with adverbial clauses. Haegeman et al. (2014) use this as one of the main clause phenomena tests that illustrates one of the differences between focus movement and clefts in English. Since the focus analysis of clefts assumes that focus fronting and clefts are similar, both should show the same property with regards to adverbial clauses. Haegeman et al. (2014) show that in English, adverbial clauses are compatible with in-situ focus and *it*-cleft but not with focus fronting.

- (33)
- a. Whenever we needed MONEY, George could not be reached.
 - b. *Whenever MONEY I needed, George could not be reached.
 - c. Whenever it was MONEY we needed, George was nowhere to be seen.

(Haegeman et al., 2014, 290-291)

Thus, *it*-clefts do not involve focus fronting in English. In Igbo, however, this test gives different results as the sentences in (34) show. The sentence in (34-a) illustrates that the temporal adverbial clause is compatible with in-situ focus, while focus fronting and clefts pattern alike, as they are both incompatible with adverbial clauses in Igbo (34-b,c).

- (34) *Focus is incompatible with adverbial clauses in Igbo*
- a. M̀gbè ọ̀bùl̀à m̀ ch̀ò-r̀ò égo, à-ná-ghì à-hù Àdá ányá.
time every 1SG want-SFX money É-IPFV-NEG NMZL-see Ada eye
'Whenever I needed money, Ada is nowhere to be seen.'
 - b. *M̀gbè ọ̀bùl̀à égo kà m̀ ch̀ò-r̀ò, à-ná-ghì à-hù Àdá ányá.
time every money FOC 1SG want-SFX É-IPFV-NEG NMZL-see Ada eye
intended: 'Whenever MONEY I needed, Ada is nowhere to be seen.'
 - c. *M̀gbè ọ̀bùl̀à ọ̀ bù égo kà m̀ ch̀ò-r̀ò, à-ná-ghì à-hù
time every 3SG COP money FOC 1SG want-SFX É-IPFV-NEG NMZL-see
Àdá ányá.
Ada eye
intended: 'Whenever it was MONEY I needed, Ada is nowhere to be seen.'

This finding supports the claim that cleft sentences in Igbo involves focus fronting.

2.2.5.1.5 Exhaustivity presupposition Clefts in various languages have been shown to give rise to exhaustivity and existential presuppositions (Percus, 1997; Hed-

berg, 2000; Zimmermann and Onea, 2011; Reeve, 2012b). Clefts and focus fronting share a common property that they express both existential and exhaustivity presuppositions in Igbo. For instance, the sentences in (23) in Section 2.2.5.1.1 have the presupposition that something was eaten, and the assertion that what was eaten is *yam*. In addition to this information, the sentences also presuppose that the clefted XP, in this case *yam*, is the only contextually relevant individual of which the property denoted by the cleft clause holds (É.Kiss, 1998a; Reeve, 2012b). One of the tests for exhaustivity is with the particles *also* and *even*, which are incompatible with exhaustive focus (É.Kiss, 1998a). As illustrated in (35), the particle *also* is possible in in-situ (information) focus (35-a), but it is odd in both focus fronting and clefts (35-b,c).

- (35) *Focus and clefts are incompatible with the additive particle ‘also’*
- a. Àdá rì-rì mà jí.
Ada eat-SFX also yam
‘Ada also ate yam.’
- b. *Mà jí kà Àdá rì-rì.
also yam FOC Ada eat-SFX
Lit: ‘Ada ate ALSO YAM.’
- c. *Ó bù mà jí kà Àdá rì-rì.
3SG COP also yam FOC Ada eat-SFX
Lit: ‘It is also yam that Ada ate.’

Another test for exhaustivity proposed by Szabolcsi (1981) involves comparing a pair of sentences in which one of the sentences contains a focused conjoined XP and the other sentence contains a focused non-conjoined XP which is identical to one of the conjuncts of the focused XP in the first sentence. If sentence 1 entails sentence 2, then the focus expressed by these sentences is not obligatorily exhaustive, since if the XP in sentence 2 is exhaustively focused, it should not be possible to conjoin it with another XP, as in sentence 1, and preserve truth (Reeve, 2012b).

- (36) a. Àdá rì-rì jí nà édè.
Ada eat-SFX yam and cocoyam
‘Ada ate yam and cocoyam.’
- b. Àdá rì-rì jí.
Ada eat-SFX yam
‘Ada ate yam.’
- (37) a. Jí nà édè kà Àdá rì-rì.
yam and cocoyam FOC Ada eat-SFX
‘Ada ate YAM AND COCOYAM.’
- b. #Jí kà Àdá rì-rì.
yam FOC Ada eat-SFX
‘Ada ate YAM.’
- (38) a. Ó bù jí nà édè kà Àdá rì-rì.
3SG COP yam and cocoyam FOC Ada eat-SFX
‘It is yam and cocoyam that Ada ate.’
- b. #Ó bù jí kà Àdá rì-rì.
3SG COP yam FOC Ada eat-SFX
‘It is yam that Ada ate.’

The (a) sentence in (36) entails (b). But this is not true for (37) and (38). The (b) sentences in (37) and (38) contradict the sentences in (a). As expected, the sentences show that ex-situ focus and clefts express exhaustivity.⁵

In sum, I have provided tests which show that there are similarities between clefts and focus in Igbo. These are the presence of the focus marker, absence of a relative clause structure, lack of further focus movement, incompatibility with adverbial clauses, and an exhaustivity presupposition. These arguments all support a focus-based analysis of this type of cleft in Igbo.

2.2.6 Interim summary

In this section, I have argued that the expletive analysis accounts better for clefts involving focus fronting in Igbo. Based on the impossibility of alternating the cleft pronoun with a demonstrative, I postulated that the cleft pronoun is expletive. In this way, the cleft pronoun and the cleft clause do not form a discontinuous definite description as proposed by the specificational approach. I showed that the copula is non-expletive. I posit a structure where FocP is the complement of the copula, and the clefted constituent is in the specifier position of this phrase, except for local clefted subjects. Evidence from island and reconstruction effects provided support for a movement dependency in the cleft clause, that is, the clefted XP moves overtly to its surface position. I provided an analysis of movement of the clefted constituent to the left periphery of FocP. I also presented various tests that indicate that the left periphery position occupied by the clefted constituent is Spec-FocP. In other words, focused constituents in both focus fronting and clefts occupy the same position in the left periphery as they behave on a par with respect to having the focus marker, the absence of a relative clause structure, impossibility of further movement of the focused constituent, incompatibility with adverbial clauses, and an exhaustivity presupposition. Igbo is not alone with regards to having clefts that do not involve relativization. There are other languages that have also been reported not to have a relative clause structure in their clefts; see for instance Reeve (2012b) for Slavic languages and Torrence (2013c) for Wolof. In the next section, I consider the syntax of relative clauses in Igbo, which is a necessary and an important part of the other type of cleft in Igbo.

2.3 The syntax of relative clauses in Igbo

In this section, I present an overview of Igbo relative clauses, which is relevant for the discussion in the following Section 2.4, and Chapter 3, where I discuss cleft constructions that involve relative clauses. Igbo relative clauses have received some attention in the descriptive literature on the language (Swift et al., 1962; Green and Igwe, 1963; Igwe and Green, 1964; Goldsmith, 1976; Nwachukwu, 1976; Emenanjo, 1978). Goldsmith (1981b), who considers wh-questions in Igbo, argues that wh-questions based on

⁵Igbo differs from languages like Hausa, where it has been argued that exhaustivity does not derive from focus fronting, but from the presence of the (gender-number) focus-sensitive particle *nee/cee* (Green, 1997; Hartmann and Zimmermann, 2007b,a; Zimmermann, 2018; Hartmann, 2019). Unlike the focus marker in Igbo, which is obligatory for ex-situ (non-subject) focus but not compatible with in-situ focus, Hausa *nee/cee* can associate with the focus constituent both in-situ and ex-situ. The particle is not obligatory for both in-situ and ex-situ foci, and it does not have to follow the focus XP. See Hartmann and Zimmermann (2007b,a) for the relevant examples.

a relative clause involve base-generation of the relativized NP, while Uwalaka (1991) proposes a movement analysis, where the relativized head noun moves overtly to the specifier of CP. I follow (Goldsmith, 1981b) in assuming base-generation of the relative head noun with movement of a null relative operator within the relative CP. I start by discussing the basic properties of relative clauses in the language in Section 2.3.1. Further, I present movement diagnostics such as island sensitivity and reconstruction effects (Section 2.3.2), and argue for the head-external analysis of relative clauses in Igbo. I show that the head noun is base-generated as sister of the relative CP with movement of a null operator merged in the base-position to Spec-CP position. The null operator analysis makes the prediction that relative clauses display movement diagnostics. The head noun is interpreted by entering into a relation with the A'-chain. Following Amaechi and Georgi (2019), I assume that unlike in *wh*-question and focus, the (local) subject obligatorily involves A'-movement in relative clauses. There is evidence from reflexes of movement with regards to this movement.

Over the last decades, the study of relative clauses has generated a lot of discussion, and different analyses have been proposed for this construction in terms of the relationship between the relative head noun and the relative internal position. For a recent concise discussion of the three competing analyses of relative clauses, see Salzmann (2017, Chapter 2). The promotion (or head raising) analysis (HRA) assumes that the head noun and the gap-internal position in the relative clause are related via a direct dependency (Schachter, 1973; Vergnaud, 1974; Kayne, 1994; Bianchi, 2000; de Vries, 2002). That is, the head noun moves overtly to its surface position from inside the relative clause. Thus, they predict that relative clauses show movement diagnostics as well as reconstruction effects. The analysis is faced with problems such as accounting for the non-identity effects in case mismatch which exist between the head noun and the gap position. On the other hand, the matching analysis (MA) assumes that there is no direct relationship between the head noun and the gap in the base position, but there is a separate representation of the head noun in the relative clause. The relative operator/pronoun is reanalyzed as a determiner taking an NP-complement. This NP complement is PF-deleted under identity with the head noun (Munn, 1994; Sauerland, 2003; Salzmann, 2006, 2017). For the head external analysis (HEA) (Chomsky, 1977), there is movement of a relative operator/pronoun from the internal base position to the left edge of the relative CP. The relative operator mediates between the head noun and the relative-internal position in such a way that the relation is an indirect one. Under the head external analysis, the head noun is never inside the relative clause at any point in the derivation.

- (39) a. I know the woman_i [_{CP} C_{rel} John saw ____i] HRA
 b. I know the woman [_{CP} [_{DP} Op [_{NP} ~~woman~~]]_i C_{rel} John saw ____i] MA
 c. I know the woman [_{CP} Op_i C_{rel} John saw ____i] HEA

I argue for a base-generation analysis for the relative clause in Igbo. I assume that the head noun is not moved overtly from its clause internal position as it is the view under the promotion analysis of relative clauses. I also present some empirical and theoretical evidence in support of this analysis.

2.3.1 Basics of Igbo relative clauses

Relative clauses in Igbo are postnominal, head external (Welmers and Welmers, 1969; Green and Igwe, 1963; Goldsmith, 1976; Nwachukwu, 1976; Emenanjo, 1978), and there are no relative pronouns. Igbo uses both gap and resumptive pronoun strategies in its relative clauses. The gap strategy is used for subjects and (in)direct objects, as shown in (40).

- (40) *Relative clauses with gap strategy*
- a. Àdá hù-rù nwáányí [OP_i ____i 'nyé-'ré nwóke ánú]
 Àdá see-SFX woman give-SFX man meat
 'Àdá saw the woman who gave the man meat.' *subject*
- b. Àdá hù-rù nwóke [OP_i nwáányí nyè-rè ____i ánú]
 Àdá see-SFX man woman give-SFX meat
 'Àdá saw the man that the woman gave meat.' *indirect object*
- c. Àdá hù-rù ánú [OP_i nwáányí nyè-rè nwóke ____i]
 Àdá see-SFX meat woman give-SFX man
 'Àdá saw the meat that the woman gave the man.' *direct object*

Resumption is used for objects of the preposition *about* (41-a), possessor of NP, for a conjunct in a coordinate structure, and subject of a tensed clause introduced by a complementizer (Goldsmith, 1981b; Sells, 1984). See Goldsmith (1981b) for examples similar to (41) with wh-questions (p.380ff).

- (41) *Relative clauses with resumption strategy*
- a. Àdá mà ónyé ányí nà-èkwú màkà *(yá).
 Ada know person 1PL IPFV-NMZL.talk about 3SG
 'Ada knows the person that we are talking about.'
- b. Àdá mà ónyé ányí mà àhá *(yá).
 Ada know person 1PL know name 3SG
 'Ada knows the person whose name we know.'
- c. Òbí mà ónyé ín hù-rù *(yá) nà Àdá.
 Obi know person 1SG see-SFX 3SG and Ada
 'Obi knows the person that I saw along with Ada.'
- d. Àdá mà ónyé ín chò-rò kà *(ó) gá.
 Ada know person 1SG want-SFX that 3SG go
 'Ada knows the person that I want that s/he goes.'

With the absence of overt segmental complementizers or relative pronouns, syntactic re-ordering indicates non-subject relativization in (40). Subject relative clauses in Igbo have the canonical SVO order as in main clauses. Green and Igwe (1963) report that for subject relativization there is a high tone that docks on the final tone bearing unit of the relativized subject. This tone is noticed when the subject DP does not end with a high tone.⁶ The subject in (42-a) *nwáányí* 'woman' ends in a low tone but in (42-b) where this subject functions as the head noun of the relative clause, the final

⁶Similar kinds of raising of a final low tone are found on the N₁ in an N₁+N₂ genitive (or sometimes referred to as associative) constructions (Green and Igwe, 1963; Nwachukwu, 1976, 1995; Manfredi, 2018). Consider the following in (i).

(i) àgbà ènwè → àgbá ènwè

low tone surfaces as high. In addition, the low tones on the finite verb in (42-a) change to downstep under subject relativization (Green and Igwe, 1963; Nwachukwu, 1976).⁷

- (42) *Tone overwritings under subject relativization*
- a. Nwáányị nyè-rè nwó'ké ánụ.
 woman give-SFX man meat
 'The/some woman gave a man meat.'
- b. **nwáányị** [OP_i ____i 'nyé-'ré nwó'ké ánụ]
 woman give-SFX man meat
 'the woman who gave a man meat'

This property of final high tone on the head noun in subject relativization, which does not occur in declarative sentences or in other A'-dependencies such as wh-/focus movement, is best analyzed as indicating the Fin head.

With preposed relative non-subject head noun, the final low tone on the subject becomes a high tone; cf. (40). The subject of the relative clause in the examples with direct and indirect object relativization surfaces with a final high tone. Note that in the declarative non-relative clause, this noun ends with a low tone; cf. (42-a). Like the downstep on the verb, studies have shown that this is not a quirk of only relative clauses but of A'-movement in general (Tada, 1995; Manfredi, 2018). See Chapter 4 for further consideration of these tonal effects under A'-movement.

2.3.2 Movement properties of Igbo relative clauses

Here, I show the Igbo relative clauses involves movement as they are sensitive to islands and exhibit reconstruction effects. I interpret these results such that an element inside the relative clause moves. I show that it is, however, not the head noun that moves. Hence, I conclude that it is an empty operator (OP) that moves inside the relative clause, as in the head external analysis.

2.3.2.1 Island sensitivity

The ungrammatical results in the (b) sentences below show that relativization in Igbo is sensitive to islands. In (43), we attempt to relativize out of a complex NP; (44) shows a similar effect when we try to relativize out of an adjunct clause.

- (43) *Complex NP island*
- a. Àdá hụ-rụ nwáányị [OP_i ____i 'nyé-'ré nwóke ánụ]
 Àdá see-SFX woman give-SFX man meat
 'Àdá saw the woman who gave a man meat.'

jaw monkey 'monkey's jaw'

⁷The downstep tone on the verb is not a distinctive characteristic of relative clauses as we find this effect in other A'-constructions other than relative clauses; cf. (i).

- (i) a. Òbí chè-rè nà Àdá rì-rì jí.
 Obi think-SFX that Ada eat-SFX yam
 'Obi thinks that Ada ate yam.'
- b. Àdá kà Òbí chè-ré ___ 'rì-'rì jí.
 Ada FOC Obi think-SFX eat-SFX yam
 'Obi thinks that ADA ate yam.'

- b. *ánú_j Àdá hù-rù nwáányí [OP_i ____i 'nyé-'ré nwóke ____j]
 meat Ada see-SFX woman give-SFX man
 Lit: 'the meat that Ada saw the woman who gave a man'
- (44) *Adjunct island*
- a. Àdá sì-rì jí [màkà nà Òbí gbù-rù òkúkò].
 Ada cook-SFX yam because that Obi kill-SFX chicken
 'Ada cooked yam because Obi killed a chicken.'
- b. *òkúkò Àdá sì-rì jí [màkà nà Òbí gbù-rù ___]
 chicken Ada cook-SFX yam because that Obi kill-SFX
 Lit: 'the chicken that Ada cooked yam because Obi killed'

The island evidence points to the fact that relativization in Igbo involves movement. Next, I turn to reconstruction, where we see similar evidence for movement.

2.3.2.2 Reconstruction

Evidence from reconstruction tests provide further support for movement within the relative clause. This is illustrated with reconstruction for Principle A, as well as idiom and scope reconstructions. For binding principles, the reflexive is subject to Condition A, illustrated in (45). The reflexive contained in the relativized nominal is not c-commanded on the surface by its antecedent, but the availability of the reflexive reading indicates that the reflexive must have been in the c-command domain of the R-expression and is bound by it. Example (46) indicates that the idiomatic interpretation is not lost even as the complement of the idiom is relativized. The sentence in (47) shows that a relativized indefinite can reconstruct into a relative clause for quantifier binding.

- (45) *Principle A*
- a. Àdá hù-rù fòtó ònwé 'yá.
 Ada see-SFX picture self 3SG
 'Ada saw a picture of herself.'
- b. [fòtó ònwé 'yá_i] Àdá_i hù-rù ___
 picture self 3SG Ada see-SFX
 'the picture of herself that Ada saw'
- (46) *Idiom reconstruction*
- a. Ùlé áhù tà-rà ákpù
 test DET chew-SFX lump
 'The test is difficult.' [lit. 'The test chew lump.']
- b. Ákpù [ùlé áhù tà-rà ___] mè-rè ó jì dàá
 lump test DET chew-SFX do-SFX 3SG AUX fall
 'He failed because the test was difficult.'
 Lit: 'The lump that the test chew made him fall.'
- (47) *Scope reconstruction*
- a. Àdá chè-rè nà nwátà òbùlà gù-rù ákwúkwó.
 Ada think-SFX that child every read-SFX book
 'Ada thinks that every child read a/some book.'
- b. ákwúkwó Àdá chè-rè nà nwátà òbùlà gù-rù ___
 book Ada think-SFX that child every read-SFX
 'the book that Ada thinks that every child read' ✓ ∃ > ∀, ✓ ∀ > ∃

In (47-b), the relativized indefinite *ákwúkwó* ‘book’ can take wide scope with respect to the embedded universal subject *nwátà òbílà* ‘every child’ ($\exists > \forall$). This reading refers to a situation where there is a single book that is read by every child. The relativized indefinite can also scope lower than the quantified subject inside of the relative clause ($\forall > \exists$). The narrow scope interpretation of *ákwúkwó* refers to a situation in which there is a different book read by each child. The narrow scope interpretation is expected if the indefinite originates in the c-command domain of the quantified expression and has moved to its surface position.

The reconstruction facts from binding, idiom interpretation, and scope all suggest that there is movement of an element inside the relative clause CP.

2.3.3 Evidence for base-generation

Despite the fact that the relative clauses in Igbo show some movement properties, they do not exhibit all movement properties. In this section, I provide some empirical advantages in support of base-generation of the relative head noun.

2.3.3.1 Strong cross-over

Non-reconstruction for Principle C under relativization, which has been observed in many languages, provides further support for a head external analysis.⁸ For instance, in the cleft sentence in (48-a), the clefted XP cannot be construed as co-referential with the subject pronoun to its right, a violation of the strong cross-over effect. The sentence in (48-b) with relativization of an operator across a co-indexed pronoun is grammatical.

(48) *Strong cross-over effect*

- a. * \acute{O} b̀̀ [$\acute{A}d\acute{a}_i$] [$k\grave{a}$ \acute{o}_i h̀̀-r̀̀ $___$]
 3SG COP Ada FOC 3SG see-SFX
 ‘It is Ada_i that she_i saw.’
- b. [$F\grave{o}t\acute{o}$ $\acute{A}d\acute{a}_i$] [\acute{o}_i h̀̀-r̀̀ $___$ $n'\acute{a}kw\grave{u}kw\acute{o}$] $gb\grave{a}$ - $w\grave{a}$ - $r\grave{a}$ $y\acute{a}$
 picture Ada 3SG see-SFX P-book shoot-break-SFX 3SG
 $\acute{o}b\grave{i}$.
 heart
 ‘The picture of Ada_i which she_i saw in the paper broke her heart.’

The sentence in (48-b) poses a problem for a promotion analysis since the R-expression is co-referential with the pronoun to its right, which is a violation of Principle C, given that the R-expression will be bound by the pronoun (if the R-expression originates inside the relative clause, in a position c-commanded by the pronoun, as assumed under the head-raising analysis). Under a promotion analysis, non-reconstruction is unexpected because there is a representation of the external head inside the relative clause so that a Condition C violation should obtain (Salzmann, 2017), but this is not a problem for the head external analysis where the head noun has no representation

⁸Note that there is also lack of reconstruction for Principle C in other constructions (such as clefts) that are based on relative clauses (see Chapter 3). See Adesola (2005, 2006) for a similar argument for Yoruba. See also Torrence (2013c) for comparison of the movement versus base-generation facts for Wolof, English, and Yoruba.

inside the relative clause.⁹

2.3.3.2 Non-reconstruction of idioms

A promotion analysis in which the head noun is argued to moved overtly from the base position in the relative clause has also been criticized based on the fact that the head noun does not always reconstruct (Hartmann and Zimmermann, 2012; Salzmänn, 2017). Consider the idiom in (49). Under relativization, the idiomatic interpretation is lost which suggests that the relative clause head noun was not present in the relative clause internal position at first.

- (49) *No idiom reconstruction*
- a. Há nà-àkú ñgàjì n'éze
 3PL IPFV-NMZL.hit spoon P-teeth
 'They are eating.'
 Lit. 'They are hitting their teeth with spoon.'
- b. ñgàjì há nà-àkú — n'éze
 spoon 3PL IPFV-NMZL.hit — P-teeth
 'the spoon that they are hitting their teeth with'
 #'They are eating.'

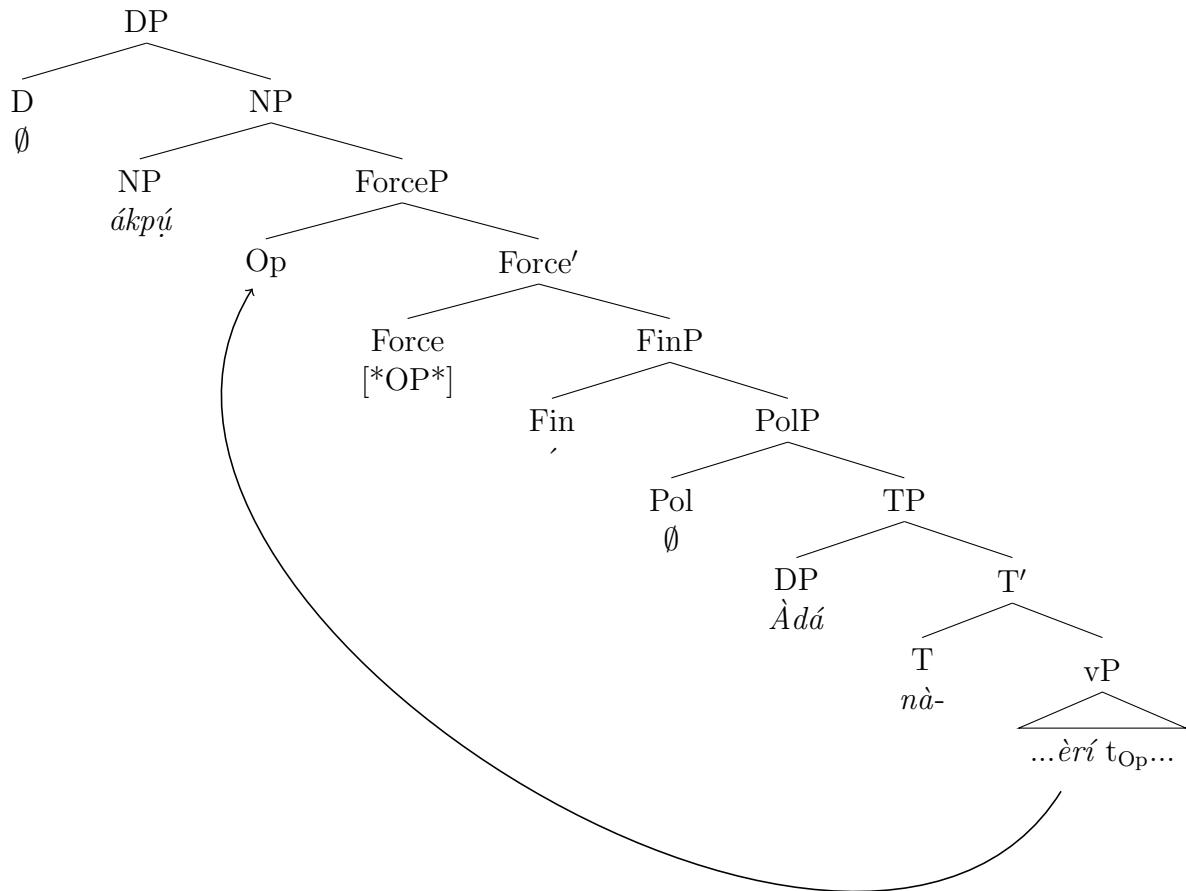
While reconstruction for idiom interpretation is available, for instance in (46), the example in (49) demonstrates that this is not the case with some other idioms. One factor responsible for this (non-)reconstruction concerns the decomposability of the idioms (Nunberg et al., 1994). Nunberg et al. (1994) identify two kinds of idioms—idiomatically combining expressions and idiomatic phrases. They argue that the former idioms are decomposable and allow for syntactic transformations while the latter ones are non-decomposable and do not allow for (certain) syntactic transformations. While the idiom in (46) belongs to the former class, the idiom in (49) belongs to the latter.

2.3.3.3 Case mismatch

Case mismatches in relative clauses have been a strong argument against the promotion analysis of relative clauses (Borsley, 1997; Bianchi, 2000; Alexiadou et al., 2000; Salzmänn, 2017). This is because the head noun can have a different case from that of the gap in the relative clause. The head noun behaves as if it occupies two distinct positions – one in the matrix clause and the other in the relative clause. Under a promotion analysis, where the head noun moves overtly from the relative clause internal position, Salzmänn (2017) shows that this would violate the activity condition (Chomsky, 2000), as it would imply that the head noun enters into Agree-relationships with two case-assigners.

Case mismatch is also evident in Igbo relative clauses. In the language, tone indicates the case of certain arguments in some constructions. For instance, complements of participles, and objects of a non-initial verb (V_2) in a serial verb construction (SVC) bear genitive case (Manfredi, 1991; Déchaine, 1993; Déchaine and Manfredi,

⁹A different analysis for this anti-reconstruction effect with respect to Principle C is the late merger of adjuncts (Freidin, 1986; Lebeaux, 1988, 1991), where the relative clause is an adjunct modifier, as such it can be merged late in the derivation. Given the late merger of the adjunct, the condition C effect disappears.

(53) *Structure of relative clause in Igbo*

In (53), I assume that the relative ForceP is adjoined to the head NP since the determiner has been argued to scope over both the head noun and the relative clause to derive the correct semantics for restrictive relativisation (Partee, 1975). Adjunction also captures the adjunct-like nature of relative clauses.

2.3.5 Summary

This section has focused on the syntax of relative clauses in Igbo. I discussed the basic features of relativization in the language. Based on the existence of island-sensitivity and reconstruction effects, I argued that Igbo relative clauses involve empty operator movement. The head noun is base-generated in its left-peripheral position, but co-indexed with the empty operator in the relative clause. This operator moves from its thematic base position to the specifier of the relative ForceP leaving behind a trace. With this treatment of relative clauses in Igbo, I now turn to the second type of cleft that involves relativization in the next section.

2.4 Clefts involving relative clauses

In the previous Section 2.3, I provided a syntactic analysis of relative clauses in Igbo, which is necessary for the discussion of the clefts discussed in this section. I show that in addition to clefts involving focus fronting, which I argued is best analyzed under

a focus-based approach in Section 2.2, Igbo attests another cleft construction that involves relativization; see the example in (1-b) in Section 2.1. I argue that the cleft pronoun in clefts involving relativization is non-expletive, hence the pronoun forms a discontinuous definite description with the cleft clause (Hedberg, 2000). I show that the copula, on the other hand, is a copula of predication. Given these properties of the cleft, I propose a specificational analysis for this type of cleft that involves relative clauses in Igbo. In Section 2.4.1, I present arguments from the alternation of the cleft pronoun with the demonstrative and with the presentational *Here is* phrase which show that the cleft pronoun is non-expletive. Section 2.4.2 highlights the fact that the copula in this kind of cleft is a predicational copula, and not a copula of specification. Next, I show in Section 2.4.3 that the cleft clause is a relative clause. I posit a specificational analysis for the cleft type that involves relativization in Section 2.4.4, and Section 2.4.5 concludes.

2.4.1 The non-expletive nature of the cleft pronoun

The initial pronoun in cleft sentences involving relativization is non-expletive and referential in contrast to the pronoun in the cleft involving focus. As the demonstrative alternation in (54) shows, this pronoun can be replaced with a demonstrative phrase. The cleft pronoun refers to the overt relative clause as has been argued under specificational analyses of clefts; see for instance Akmajian (1970); Percus (1997); Hedberg (1990, 2000); Reeve (2012b); among many others. In this case, the cleft pronoun and the cleft clause form a semantic unit, with *it* playing the role of the definite article and the cleft clause the descriptive component (Han and Hedberg, 2008).

- (54) *Cleft pronoun is non-expletive*
- a. Ó bù jí Àdá rì-rì.
3SG COP yam Ada eat-SFX
'It is the yam that Ada ate.'
- b. Ìkè áhù bù jí Àdá rì-rì.
the.one that COP yam Ada eat-SFX
'That is the yam that Ada ate.'

Another closely related test is that the cleft pronoun and the copula in this cleft can be substituted for *Lèé* 'Here is' but not for the same cleft pronoun and copula in the clefts involving focus (Clech-Darbon et al., 1999).¹⁰ The sentences in (55) below are the counterparts of those in (1) in Section 2.1.

- (55) a. *Lèé jí kà Àdá rì-rì.
look.IMP yam FOC Ada eat-SFX
Lit: 'Here's yam that Ada ate.'
- b. Lèé jí Àdá rì-rì.
look.IMP yam Ada eat-SFX
'Here's the yam that Ada ate.'

In sum, the possible alternations of the initial cleft pronoun shown above demonstrate

¹⁰See Clech-Darbon et al. (1999) for similar arguments in distinguishing clefts in French. Clech-Darbon et al. show that the material to the right of the copula in these "broad-focus" clefts can only be an NP or DP which contains the relative clause. Other categories such as PPs cannot occur in this position.

that the cleft pronoun is referential in clefts where the cleft clause is a relative clause.

2.4.2 The copula as a predicational linking verb

For clefts involving relativization, I argue that the copula is a predicational linking verb that selects a predicate-level complement. This is expected given that the cleft clause is a relative clause in this type of cleft construction, as I will show in Section 2.4.3. Compare the cleft sentences in (1), repeated here as (56).

- (56) *Cleft constructions in Igbo*
- a. Ó bù jí kà Àdá rì-rì.
3SG COP yam FOC Ada eat-SFX
'It is yam that Ada ate.'
- b. Ó bù jí Àdá rì-rì.
3SG COP yam Ada eat-SFX
'It is the yam that Ada ate.'

In (56-a), the clefted constituent supplies a 'value' for a 'variable', hence the cleft sentence can be used as an answer to a question such as *What did Ada eat?*, where the clefted XP corresponds to the wh-phrase. In this sense, the cleft in (56-a) correspond to a specificational sentence. On the other hand, the post-copular clefted XP in (56-b) does not provide a value for a variable. Rather it is predicated of the subject. Hence the cleft sentence cannot serve as an answer to the question *What did Ada eat?*. This interpretative difference suggests that the copula in these two cleft sentences are not the same copula. The copula found in clefts involving relativization is a predicational copula. See Section 2.5 for further interpretative differences between these cleft sentences, and Chapter 3 for a detailed discussion of the *bù* copula as both a copula of specification and a predicational copula in Igbo.

2.4.3 Presence of relative clause structure

A number of tests show that the structure after the copula in (1-b) in Section 2.1 is a relative clause. The syntactic word order, as well as the tonal reflexes which are present in relative clauses (see Section 2.3) are also present in this kind of cleft. In the examples below, I compare clefts involving relativization with those in Section 2.2 that involve focus fronting.

- (57) a. Ó bù nwáányì nyè-rè nwó¹ké ánú.
3SG COP woman give-SFX man meat
'It is a woman that gave a man meat.'
- b. Ó bù nwáányí [OP_i ¹nyé-¹ré nwó¹ké ánú]
3SG COP woman give-SFX man meat
'It is the woman that gave a man meat.'

The sentence in (57-b) contains a subject relative clause. In the example, the downstep tone indicates that subject extraction has taken place. In addition, the data also illustrate the subject relative final high tone (cf. Section 2.3.1). See also Chapter 4 where these tonal reflexes are discussed in more detail.

Important for non-subjects is the presence of the focus marker *kà*, which is present in clefts based on focus (cf. Subsection 2.2.5.1.1) and absent in relative clauses (see

Section 2.3.1). Compare the sentences in (1) in this chapter, repeated here as (58).

- (58) a. Ó bù jí kà Àdá rì-rì.
 3SG COP yam FOC Ada eat-SFX
 ‘It is yam that Ada ate.’
 b. Ó bù jí Àdá rì-rì.
 3SG COP yam Ada eat-SFX
 ‘It is the yam that Ada ate.’

The cleft constructions also exhibit movement properties. This is illustrated below with the adjunct island in (59).

- (59) a. Òbí rì-rì jí [màkà nà Àdá sì-rì ófé].
 Obi eat-SFX yam because that Ada cook-SFX soup
 ‘Obi ate yam because Ada cooked soup.’
 b. *Ó bù ofe Òbí rì-rì jí [màkà nà Àdá sì-rì ____].
 3SG COP soup Obi eat-SFX yam because that Ada cook-SFX
 Lit: ‘It is the yam that Obi ate and cocoyam.’

The example in (60) demonstrates an argument for base-generation of the clefted XP in the cleft type that involves relativization. Case mismatch is observed with the NP *jí* ‘yam’ when it occurs as the direct object in the sentence in (60-a) and when it is the clefted XP in (60-b). In (60-a), the NP bears genitive case, while in (60-b) the clefted XP bears a different case. This is a case of anti-identity (Adger and Ramchand, 2005) that suggests that the clefted XP was not moved from the relative clause internal position.

- (60) a. Òbí nà-èrí 'jí.
 Obi IPFV-NMZL.eat yam.GEN
 ‘Obi is eating yam.’
 b. Ó bù jí Òbí nà-èrí.
 3SG COP yam.ACC Obi IPFV-NMZL.eat
 ‘It is the yam that Obi is eating.’

With the presence of a relative clause in this cleft type, I posit that the cleft also involves movement of an empty operator inside of the relative clause ForceP. The clefted noun phrase is base-generated outside of the relative clause ForceP (cf. Section 2.3).

2.4.4 A specificational analysis

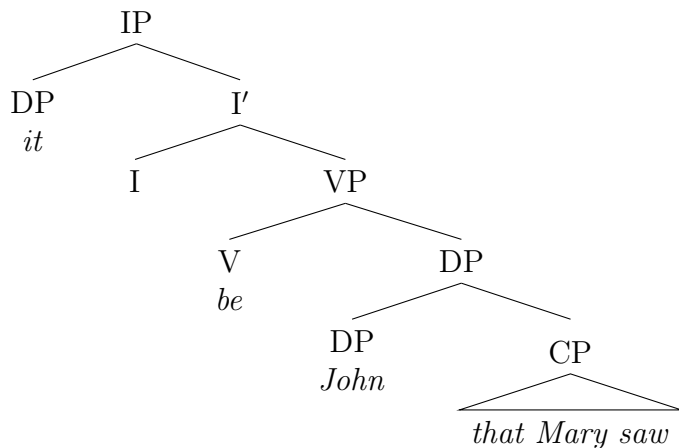
I argue for a specificational analysis for clefts involving relativization. The specificational analysis considers the cleft pronoun and the cleft clause as a discontinuous definite description (Akmajian, 1970; Percus, 1997; Hedberg, 2000; Reeve, 2012b). There are two approaches with regards to how the cleft pronoun and the cleft clause are linked under the specificational analysis. One approach proposed by Akmajian (1970) (see also Percus (1997)) is that the cleft sentence involves an underlying D+NP+CP constituent whose CP then undergoes extraposition to the end of the sentence. For this approach, the cleft in (61-a) is derived from the specificational sentence in (61-b). The relative clause *that Mary saw*, which is part of the subject DP in (61-b), is extraposed to the sentence final position, and the determiner and NP *one* are spelled out

morphologically as *it* (Percus, 1997).

- (61) a. It is JOHN that Mary saw.
 b. The one that Mary saw is JOHN.

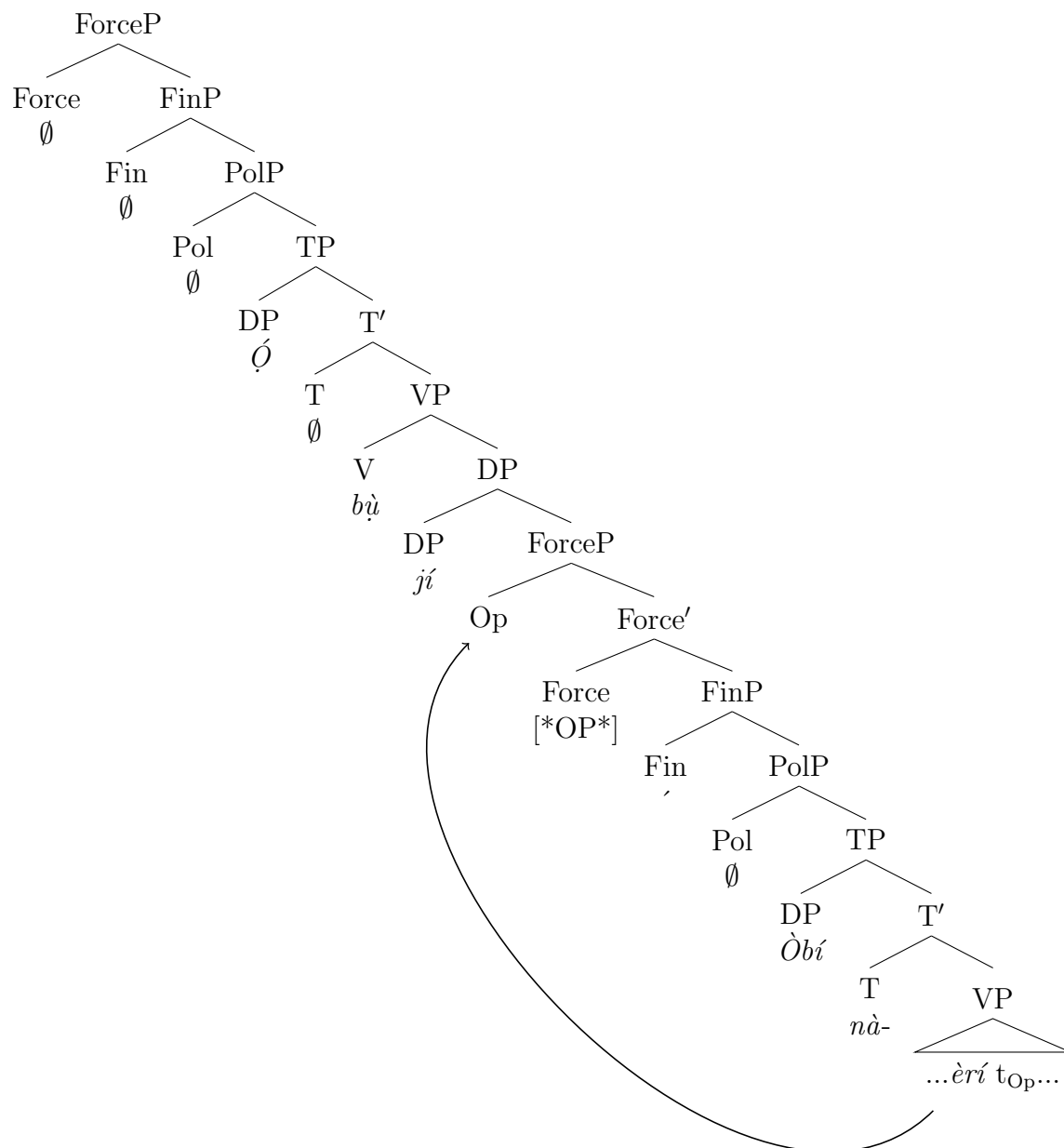
The other approach, which I assume here, posits that the cleft clause is base-generated in its surface sentence final position and linked up interpretatively at LF with the cleft pronoun (Hedberg, 1990; Reeve, 2012b). Under this approach, the cleft clause never forms a constituent with the cleft pronoun. Rather the cleft clause is directly related syntactically to the clefted constituent and directly related semantically and pragmatically to the cleft pronoun (Hedberg, 2000, 907). The structure in (62) is proposed by Hedberg (2000) (see also Reeve (2012b)).

- (62) *Cleft structure*



There are empirical arguments for the structure in (62) as reported by Hedberg and Reeve. One argument is that the cleft clause behaves as if the clefted XP is its host (Reeve, 2012b); that is, the cleft clause behaves syntactically as a modifier of the clefted XP. Further, the clefted XP and the cleft clause form a syntactic constituent as noted by (Delahunty, 1982).

Following Hedberg (2000) and Reeve (2012b), I assume the structure in (63) for clefts involving relativization in Igbo. The cleft (relative) clause is adjoined to the clefted XP, and the DP containing the clefted XP and the relative clause is the complement of the copula. I take it that the cleft clause does not originate as a modifier of the surface subject and undergoes obligatory extraposition to clause-final position, *à la* Percus (1997), but rather the clefted XP takes the cleft clause as its antecedent (Reeve, 2012b). The structure in (63) is for the sentence in (60-b).

(63) *Structure for clefts involving relativization*

In the structure in (63), there is movement of an empty operator inside the cleft clause. But the clefted XP *jí* ‘yam’ is base-generated and the cleft clause is adjoined to it. Both the clefted constituent and the cleft clause are contained in the DP complement of the predicational copular verb.

2.4.5 Interim summary

To sum up, I argued in this section that cleft constructions involving relativization are better accounted for under the specificational analysis of clefts. I began by showing that the cleft pronoun in this cleft type is non-expletive; rather the pronoun forms a discontinuous definite description with the cleft clause. I also argued that the copula found in the cleft is a predicational linking verb and not a copula of specification as the post-copular clefted XP in this cleft type does not provide a value for a variable. Then I provided evidence that the cleft clause patterns like a relative clause in the

language. Lastly, I proposed a specificational analysis, where the clefted XP and the cleft clause are contained in a DP that is the complement of the copula. I also posit that the clefted XP is base-generated and not overtly moved from inside of the cleft clause.

2.5 Interpretative differences

So far, we have seen that there are syntactic differences between the cleft sentences exemplified in (1) in Section 2.1. These differences are summarized in Table 2.1 below.

	Clefts involving focus fronting	Clefts involving relativization
involves focus fronting	✓	✗
presence of a focus marker	✓	✗
exhibits subject/non-subject asymmetry	✓	✗
expletive pronoun	✓	✗
contains a copula of specification	✓	✗
contains a predicational copula	✗	✓
presence of a relative clause structure	✗	✓

Table 2.1: Clefts involving focus fronting vs. clefts involving relativization

In this section, I consider the interpretative differences between the cleft constructions. Hedberg (1990) proposes that there are two pragmatic subtypes of clefts. These are ‘topic-clause’ clefts, in which the cleft clause expresses the topic, and a comment-clause cleft in which the cleft clause expresses part of the comment. She notes that for the topic-clause cleft the clefted constituent is necessarily contrastive. den Dikken (2013) also makes a similar distinction between two subtypes of specificational *it*-clefts in English. These are the ‘contrastive or stressed-focus *it*-clefts’ and ‘continuous-topic *it*-clefts’.¹¹ den Dikken (2013) observes that the relative clause in continuous-topic cleft has a direct relation with the clefted XP, but this relationship is an indirect one in the case of contrastive-focus cleft. He notes, following Lambrecht (2002), that the relative clause of the continuous-topic cleft is not presuppositional but new. He observes that it is not the ‘value’ that is the focus of the construction but rather the predication established between the ‘value’ and the predicate denoted by the ‘pseudorelative’ clause. Rialland et al. (2002) referred to the continuous-topic cleft as ‘broad-focus’ cleft. They argue (on the basis of French) that the relative clause in these clefts are not realized as a ‘post-focus’, neither do they correspond to any given information. They show that the cleft sentences have a different prosodic pattern than ‘regular’ clefts (Belletti, 2009, fn.32) and they are neither contrastive nor exhaustive.

Clefts such as those involving focus fronting (cf. Section 2.2), as represented in (1-a), are contrastive-focus clefts, while those involving relativization (cf. Section 2.4), as in (1-b) in Section 2.1 fall under den Dikken’s continuous-topic cleft. The contrastive *it*-cleft is the ‘regular’ cleft that is used as an answer to a wh-question. The cleft in

¹¹Prince (1978) makes a similar distinction between what she called stressed focus *it*-cleft and informative-presupposition *it*-cleft.

(1-a) is a felicitous answer to the question in (64), but continuous-topic clefts involving relativization such as (1-b) cannot be used as answer to the wh-question in (64).

- (64) Gí'ní kà Àdá rì-rì?
 what FOC Ada eat-SFX
 'What did Ada eat?'

The relative clause in clefts involving relativization (1-b) modifies the clefted constituent. Important is the definite (uniqueness) interpretation present in the cleft. This is reflected in the English translation, as compared to the translation of the cleft involving focus fronting in (1-a) in Section 2.1.

2.6 Summary

In this chapter, I have argued that Igbo has two different cleft constructions that are different syntactically. There are clefts that involve focus fronting and those that involve relativization. I showed that in the former, the cleft pronoun is non-expletive and the copula is a copula of specification. I provided novel evidence for a focus-based analysis of this cleft type and argued for an overt movement of the clefted XP from inside of the cleft clause. Next, I discussed the syntax of relative clauses in Igbo, where I argued for a head external analysis. For the other type of cleft construction involving relativization, I argued that the cleft pronoun is non-expletive, and the copula is a predicational linking verb. I also provided tests which show that the cleft clause is a relative clause. Based on this a specificational analysis was proposed for this type of cleft. In this cleft type, the clefted XP is base-generated and there is movement of an empty operator inside the cleft clause. With regards to their interpretation, I showed that clefts involving focus are contrastive and exhaustive and they are the clefts used as an answer to a wh-question, while clefts involving relative clauses are continuous-topic clefts.

Chapter 3

Wh-question formation in Igbo

3.1 Introduction

In this chapter I study the morphosyntax and pragmatics of wh-questions in Igbo. The language has three ways of forming wh-questions – one of which involves focus movement, and the other two involve relativization. The emphasis of the present study is the latter, that is, those wh-questions involving relativization, which have an interesting structure, and one of them, viz., the *òlé'é* wh-question has received less attention in the literature. The wh-question strategy that involves relative clauses has two forms. These are illustrated in (1-c&d). Going by the discussion in the previous chapter on relative clauses in the language, I argue for a base-generation analysis of the relative head noun in the relative clauses in this kind of wh-questions with movement of an empty operator in the relative clause. These wh-question constructions are clefts with different copulas, and I investigate the usage conditions conveyed by the copulas used in these questions. I also discuss the role of tone in Igbo interrogatives, as well as give an insight to the usage of the wh-question types.

There are basically three ways of forming wh-questions in Igbo. These are exemplified in the following sentences in (1) below. Example (1-a) is the baseline declarative sentence. The wh-question in (1-b) involves focus movement (see the argumentation in Amaechi and Georgi (2019) that this kind of wh-question has the same structure as focus constructions). The example shows ex-situ focus, where the focused wh-pronoun is moved to Spec-FocP and this triggers the Foc head to spell out as the *kà* focus marker. The wh-questions in (1-c&d) involving relative clauses (Goldsmith, 1981b) will be the focus of this chapter.

- (1) *Wh-questions in Igbo*
- | | | |
|----|-------------------------------------|--------------------------|
| a. | Àdá rì-rì jí n'ùtútù | |
| | Ada eat-SFX yam P-morning | |
| | 'Ada ate yam in the morning.' | <i>baseline</i> |
| b. | G'í n'í kà Àdá rì-rì n'ùtútù | |
| | what FOC Ada eat-SFX P-morning | |
| | 'What did Ada eat in the morning?' | <i>focus wh-question</i> |
| c. | Kèdú íhé Àdá rì-rì n'ùtútù | |
| | WH.COP thing Ada eat-SFX P-morning | |
| | 'What did Ada eat in the morning?' | <i>kèdú wh-question</i> |
| d. | Òlé'é íhé Àdá rì-rì n'ùtútù | |
| | WH.look thing Ada eat-SFX P-morning | |
| | 'What did Ada eat in the morning?' | <i>òlé'é wh-question</i> |

The three wh-questions illustrated in (1) are syntactically different, with the last two having some similar structural properties in that they are both biclausal and contain relative clauses. In this study, I apply a number of tests that help to tell these wh-constructions apart. And I explicitly show that all the questions exemplified in (1) have an interrogative projection, whose head realizes a low tone. The present study also discusses the pragmatics of the different wh-questions. The chapter is organized as follows. In Section 3.2, I give a summary of the wh-questions that involve focus movement. This is based on Amaechi and Georgi’s (2019) study; this construction will mainly serve as a comparison to the biclausal wh-question strategies that are the focus of this chapter. In Section 3, I examine the morphosyntax of other kinds of wh-questions that involve relativization. Section 4 discusses copulas in the language, and the important role they play in wh-questions in the language. In Section 5 I explore the usage of these question strategies, as well as the default locative interpretation found with wh-questions that involves relativization. Section 6 summarizes and concludes the chapter.

3.2 Wh-questions involving focus movement

In this section I will start with a description of the basic properties of the wh-question formation strategy exemplified in (1-b). The discussion here will also serve as a comparison to the biclausal wh-strategies with relativization in Section 3.3. The wh-question construction in (1-b) has the same syntax as the focus fronting construction in the language (Amaechi and Georgi, 2019).¹ Compare the sentences in (2) below. This wh-question has received some attention in the Igbo literature (Goldsmith, 1981b; Uwalaka, 1991; Ndimele, 1991; Ogbulogo, 1995; Nwankwegu, 2015). In these sentences, the wh-phrase occurs in sentence-initial position and is followed by the focus marker when the wh-phrase is ex-situ just as focused XPs are followed by the focus marker (see Chapter 2).

- (2) *Kà in ex-situ wh-/focus*
- a. Gí'ní kà Àdá rì-rì n'ùtùtù
 what FOC Ada eat-SFX P-morning
 ‘What did Ada eat in the morning?’ *wh-question*
- b. Jí kà Àdá rì-rì n'ùtùtù
 yam FOC Ada eat-SFX P-morning
 ‘Ada ate YAM in the morning.’ *focus*

Evidence that this kind of wh-question involves movement comes from the fact that it exhibits typical properties of movement such as island-sensitivity, reconstruction effects and strong cross-over effects (Adger and Ramchand, 2005; Torrence, 2013c). The example in (3) shows island-sensitivity exemplified with a CNPC-island. Reconstruction is illustrated with scope in (4). And example (5) illustrates the existence of strong cross-over.

¹Igbo attests both in-situ and ex-situ (fronting) focus. See Amaechi and Georgi (to appear) for differences between the in-situ and ex-situ focus marking and other focus marking strategies in the language.

(3) *Island-sensitivity (CNPC-island)*

- a. Úchè sì-rì jí [OP_i Àdá rì-rì ____i].
 Uche cook--SFX yam Ada eat-SFX
 ‘Uche prepared the yam that Ada ate.’
- b. *Ònyé kà Úché sì-rì jí [OP_i ____j rì-rì ____i]?
 who FOC Uche cook--SFX yam eat-SFX
 ‘Who did Uche prepare the yam that ate?’

(4) *Reconstruction effect (scope)*

- Ònyé kà í chè-rè nà nwátà òbùlà gbà-kwù-rù?
 who FOC 2SG think-SFX that child every run-DIR-SFX
 ‘Who do you think that every child ran to?’

 $wh > \forall, \forall > wh$ (5) *Strong cross-over (Amaechi and Georgi, 2019, 7)*

- a. Ó chè-rè nà Òbí hù-rù Àdá
 3SG think-SFX that Obi see-SFX Ada
 ‘S/he_i thinks that Obi_j saw Ada_k.’
- b. Ònyé kà ó chè-rè nà Òbí hù-rù ___?
 who FOC 3SG think-SFX that Obi see-SFX
 *for which x, x thinks that Obi saw x
 ✓for which x, y thinks that Obi saw x

The data in (3) show that wh-movement is island-sensitive as extraction out of the relative clause is banned. For the scope example in (4), the wh-phrase can be interpreted with both wide and narrow scope with respect to the quantified embedded subject. With wide scope interpretation, the question receives an individual reading answer and under a narrow scope interpretation, the question receives a pair-list answer. The availability of a pair-list reading is assumed to involve reconstruction of the wh-phrase to a position below the quantifier (Korsah and Murphy, 2019). The scope reconstruction is illustrated with long-distance extraction rather than clause-bound movement as the possibility of quantifier raising to matrix clause is ruled out given that raising of quantifiers at LF is clause-bound (May, 1985; Fox, 2003). Finally, the strong cross-over effect in (5) arises with a coreferent pronoun c-commanding the base position of the moved element. Put differently, the pronoun in the matrix clause cannot be coreferent with the moved wh-element; this is based on the standard assumption that the pronoun c-commands the trace or base position of the wh-element and this induces a Principle C violation. Based on these movement properties displayed by this wh-construction, Amaechi and Georgi (2019) argue that this kind of wh-question involves overt A'-movement of the wh-phrase to the specifier of the focus projection in a split CP-system (Rizzi, 1997).

In addition to the classic movement tests in (3)-(5), we also see some language-specific A'-movement diagnostics (see Chapter 4 for arguments of reflexes that are triggered by A'-movement but not in A'-dependencies that involve base-generation (such as topicalization)). The first test is the final high tone on crossed-over subject DPs (Swift et al., 1962; Green and Igwe, 1963; Nwachukwu, 1976; Manfredi, 2018). Manfredi observes that this final high tone is present in all A'-movement dependencies. The tone change is observable when the subject DP ends with a low tone. In the declarative sentence in (6), the subject DP *Úgò* bears a final low tone but in the object wh-question in (6-b), the final low tone changes to a high tone.

(6) *Final high tone on crossed-over subject*

- a. Ûgò rì-rì jí.
Ugo eat-SFX yam
'Ugo ate yam.'
- b. Gí'ní kà Ûgó rì-rì ___?
what FOC Ugo eat-SFX
'What did Ugo eat?'

Similar to the final high tone on the subject DP is the particle *ná* that occurs in movement dependencies out of negative clauses (Igwe and Green, 1964, 44). This particle occurs after the subject DP, and when it is present, the subject DP does not bear a final high as shown in (6). I show and argue in Chapter 4 that this particle is also a reflex of A'-movement similar to the final tone on the subject DP. The particle does not only occur in relative clauses as observed by Igwe and Green (1964) but in all A'-movement dependencies such as the wh-question in (7-b) below.

(7) *Ná in A'-movement with negation*

- a. Ûgò é-'rí-ghí jí.
Ugo É-eat-NEG yam
'Ugo didn't eat yam.'
- b. Gí'ní kà Ûgò ná 'é-rí-ghí ___?
what FOC Ugo PRT É-eat-NEG
'What did Ugo not eat?'

A final language-specific A'-movement diagnostic is the ban on extraction from perfective clauses. A'-movement out of perfectives such as (8-a) is bad in Igbo. Consider the following sentences in (8) (see also Chapter 4 for detailed discussion on non-extraction out of perfective clauses).

(8) *No movement out of perfective clauses*

- a. Àdá è-rí-é-lá 'jí.
Ada NMZL-eat-Á-PFV yam
'Ada has eaten yam.'
- b. *Gí'ní kà Àdá è-rí-é-lá ___?
what FOC Ada NMZL-eat-Á-PFV
'What has Ada eaten?'

Igbo also attests in-situ wh-question counterparts of the wh-questions with focus fronting. The wh-phrase can also occur in its base position. In this case, it is not followed by *kà*, as illustrated in (9), the in-situ counterpart of (1-b). Amaechi and Georgi (2019) observe that the in-situ strategy also involves syntactic movement with the tail of the movement chain being pronounced in a simple question, viz., when only one constituent is questioned. In-situ questions also exhibit movement properties. For instance, they are island-sensitive and license parasitic gaps.

- (9) Àdá rì-rì gí'ní (*kà) n'ùtùtù
Ada eat-SFX what FOC P-morning
'What did Ada eat in the morning?' *in-situ*

An interesting aspect of this wh-question with focus movement is the subject/non-

subject asymmetry that is found with the questions (Robinson, 1974; Tada, 1995). Note that all the examples we have seen so far involved a wh-object. And it has been shown that ex-situ wh-words are obligatorily followed by the focus marker *kà*, but a wh-subject is incompatible with *kà* (10).

- (10) a. Ònyé (*kà) hù-rù Òbí?
 who FOC see-SFX Obi
 ‘Who saw Obi?’

It has been proposed that a wh-subject, such as (10) does not move (Manfredi, 1991; Ndimele, 1991; Amaechi and Georgi, 2019). This is based on evidence from the absence of *kà* marking, as well as the absence of the tonal reflex of subject movement found in environments such as long-distance wh-/foc-subject movement (and subject relativization) where these reflexes of movement are attested, see (11). Under the long-distance subject question in (11-b), the focus marker is obligatory after the fronted wh-pronoun. In addition to this, the embedded verb bears downstep tone as against the low tones in the baseline declarative sentence in (11-a).

- (11) *Long-distance wh-subject question*
- a. Òbí chère nà Àdá rì-rì jí n’ùtùtù
 Obi think-SFX that Ada eat-SFX yam P-morning
 ‘Obi thinks that Ada ate yam in the morning.’ *baseline*
- b. Ònyé *(kà) Òbí chère — ‘rì-’rì jí n’ùtùtù
 who FOC Obi think-SFX eat-SFX yam P-morning
 ‘Who does Obi think ate in the morning?’ *wh-question*

Crucially, this tonal reflex on the verb is absent in matrix subject question (10). Hence, Foc head does not spell out *kà* as there is no wh-phrase in its specifier for local subject questions. Amaechi and Georgi (2019) argue that FocP is not projected in matrix subject questions. But under non-subject (and long-distance subject) questions, where it is clear that an XP has moved to Spec-FocP, the Foc head is realized. This is indicated in the structures in (12) below (Amaechi and Georgi, 2019, 21).

- (12) *The structure of the left periphery in matrix wh-clauses:*
- a. subject question:
 [ForceP Force [TP XP_[Foc] [T’ T [AspP V+v+ASP [vP <XP> [v’ ...]]]]]]
- b. non-subject question:
 [ForceP Force [FocP XP_[Foc] [Foc’ Foc [TP DP [T’ T [AspP V+v+ASP [vP <DP> [v’ ... <XP> ...]]]]]]]]

Note that the type of wh-question considered in this section, which is like a focus construction, can also occur in clefts involving focus movement, as shown in Chapter 2. I suggest that the nature of the clefts discussed in the previous chapter is reflected in the different wh-question strategies found in the language. In the next section I focus on the two other types of wh-questions in (1) in this chapter. I argue that these questions are clefts involving relativization. Following Goldsmith (1981b), I argue that these wh-questions involve base-generation.

3.3 Wh-questions involving relativization

In this section I consider the question types in (1-c) and (1-d) in Section 3.1 and argue that they are clefts (biclausal structures) that involve relative clauses. These are the *kèdú* question and *òlé'é* questions exemplified in (1) in this chapter. First I discuss some of the empirical differences between the wh-question involving focus fronting of the wh-word to Spec-Foc in the previous section and the wh-questions with relative clauses. Then I study the syntactic structure of these questions and provide evidence that show that these two questions have a similar structure.

3.3.1 Differences between wh-questions with focus fronting and wh-questions involving relativization

Although all the sentences in (1) in Section 3.1 are wh-questions, there are observable differences when we compare wh-questions with focus movement (1-b) discussed in Section 3.2 and those in (1-c) and (1-d) that I will show to involve relativization. I present a few more differences between these wh-questions in addition to those already observed by Goldsmith (1981b), Manfredi (1991), Ogbulogo (1995), Nwankwegu (2015), among others. First is that wh-questions involving relativization are only found ex-situ. Compare example (13) to (9) above. Also, the focus marker *kà* is not found in questions with relative clauses (14). Note that the wh-elements *kèdú* and *òlé'é* are glossed as WH.COP and WH.look respectively. This is based on the meaning of the component parts that make up these elements (see Sections 3.3.2.2 and 3.3.3.2 below).²

- (13) *No in-situ kèdú and òlé'é questions*
- a. *Àdá rì-rì kèdú íhé n'ùtútù?
Ada see-SFX WH.COP thing P-morning
Intended: 'What did Ada eat in the morning?'
- b. ?*Àdá rì-rì òlé'é íhé n'ùtútù?
Ada see-SFX WH.look thing P-morning
Intended: 'What did Ada eat in the morning?'
- (14) *No focus marker with kèdú and òlé'é questions*
- a. Kèdú íhé (*kà) Àdá rì-rì ___?
WH.COP person FOC Ada eat-SFX
'What did Ada eat?'
- b. Òlé'é íhé (*kà) Àdá rì-rì ___?
WH.look person FOC Ada eat-SFX
'What did Ada eat?'

The wh-question elements, *kèdú* and *òlé'é* always appear to be the structurally highest

²One only gets *kà* with manner *kèdú* questions where *kà* replaces the clefted XP *ètù* 'manner' (Goldsmith, 1981b). Consider the sentences in (i) and (ii).

- | | | | | | | | | | | | |
|-----|----|--------|--------|-----|-----|------|----|--------|--------|-----|--------------------|
| (i) | a. | Kèdú | ètù | ó | dì | (ii) | a. | Kèdú | ètù | í | mè-rè |
| | | WH.COP | manner | 3SG | COP | | | WH.COP | manner | 2SG | do-SFX |
| | | | | | | | b. | Kèdú | kà | í | mè-rè |
| | | WH.COP | C | 3SG | COP | | | WH.COP | C | 2SG | do-SFX |
| | | | | | | | | | | | 'How are you?' |
| | | | | | | | | | | | 'How is (s)he/it?' |

The *how*, like the *why* questions are different from other form of questions as they involve the use of different auxiliaries. These are not discussed here.

element in wh-questions with relative clauses. Thus, they can not be preceded by the focus-sensitive particle (FSP) *sòsò* or *nááni* ‘only’. The FSP can precede ex-situ wh-pronouns in the focus construction (15-a). For wh-questions involving relativization, the FSP rather occurs with a resumptive pronoun in the base argument position of the questioned constituent as in (15-c).

(15) *Wh-phrases with focus-sensitive particle*

- a. Sòsò ònyé kà Àdá hù-rù __?
 only who FOC Ada see-SFX
 ‘Who is the only person that Ada saw?’ [lit. Only who did Ada see?]
- b. *Sòsò kèdú/òlé’é ónyé Àdá hù-rù
 only WH.COP/WH.look person Ada see-SFX
 intended: ‘Who is the only person that Ada saw?’
- c. Kèdú/Òlé’é ónyé Àdá hù-rù sòsò yá
 WH.COP/WH.look person Ada see-SFX only 3SG
 ‘Who is the only person that Ada saw?’

Also, the wh-element *kèdú* and *òlé’é* cannot be preceded by a preposition but wh-elements in the ex-situ focus movement construction can.

(16) *Preposition pied-piping*

- a. (N’)èbé’é kà Àdá hù-rù Òbí __?
 P-where FOC Ada see-SFX Obi
 ‘Where did Ada see Obi?’
- b. *Nà kèdú ébé Àdá hù-rù Òbí
 P WH.COP place Ada see-SFX Obi
 intended: ‘Where did Ada see Obi?’
- c. *N’òlé’é ébé Àdá hù-rù Òbí
 P-WH.look place Ada see-SFX Obi
 intended: ‘Where did Ada see Obi?’

Igbo is a preposition pied-piping language. For PP wh-phrase in (16), the preposition *nà* (or *n’* before a noun beginning with a vowel) is optional in ex-situ questions but it is never stranded (preceding a gap of the fronted wh-element). The preposition is incompatible with *kèdú* and *òlé’é*.

The wh-questions involving relativization cannot be coordinated but ex-situ focused wh-pronouns can (17).

(17) *Coordination*

- a. Ònyé nà ònyé kà Àdá hù-rù?
 who and who FOC Ada see-SFX
 ‘Who and who did Ada see?’
- b. *Kèdú ónyé nà (kèdú) ónyé Àdá hù-rù?
 WH.COP person and WH.COP person Ada see-SFX
 intended: ‘Who and who did Ada see?’
- c. *Òlé’é ónyé nà (òlé’é) ónyé Àdá hù-rù?
 WH.look person and WH.look person Ada see-SFX
 intended: ‘Who and who did Ada see?’

A further difference is that we do not get the subject/non-subject asymmetry found in

wh-questions with focus fronting in wh-questions involving relativization. In the latter, both subjects and non-subjects involve movement. Empirical evidence for this is that we get the downstep tone on the finite verb under subject questions in *kèdú* and *òlé'é* questions. Consider the following sentences in (18).

- (18) *Subject movement in kèdú and òlé'é questions*
- a. Kèdú ónyé 'hú-'rú Òbí?
 WH.COP person see-SFX Obi
 'Who saw Obi?'
- b. Òlé'é ónyé 'hú-'rú Òbí?
 WH.look person see-SFX Obi
 'Who saw Obi?'

Finally, the simple wh-pronouns found in focus movement are available only for *ònyé* 'who', *gí'ní* 'what', and *èbéé* 'where'. There is no simple wh-pronoun for *when*, for instance. But *kèdú* and *òlé'é* questions can be used to express every form of wh-question, e.g., for manner, time, instrument, etc. and also in discourse-linked contexts, see the examples and the discussion in Section 3.5. The following table summarizes the differences between the wh-questions involving focus movement and those involving relativization in Igbo.

	wh-question with focus fronting	wh-question with relativization
can occur in-situ	✓	✗
can occur with <i>kà</i> focus marker	✓	✗
can be preceded by FSP	✓	✗
can co-occur with preposition	✓	✗
can be coordinated	✓	✗
subject/non-subject asymmetry	✓	✗

Table 3.1: Differences between wh-questions with focus fronting and wh-questions with relativization

In this section, I have shown that there are quite a number of differences between questions involving focus fronting and those with relativization. In the next two sections I discuss the structure of the wh-questions involving relative clauses. I consider the structure of the embedded relative clauses in these questions, the nature of the A'-dependency and the projections in the left periphery. I also explore the make-up of the embedding (main) clause, viz. the wh-element contained therein and the copula. With this background, I will show what the source of the observed differences listed in Table 3.1 is based on the different structures of these wh-questions.

3.3.2 Structure of *kèdú* questions

The structure of *kèdú* questions has received some attention. While Goldsmith (1981b) observes that this type of question contains a relative clause and argues for base-generation analysis of the relative head noun for this kind of questions, Uwalaka (1991) and Nwankwegu (2015), on the other hand, argue that the wh-question involves movement of the head noun out of the relative clause (in a head-raising manner). This is

based on the fact that the question shows movement properties. I provide novel evidence that supports the base-generation of the relative head noun, and propose that the movement properties we get are the result of empty operator movement inside of the relative clause. The present study also provides a detailed analysis of the structure of the matrix clause, which is not clearly accounted for in the above studies.

The differences highlighted in the previous section 3.3.1 between wh-questions with focus movement and those that involve relativization are largely explained given the inherent copular nature of *kèdú* questions (Manfredi, 1991). The morpheme *kèdú* has been proposed to be ‘predicational inherently copular’ (Manfredi, 1991, 216) given that it is composed of *n(kè)* ‘the one’ and the copula *dú*, a variant of the copula *dí* in, for instance, the Nnewi dialect (Déchaine, 1993; Nwachukwu, 1995; Mbah, 2012). Evidence from phonology supports the assertion that *kèdú* is indeed a compound. In Igbo, we find ATR harmony within phonological words, where vowels in a word belong to the same +ATR or –ATR set (19). In the *kèdú* morpheme, there is a difference in the ATR values of the vowels in the word, hence, no harmony. This suggests that the morpheme is a compound of two independent phonological words.

- (19) $[\pm\text{ATR}]$ harmony distinction in *kèdú*
- a. $[\text{+ATR}]$ i, u, o, e = *kè*
 - b. $[\text{–ATR}]$ ì, ù, ọ, a = *dú*

Apart from the initial *kèdú* morpheme, what is contained in the wh-question is a relative head noun followed by its relative clause. In this section, I will first consider the structure of the relative clause in the wh-question (Section 3.3.2.1), where I argue that there is movement of an empty operator within the relative clause with base-generation of the co-indexed relative head noun. This is in line with the head external analysis of relative clauses assumed in Chapter 2. Then, I consider the structure of the main clause, which is composed of a noun and a copula in Section 3.3.2.2. I explore the interrogative phrase projection, and the low tone the interrogative head realizes in questions in Sections 3.3.2.3 and 3.3.2.4. Section 3.3.2.5 summarizes.

3.3.2.1 Structure of the embedded clause

In this section, I show that *kèdú* questions involve a relative clause, and further examine the nature of the A' -dependency in the wh-question. I argue that there is empty operator movement in the relative clause, and the operator is co-indexed with the relative head noun, which I assume is base-generated and not overtly raised from inside of the relative clause. *Kèdú* questions have also been reported to contain relative clauses (Goldsmith, 1981b) based on evidence from island-sensitivity. I will add more tests to support this view. In the absence of the *kèdú* morpheme, the structure of the clause is just like a normal head noun with a relative clause (20). All the properties of relative clauses discussed in Chapter 2 are found in this type of wh-question, such as the downstep tone on finite verb under (local and long-distance) subject relativization (20) (see also the following Section 3.3.2.1.1 and analysis of this tone reflex in Chapter 4). The finite verb bears low tones in the declarative sentence in (20-a), but in the *kèdú* question in (20-b), and in the relative clause in (20-c) the verb bears downstep tones.

(20) *Downstep tone in subject kèdú questions*

- a. Íhé m̀è-r̀è gí
 thing do-SFX 2SG
 ‘Something happened to you.’
- b. K̀èdú íhé ‘m̀é-’r̀é gí?
 WH.COP thing do-SFX 2SG
 ‘What happened to you?’
- c. íhé ‘m̀é-’r̀é gí
 thing do-SFX 2SG
 ‘the thing that happened to you’

Further support for the embedded clause in *kèdú* questions comes from the position of the first person singular subject pronoun in embedded clauses. This pronoun can either occur in pre- or postverbal position in matrix clauses (referred to as *Mu* permutation by Goldsmith (1981a)), but in embedded clauses, only the pre-verbal position is grammatical as illustrated in (21) below.

(21) *First person singular pronoun in matrix and embedded clauses*

- a. É r̀ì-r̀ì m̀ jí.
 E eat-SFX 1SG yam
 ‘I ate yam.’
- b. M̀ r̀ì-r̀ì jí
 1SG eat-SFX yam
 ‘I ate yam.’
- c. *Ó ch̀è-r̀è [ǹà é r̀ì-r̀ì m̀ jí].
 3SG think-SFX that E eat-SFX 1SG yam
 intended: ‘S/he thinks that I ate yam.’
- d. Ó ch̀è-r̀è [ǹà m̀ r̀ì-r̀ì jí].
 3SG think-SFX that 1SG eat-SFX yam
 ‘S/he thinks that I ate yam.’

In *kèdú* questions only the preverbal position of the first person singular pronoun is licit, see (22). This shows that the *kèdú* question is biclausal with a matrix and an embedded clause.

(22) *First person singular pronoun in kèdú question*

- a. *K̀èdú íhé é r̀ì-r̀ì m̀ ___?
 WH.COP thing E eat-SFX 1SG yam
 intended: ‘What did I eat?’
- b. K̀èdú íhé m̀ r̀ì-r̀ì ___?
 WH.COP thing 1SG eat-SFX yam
 ‘What did I eat?’

There are proposals that noun complement clauses (NCCs) involve a relative clause structure (Kayne, 2008, 2014; Arsenijević, 2009). However, the embedded clause in *kèdú* questions in Igbo is clearly not an NCC for the following reasons: NCC patterns closely with complement clauses to verbs as it occurs with an overt *ǹà* complementizer in the language (23-a). Note that this complementizer (with a low tone that occurs before the subject) does not show up in relative clauses. In both relative clause and NCC, English uses the same complementizer *that* as shown in the translations of (23-a-b).

The data point to the fact that NCCs cannot be analyzed as relative clauses in Igbo. See de Cuba (2017) for arguments against equating NCCs to relative clauses based on a cross-linguistic study. This is another argument that *kèdú* construction contains a relative clause and not an NCC.

(23) *Noun complement clauses versus relative clauses*

- a. Ányị nù-rụ ákúkọ [*(nà) Àdá á-bà-tá-lá].
 3PL hear-SFX news that Ada NMZL-enter-DIR-PFV
 ‘We heard the news that Ada has returned.’
- b. Ányị nù-rụ [*(nà) Àdá á-bà-tá-lá].
 3PL hear-SFX that Ada NMZL-enter-DIR-PFV
 ‘We heard that Ada has returned.’
- c. Kèdú íhé [(*nà) ányị nù-rụ]?
 WH.COP thing that 3PL hear-SFX
 ‘What did we hear?’

In what follows I first discuss the movement properties of this type of wh-question: I show that like the wh-questions that involve focus movement, *kèdú* questions also display the typical characteristics of A'-movement dependencies. I assume that what is moved is a null operator (OP) in the relative clause CP of the *kèdú* construction. The operator undergoes A'-movement inside the relative clause, in line with the head external analysis of relative clauses (Chomsky, 1977; Borsley, 1997), and for an overview of relative clause analyses, see Salzmann (2017). See also Chapter 2 for the discussion on relative clauses. In Section 3.3.2.1.2, I provide evidence that support the assumption that the relative head noun involves base-generation and not raising as assumed under a promotion analysis of relative clauses.

3.3.2.1.1 Movement diagnostics In this section, I show that *kèdú* construction exhibits typical diagnostics for movement. It is a standard assumption that properties such as island-sensitivity and reconstruction are properties of movement-derived A'-chains. Like the focus movement discussed in Section 3.2, *kèdú* questions are also subject to all classic islands. These are illustrated with the CNPC island in (24) and the adjunct island in (25).

(24) *CNPC-island*

- a. Úchè mà íwá [OP_i ____i ¹hụ-¹rụ Àdá].
 Uche know child see-SFX Ada
 ‘Uche knows the child that saw Ada.’
- b. *Kèdú ónyé Úchè mà íwá [OP_i ____i ¹hụ-¹rụ ____j]?
 WH.COP person Uche know child see-SFX
 ‘Lit.: Who does Uche know the child who saw?’

(25) *Adjunct island*

- a. Úchè pù-rụ [túpú Ada àhụ Òbí].
 Uche leave-SFX before Ada saw Obi
 ‘Uche left before Ada saw Obi.’
- b. *Kèdú ónyé Úchè pù-rụ [túpú ___ àhụ Òbí]?
 WH.COP person Uche leave-SFX before saw Obi
 ‘Lit.: Who did Uche leave before ___ saw Obi?’

We also get reconstruction effects such as reconstruction for Binding Principle A and scope as well as strong cross-over effects. These are illustrated below.

- (26) *Principle A*
 [Kèdú fòtó [ònwé 'yá]_i] Òbì_i sè-rè?
 WH.COP picture self 3SG Obi draw-SFX
 ‘Which picture of himself_i did Obi_i draw?’
- (27) *Scope reconstruction*
- Kèdú ónyé í chè-rè nà nwátà òbùlá gbà-kwù-rù?
 WH.COP person 2SG think-SFX that child every run-DIR-SFX
 ‘Who do you think that every child ran to?’
 - Nwátà òbùlá gbà-kwù-rù Úchè.
 child every run-DIR-SFX Uche
 ‘Every child ran to Uche.’
 - Òbì gbà-kwù-rù Àdá, Ézè gbà-kwù-rù N'gózí mà Èméká gbà-kwù-rù
 Obi run-DIR-SFX Ada Eze run-DIR-SFX Ngozi but Emeka run-DIR-SFX
 Àmádí.
 Amadi.
 ‘Obi ran to Ada, Eze ran to Ngozi but Emeka ran to Amadi.’
- (28) *Strong cross-over*
 *Kèdú ónyé_i ó_i hù-rù n'ányá
 WH.COP person 3SG see-SFX P-eye
 ‘Who_i does he_i love?’

Example (26) shows that the anaphoric element can be bound by the subject of the relative clause. This is possible in the instance where the anaphoric element is reconstructed to a position below the subject. Scope reconstruction in (27) also indicates reconstruction effects, where we get both wide and narrow scope interpretation. The availability of narrow scope suggests that the *wh*-phrase has been reconstructed to a position below the quantified subject DP. Example (28) illustrates the point that the relative head noun *ónyé* cannot co-refer with the subject pronoun to its right. The bound reading of the pronoun is lost. This follows if an element moves across the coreferent subject pronoun since the pronoun then c-commands the reconstructed coreferent element, in violation of Principle C.

In addition to the classic movement diagnostics, there are also some language-specific tests that indicate that there is movement in the *kèdú* *wh*-question. It is important to note that the *kèdú* question does not exhibit the subject/non-subject asymmetry observed in focus movement *wh*-questions discussed in Section 3.2. Both subject and non-subject *kèdú* questions show properties of movement dependencies. Evidence that the subject *kèdú* questions involve movement comes from the fact that we find the reflexes of movement such as downstep tone on the finite verb under subject extraction (29-a), the presence of the *ná* particle under extraction from a negative clause (29-b), and the ban on extraction from perfective clauses (29-c). See the same argument for non-subject extraction under *wh*-questions involving focus movement in Section 3.2.

- (29) *Reflexes of movement in kèdú questions*
- a. Kèdú ónyé [OP_i ____i 'hù-'rù Àdá]?
 WH.COP person see-SFX Ada
 'Who saw Ada?'
- b. Kèdú ónyé [OP_i ná ____i á-'hù-ghí Àdá]?
 WH.COP person PRT É-see-NEG Ada
 'Who didn't see Ada?'
- c. *Kèdú ónyé [OP_i ____i à-hù-lá Àdá]?
 WH.COP person NMZL-see-PFV Ada
 'Who has seen Ada?'

Another property of A'-movement dependencies in Igbo is the final high tone on crossed over subjects (Tada, 1995; Manfredi, 2018). This is illustrated in (30) below, which shows this effect in both a *kèdú* question and a relative clause. The subject of the sentence *Úché* has a final low tone in the declarative sentence in (30-a) but under (object) extraction in (30-b-c), the final high tone of the subject DP becomes high.

- (30) *Final high tone on crossed-over subject*
- a. Úché rì-rì jí n'ùtùtù
 Uche eat-SFX yam P-morning
 'Uche ate yam in the morning.'
- b. Kèdú íhé Úché rì-rì n'ùtùtù
 WH.COP thing Uche eat-SFX P-morning
 'What did Uche eat in the morning?'
- c. íhé Úché rì-rì n'ùtùtù
 thing Uche eat-SFX P-morning
 'the thing that Uche ate in the morning'

I conclude that all these tests show that there is movement in this kind of wh-question. But what I assume that moves is an empty operator inside the relative clause (35) as proposed under the head external analysis and not a copy of the relative head noun as advocated under the promotion analysis of relative clauses (see Chapter 2 for the discussion on relative clauses). In the next section, I present evidence for base-generating the relative head noun.

3.3.2.1.2 Arguments for base-generation of the relative head noun The movement diagnostics indicate that *kèdú* wh-questions involve movement. But there is evidence that shows that it is not the relative head noun that is being moved overtly from the relative clause internal argument position. I argue that what is moved is a null operator in the relative CP. The piece of evidence for base-generation comes from lack of reconstruction. For instance, there is non-reconstruction for Principle C of the binding theory. See Adesola (2005) for a similar argument for Yoruba.

- (31) Kèdú fòtó Áda_i ó_i hù-rù ___ ?
 WH.COP picture Ada 3SG see-SFX
 '*Which picture of Ada_i did she_i see?'

The ungrammaticality of the English translation in (31) is explained if the DP *picture of Ada* containing the R-expression *Ada* reconstructs into the c-command domain of the subject pronoun. Under reconstruction, this yields a Principle C violation, as

the R-expression will be bound by the pronoun. We also find non-reconstruction of idioms. This is a case of the anti-identity effect in semantic interpretation (Adger and Ramchand, 2005).

(32) *Idiom reconstruction*

- a. Ùlé áhù tà-rà ákpù
test DET chew-SFX lump
'The test is difficult.'[lit. 'The test chewed lump.']
- b. [Ákpù_i [OP_i ùlé áhù tà-rà ____i]] mè-rè ó jì dàá
lump test DET chew-SFX do-SFX 3SG AUX fall
'He failed because the test was difficult.'[lit. 'The lump that the test chewed made him fail.']
- c. Kèdú [ákpù_i [OP_i ùlé áhù tà-rà ____i]]
WH.COP lump test DET chew-SFX
'*How difficult was the test?'
'#Where is the lump that the test chewed?'

Considering the example in (32) above, where the complement of the idiom is being relativized as in (32-b), the idiomatic interpretation is preserved, but this meaning is not available when the complement is questioned, as in (32-c). Igbo is not alone in this case as Adger and Ramchand (2005) show that in Scottish Gaelic idioms lose their idiomatic reading in constructions based on relative clauses.

A further argument for base-generation comes from case mismatch in relative clauses (Borsley, 1997; Bianchi, 2000; Alexiadou et al., 2000; Adger and Ramchand, 2005; Salzmann, 2017). Tone indicates the case of certain arguments in some constructions. For instance, direct objects of the verb in perfective and imperfective constructions bear genitive case (Déchaine and Manfredi, 1998). This is similar to those found in genitive constructions (Welmers and Welmers, 1969; Emenanjo, 1978; Nwachukwu, 1995; Manfredi, 1997). The same genitive case is also found with the object of the non-initial verb (V_2) in a serial verb construction (SVC) (Déchaine, 1993). For instance, the object of V_2 in the SVC in (33-a) bears a high and downstep tone—the genitive tone. This differs for the same DP in a subject position as in (33-b), or as complement of a non-nominalized verb (33), where it surfaces with two high tones.

(33) *Case mismatch under SVC*

- a. Àdá jì ímà bè-é **á'nú**
Ada use knife cut-Á meat.GEN
'Ada cut the meat with a knife.'
- b. **Ánù** dì n'ìtè
meat.NOM COP P-pot
'There is meat in the pot.'
- c. Àdá sì-rì **ánù**.
Ada cook-SFX meat.ACC
'Ada prepared meat.'
- d. Kèdú **ánù** Àdá jì ímà bè-é?
WH.COP meat.ACC Ada use knife cut-Á
'Which meat did Ada cut with a knife?'

In the *kèdú* construction in (33-d), the highlighted noun complements in (33-a) above,

which is being displaced does not bear the genitive tones. Similarly, we see the same effect when we consider the imperfective construction, where the direct object bears the genitive downstep tone, see (34-a). But in *kèdú* questions, the genitive tone is lost, as shown in (34-b). If the head noun originated inside the relative clause (that is, the gap position), it should be assigned the respective case and keep this case when it moves. But it does not bear this case, hence, it can never have been in the case assignment domain of the relative-clause-internal predicate.

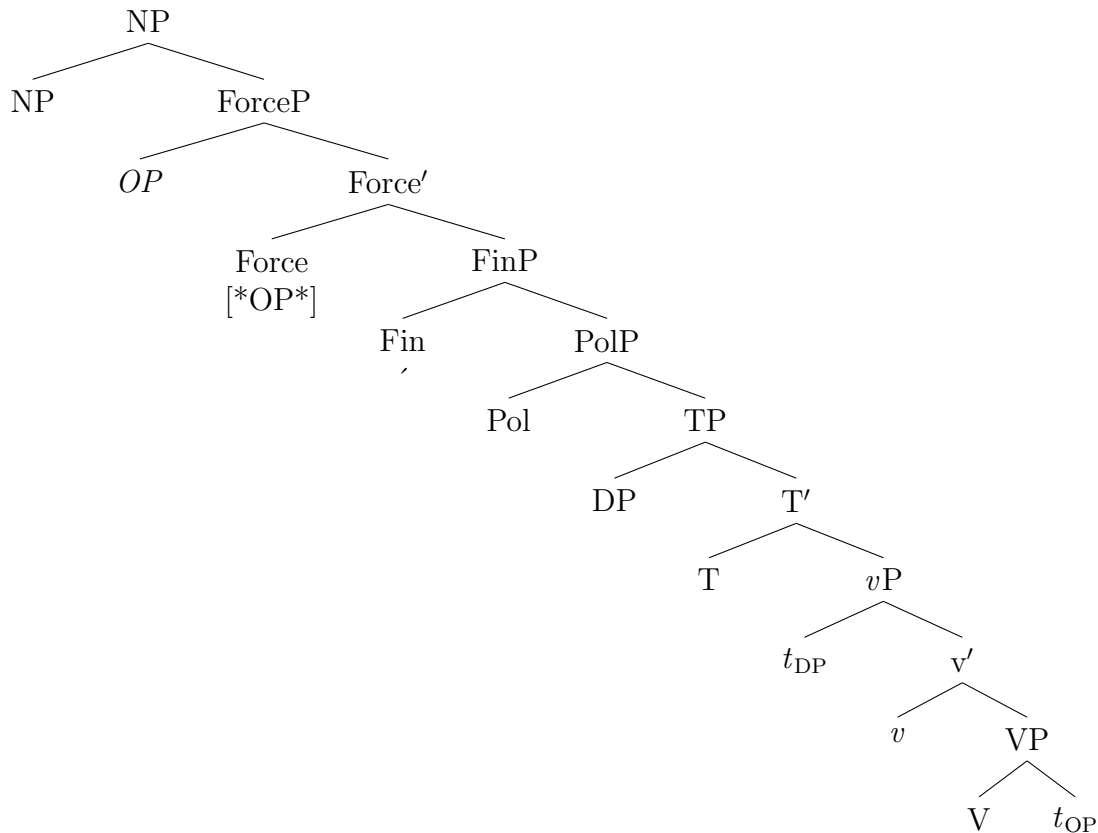
(34) *Case mismatch under imperfective aspect*

- a. Àdá nà-èsí 'jí.
 Ada IPFV-NMZL.cook yam.GEN
 'Ada is preparing yam.'
- b. Kèdú jí Àdá nà-èsí?
 WH.COP yam.ACC Ada IPFV-NMZL.cook
 'Which yam is Ada preparing?'

The absence of reconstruction for Principle C and idioms and the case mismatch support the assumption that the relative head noun in this construction is base-generated.

3.3.2.1.3 Projections in the embedded clause I assume the structure in (35) for the relative clause. In the structure, I assume that relative clauses are ForcePs following Rizzi's (1997) cartographic approach. The empty operator that moves inside of the Force projection targets the specifier position of ForceP. Following the assumption that movement is driven by feature checking (Chomsky, 2000), I assume that what triggers this movement is the probe feature [*OP*] on the Force head that is discharged when it is c-commanded by an element that bears the matching [OP] feature (Amaechi and Georgi, 2019). The empty operator movement to Spec-Force takes place in order to discharge this feature. The relative head noun in the clause is base-generated, and ForceP attaches to it. I assume that relative clauses are adjuncts to the NP, as the structure in (35) shows.³

³Note that I do not indicate verb movement in the structure in (35), and subsequent structures in this chapter (since it is irrelevant for the issues under discussion here). But I will address the verb movement question in the following Chapter 4.

(35) *Structure of object relative clause*

I assume that Focus is not projected in (35) since wh-question and focus fronting cannot occur in embedded clauses (see Amaechi and Georgi (2019)). In the next section, I investigate the nature of the matrix clause in *kèdú* questions, where I argue that there is an interrogative projection within the clause structure.

3.3.2.2 Structure of the embedding (main) clause

In this section, I discuss the nature of the elements in the matrix clause, viz., the element *(̀̀)kè* and the copula *dú/dú*. I argue that *(̀̀)kè* is a ‘defective noun’ (Sohn, 1999; Diessel, 1999) inserted to fill the specifier position of the copula and that this nominal only gets its referent interpretation from the obligatory relative head noun in the *kèdú* construction. Furthermore, I show that the question interpretation is only possible if the (Int)errogative head is projected in the left periphery above the copula projection. This is necessary for the interpretation as a wh-question of the *kèdú* construction given that the nominal element *kè* by itself does not encode any wh-question meaning. This explains the obligatoriness of Int and the relative head noun. In contrast, in wh-questions involving focus movement, the wh-phrase that undergoes the movement suffices. Hence in this wh-construction projection of Int is optional. But when it is used, the Int head is realized as a low tone on the clause initial pronominal. First I begin by looking at the wh-element *(̀̀)kè* in Section 3.3.2.2.1. Section 3.3.2.2.2 is on the copula found in the *kèdú* wh-question.

3.3.2.2.1 On the nature of the wh-element *(̀̀)kè* The assumption that the element *(̀̀)kè*, which occurs before the copula in *kèdú* questions is a nominal one is based on the tonal behaviour of the word in an associative construction (Emenanjo,

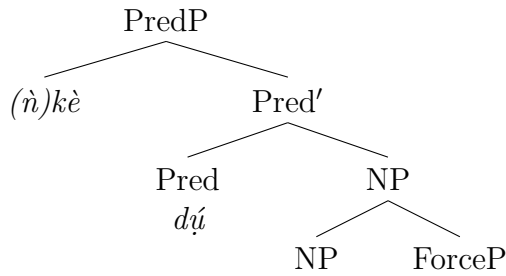
1978, 40). It also occurs with demonstratives, where it precedes the demonstrative determiner. In the sentence in (36-a), the demonstrative with $(\grave{n})k\grave{e}$ occurs in subject position while the genitive phrase is in the object position. (36-b) shows that the positions occupied by $(\grave{n})k\grave{e}$ are typical nominal positions. In the sentence, $(\grave{n})k\grave{e}$ is being replaced with the noun $\acute{n}\acute{r}\acute{i}$ ‘food’. Igbo appears to be one of the languages that lack demonstrative pronouns and only have demonstrative determiner in that the demonstrative determiners like a ‘this’ in (36-a) cannot occur without $(\grave{n})k\grave{e}$.

- (36) *$\grave{N}k\grave{e}$ as a noun*
- a. $\grave{N}k\grave{e}$ \acute{a} $b\grave{u}$ $\grave{n}k\acute{e}$ $^1\acute{a}ny\acute{i}$.
 the.one this COP the.one 1PL
 ‘This is ours.’
- b. $\acute{N}\acute{r}\acute{i}$ \acute{a} $b\grave{u}$ $\acute{n}\acute{r}\acute{i}$ $^1\acute{a}ny\acute{i}$.
 food this COP food 1PL
 ‘This food is ours.’ [lit. ‘This food is our food.’]
- c. $\grave{N}k\acute{e}$ $\grave{a}ny\acute{i}$ $ch\grave{o}-r\grave{o}$ $\acute{a}-^1d\acute{i}-gh\acute{i}$.
 the.one 1PL want-SFX É-COP-NEG
 ‘The one that we want is not available.’

In (36-c) the nominal is modified by a clause. What these examples in (36-a&c) with $(\grave{n})k\grave{e}$ show is that $(\grave{n})k\grave{e}$ is a ‘defective noun’ (see, for instance, Sohn (1999) and Diessel (1999) for defective nouns in Korean). The noun is defective in the sense that it has to be modified by a demonstrative, a modifying clause or another noun. $(\grave{N})k\grave{e}$ cannot occur independently as the subject or the object of a declarative sentence (37).

- (37) *$\grave{N}k\grave{e}$ as a defective noun*
- a. $^* \grave{N}k\grave{e}$ $r\grave{i}-r\grave{i}$ $j\acute{i}$.
 the.one eat-SFX yam
 intended: ‘The one ate yam.’
- b. $^* \grave{A}d\acute{a}$ $h\grave{u}-r\grave{u}$ $\grave{n}k\grave{e}$.
 Ada see-SFX the.one
 intended: ‘Ada saw the one.’

The only exception to this rule, where the defective noun $(\grave{n})k\grave{e}$ seems to appear independently without a modifier is in $k\grave{e}d\acute{u}$ questions. I assume that this defective noun is inserted in the specifier of the predicate phrase (PredP), which is headed by the copula in the construction. The reason for this assumption is that there are no subjectless clauses in Igbo, that is, the EPP requirement. Spec-TP must be occupied by an expletive if no XP moves there (Amaechi and Georgi, 2019). And as I show in Section 3.4, the copula in Igbo is verbal. Hence, the defective noun has to occupy Spec-PredP.

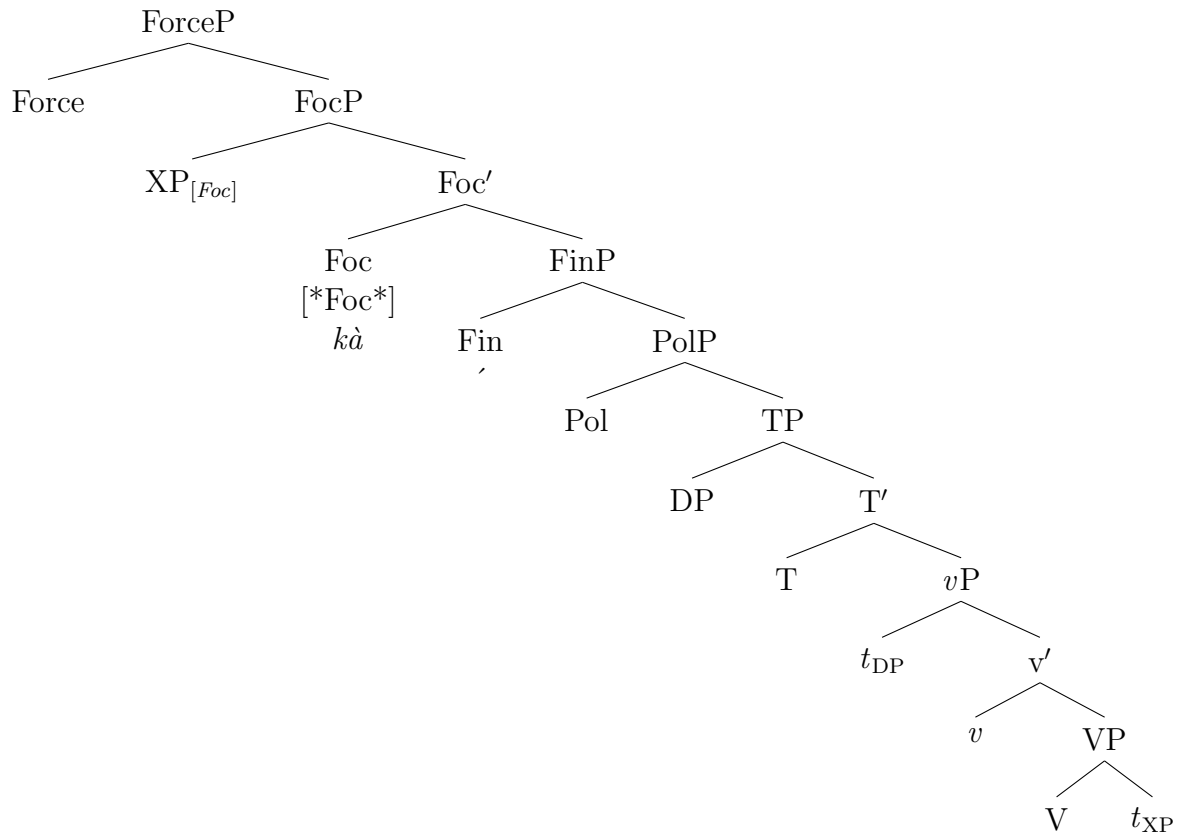
(38) *Position of (̀̀)kè*

I suggest that $(̀̀)kè$ is not only ‘defective’ in the sense that it always requires a modifier, but it is also defective in indicating whether what is being questioned is a person, a thing, or a place, etc. It is for this reason that the relative head nouns are obligatory in $kèd̀̀$ questions. Unlike wh-phrases in wh-questions with focus movement, $(̀̀)kè$ in $kèd̀̀$ questions does not indicate the type of referent in the wh-questions. In fact, the data in (36) show that $(̀̀)kè$ does not have an inherent wh-meaning. This explains why the expletive pronoun and copula are optional in wh-questions involving focus movement but the initial $kèd̀̀$ in (39-d-f) is not (the asterisk indicates that the sentences (39-d-f) are only grammatical as wh-questions with $kèd̀̀$).

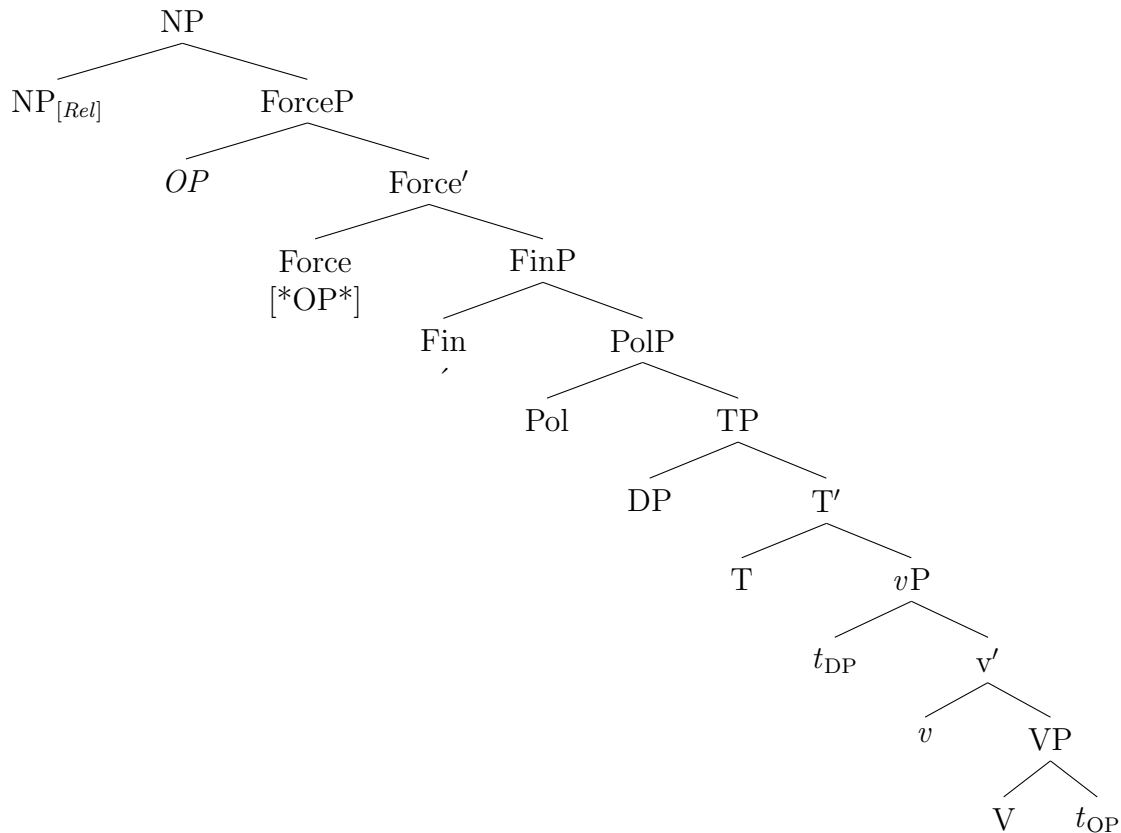
(39) *Optionality of expletive pronoun and copula in wh-questions involving focus fronting*

- a. (̀̀ b̀̀) g̀̀ǹ̀ kà Àdá r̀̀-r̀̀ n'̀̀t̀̀t̀̀
3SG COP what FOC Ada eat-SFX P-morning
‘What did Ada eat in the morning?’
- b. (̀̀ b̀̀) ònyé kà Àdá h̀̀-r̀̀ n'̀̀t̀̀t̀̀
3SG COP who FOC Ada see-SFX P-morning
‘Who did Ada see in the morning?’
- c. (̀̀ b̀̀) èbé'è kà Àdá gà-rà n'̀̀t̀̀t̀̀
3SG COP where FOC Ada go-SFX P-morning
‘Where did Ada go in the morning?’
- d. *(Kèd̀̀) íhé Àdá r̀̀-r̀̀ n'̀̀t̀̀t̀̀
WH.COP thing Ada eat-SFX P-morning
‘What did Ada eat in the morning?’
- e. *(Kèd̀̀) ónyé Àdá h̀̀-r̀̀ n'̀̀t̀̀t̀̀
WH.COP person Ada see-SFX P-morning
‘Who did Ada see in the morning?’
- f. *(Kèd̀̀) ébé Àdá gà-rà n'̀̀t̀̀t̀̀
WH.COP place Ada go-SFX P-morning
‘Where did Ada go in the morning?’

In addition to indicating referent, $g̀̀ǹ̀$ ‘what’ in (39-a), $ònyé$ ‘who’ in (39-b), and $èbéé$ ‘where’ in (39-c) are wh-words and are inherently focused. On the other hand, the equivalent of these wh-words in (39-d-f), $íhé$ ‘thing’, $ónyé$ ‘person’ and $ébé$ ‘place’, respectively are not characterized as a question operator nor are they inherently interrogative. They are only the base-generated antecedent of the relative operator, as argued for in Section 3.3.2.1. In (39-a-c) the object wh-phrase moves to Spec-FocP, where it checks the [FOC] feature on the Foc head as shown in the structure in (40) below.

(40) *Focus movement (object question)*

In examples (39-d-f), on the other hand, the relativized head noun is base-generated, and ForceP attaches to it. And within the Force projection, a null operator is moved from the argument position to Spec-ForceP, see (41).

(41) *Relative operator movement*

In Yoruba, which also has a relative clause structure embedded under its wh-element (Adesola, 2005, 2006), the relative head noun is optional given that the wh-phrases that occur before the copula in Yoruba are characterized as question operators (42). Note that in the examples in (42), when the relative head noun is not pronounced, the complementizer is deleted as well (Adesola, 2005). *Kèdú* questions unlike that of Yoruba seem to have an obligatory requirement of having an explicit relative head noun after the copula (43). A possible explanation for this is that in Yoruba the wh-phrases that occur before the copula are specified for what is being asked, e.g. *kí(ni)* ‘what’ (42-a) and *ta(ni)* ‘who’ (42-b). But the word *kè* in Igbo appears to be ‘vague’ (Goldsmith, 1981b). Thus the obligatoriness of the relative head noun. Also notice that the wh-phrases precede the copula in Yoruba.

(42) *Yoruba (Adesola, 2005, 46-47)*

- a. *Kí_i ni (ohun; tí) Àdìó rà t_j?*
 who be thing C Adio buy
 ‘What did Adio buy?’ (what was the thing that Adio bought)
- b. *Ta_i ni (èni_i tí) ó_i ra iṣu?*
 who be person C he buy yam
 ‘Who bought some yams?’ (who was the person that bought yams)

(43) *Igbo*

- a. *Kèdú *(íhé) Àdá zù-rù?*
 WH.COP thing Ada buy-SFX
 ‘What did Ada buy?’

- b. Kèdú *(ónyé) 'zú-'rú jí?
 WH.COP person buy-SFX yam
 'Who bought some yams?'

Given that neither the initial defective noun (*n̄*)*kè* nor the relative head noun in the *kèdú* construction is inherently interrogative, the question remains how the constructions are being interpreted as interrogative wh-questions. In the following section, I argue for an (int)errogative head in *kèdú* questions. I show that wh-questions in Igbo project an IntP on top of the PredP, that is the projection of the copula. Given that wh-questions in Igbo always coincide with the presence of a copula that is analogous to focus movement, this copula projection is optional in (39-a). But in wh-questions that involve relativization, this Int projection is obligatory. I argue that the reason for this is that the relative head noun, which is indefinite (see Section 3.5) in these cases and lacks inherent interrogation only gets to be interpreted as interrogative in the presence of the interrogative force. Also, I show that the head of this Int projection is realized by a low tone. First, I discuss the Int projection within a split CP system (Rizzi, 1997, 2001).

3.3.2.2 The copula Another important constituent in the matrix clause of the *kèdú* construction is the copula *dú* that takes the relative clause as a complement. This copula is one of the three copulas in the language. The copula is a predicative copula that takes nominal adjectives. In Section 3.4 I discuss copular clauses in Igbo and explore the different types of copulas. I also account for the different copulas we have in *kèdú* wh-questions, and why they are different from those found in wh-questions with focus movement.

3.3.2.3 Int(errogative) phrase in the left periphery

Rizzi (2001) proposes that there is an interrogative projection below the Force projection in the left periphery. The Int position is occupied by *se*, the complementizer that introduces embedded yes/no questions in Italian. He further suggests that this position could also host *perché* 'why' and other sentence adverbials. Rizzi provides evidence from the positional properties of complementizers *che* and *se* which shows that the complementizers occupy different positions within the CP layer. The complementizer *se* can be preceded and followed by a topic, while *che*, which expresses Force, can only be followed by a topic (44). He proposes (45) as the order of elements in the CP layer.

(44) *Italian (Rizzi, 2001, 289)*

- a. Non so *se*, a Gianni, avrebbero potuto dirgli la verità
 'I don't know if to Gianni, they could have said the truth'
 b. Non so, a Gianni, *se* avrebbero potuto dirgli la verità
 'I don't know, to Gianni, if they could have said the truth'
 c. Credo che QUESTO avreste dovuto dirgli (non qualcos'altro)
 'I believe that THIS you should have said to him, not something else'
 d. *Credo QUESTO che avreste dovuto dirgli (non qualcos'altro)
 'I believe THIS that you should have said to him, not something else'

(45) Force - (Top*) - Int - (Top*) - Foc - (Top*) - Fin

Aboh (2004) also proposes an Int projection within the CP system in Gungbe, where yes/no questions are formed with a sentence-final low tone (46). Aboh argues that there is an IntP projected below ForceP, and given that the interrogative phrase (or sentence) is sandwiched between the complementizer and the sentence-final high tone in the embedded clause in (46-c), the whole phrase (or sentence) is moved to Spec-IntP.

- (46) *Gungbe (Aboh, 2004, 318-319)*
- a. Kòfí d̀̀ nù.
Kofi eat-PERF thing
'Kofi ate.'
 - b. Kòfí d̀̀ nù?
Kofi eat-PERF thing
'Did Kofi eat?'
 - c. ùn kànbíó d̀́ Kòfí d̀̀ nù.
1SG ask-PERF that Kofi eat-PERF thing
'I asked whether Kofi ate.'

The difference between Gungbe and Igbo is that while the question marker (that is, the low tone realizing Int) in Gungbe is found sentence-final, it is clause-initial in Igbo yes/no questions (47). The initial pronoun in (47-a) has a high tone but in the question in (47-b), the pronoun has a low tone. This interrogative low tone has received some attention in the literature; cf. Emenanjo (1979); Ikekeonwu (1987); Ndimiele (1991); Nwachukwu (1995); Mbah (2012); Nwankwegu (2015).

- (47) *Interrogative low tone in yes/no question*
- a. Ó rì-rì jí.
3SG eat-SFX yam
'S/he ate yam.'
 - b. Ò rì-rì jí.
3SG.Q eat-SFX yam
'Did s/he eat yam?'

A question that we might ask at this point is whether there really evidence for Int in Igbo, and whether it is not the case that Force is responsible for clause typing that we see in (47-b). A look at embedded clauses suggests that the position of this low tone is quite distinct from that of Force. In embedded yes/no questions, apart from the complementizer *kà* found in focus (and raising constructions), for instance, the language also has the complementizer *nà*, which introduces embedded clauses (see Chapter 4). But embedded yes/no questions are introduced with the complementizer *mà*. These complementizers are illustrated in (48-b-d) below. Sentence (48-a) is the baseline declarative sentence.

- (48) *Embedded yes/no question*
- a. Ó rì-rì jí.
3SG eat-SFX yam
'S/he ate yam.'
 - b. Jí **kà** ó rì-rì.
yam FOC 3SG eat-SFX
'S/he ate YAM.'

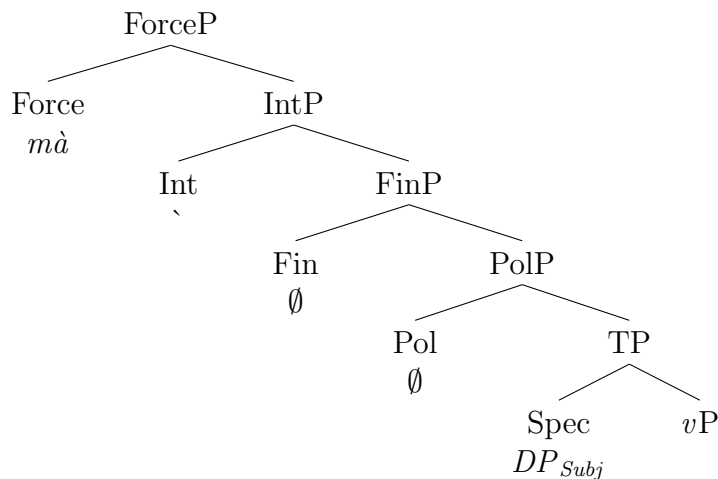
- c. Òbí ch̀è-r̀è **ǹà** ó r̀ì-r̀ì jí.
 Obi think-SFX that 3SG eat-SFX yam
 ‘Obi thinks that s/he ate yam.’
- d. Òbí j̀ù-r̀ù **m̀à** ò r̀ì-r̀ì jí.
 Obi ask-SFX C 3SG.Q eat-SFX yam
 ‘Obi asked whether s/he ate yam.’

In the sentences in (48-a-c) the third person pronoun in the different constructions has a high tone. Important for present concerns is that in example (48-d) with an embedded question, the pronoun that occurs after the complementizer *m̀à* bears a low tone. Having a high tone on the pronoun is ungrammatical as the example in (49) shows.

- (49) *Òbí j̀ù-r̀ù m̀à **ó** r̀ì-r̀ì jí.
 Obi ask-SFX C 3SG eat-SFX yam
 ‘Obi asked whether he ate yam.’

The data in (48-d) shows that the complementizer *m̀à* and the low tone do not compete for the same position. I assume that the embedded complementizer occupies the highest Force position within the CP domain, while the interrogative low tone is in Int, as in (50). I assume that Int is realized by a floating low tone and this tone attaches to the closest overt element on its right, which is the subject in Spec-TP. (Note that a floating H tone does not realize the Fin head in (50) since there is no XP that overtly moves to Spec-ForceP).

- (50) *Position of Int in embedded yes/no question*



Note that under Rizzi’s (2001) analysis of the Italian left periphery, the Int projection hosts *se* ‘if’, which introduces embedded yes/no questions (and *perché* ‘why’). This projection is distinct from, and lower than the Force projection. The main support for this is that in Italian, *se* can be preceded and followed by a topic, while *che*, the realization of Force, can only be followed by a topic (44). But here, I argue that Igbo *m̀à* is in Force given that it occurs in the same position as the complementizer *ǹà*. Compare (48-d) and (48-c) above. Also, they both precede a topic in Igbo (51).

- (51) *Complementizers in embedded clauses*
- a. Àdá, í hù-rù yá.
Ada 2SG see-SFX 3SG
'As for Ada, you saw her.'
- b. Úchè á-'má-ghí mà Àdá, ì hù-rù yá.
Uche É-know-NEG C Ada 2SG see-SFX 3SG
'Uche didn't know whether as for Ada, you saw her.'
- c. *Úchè á-'má-ghí Àdá mà ì hù-rù yá.
Uche É-know-NEG Ada C 2SG see-SFX 3SG
intended: 'Uche didn't know whether as for Ada, you saw her.'
- d. Úchè mà nà Àdá, ì hù-rù yá.
Uche know C Ada 2SG see-SFX 3SG
'Uche knows that as for Ada, you saw her.'
- e. *Úchè mà Àdá nà ì hù-rù yá.
Uche know Ada C 2SG see-SFX 3SG
intended: 'Uche knows that as for Ada, you saw her.'

To recap, I have shown in this section that both Force and Int are present in yes/no questions in Igbo, and there are good reasons for arguing that these two heads are distinct. Having established that there is an Int projection in Igbo, I discuss evidence for this projection in matrix wh-questions. I argue that the interrogative low tone found in yes/no questions is also present in wh-questions in the language. Hence, Int is projected in wh-questions. Note that Igbo does not have embedded wh-questions (Goldsmith, 1981b; Amaechi and Georgi, 2019), these are expressed with relative clauses. Thus, we will be looking at main clauses where wh-questions are found.

3.3.2.4 The interrogative low tone in wh-questions

Here I present empirical support for the low tone in wh-questions in Igbo in line with the argument that the low tone is a realization of the Int head within a split CP system (Rizzi, 1997, 2001). Importantly, this Int head is present not only in *kèdú* constructions but also in wh-questions that involve focus movement. I assume that this low tone is not observed on (*n*)*kè* as the noun has inherent low tones. But we do see this tone change on the pronoun preceding the copula in wh-questions involving focus movement. Recall that the third person singular pronoun and the copula are optional in wh-questions that involve focus movement (39-a). Interestingly, whenever the pronoun and the copula are overt, as in (52-a), the pronoun bears a low tone. Note that under focus movement without interrogative meaning such as (52-b), having a high tone and not a low tone is licit.⁴ Compare the example in (39-a) above, repeated as (52-a) and (52-b) below.

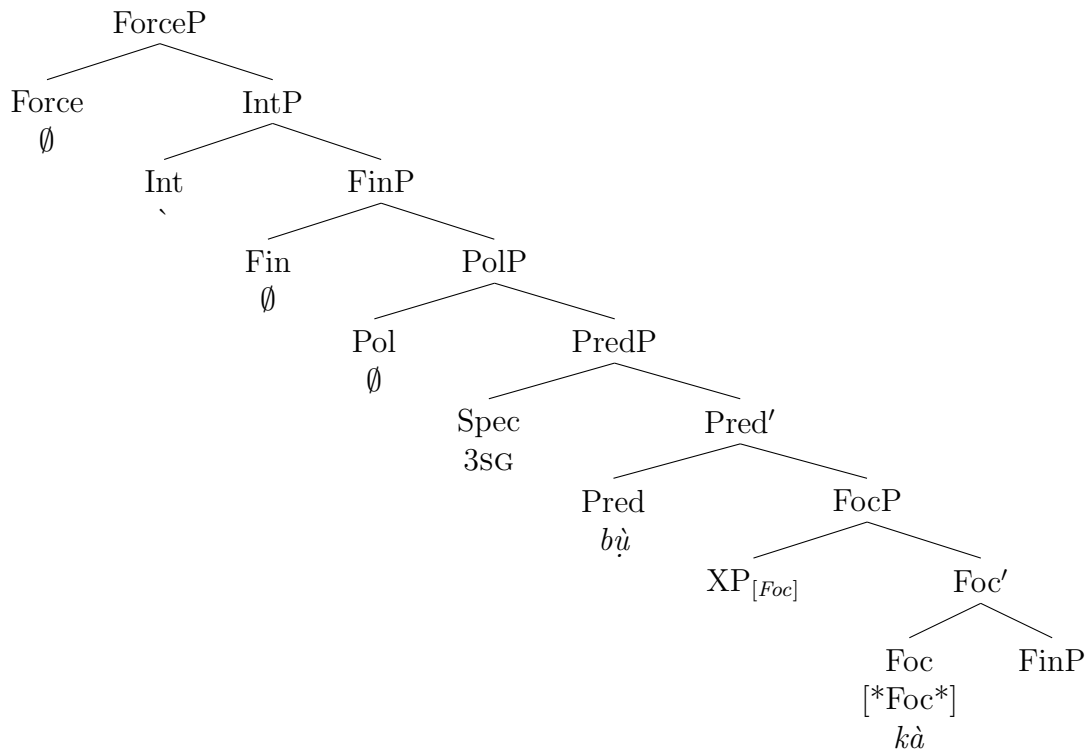
- (52) *Interrogative low tone in wh-questions with focus movement*
- a. Ọ̀ bù ɡí'ní kà Àdá rì-rì n'ùtùtù
3SG.Q COP what FOC Ada eat-SFX P-morning
'What did Ada eat in the morning?'

⁴Example (52-c) where the initial pronoun bears a low tone is grammatical only in the context where the sentence is to be understood as a yes/no question, as in the following translation 'Is it yam that Ada ate in the morning?'

- b. * \acute{O} bù gí'ní kà Àdá rì-rì n'ùtùtù
 3SG COP what FOC Ada eat-SFX P-morning
 intended: 'What did Ada eat in the morning?'
- c. \acute{O} / * \grave{O} bù jí kà Àdá rì-rì n'ùtùtù
 3SG / 3SG COP yam FOC Ada eat-SFX P-morning
 'Ada ate YAM in the morning.'

The tone difference on the initial pronoun in the sentences in (52) mirrors the fact that (52-b) is a question and requires an interrogative low tone, (52-c) does not. Focus (discussed in Chapter 2) and wh-questions discussed in Section 3.2 of this chapter differ in this respect.⁵ The structure in (53) is for the question in (52-a), which differs from focus movement without wh-question meaning in projecting an IntP.

(53) *Wh-question with focus movement*



I assume that $(\grave{n})k\grave{e}$ in $k\grave{e}d\acute{u}$ fills the specifier position of the PredP headed by the copula. And above this is the IntP projection, which hosts the question low tone. This floating tone attaches to the element on its right, which is the pronoun in the focus-copula sentences in (52) and to $(\grave{n})k\grave{e}$ in $k\grave{e}d\acute{u}$ questions. However, we do not see this tone on $(\grave{n})k\grave{e}$ due to the underlying tones of the noun. Furthermore, I assume that the 'defective noun' $(\grave{n})k\grave{e}$ does not move to Spec-IntP in wh-questions. This

⁵The simple wh-pronouns in questions with focus movement all have an initial low tone wh-word except for $g\acute{i}'n\acute{i}$ 'what', which has an initial high tone. Goldsmith (1981b) reports that perhaps the word is a borrowing from Yoruba $k\acute{i}n\bar{i}$ 'what'. Nwachukwu (1990) cited in Uwalaka (1991), on the other hand, claims that the word is from a proto-Kwa mother language which both Igbo and Yoruba derive from. A more recent study of micro-parametric variation in some dialects of Igbo suggests that the initial low tone is actually present in the wh-word for *what* in some of these dialects (Nwankwegu, 2015). Also, given the three simple wh-phrases $\acute{o}n\acute{y}\acute{e}$ 'who', $g\acute{i}'n\acute{i}$ 'what', and $\acute{e}b\acute{e}'\acute{e}$ 'where', and their corresponding indefinites $\acute{o}n\acute{y}\acute{e}$ 'person', $\acute{i}h\acute{e}$ 'thing', and $\acute{e}b\acute{e}$ 'where', only $g\acute{i}n\acute{i}$ appears very different from its corresponding indefinite.

position is thus filled by a null question operator. It is this operator that supplies the interrogative meaning of the clause, not the embedded operator movement in the embedded relative CP subpart of the question. Note that IntP is closed upwards by Force (Rizzi, 2001). Evidence for this in Igbo comes from the fact that we see the complementizer *mà* in embedded yes/no questions preceding the low tone of Int. Having (*ṅ*)*kè* move to Spec-IntP would suggest that the position should be able to host other XPs just like the other elements within the CP layer, but this is not borne out. No other XPs move to precede the copula in these wh-questions. As noted in Section 3.3.1 *kèdú* is always clause-initial and it is never preceded by any other element. Adopting Distributed Morphology's (Halle and Marantz, 1993, 1994) postsyntactic late insertion of exponents, we have the following Vocabulary Item for Igbo interrogatives (54).

- (54) *Vocabulary Item for questions*
 / $\dot{\int}$ \longleftrightarrow [Int]

In sum, I argued that the initial low tone in questions in Igbo expresses the interrogative force.

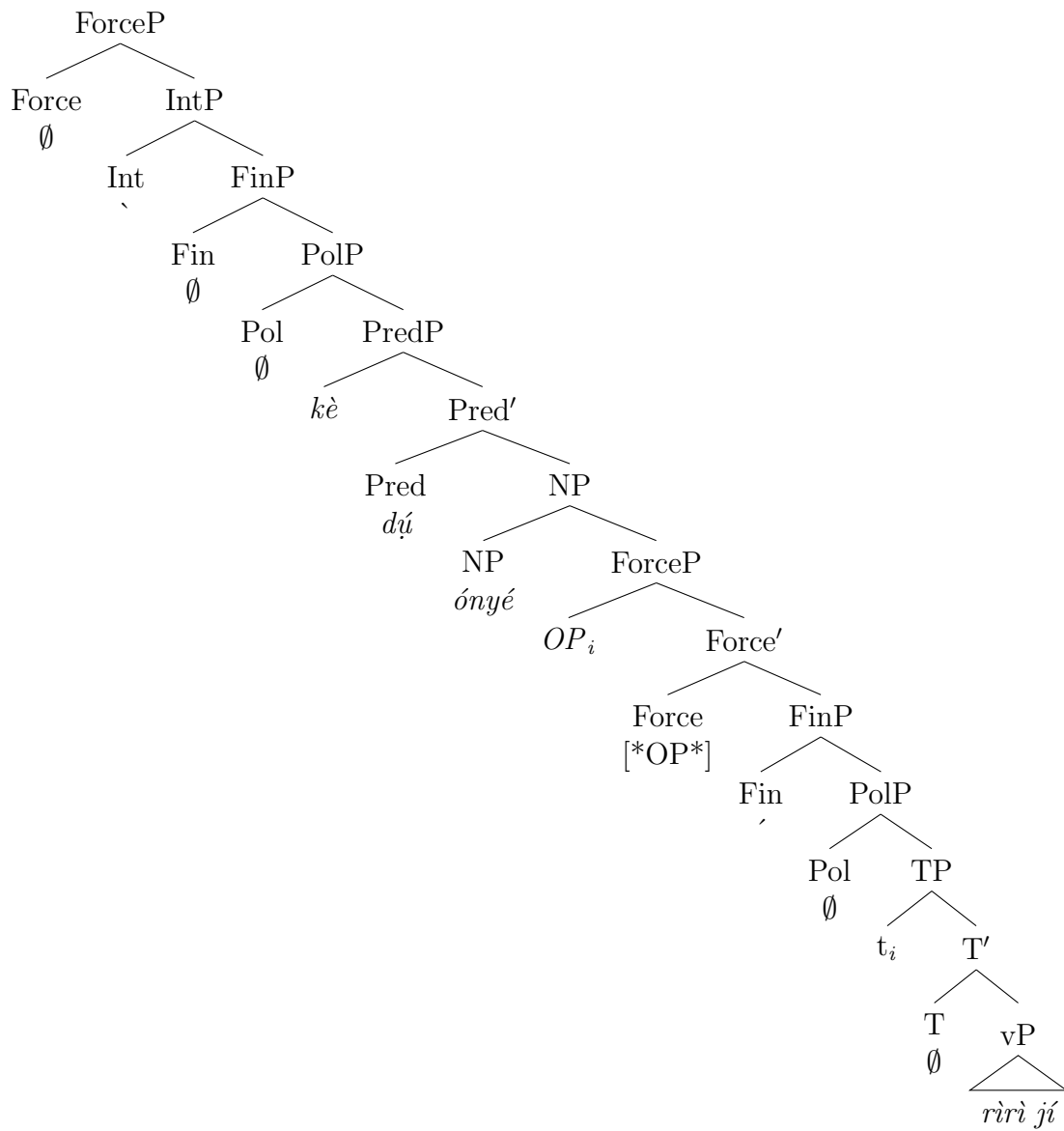
3.3.2.5 Summary

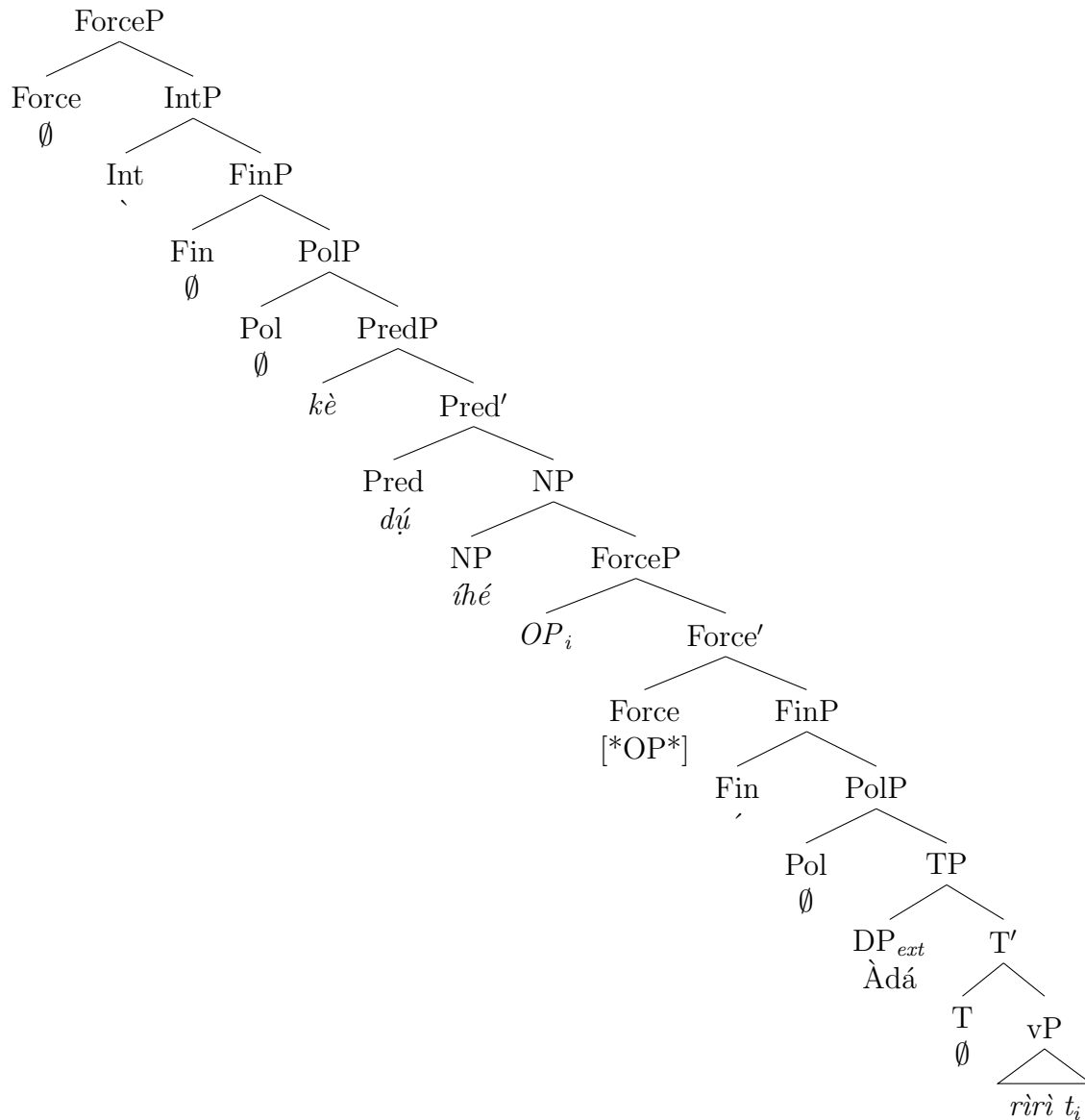
In this section I investigated the *kèdú* wh-question. I argued that this question construction is a biclausal cleft that involves a relative clause. This wh-question coincides with the presence of a copula. I show that the initial morpheme *kè*, which appears to have formed a compound with the copula, is a defective noun that fills Spec-PredP. I argue that above the PredP projection, there is an Int projection, and the realization of this is the low tone present in questions in Igbo. So a translation of *kèdú* questions that would be closer to the Igbo structure is for instance, 'Who is the person/thing/place that', see (55).

- (55) *Subject and object kèdú questions*
- a. Kèdú ónyé 'rì-'rì jí?
 WH.COP person eat-SFX yam
 'Who ate yam?' (lit: 'Who is the person that ate yam?')
- b. Kèdú íhé Àdá rì-rì?
 WH.COP thing Ada eat-SFX
 'What did Ada eat?' (lit: 'What is the thing that Ada ate?')

Having shown that the wh-question is biclausal, I propose the following structures for the *kèdú* construction. The structure in (56) is for the subject question in (55-a) and the structure in (57) shows that of the non-subject question as exemplified in (55-b).

(56) *Kèdú* subject question



(57) *Kèdú* object question

In the next section, I investigate the other type of wh-question, *òlé'é* questions. I argue that these questions also involve relativization, I show that this question type provides support for the Int projection with the low tone on the initial pronoun in the construction, and it is very similar to *kèdú* wh-questions.

3.3.3 Structure of *òlé'é* questions

Another type of wh-question that involves a cleft structure is the *òlé'é* wh-question (1-d) in Section 3.1. I will argue in this section that the structure is very similar to *kèdú* questions in that the embedded clause is a relative clause. This question type is different from wh-questions with focus fronting in a number of ways, such as the absence of a focus marker in the wh-question, and the presence of a relative clause structure (see Section 3.3.1). The *òlé'é* wh-question is similar in many ways to *kèdú* wh-question as they both have a relative clause subpart as the core of the A'-dependency. But it differs from the *kèdú* construction in having a different predicative element and a pronoun as the component parts of the matrix clause of the construction. I start by looking at the

structure of the embedded relative clause in Section 3.3.3.1, where I argue for movement of an empty operator within the relative clause and base-generation of the relative head noun. In Section 3.3.3.2, I discuss the structure of the matrix clause where I argue that the low tone on the initial pronoun in the construction is the interrogative low tone discussed in Section 3.3.2.4, and I consider the predicative element that follows the pronoun.

3.3.3.1 Structure of the embedded clause

There is evidence showing that *òlé'é* wh-questions contain an embedded clause and that this embedded clause is a relative clause. First, we get the downstep tone on the finite verb under subject relative clause like that in a relative clause (58). This downstep tone is absent in the declarative sentence in (58-a).

(58) *Downstep tone in subject òlé'é questions*

- a. Íhé m̀è-r̀è ǵ
thing do-SFX 2SG
'Something happened to you.'
- b. Òlé'é íhé 'm̀é-'r̀é ǵ?
WH.look thing do-SFX 2SG
'What happened to you?'
- c. íhé 'm̀é-'r̀é ǵ
thing do-SFX 2SG
'the thing that happened to you'

Further support for the presence of an embedded clause under *òlé'é* wh-questions is that only the preverbal occurrence of the first person singular pronoun is allowed in this kind of wh-questions (59-f). In matrix clauses both pre- and postverbal positions are possible (59-a-b), but in an embedded clause, only the preverbal position is allowed, see (59-d-e).

(59) *First person singular pronoun in matrix and embedded clauses*

- a. É r̀ì-r̀ì m̀ jí.
E eat-SFX 1SG yam
'I ate yam.'
- b. M̀ r̀ì-r̀ì jí
1SG eat-SFX yam
'I ate yam.'
- c. *Ó ch̀è-r̀è [nà é r̀ì-r̀ì m̀ jí].
3SG think-SFX that E eat-SFX 1SG yam
intended: 'S/he thinks that I ate yam.'
- d. Ó ch̀è-r̀è [nà m̀ r̀ì-r̀ì jí].
3SG think-SFX that 1SG eat-SFX yam
intended: 'S/he thinks that I ate yam.'
- e. *Òlé'é íhé é r̀ì-r̀ì m̀ ____?
WH.look thing E eat-SFX 1SG
intended: 'What did I eat?'
- f. Òlé'é íhé m̀ r̀ì-r̀ì ____?
WH.look thing 1SG eat-SFX
'What did I eat?'

In the next section, I show that *òlé'é* questions also exhibit movement properties, which supports the assumption that we have an *A'*-movement dependency within the relative clause.

3.3.3.1.1 Movement diagnostics The island tests, reconstruction effects and the strong cross-over effect that we get in this type of wh-question are illustrated in the following examples in (60) to (64). The data in (60) and (61) show that movement out of the classic strong islands are banned. Principle A (62) and (narrow) scope (63) indicate reconstruction. And (64) illustrates strong cross-over, that is, the idea that the relative head noun *ónyé* cannot co-refer with the subject pronoun to its right.

(60) *CNPC-island*

- a. *Úchè mà íwá [OP_i ____i 'hù-rù Àdá].*
 Uche know child see-SFX Ada
 'Uche knows the child that saw Ada.'
- b. **Òlé'é ónyé Úchè mà íwá [OP_i ____i 'hù-rù ____j]?*
 WH.look person Uche know child see-SFX
 'Lit.: Who does Uche know the child who saw?'

(61) *Adjunct island*

- a. *Úchè pù-rù [túpú Àdá àhù Òbí].*
 Uche leave-SFX before Ada saw Obi
 'Uche left before Ada saw Obi.'
- b. **Òlé'é ónyé Úchè pù-rù [túpú ___ àhù Òbí]?*
 WH.look person Uche leave-SFX before saw Obi
 'Lit.: Who did Uche leave before ___ saw Obi?'

(62) *Principle A*

- [Òlé'é fòtó [ònwé 'yá]_i] Òbí_i sè-rè?*
 WH.look picture self 3SG Obi draw-SFX
 'Which picture of himself_i did Obi_i draw?'

(63) *Scope*

- a. *Òlé'é ónyé í chè-rè nà nwátà òbùlà gbà-kwù-rù?*
 WH.look person 2SG think-SFX that child every run-DIR-SFX
 'Who do you think that every child ran to?'
- b. *Nwátà òbùlà gbà-kwù-rù Úchè.*
 child every run-DIR-SFX Uche
 'Every child ran to Uche.'
- c. *Òbí gbà-kwù-rù Àdá, Ézè gbà-kwù-rù N'gózí mà Èméká gbà-kwù-rù*
 Obi run-DIR-SFX Ada Eze run-DIR-SFX Ngozi but Emeka run-DIR-SFX
 Àmádí.
 Amadi.
 'Obi ran to Ada, Eze ran to Ngozi but Emeka ran to Amadi.'

(64) *Strong cross-over*

- **Òlé'é ónyé_i ó_i hù-rù n'ányá*
 WH.look person 3SG see-SFX P-eye
 'Who_i does he_i love?'

Language-specific empirical diagnostics that indicate *A'*-movement in the language,

such as the downstep tone on the finite verb under subject relativization (65-a), the final high tone on crossed over subjects (65-b), the particle that appears under extraction from negative clauses (65-c), and non-extraction from perfective clauses (65-d) are all found in this type of wh-question.

- (65) *Reflexes of movement in òlé'é questions*
- a. Òlé'é ónyé 'rí-'rí jí táà?
WH.look person eat-SFX yam today
'Who ate yam today?'
- b. Òlé'é íhé Úché rì-rì táà?
WH.look thing Uche eat-SFX yam today
'What did Uche eat today?'
- c. Òlé'é ónyé ná á-'hù-ghí Òbí?
WH.look person PRT É-see-NEG Obi
'Who didn't see Obi?'
- d. *Òlé'é ónyé à-'hù-lá Àdá?
WH.look person NMZL-see-PFV Ada
'Who has seen Ada?'

The movement tests and the presence of these reflexes of movement (65) show that there is movement within the relative clause.

3.3.3.1.2 Base-generation properties of the relative head noun Given the similarities between the two question types that involve relativization, I propose that òlé'é questions also involve base-generation of the relative head noun in the embedded relative clause with an operator movement inside the relative CP. Arguments for base-generation of the relative head noun come from lack of Principle C (66), which shows that the R-expression *Àdá* reconstructs into the c-command domain of the pronominal subject; absence of idiom reconstruction (67) indicates anti-identity in interpretation; and (68) illustrates a case mismatch, where the case of the object of V_2 in the SVC is different from that in the òlé'é construction. These data indicate that the relativized head noun and the element that moves inside the relative clause are not identical.

- (66) *Principle C*
- a. Òlé'é fòtó Ádá_i ó_i hù-rù ___ ?
WH.look picture Ada 3SG see-SFX
'*Which picture of Ada_i did she_i see?'
- b. *Ó_i hù-rù fòtó Ádá_i.
3SG see-SFX picture Ada
'*She_i saw the picture of Ada_i.'

- (67) *Idiom reconstruction*
- a. Ùlé áhù tà-rà ákpù
test DET chew-SFX lump
'The test is difficult.' [lit. 'The test chewed lump.']
- b. [Ákpù_i [OP_i ùlé áhù tà-rà ____i]] mèt-rè ó jì dàá
lump test DET chew-SFX do-SFX 3SG AUX fall
'He failed because the test was difficult.' [lit. 'The lump that the test chewed made him fail.']

- c. Òlé'é [ákpù; [OP_i ùlé áhù tà-rà _i]]
 WH.look lump test DET chew-SFX
 ‘*How difficult was the test?’
 ‘#Where is the lump that the test chew?’

(68) *Case mismatch*

- a. Àdá jì ímà bẹ-é **á'nú**
 Ada use knife cut-Á meat.GEN
 ‘Ada cut the meat with a knife.’
- b. **Ánù** ò ò n'itè
 meat.NOM COP P-pot
 ‘There is meat in the pot.’
- c. Àdá sì-rì **ánù**.
 Ada cook-SFX meat.ACC
 ‘Ada prepared meat.’
- d. Òlé'é **ánù** Àdá jì ímà bẹ-é?
 WH.look meat.NOM Ada use knife cut-Á
 ‘Which meat did Ada cut with a knife?’

So far, we have seen that the structure of the embedded relative clause in òlé'é wh-questions is the same as that of kèdú wh-questions discussed in Section 3.3.2. I assume that what undergoes movement in the relative clause is an empty operator which is co-indexed with the relative head noun. Next I turn to the structure of the main clause of the wh-question.

3.3.3.2 Structure of the embedding (main) clause

Here I consider the nature of the main clause of òlé'é wh-questions. Nwachukwu (1995) observes that the morpheme òlé'é is derived from the third person singular pronoun ò and the imperative of the verb lèé ‘look’. I argue that the initial pronominal element bears the interrogative low tone found in questions in the language (see Section 3.3.2.4). As for the predicative element in the main clause, I suggest that the imperative of lèé ‘look’ is being grammaticalized to a copula in the language.

3.3.3.2.1 The initial pronominal element with interrogative low tone

Pronominal subject clitics in Igbo such as the second and third person singular pronouns take the ATR harmony value of the vowel in the following verb in a sentence. This is shown in the following examples (69). In (69-a), for instance, the subject pronoun belongs to the –ATR harmony set as a result of the –ATR value of the vowel in the verb, whereas in (69-b), the same subject pronoun surfaces as +ATR, given that the vowel in the verb is that of the +ATR set.

(69) *Pronominal subject clitics' ATR harmony*

- a. **Í** tà-rà ákí.
 2SG chew-SFX palm kernel
 ‘You chewed palm kernel.’
- b. **Í** tẹ-rẹ ùdé.
 2SG rub-SFX cream
 ‘You applied cream (to your body).’

- c. Ó rì-rì jí.
3SG eat-SFX yam
'S/he ate yam.'
- d. Ó rì-rì ñkwú.
3SG climb-SFX palm
'S/he climbed a palm tree.'

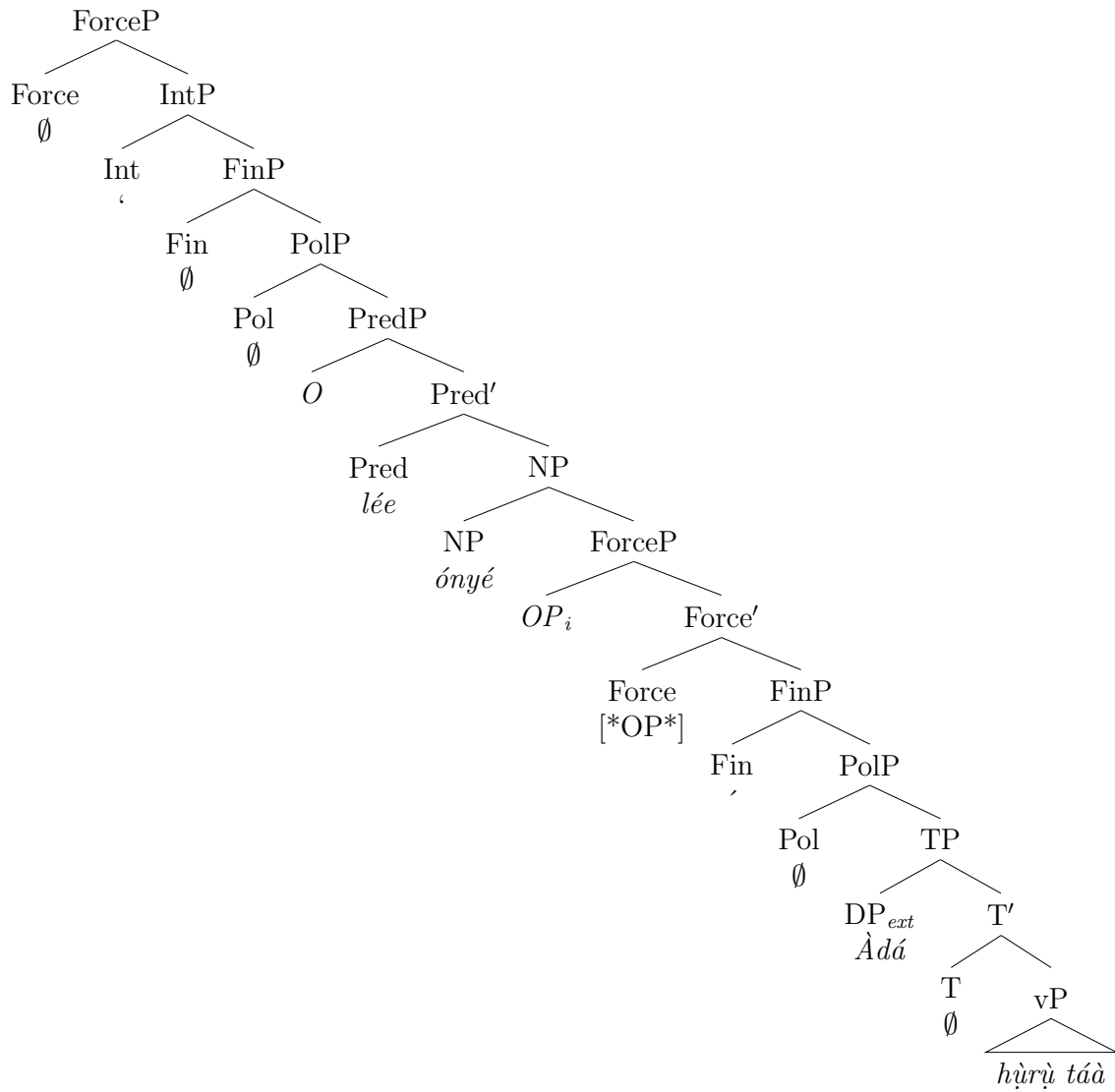
The initial pronoun in *òlé'é* construction patterns like pronominal subject clitics as it agrees in ATR harmony with the following verb *lé* 'look'.

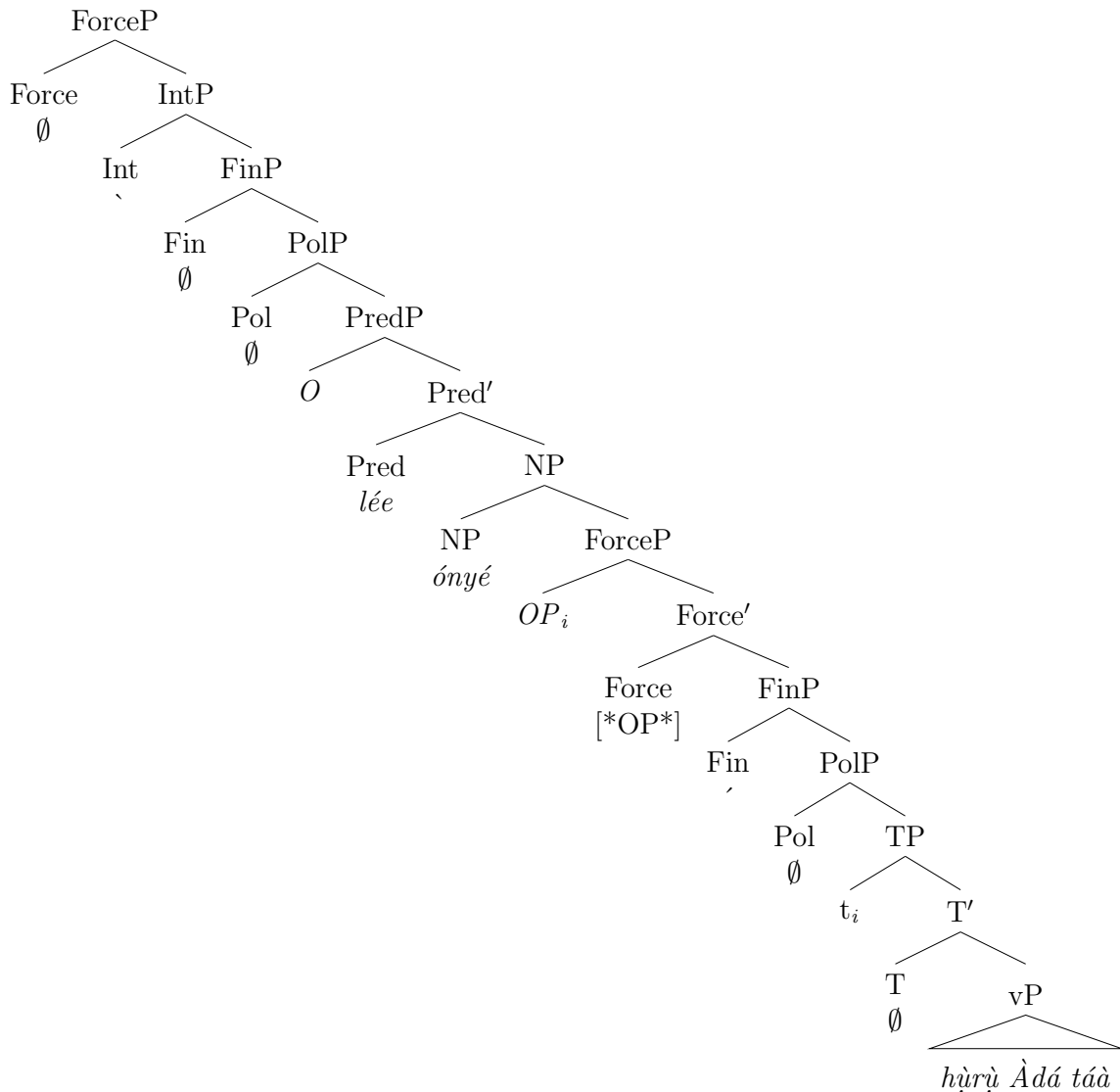
- (70) a. Òlé'é ónyé Àdá hù-rù táà?
WH.look person Ada see-SFX today
'Who did Ada see today?'
- b. Òlé'é ónyé hù-rù Àdá táà?
WH.look person see-SFX Ada today
'Who saw Ada today?'

Furthermore, the pronoun bears a low tone in the *òlé'é* construction (70). Note that the pronouns in (69) have high tone. I assume that the low tone on the pronoun is the low tone that is associated with questions in the language (see Section 3.3.2.4 above). Like *kèdú* questions I assume that there is an Int projection, whose head is realized as the low question tone above the PredP projection. The head of this PredP is the imperative of *lé* 'look'. This predicative element is the focus of the next section.

3.3.3.2.2 The predicative element Apart from the initial pronominal clitic which bears the interrogative low tone in *òlé'é* wh-questions, we also have the predicative element *lèé* which is the imperative of the verb *lèé* 'look'. This is not a common predicative element in biclausal wh-questions cross-linguistically. Although the predicative element found in *òlé'é* wh-questions appears not to contain any one of the copulas *bú*, *dí* or *nò* in the language, I argue that the imperative *lèé* is being grammaticalized to a copula in the language. This is following recent grammaticalization studies (Taine-Cheikh, 2013; Creissels, 2017), which show that the imperative of the verb *look* or *see* grammaticalize to ostensive predicators, and further to a copula. See discussion on this and other copulas found in wh-questions in the language in Section 3.4.

3.3.3.2.3 Interim summary The focus of this section has been *òlé'é* wh-questions, which also have a relative clause subpart. For the structure of the embedded relative clause, I argue for movement of an empty operator within the relative clause with base-generation of the relative head noun. I show that the initial pronominal clitic bears the interrogative low tone, and I assume that the pronoun fills the Spec-PredP position, see the structures in (71) and (72) below. The predicative element in the wh-question is the imperative of the verb *lé* 'look', and this occupies the Pred head position in the structures in (71) and (72). I assume the following structure for *òlé'é* wh-question. The structure in (71) is for the sentence in (70-a) above, while the structure in (72) is for (70-b).

(71) *Òlé' é object wh-question*

(72) *Òlé'é* subject wh-question

We have seen so far that *òlé'é* and *kèdú* questions are similar in that they both contain relative clauses as shown in the above structures. But they differ in the elements contained in their matrix clauses. I showed in Section 3.3.2.2 that the initial element in a *kèdú* question is a defective noun followed by a copula. In *òlé'é* questions, there is a pronominal element and the verb *lèé* 'look'. What their respective matrix clauses have in common, however, is the Int low tone which attaches to the initial elements in Spec-PredP in these two wh-questions.

There is another wh-element *òlé* in Igbo, which is to be distinguished from *òlé'é*. *Òlé* is used to ask for quantity and/or frequency. Unlike *kèdú* and *òlé'é*, *òlé* occurs postnominally like other determiners in the language. Also *òlé* questions obligatorily require the focus marker *kà* as exemplified in (73-a-b) below.

(73) *Òlé* questions involve focus movement

- a. Égò òlé *(kà) í zù-rù yá?
 money how.many FOC 2SG buy-SFX it
 'How much did you buy it?'

- b. Ébé òlé *(kà) í gà-rà?
 place WH FOC 2SG go-SFX
 ‘Where did you go?’
- c. Í gà-rà ébé òlé?
 2SG go-SFX place WH
 ‘Where did you go?’

I assume the wh-questions such as those in (73) do not contain relative clauses, and are best analyzed as involving focus movement of the genitive phrase that appears before the focus marker to the left edge of the focus phrase (see also Clark (1990)). Hence, overt movement to Spec-FocP triggers the spell out of the Foc head. Further evidence that these questions are to be analyzed as wh-questions involving focus movement discussed in Section 3.2 is that they can also be found in-situ (73-c) (Nwankwegu, 2015).

We also find *kà* in a form of *kèdú* question. Recall from the discussion in Section 3.3.1, that one of the differences between the wh-questions that involve focus movement and those that involve relativization is that while those that involve focus movement obligatorily (except for local subject) occur with the focus marker *kà* that spells out Foc, this marker, which is not found in relative clauses does not occur in *kèdú* questions. *Kà* is only found in *kèdú* manner questions, where *kà* seems to replace the relative head noun *ètù* ‘manner’ in these questions (Goldsmith, 1981b, 372). Compare (74) and (75) below.

- | | | | |
|------|--|------|---|
| (74) | a. Kèdú ètù ó dì?
WH.COP manner 3SG COP
‘How is it?’ | (75) | a. Kèdú kà ó dì?
WH.COP FOC 3SG COP
‘How is it?’ |
| | b. Kèdú ónyé ó bù?
WH.COP person 3SG COP
‘Who is s/he?’ | | b. *Kèdú kà ó bù?
WH.COP person 3SG COP
intended: ‘Who is s/he?’ |
| | c. Òlé’ é ètù ó dì?
WH.COP manner 3SG COP
‘How is it?’ | | c. *Òlé’ é kà ó dì?
WH FOC 3SG COP
intended: ‘How is it?’ |

The ungrammaticality of the sentence in (75-c) shows that the replacement of *ètù* ‘manner’ with *kà* seem to be a quirk of *kèdú* questions. Here it seems that *kà* is in the position of the head noun in (75-a).

3.3.4 Summary

I have shown in this section the different types of wh-question formation strategies attested in Igbo. One of them involves focus movement. In this form of wh-question, the wh-phrases are moved to Spec-FocP in the left periphery. The Foc head is realized overtly when an element occupies its specifier position. Hence, under subject wh-questions with focus fronting, the focus head is not realized since the subject does not move to Spec-FocP (Amaechi and Georgi, 2019). This is a subject/non-subject asymmetry found in this kind of wh-question. But this asymmetry is absent in the other two kinds of wh-questions that involve relativization as relative clauses obligatorily involve movement (Šimík, 2018). For the relative clause embedded in these kinds of wh-questions, I argued for a head external analysis for the relative clauses. The

empty relative operator moves to the Spec-ForceP with base-generation of the relative head. I assume that relative clauses do not project a FocP as XPs inside the relative clause cannot be focused (Hartmann and Zimmermann, 2012). The wh-questions that involve relative clauses are inherently biclausal and they have an obligatory nominal and predicative element that precedes the relative clause. But this is not the case with wh-questions with focus movement, where the pronoun and copula are optional. A summary of the differences and similarities among the three wh-questions considered in this chapter is presented in Table 3.2.

	focus wh-question	<i>Kèdú</i>	<i>òlé'é</i>
initial Int low tone	✓	✓	✓
initial pronominal element	✓	✗	✓
contains a copula	✓	✓	?
involves focus movement	✓	✗	✗
involves relativization	✗	✓	✓

Table 3.2: Wh-questions in Igbo

The study of these wh-question types has shed light on focus movement and relativization as two different A'-movement operations. I argue that one thing that these wh-questions (and yes/no questions) all share is the interrogative low tone, and I assume that this low tone realizes the Int head in the structures I proposed. The low tone surfaces on the left most element in the wh-questions with relativization, and for wh-questions with focus movement, this is found on the pronoun when it is projected. In addition to the nominal element in these wh-questions, an important component of the clause is the copula that occurs after the nominal elements. This is the focus of the next section.

3.4 Igbo copular clauses

In the previous section I discussed the three wh-question strategies attested in Igbo. I argued that not only yes/no questions, but also wh-questions in the language project an interrogative head, which occupies a position above the predicate phrase that is headed by the copula. Given the fact that copulas are found in wh-questions in Igbo, in this section, I examine copular clauses and the important role that copulas play in the cleft wh-questions discussed above. It has long been observed in the Igbo literature that the language has three copulas (Welmers, 1973; Welmers and Welmers, 1969; Emenanjo, 1978; Nwachukwu, 1983b, 1984; Manfredi, 1991; Uchechukwu, 2010, 2015). These are *bú*, *dí* and *nò*. The first is argued to be identificational, while the second is predicational and the last is locative.⁶ I show that the *bú* copula can be used not only as identificational but also functions as a specificational and predicational copula in the language. The copula *dí* seems to be more restricted, only functioning as a predicational copula. I further suggest that in addition to the three copulas, the imperative of the verb *lèé* 'look' in *òlé'é* questions is also been grammaticalized as a copula in the language. This section is organized as follows: Section 3.4.1 provides a general background on copular clauses, where I consider the different types of copular clauses and the different approaches to them in the literature. Section 3.4.2 discusses

⁶The copula *dí* can also be used as locative often for non-animate nouns.

the copula *bú*, which I show is both a specificational and predicational copula in the language. Section 3.4.3 considers the copula *dí*, which is predicational. In Section 3.4.4 I address the different copulas found in wh-questions discussed in the preceding sections as well as a synchronic property of copulas that are found in wh-questions that involve clefts. Finally, Section 3.4.5 summarizes and concludes.

3.4.1 Background on copular clauses

3.4.1.1 Types of copular clauses

Copular clauses are sentences that contain two constituents which are often connected by a copula. And in this construction, the contentful predicate is not the copula (since in some languages there is no verbal copula) but some other categories such as D, A or P (Mikkelsen, 2011). Different types of copular clauses have been distinguished in the literature (Higgins, 1973, 1979; Mikkelsen, 2011). These are exemplified in (76) below.

(76) *English copular clauses (Mikkelsen, 2011, 1806)*

- | | | |
|----|---|-------------------------|
| a. | The hat is big. | <i>predicational</i> |
| b. | The director of <i>Anatomy of a Murder</i> is Otto Preminger. | <i>specificational</i> |
| c. | That (woman) is Sylvia. | <i>identificational</i> |
| d. | Cicero is Tully. | <i>equative</i> |

Predicational copular clauses are said to predicate a property of the subject referent. In (76-a), the DP *the hat* denotes an individual, and the post-copular element, in this case, the adjective *big* predicates a property of that individual. Specificational clauses, on the other hand, do not involve predication. In specificational copular clauses, the post-copular element values the pre-copular variable. The pre-copular subject expression in (76-b) sets up a variable (the *x* that directed *Anatomy of a Murder*) and the post-copular expression provides the value for that variable ($x =$ Otto Preminger). Identificational clauses are used in “teaching the names of people or of things” (Higgins, 1979, 237). They involve demonstrative subjects and the demonstrative must be understood as having deictic, not anaphoric, reference (Higgins, 1979). Equative clauses equates the referent of the pre-copular subject with the post-copular element. Both DPs in equatives are referential and denote the same individual. Equative clauses are also referred to as identity or equational clauses. In this study, we concentrate on the predicational and specificational clauses, which are often the basic copulas used in copular clauses discussed in the literature.

3.4.1.2 Approaches to copular clauses

Copulas have received a lot of attention in the generative literature. There are two main analyses with regards to the structure of copular clauses. These are the inverse analysis and the equative analysis. Based on the assumption that specificational and predicational clauses involve the same copula verb, the inverse analysis assumes that both predicational and specificational clauses are derived from the same base small clause, with specificational clauses having inverted predicational structures (Heggie, 1988; Moro, 1997; Mikkelsen, 2005; den Dikken, 2006). The other equative analysis claims that specificational clauses and predicational clauses are not related, rather, specificational clauses are equatives clauses as both kinds of clauses share common syntactic and semantic properties (Heycock and Kroch, 1999; Han and Hedberg, 2008).

Here I consider the inverse analysis by Moro (1997) and Heycock and Kroch's 1999 equative analysis.

For the inverse analysis, predicational clauses are the basic type of copular sentence, while specificational clauses are derived from it. Moro (1997) analyses copular sentences as clauses where the copula takes a small clause complement. And one part of this small clause has to raise past the copula and occupy the subject position. In a predicational clause, it is the subject of the small clause that raises past the copula, while in a specificational clause, the predicate of the small clause raises past the copula to occupy the subject position. Thus, the difference between a predicational or specificational clause is whether the subject or the predicate of the small clause (SC) raises to the subject position (77).

- (77) a. is [_{SC} [_{DP_{subj}} John] [_{DP_{pred}} the new English teacher]]
 b. [_{DP_{subj}} John] is [_{SC} t_i [_{DP_{pred}} the new English teacher]] *predicational*
 c. [_{DP_{pred}} the new English teacher] is [_{SC} [_{DP_{subj}} John] t_i] *specificational*

On the issue of what determines the element that moves to the pre-copular position under the predicate inversion analysis, Mikkelsen (2005) proposes that this is based on the fixed information structure of specificational clauses. In these clauses there is the preference for the less referential DP, which is topic (discourse-old information) to precede the focus (discourse-new information). The topic is always in pre-copular subject position, and the predicative complement, which is always focus, occurs in the post-copular position.

Heycock and Kroch (1999) argue against Moro's predicate inversion analysis. One of the arguments is that not all predicational clauses allow for inversion, APs, for instance, do not invert. Consider (78), the inverted form of the predicational clause in (76-a). Instead, Heycock and Kroch argue that specificational clauses are equatives, which are distinct from predicational copular clauses. According to their analysis, the difference in the two types of copular clauses is due to the existence of two types of small clauses. There is the more familiar predicational small clause (78-b), and the specificational/equative small clause (78-c). The examples in (78-b-c) are Heycock and Kroch's (59a-b). Crucially, the two elements of the small clause in an equative clause are not distinguished as subject and predicate. They suggest that the equative small clause involves some functional head, which is absent in predicational small clauses.

- (78) a. *Big is the hat.
 b. I consider [_{SC} John the real murderer.]
 c. But if what you say is true, that would make [_{SC} the real murderer John!]

In this present study, the goal is not to see which approach is better or which is best suited for the copulas in Igbo. Rather, the study seeks to examine the copulas in Igbo and how to account for the usage of the copulas across the copular clause types in the language. In the next section, I consider these copulas.

3.4.2 The *bú* copula as both specificational and predicational copula

Copular clauses in Igbo are of the verbal type since there is always a verbal copula, which joins the pre- and postcopular constituents in the constructions. The *bú* copula

can be used to express all the above copular clauses exemplified in (76) in Section 3.4.1.1.

- (79) *Bù copular clauses*
- a. Òbí bù ónyéńkúzí.
Obi COP teacher
'Obi is a teacher.' *predicational*
 - b. Ónyé 'mé-'rì-'rì bù Òbí.
person do-eat-SFX COP Obi
'The person who won is Obi.' *specificational*
 - c. Nwóke áhù bù Òbí.
man that COP Obi
'That man is Obi.' *identificational*
 - d. Innocent Idibia bù 2Baba.
Innocent Idibia COP 2Baba
'Innocent Idibia is 2Baba.' *equative*

Evidence that the copula is verbal is that like verbs in the language, the verb can be inflected and allows for auxiliaries, see (80).

- (80) *Igbo copulas are verbal*
- a. Òbí á-'bù-ghí ónyéńkúzí.
Obi É-COP-NEG teacher
'Obi is not a teacher.'
 - b. Òbí gà-àbù ónyéńkúzí.
Obi FUT-NMZL.COP teacher
'Obi will be a teacher.'

For specificational copular clauses, the subject is non-referential, and the postcopular DP is referential (Mikkelsen, 2005), whereas for predicational clauses, the subject is referential. There are different tests that are applied to copular clauses to tell them apart. A common test is reversibility (Moro, 1997). The order of the pre- and post-copular element in a specificational clause can be reversed but this is not allowed with predicational clauses. Consider the following sentences in (81), where the XPs flanking the copula in (80-a) and (80-b) are reversed.

- (81) *Reversibility test*
- a. *Ónyéńkúzí bù Òbí.
teacher COP Obi
'A teacher is Obi.'
 - b. Òbí bù ónyé 'mé-'rì-'rì.
Obi COP person do-eat-SFX
'Obi is the person that won.'

Specificational clauses have been analyzed in terms of information structure to involve question-answer pairs or topic-focus/comment (den Dikken et al., 2000; Heycock and Kroch, 2002; Mikkelsen, 2005), where the pre-copular subject is the question-denoting element or topic, and the post-copular element is the answer or focus.⁷ Consider the

⁷Den Dikken et al. (2000) argue that in a type of specificational pseudoclefts, where the wh-clause precedes the copula, the wh-clause is a question, and the XP that occurs after the copula is a full IP,

following question-answer pair in (82) below

(82) *Information structure of specificational copular clauses*

- a. Q: Ònyé m̀è-r̀ì-r̀ì?
 who do-eat-SFX
 ‘Who won?’
- b. A: Ónyé ʼm̀é-ʼr̀ì-ʼr̀ì bù Òbí.
 person do-eat-SFX COP Obi
 ‘The person who won is Obi.’

(83) [Ónyé ʼm̀é-ʼr̀ì-ʼr̀ì]_{TOP} bù [Òbí]_{FOC}

Apart from this reversibility available with specificational clauses, there are other specific constraints on the elements in a specificational clause. These are discussed in Higgins (1973, 1979); Mikkelsen (2005). One of the tests is that the focal item, that is, the post-copular element cannot be extracted nor deleted in a specificational clause, and nothing can be moved out of the post-copular element. The example (84-a) below illustrates extraction of the post-copular DP *Òbí* in (79-b). In this instance, the sentence is ungrammatical but in comparison to extraction of the post-copular element in (79-a), this extraction out of a predicational clause is allowed (84-b). Also, when we have a complex constituent like a coordinate structure (&P) as the post-copular element, extraction of one of the conjuncts (even with a resumptive pronoun in the base argument position) results in ungrammaticality. This is shown in example (85).

(84) *Extraction out of post-copular DP*

- a. *Ònyé kà ónyé ʼm̀é-ʼr̀ì-ʼr̀ì bù ____?
 who FOC person do-eat-SFX COP
 Lit: ‘Who the person that won is?’
- b. Ònyé kà Òbí bù ____?
 who FOC Obi COP
 ‘Who is Obi?’

(85) *No extraction out of specificational post-copular DP*

- a. Ńdí ʼm̀é-ʼr̀ì-ʼr̀ì bù [Òbí nà Àdá].
 people do-eat-SFX COP Obi and Ada
 ‘The persons that won are Obi and Ada.’
- b. *Ònyé kà ńdí ʼm̀é-ʼr̀ì-ʼr̀ì bù (yá) nà Àdá?
 who FOC people do-eat-SFX COP 3SG and Ada
 Lit: ‘Who the people that won him and Ada?’

Note that extraction out of a coordinate structure is allowed in Igbo (Goldsmith, 1981b; Georgi and Amaechi, 2019). This is possible only with a resumptive pronoun in the clause internal argument position of the extracted conjunct. See the example in (86) below.

which is usually reduced. The structure of the specificational pseudocleft in (i-a) is as in (i-b).

- (i) a. What John is is important to himself.
 b. [TopP [CP What John is *t*] [Top^o [IP (John is) important to himself]]].

According to den Dikken et al. (2000), the answer/comment is an IP, which is the complement of a functional Top head. And the *wh*-clause is an interrogative generated in Spec-Top. The copula *is* realises Top^o. Ellipsis applies optionally to parts of the IP that repeat material of the question.

- (86) Ònyé kà Òbì hù-rù *(yá) nà Àdá?
 who FOC Obi see-SFX 3SG and Ada
 Lit: ‘Who did Obi see him/her and Ada?’

Higgins (1979) observes that movement out of the subject of specificational clauses is ruled out independently based on Ross’ (1967) complex NP constraint (CNPC) and the sentential subject constraint. This is what we see in the data on specificational clauses. The pre-copular constituent in the example in (79-b) is a relative clause, and extraction out of relative clauses is ruled out by the CNPC. One important feature in this example is the downstep tones on the finite verb in the relative clause that occurs in the subject position (for further discussion on relative clauses, see Chapter 2, and for an analysis of the tonal reflex on the finite verb, see Chapter 4).

Another test proposed by Higgins (1979) that is applicable to Igbo is the negation test. According to Higgins, specificational clauses cannot have a “straight” negation of the predicate, but they can have only a contradiction negation (Higgins, 1979, 321). Specificational clauses with negation on the copula are not as acceptable as when the negation is within the pre-copular relative clause. Example (87-a) shows negation of the predicational clause in (79-a), which is acceptable. But for negation of the specificational clause in (79-b), the sentence where negation appears within the relative clause (87-c) is more acceptable than that where negation is on the copula (87-b).

- (87) *No “straight” negation of the predicate in specificational copular clauses*
- a. Òbì á-¹bù-ghí ónyéńkúzí.
 Obi É-COP-NEG teacher
 ‘Obi is not a teacher.’ *predicational*
- b. ?Ónyé ¹mé-¹rí-¹rí á-¹bù-ghí Òbì.
 person do-eat-SFX É-COP-NEG Obi
 ‘The person who won isn’t Obi.’ *specificational*
- c. Ónyé ná é-¹mé-rí-ghí bù Òbì.
 person PRT É-do-eat-NEG COP Obi
 ‘The person who didn’t win is Obi.’ *specificational*

Mikkelsen (2005) proposes the tag question test to differentiate between specificational clauses and predicational clauses. Mikkelsen observes that in English, a singular subject of a specificational clause requires the pronoun *it* in a tag question, even if the subject of the clause is [+human]. In contrast, predicational subject pronominalizes with a gendered pronoun, just like a referential subject of a non-copular clause does.

- (88) a. The director of Anatomy of a Murder is Otto Preminger, isn’t it/*he?
 b. The guest of honor was happy, wasn’t she/he/*it?
 c. The guest of honor spoke after the dinner, didn’t she/he/*it?

Mikkelsen argues that the diagnostic illustrated in (88) shows that the subject of a specificational clause is non-referential. This test which appears to work fairly consistently in English cannot be applied to Igbo as the language does not distinguish gender in its pronoun system.

Another test that sets predicational clauses apart, but which is not applicable in Igbo (there is no direct equivalence of the VP ellipsis in (89) in Igbo), is that they can be targeted by VP ellipsis (89). Also, unlike specificational clauses, predicational clauses can express a proposition without the copula in embedded clauses (90).

- (89) Bill is a teacher, but I wish she wasn't.
- (90) a. I consider [John my best friend]. *predicational*
 b. I consider [my best friend *(to be) John]. *specificational*

The above tests show that unlike specificational clauses, predicational clauses do not require specific constraints (Higgins, 1979, 295) and are more like 'normal' predicative clauses.

3.4.3 The predicational copula *dị*

In the previous section, I show that *bụ* is a copula that may be found in both specificational and predicational clauses in the language. But in addition to this copula, the language has the copula *dị* (this is the variant of *dụ* in *kèdụ* wh-questions discussed in Section 3.3.2), which appears only in predicational clauses. A basic difference between predicational *bụ* copular clauses and those with *dị* is that the *dị* copula occurs with what is referred to as descriptive nouns. Descriptive nouns are often translatable to English adjectives. In the predicational *bụ* clause in (79-a) (repeated here as (91-a)), the copula *bụ* cannot be replaced by the *dị* copula. Likewise in a sentence such as (91-c), where the predicate complement is the descriptive noun *ọ́chá* 'white', only *dị* is allowed. The predicational *bụ* cannot be used as the illicit example (91-d) shows.

- (91) *Dị as a predicational copula*
- a. Ọ́bị bụ ọ́nyéńkúzí.
 Obi COP teacher
 'Obi is a teacher.'
- b. *Ọ́bị dị ọ́nyéńkúzí.
 Obi COP teacher
 intended: 'Obi is a teacher.'
- c. Ọ́dádá dị ọ́chá
 Ada COP white
 'Ada is fair in complexion.'
- d. #Ọ́dádá bụ ọ́chá
 Ada COP white
 intended: 'Ada is fair in complexion.'⁸

The *dị* copula also occurs with locational XPs, see example (92-a) below. The sentence in (92-b) illustrates extraction of the post-copular locative PP. The sentence in (92-c) shows that the pre- and post-copular elements in the *dị* copula in (91-c) cannot be inverted. All these properties are expected if *dị* is indeed a predicational copula.⁹

⁸Sentence (91-d) is felicitous if it is interpreted as an equative clause, where both *Ọ́dádá* and *ọ́chá* denote the same individual. In this case, we no longer have *ọ́chá* 'being fair in complexion' as a characteristics of *Ọ́dádá*.

⁹Sentence (92-a) with the copula *bụ* may be grammatical when there is a continuation with the post-copular PP being in Spec-FocP position.

- (i) a. Ọ́ bụ n'ímé àkpà kà ọ́ tinye-re ọ́sè.
 3SG COP P-inside bag FOC 3SG put-SFX pepper
 'It's in the bag that s/he put the pepper.'

(92) *Properties of predicational copular clauses*

- a. Ó dì/*bù n'ímé àkpà.
3SG COP/COP P-inside bag
'It's in the bag.'
- b. (N')èbé'é kà ó dì ___?
P-where FOC 3SG COP
'Where is it?'
- c. *Òchá dì Àdá.
white COP Ada
intended: 'Ada is fair in complexion.'

Further evidence that *dì* is only a copula of predication comes from the fact that some clauses with *dì* copula can be expressed with non-copular predicative verbs. Consider the following sentences in (93).

- (93) a. Ófé ísála dì ùtọ́
soup nsala COP sweet
'Nsala soup is delicious.'
- b. Ófé ísála tọ-rọ ùtọ́
soup nsala ICV-SFX sweet.IC
'Nsala soup is delicious.'

Sentence (93-b) contains the so-called inherent complement verbs (ICVs) found in some (West) African languages (Nwachukwu, 1987; Avolonto, 1995; Essegbey, 1999; Anyanwu, 2012; Aboh, 2015; Korsah, 2015). In this construction, the verb and its inherent complement (IC) are argued to form a single semantic unit with the IC 'specifying' the meaning of the predicate (Nwachukwu, 1987). This is also expected of the *dì* copula given that predicational clauses are very similar to 'normal' predicative clauses, hence no requirements are placed on them like in specificational clauses. It is important to note that in all these copular constructions, the copula cannot be deleted. In the following section I discuss the use of the copulas in the different cleft constructions in the language.

3.4.4 Copulas in wh-questions

Recall from the preceding Sections 3.2 and 3.3 that Igbo uses two different kinds of cleft constructions in its formation of wh-questions. Basically, there is the cleft that involves focus movement (94-a), and the cleft that involves relativization. This is the case of *kèdú* questions and *òlé'é* questions (see Sections 3.3.2 and 3.3.3) (94-b-c).

(94) *Copulas in wh-questions*

- a. Ò bù [_{FOCP} gí'ní kà Àdá rì-rì n'ùtùtù]?
3SG COP what FOC Ada eat-SFX P-morning
'What did Ada eat in the morning?'
- b. Kèdú [_{ForceP} íhé Àdá rì-rì n'ùtùtù]?
WH.COP thing Ada eat-SFX P-morning
'What did Ada eat in the morning?'
- c. Òlé'é [_{ForceP} íhé Àdá rì-rì n'ùtùtù]?
3SG.Q.look thing Ada eat-SFX P-morning
'What did Ada eat in the morning?'

Apart from the difference in the different A'-movement dependencies in these clefts, the cleft constructions are also distinguished lexically in the choice of copula. The *bú* copula, which is found in both specificational and predicational clauses, selects the focus phrase complement in the focus cleft in (94-a), while the predicational *dí* copula takes a relative clause complement in the *kèdú* cleft in (94-b). I suggest that the copula in the cleft construction in (94-a) is a copula of specification, while that in (94-b) is a copula of predication. For the cleft in (94-c), I suggest that *lèé* which is the imperative of the verb 'look' is in the process of grammaticalization to a copula in the language.

3.4.4.1 Proposition in wh-questions with focus movement

Amaechi and Georgi (2019) argue that the wh-question in (94-a) involves focus movement of the wh-phrase to the left periphery of FocP (see Section 3.2). Since this form of wh-question is focus based, the point that we get the specificational copula *bú* and not the predicational copula *dí* is not surprising. This is based on the assumption that the specificational copula equates propositions (Schlenker, 2003), and according to alternative semantics (Rooth, 1981, 1992), focus evokes a set of alternative propositions.

3.4.4.2 Predication in *kèdú* questions

It has been assumed in the semantic literature that the predicational copula takes a predicate (that is, the post-copular element) that is non-referential, of the semantic type $\langle e, t \rangle$, (while specificational and equative copulas take complements of type $\langle e \rangle$) (Mikkelsen, 2005; Geist, 2007). These are phrases such as predicative noun phrases, APs, and PPs occurring in the post-copular position of predicational clauses. Predicational clauses have been informally described as asking for a property (Higgins, 1979). Relative clauses are standardly taken to be properties of type $\langle e, t \rangle$ (Heim and Kratzer, 1998). Given that properties are construed as sets of individuals, it is not surprising that we have the predicational copula *dí* present in *kèdú* clefts, which contain relative clauses.

I have shown in this section that the copula in the focus clefts is the copula of specification, while the copula in *kèdú* clefts is that of predication since relative clauses found in *kèdú* clefts are property-denoting. In the next section I discuss the imperative of the 'look' verb found in *òlé'é* wh-questions and I suggest that this is probably being grammaticalized into a copula in the language.

3.4.4.3 Emerging copula in *òlé'é* questions

In the previous section, I showed that the copula in wh-questions that involve focus movement is the copula of specification, while that in *kèdú* questions is the copula of predication given the relative clause that follows the copula. In this section I examine the equivalent of the copula in the *òlé'é* wh-questions. Recall from Section 3.3.3 that the initial phrase *òlé'é* consists of a third person singular subject pronoun and the imperative of the verb *lèé* 'look' (Nwachukwu, 1995). But these two elements have been fused in this construction. The imperative precedes the relative clause in *òlé'é* wh-questions. Given that the *lèé* 'look' imperative is not any of the copulas considered in the preceding section, I argue that the imperative *lèé* in *òlé'é* constructions is being grammaticalized to a copula.

In (African) languages copulas often grammaticalize from focus markers, relative clause markers, demonstratives, resumptive pronouns and postural verbs such as *stand* or *sit* (Heine and Reh, 1984; Harris and Campbell, 1995; Diessel, 1999; Heine and Kuteva, 2002). Other sources have also been reported such as the verb *see* or *look*. Taine-Cheikh (2013) shows that copulas derive from the verb *see* in some varieties of Arabic, and Creissels (2017) suggests that copulas derive from the imperative *look/see* in Mande languages.¹⁰ Creissels observes that the grammaticalization path for Mande languages is from the imperative *look/see* to ostensive predicator (i.e. words used ‘to draw the addressee’s attention to an obvious fact’ e.g., French *voici*) and further to copula. The ostensive predicative use of *lèé* ‘look’ is exemplified with the Igbo data in (95) below. Creissels also shows that ostensive predicators differ from copulas in the the deictic component of their meaning, and in the particular illocutionary force they carry.

(95) *Ostensive predicative use of lèé ‘look’ in Igbo*

- a. Lèé égó 'gì!
look.IMP money 2SG
‘Here is your money!’ (or ‘Look at your money!’)
- b. Lèé Àdá, ónyé'ísí ùlò órú à.
look.IMP Ada person.head house work this
‘Here is Ada, the head of this company.’
- c. Lèé yá n'óbá 'jí.
look.IMP 3SG P-barn yam
‘Here is (s)he/it in the yam barn.’

Although the imperative *lèé* cannot be considered directly identical to the copulas in Igbo as one cannot substitute the predicational *dí* copula with *lèé* in copular sentences such as (91-c), for instance, the fact that we see the imperative of *look/see* in wh-questions involving clefts, where we expect a copula, provides evidence that indeed the imperative *lèé* is being grammaticalized to a copula in the language. Hence, in the *òlé'é* cleft context, the ostensive predicative meaning *Here is* of *lèé* in (95) has become a predicational copula that takes a relative clause complement in the wh-question. Creissels (2017) also provides data from the Mande language Soninke, where the imperative of *há'yí* ‘look’ is found in interrogative clauses.

(96) *Soninke (Creissels, 2017, 60)*

- a. À há'yí màní ñàa-nà?
3SG look what do-GER^L
‘What is he doing?’ (lit. ‘Look_{imper} at him doing what?’)
- b. À há'yí sòxò-nó bà?
3SG look cultivate-GER Q
‘Is he cultivating?’ (lit. ‘Look_{imper} at him cultivating?’)

The example in (96) shows that Igbo is not alone in having the imperative of the verb ‘look’ being used in question contexts. Note that in Igbo, this form of ‘look’ verb is only found in wh-questions (96-a), but the Soninke data show that it can also be found in yes/no questions (96-b).

¹⁰Thanks to Caterina Donati for drawing my attention to Creissels’ work.

3.4.4.4 A synchronic property of copulas in clefts involving questions

Another interesting fact about the copulas in the clefts exemplified in (94) is that the copulas seem to have lost (some) verbal features when used in these wh-question contexts. For instance, the copula *bú* has not undergone phonological attrition, and it is still an independent word in the cleft in (94-a), but unlike the copula in a declarative focus cleft which can take the negative suffix (97-a), the copula in (94-a) cannot (see (97-b) below). The other two clefts in (94) involving relativization cannot take any inflection either. Sentence (97-b) is only grammatical with negation being marked on the verb in the focus embedded clause, as in (97-c).

- (97) a. Ọ bú-'ghí jí kà Àdá rì-rì n'ùtùtù?
 3SG COP-NEG yam FOC Ada eat-SFX P-morning
 'It is not yam that Ada ate in the morning.'
- b. *Ọ bú-'ghí gí'ní kà Àdá rì-rì n'ùtùtù?
 3SG COP-NEG what FOC Ada eat-SFX P-morning
 lit: 'It is not what that Ada ate in the morning?'
- c. Ọ bù gí'ní kà Àdá ná 'é-rí-ghí n'ùtùtù?
 3SG COP what FOC Ada PRT É-eat-NEG P-morning
 'What did Ada not eat in the morning?'

Even though the copulas in the wh-questions in (94) do not take inflections, it is clear that these copulas have not grammaticalized to focus markers in the questions. A piece of evidence for this is that we still find the focus marker *kà* in (94-a), and this does not in any way look like any of the copulas, nor is it being grammaticalized to a copula in the language. The inability of having inflection on the copula in the wh-questions may be the result of the cleft constructions gradually acquiring some characteristics of a monoclausal structure while still retaining some characteristics of a biclausal one (see Harris and Campbell (1995); van der Wal and Maniacky (2015) on the development from cleft to focus constructions).

3.4.5 Interim summary

In this section, I have shown that Igbo cleft constructions contain different kinds of copulas. I started out by looking at the types of copular clauses, and how they differ. I also considered the two main approaches to copular sentences. I discussed evidence that show that the copula *bú* can function both as a specificational copula and a predicational one. Since *bú* is a copula of specification, it occurs in cleft constructions involving focus movement as they involve sets. The copula *dí*, on the other hand, occurs in *kèdú* clefts which contain a relative clause. Since relative clauses denote properties, we have the predicational copula in this kind of cleft. I suggest that in *òlé'é* clefts, the imperative of the verb *lèé* 'look' in the construction is being grammaticalized to a copula. This contributes to the little body of literature on the grammaticalization path of copulas from the imperative of the verbs 'look' or 'see'.

3.5 Aspects of use

In this section I address the pragmatics of the different wh-question constructions discussed above. There is dialectal variation between the *kèdú* and *òlé'é* questions,

while the former is used by Enugu and Onitsha speakers, the latter is found with the central (Owerri, Ụmụahịa) dialects speakers (Ikekeonwu, 1987). The wh-question with focus movement is used in all the dialects. I show in this section that the wh-questions that involve relativization are also used in discourse linked (D-linked) contexts. I also show that these question forms have a default *where* interpretation.

3.5.1 A survey

In order to establish the difference in the usage of these wh-question types, a study was carried out. A total of nine speakers were interviewed, and they cut across different dialects.¹¹ Speakers were first asked to translate 13 simple questions like *Who ate yam?*, *What did Ada eat?* and *Where did Ada eat?* Out of the 9 speakers, 3 speakers used the wh-question with focus movement, and the other 6 speakers used a combination of the wh-question with focus and *kèdú* construction. I take the fact that speakers use both wh-questions that involve focus and *kèdú* construction interchangeably here to suggest that these two kinds of question can be used in an out-of-the-blue context. No speaker used the *òlé'é* construction, not even participants who speak the central dialect. Participants were also asked to translate 10 D-linked questions such as *Which person ate yam?* and *Which food did Ada eat?* 7 out of the 9 participants used the *kèdú* construction, 1 speaker used a combination of wh-question with focus movement and *kèdú* construction, and the other speaker combined all three forms of question. To further elicit the D-linked context, speakers were asked to judge and select the most appropriate form of wh-question. They were presented with the following *membership in a presupposed set* context, where the speaker presents the hearer with a choice between (at least) two options. The scenario is that your colleagues, *Ngozi* and *Chinua* are outside talking, and while you are leaving the room to go outside, and you have already seen your colleagues outside talking, your boss who is inside the room and does not see the people who are outside asked you to call one of your colleagues outside. For this, speakers were asked to complete the statement in (98) by selecting the best form of wh-question out of the three kinds that asks for *Which one of them would you like me to call?*

- (98) Ṅózí nà Chínùá nò n`rò.
 Ngozi and Chinua COP.LOC P-outside
 ‘Nogozi and Chinua are outside.’

For this, participants can choose more than one form of wh-question. 6 participants went for *kèdú* questions, 3 for *òlé'é* questions and only one participant chose the wh-question with focus movement. Even though no speaker used the *òlé'é* questions in the translation task, a piece of evidence that shows that *òlé'é* question is not only restricted to d-linked context is based on (99), which is an excerpt from the Igbo text *Omenukò*.

¹¹9 native speakers of Igbo were interviewed. Out of whom, there were 3 students and 1 lecturer of Abia State Polytechnic, Aba, 2 were secondary school teachers at Urban Girls Secondary School, Enugu, and 2 artisans and 1 teacher at Dikenafai, Imo State. Data was collected in September 2018. The participants were between the ages of 18 and 64. They were paid for participation.

- (99) Ndi ahụ batara wee juo umu ntakiri ahụ si, “Olee nna unu
 people the enter take ask children small the say where father your
 ukwu?” Ha wee si ndi ahụ batara na ha amaghi ebe ha
 big they take say people the enter that they know.not place they
 gara.
 went
 ‘The people came in and asked the little children saying “Where are your
 fathers?” And they told the people that came in that they don’t know where
 they went.’
 (Pita Nwana, *Omenuko* Official orthography edition. Longman Nigeria, p. 13)

The text is written in the standard Igbo orthography, which is based on the central dialects. Out of the 40 wh-questions in the text, 11 are *òlé'é* questions and 12 are questions with ex-situ focus fronting, and there are no *kèdú* questions. The remaining 17 questions are in-situ wh-questions. These include subject questions, non-subject questions and questions with the wh-word *anịaa* ‘how’, which occurs clause-finally. The data from the study suggests *òlé'é* questions are used more in D-linked contexts, while wh-questions with focus fronting and *kèdú* questions are neutral when it comes to their use in out-of-the-blue context. But *kèdú* questions are also used in D-linked contexts.

3.5.2 Locative interpretation of *kèdú* and *òlé'é* wh-expressions

Here I show that *kèdú* and *òlé'é* constructions have a default locative interpretation when the copula takes a definite DP as complement (see also Nwachukwu (1995) for ‘where’ interpretation of *òlé'é*).¹² I exemplify this with the *kèdú* constructions in (100).¹³ See also the example in (99) for the *òlé'é* wh-question.

- (100) *Locative interpretation*
- a. Kèdú Ada?
 WH.COP Ada
 ‘Where is Ada?’
 - b. Kèdú 'yá?
 WH.COP 3SG
 ‘Where is (s)he/it?’
 - c. Kèdú nwà áhù?
 WH.COP child DET
 ‘Where is the child?’
 - d. Kèdú íhé Àdá sè-rè?
 WH.COP ihe Ada draw-SFX
 ‘What did Ada draw?’

¹²Thanks to Malte Zimmermann and Carla Bombi for discussion of this section.

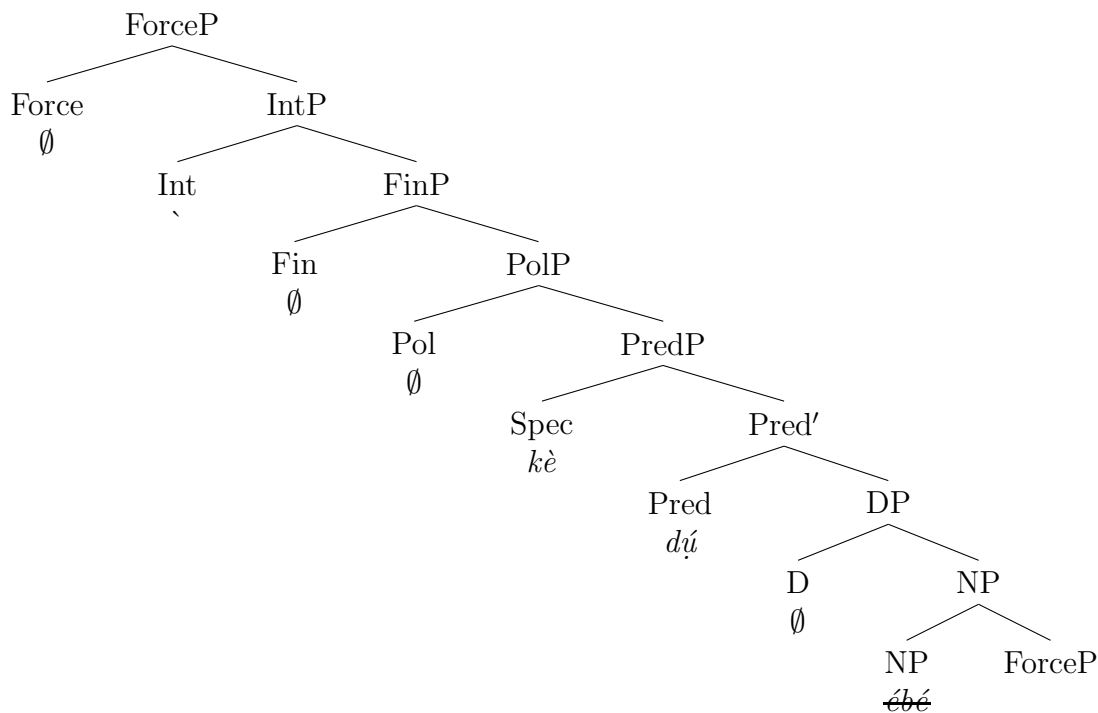
¹³Note that having *kèdú* with a DP or the relative clause complement has a general greeting reading as in (i).

- (i) Kèdú
 WH.COP
 ‘How are you?’ (#‘Where are you?’)

- e. Kèdú íhé áhù Àdá sè-rè
 WH.COP thing DET Ada draw-SFX
 ‘Where is the thing that Ada drew?’

In (100-a) we have a proper name, and in (100-b), there is a pronoun, while (100-c) shows a modified noun. The difference between (100-d) and (100-e) is the occurrence of the definite determiner. It appears that *kèdú* has the general meaning of *where* when it combines with definite DPs, and one gets the other *wh*-meanings when it combines with indefinites. This is not surprising given that indefinites in languages such as Mandarin Chinese can be interpreted as interrogative (with or without a *wh*-question particle) (Cheng, 1997, 96). One way of analyzing the data in (100) with locative interpretation is to propose a silent ‘where’ in the construction (see also Torrence (2013a) proposal of locative *ana* construction in Wolof below). In this case, the silent ‘where’ will function as the relative head noun as proposed for the structure of *kèdú* question in (56) in this chapter. And I assume a rule that allows the deletion of this relative head noun with this deletion restricted only to the indefinite *ébé* ‘where’. In the structure in (101), the relative head noun is projected under a DP since this interpretation is only possible with definites.

- (101) *Structure of wh-question with locative interpretation*



A case in point is the *wh*-drop reported for Bavarian and Dutch, where the *wh*-element in Spec-CP in root clauses can be elided (Bayer, 2010; Torrence, 2013a). Bayer (2010) points out that this is restricted only to ‘what’, the most neutral *wh*-element in these languages.

- (102) *Wh-drop (Bayer, 2010)*
 a. {Wos/~~wos~~} is-n do los?
 what is-prt (t)here on
 ‘What’s going on (t)here?’

Bavarian

- b. {Wat/~~wat~~} zegt-ie?
 what says-he
 ‘What does he say?’

Dutch

But a difference between this kind of wh-drop found in German and Dutch is that in Igbo having the overt indefinite *ébé* ‘where’ in the sentences in (101) is ungrammatical, see (103-a). Also, having just the indefinite *ébé* without *Àdá* or *yá* is also bad as (103-b) shows. Another piece of data showing that definiteness is crucial for this ‘where’ meaning is illustrated in (104). (104-a) is like (103-b) in containing the indefinite *ónyé* ‘person’, and this is ungrammatical. But in (104-b), where a determiner occurs after *ónyé*, the sentence becomes grammatical with the ‘where’ interpretation.

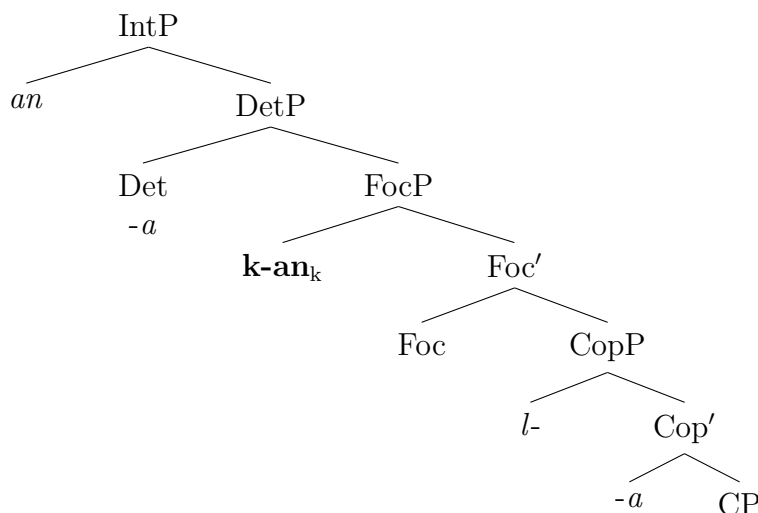
- | | | | |
|-------|--|-------|--|
| (103) | a. *Kèdú ébé Àdá/yá?
WH.COP place Ada/3SG
#‘Where is Ada/3SG?’ | (104) | a. *Kèdú ónyé?
WH.COP person |
| | b. *Kèdú ébé?
WH.COP place | | b. Kèdú ónyé áhù?
WH.COP person DET
‘Where is the person?’ |

That certain wh-constructions tend to have a ‘where’ meaning is not a peculiar case of Igbo. Torrence (2013a), for instance, reports the case of the locative *ana* construction used to ask about location in Wolof. Torrence (2013a) shows that the wh-question particle *an-a* is composed of the wh-marker *an-* and the determiner *a*. When *ana* is followed by a non-wh DP, as in (105-a), the clause is interpreted as, ‘where is DP?’

- (105) *Wolof* (Torrence, 2013a, 94)
- | | |
|----|---|
| a. | An-a mu?
Q _{wh} -DET 3SG
‘Where is he?’ |
| b. | (An-a) k-an mu a lekk gato b-i?
Q _{wh} -DET CL-an 3SG COP eat cake CL-DEF.PROX
‘Who ate the cake?’ |

Torrence argues that the wh-question in (105-a) contains a silent ‘where’, since in questions like (105-b) *ana* is followed by wh-expressions, in the above example *kan*. In the (cleft) wh-question in (105-b), the wh-element *ana* is an optional wh-particle, which occurs to the left of wh-questions. This is followed by the class marker *k* (*ki*-class is the default singular human noun class) and the wh-element *an*. Torrence shows that *k-an* occupies the Spec-FocP position in Wolof. The focus projection then takes a copula phrase as its complement, given that Wolof wh-questions such as those in (105-b) coincide with a copula (Torrence, 2013b). He proposes the following structure in (106) for the wh-question in (105-b). He assumes that clause-initial *an-* is the head of IntP, and this head takes a determiner-like (DetP) complement.

(106) *Structure of Wolof wh-question (Torrence, 2013a, 96)*



We also find cases where the wh-word for ‘where’ is used as a question word in different contexts. For instance, Hausa *inā* ‘where’ functions as a question word in other contexts; see (107) below. In Norwegian, Svenonius and Kennedy (2006) point out that the wh-element *kor* has a locative meaning in the absence of an adjective.

- (107) a. *Īnā sūnan yāròn*
 where name boy
 ‘What is the boy’s name?’ *Hausa (Newman, 2000, 491)*
- b. *Kor gammel er du?*
 where old are you
 ‘How old are you?’ *Norwegian (Svenonius and Kennedy, 2006, 134)*

Similar example to (107-a) is provided in Goldsmith (1981b) for Igbo, see (108). This appears to contradict the locative meaning discussed here but the sentence in (108) also has this locative interpretation. A context is where there is a list of names (say in a register) and the speaker is supposed to sign in front of the names of each participant. Participant A comes forward, and the speaker shows him the register and utters (108). To this question, participant A could response *Lèé áfà m̄* meaning ‘Here’s my name.’

- (108) *Kèdú áfà gí?*
 WH.COP name your
 ‘What is your name?’ *(Goldsmith, 1981b, ex. 13)*

I have considered the aspect of use of wh-questions that are based on relativization in this section. I have shown that these wh-questions are used not only in out-of-the-blue contexts but also in discourse linked contexts. I also showed that these questions have a locative meaning when they combine with definite DPs. Hence, I claim that there is a silent ‘where’ in the structure of *kèdú* and *òlé!é* questions, and finally I compared this to similar wh-questions with locative meaning in other languages.

3.6 Summary

This section started out with the consideration of different strategies of forming wh-questions in Igbo. I showed that the language has a wh-question formation strategy that

involves focus movement of the wh-phrase to the left periphery of the focus projection. In this kind of wh-question, a subject/non-subject asymmetry is observed, where non-subjects move overtly to Spec-FocP, but subjects do not move. For *kèdú* and *òlé'é* wh-questions I argued that they are biclausal and involve a relative clause. I showed that this involve base-generation of the relative head noun that specifies what is being questioned. What is A'-moved within the relative clause is an empty operator, as I argued for a head external analysis of relative clause. I further provided evidence that shows that there is an IntP projected in wh-questions in the language. The Int head is realized by a low tone that surfaces on the initial element in the wh-questions. I also showed that the wh-questions involving relativization have a default *where* interpretation when they combine with definite noun phrases. The role of copulas in the different wh-questions was discussed, where I showed that the copula in wh-question involving focus movement is a copula of specification, while the ones in the questions containing relative clauses are copulas of predication with one of the wh-question type having a copula that is being grammaticalized from the imperative of *lèé* 'look'.

Chapter 4

Reflexes of A'-movement in Igbo

4.1 Introduction

In the previous chapter we have seen that Igbo has several ways to express questions, and most of them involve movement. One argument for movement are reflexes of movement. In this chapter I investigate the empirical evidence that indicates A'-movement in Igbo, viz. reflexes of A'-movement. These are the morpho-phonological effects that are observable along the path of movement. Some of these effects in Igbo are well-known, but their nature is not well understood. Most of these effects are based on tone changes. One of them is the tonal overwriting found in subject relative clauses. This comes in two forms: final high tone on the relativized subject, and downstep tones on the finite verb (Swift et al., 1962; Green and Igwe, 1963; Emenanjo, 1978). A similar final tonal overwriting is also found on crossed over subjects (for a recent discussion, see Manfredi (2018) and references cited therein). Another effect which is often neglected is the presence of a particle found in relative clauses containing negation (Green and Igwe, 1963; Igwe and Green, 1964; Goldsmith, 1976; Nwachukwu, 1976). A final A'-movement effect which I discuss pertains to the perfective morphology. I show that extraction out of clauses with the perfective morphology is not allowed. The present study is significant in the following ways. First, I show that all these effects arise under A'-movement in general, and are not specific properties of relative clauses as it has always been claimed in the descriptive literature on the language. (Exceptions to this are Robinson (1974) cited in Tada (1995), and Manfredi (2018) who observe that the final high tone on the subject under non-subject A'-extraction cuts across all A'-movement dependencies.) This is because it is found in other A'-constructions and also when the movement is unbounded. Secondly, the present study unifies the final high tone on the subject under (local) subject relative clauses and crossed over subjects under A'-movement. Thirdly, the study provides a detailed account for the downstep tone on the finite verb under subject relativization and shows that this is not a quirk of subject relativization but of subject extraction in general (see also Amaechi and Georgi (2019)). The study also develops an analysis of the particle *ná* found in negative clauses out of which movement has taken place. Finally, I suggest an analysis for the extraction restriction found in the perfective construction. This chapter is organized as follows: Section 4.2 presents an overview of properties of A'-movement and cyclicity effects. The analysis of the downstep tone on the finite verb under subject extraction is presented in Section 4.3. Section 4.4 gives an account of the final high tone on the subject under subject and non-subject extraction. Section 4.5 contains

the account of the particle *ná* under movement from negative clauses, while Section 4.6 investigates the perfective restriction. Section 4.7 summarizes and concludes the chapter.

4.2 A'-movement and cyclicity effects

A'-movement operations have been shown to be fundamentally different from A-movement. For instance, unlike A-movement, A'-movement exhibits reconstruction effects and weak cross-over, licenses parasitic gaps, etc. (for an overview see van Urk (2015)). An important property of A'-movement is that it is unbounded (Ross, 1967), that is, it can apply long-distance out of finite clauses. For instance in (1), the object of the deeply embedded clause is wh-moved to the left edge of the matrix clause.

- (1) [What_i do you think [that John believes [that Bill bought ___i]]]?

Under phase theory, where vPs and CPs are considered as phases, movement such as that in (1) is assumed to proceed successive-cyclically, making a stop at the vPs and CPs phase edges (Chomsky, 2000, 2001).

- (2) [CP What_i do you [vP ___i think [CP ___i that John [vP ___i believes [CP ___i that Bill [vP ___i [vP bought ___i]]]]]]] ?

There has been a lot of cross-linguistic empirical evidence to show that movement indeed makes these steps along the path of movement. These are the so-called reflexes of movement, that is, the marks of successive-cyclicity (Boeckx, 2008). There are phonological, morphological, syntactic and semantic reflexes in this regards (for an overview, see Boeckx (2008) and Chapter 2 of Georgi (2014)). An example of phonological evidence is tonal overwriting in Asante Twi. Korsah and Murphy (2019) report a process of tonal overwriting on verbs that are crossed over by A'-movement in Asante Twi. This is exemplified in (3) below with wh-questions. In a simple declarative clause, such as (3-a), the syllables of the verb are low-toned, but under wh-movement (3-b), the low tones become high. Korsah and Murphy also observe that this tonal overwriting is present under long-distance extraction, where all the verbs crossed over by the moving XP surface as high tones. In (3-d), we see high tones on both the matrix and the embedded verb under wh-movement. (3-c) is the declarative counterpart of (3-d), and here the verbs have low tones.

- (3) *Tone overwriting in Asante Twi (Korsah and Murphy, 2019, ex. 1 & 4)*
- a. Ám¹má **kíta** bayéré.
Ama hold yam
'Ama is holding yam.'
 - b. Déén_i na Ám¹má **kítá** ___i ?
what FOC Ama hold
'What is Ama holding?'
 - c. [CP Kofi **kaé** [CP sɛ Ám¹má **kíta** bayéré.]]
Kofi remember that Ama hold yam
'Kofi remembers that Ama is holding a yam.'
 - d. [CP Déén_i na Kofi **kaé** [CP sɛ Ám¹má **kítá** ___i ?]]
what FOC Kofi remember that Ama hold
'What does Kofi remember that Ama is holding?'

Another tonal reflex, viz., downstep deletion has also been reported for Kikuyu (Clements et al., 1983; Clements, 1984). Kikuyu is also interesting in the sense that we find also a morphological reflex in the language with regards to negation. Clements (1984) reports that under A'-movement out of negative clauses, the negative prefix /-ti¹-/ is replaced by /-tá-/. This is in addition to the change on the form of the initial noun class prefix on the verb (Clements, 1984).¹ The example in (4-a) is an affirmative sentence, and (4-b) is the corresponding negative sentences while (4-c) illustrates subject extraction corresponding to (4-b).

- (4) *Negative marker replacement in Kikuyu (Clements, 1984, 40)*
- a. ka-aná yá-tém-íré mo-té¹
CP-child SP-cut-T CP-tree
'The child cut a tree.'
 - b. ka-aná yá-tí-ná-tém-¹á mo-te
CP-child SP-NEG-T-cut-T CP-tree
'The child didn't cut a tree.'
 - c. nó-o o-ta-ná-tém-á mo-te
FP-who PP-NEG-T-cut-T CP-tree
'Who didn't cut a tree?'

This case of Kikuyu illustrates morphological evidence for movement in the verbal domain. A well-known case (of a morphological reflex) that we see in the C domain is the complementizer alternation in Irish (McCloskey, 1979, 2001, 2002). Under A'-movement, the default form of the complementizer *go* (5-a), is replaced by the form *a* (5-b). In the following example (5-a), the *go* form changes to *gu* when it is combined with the past tense marker *-r*.

- (5) *Complementizer alternation in Irish (McCloskey, 2001, 67)*
- a. Deir siad **gur** ghoid na síogaí í.
say they *go*[PAST] stole the fairies her
'They say that the fairies stole her away.'
 - b. an ghirseach **a** ghoid na síogaí ____
the girl aL stole the fairies
'the girl that the fairies stole away'

The same effect is also present in long-distance dependencies (6). An interesting fact about Irish is that the *a* form only occurs in clauses that have been crossed over by a moving XP. In (6-a) where the XP is extracted from the most deeply embedded clause, the form of the complementizer is *a* in all the crossed over clauses. (6-b) shows that if an XP is moved from within a clause, the form of the complementizer only changes in this clause but not in clauses embedded in it. In the embedded clause, we see the declarative complementizer *go*.

¹See also Diercks (2010) for different markers of negation in extraction and non-extraction contexts in Lubukusu.

- (6) *Complementizer alternation in Irish (McCloskey, 1979, 54,151)*
- a. [CP an t-ursceal **a** mheas me [CP **a** duint se [CP **a** thuig se ___
the novel a^L thought I a^L said he a^L understood he ___
]]]
- ‘the novel that I thought he said he understood’
- b. [CP an fear **a** shíl [CP ___ **go** mbeadh sé ann]]
the man a^L thought go would.be he there
‘the man that thought he would be there’

Some other examples of morphological reflexes in the C domain are agreement with A'-moved XPs in Kinande (Schneider-Zioga, 1995) and complementizer agreement in Wolof (Torrence, 2012, 2013a). The above examples show that reflexes of movement are observed on different elements in the clause structure. Languages also make use of different patterns when it comes to indicating where in the structure we see these reflexes. The Asante Twi data in (3) in this section illustrate that the reflex occurs in every clause that is crossed over by the moving wh-XP. There are also languages where the reflexes are found only in the clause in which the XP surfaces, and in some other languages we see the reflex only in the clauses that have been crossed over but not in the clause where the XP appears. And there are also languages where we see no reflex at all. See Georgi (2014) for a detailed study of patterns of reflexes of movement and analyses thereof.

In this work, I will show that Igbo exhibits both phonological (tonal) and morphological reflexes of movement in the C domain, and that these reflexes display different patterns. I also argue that the reflex in C sometimes interact with elements in the TP. A case in point is the downstep tone on the finite verb under subject extraction to which I now turn to in the next section.

4.3 Tone on the finite verb under subject extraction

Subject relativization in Igbo has received a lot of attention over the years (Swift et al., 1962; Green and Igwe, 1963; Welmers and Welmers, 1969; Goldsmith, 1976, 1981b; Nwachukwu, 1976; Emenanjo, 1978). This is as a result of the special tone pattern that is observed on the verb when subjects are relativized. The nature of this tonal process is still poorly understood as most of the previous literature assumes that this tone overwriting on the verb is a construction-specific quirk of relative clauses. I will show that these special tones on the verbs do not just signal subject relativization, rather they indicate subject extraction in general in the language (see also Amaechi and Georgi (2019)). This is because the tone pattern observed in the subject relative clauses are also found under long-distance subject extraction with no relative clause structure. In this section, I first present a brief overview of the tone patterns of the verb morphology in a simple declarative sentence. Section 4.3.2 outlines the tone on the verb under subject extraction, and in Section 4.3.3 I consider the nature of the tone overwriting and provide an analysis.

4.3.1 Verb morphophonology

In this section I consider the Igbo verb morphophonology relevant for the discussion of tone overwriting under subject extraction. This section is based on previous literature on verbal morphophonology of the language (Green and Igwe, 1963; Emenanjo, 1978; Nwachukwu, 1983a; Clark, 1990; Manfredi, 1991; Déchaine, 1993; Nwachukwu, 1995). Igbo verbs are often high (H) or low (L) toned with a CV syllable structure, and tone has been a basis of classification of verbs and nouns in the language.² The verbs in (7) are high tone verbs (HTVs), while those in (8) belong to the low tone verb (LTV) class.

- | | | | |
|-----|------------------------|-----|-------------------------|
| (7) | <i>High tone verbs</i> | (8) | <i>Low tone verbs</i> |
| | a. rí ‘eat’ | | a. ch̀è ‘think’ |
| | b. nyé ‘give’ | | b. ẁè ‘take’ |
| | c. zá ‘answer’ | | c. z̀à ‘sweep’ |
| | d. sá ‘wash’ | | d. kp̀ù ‘hold in mouth’ |

Igbo exhibits a very high inflectional morphology in its verbal system, and a number of tonal changes are also observed on the verb, as well as on the various affixes that attach to it. In most cases, both tones and affixes indicate the form of the verb in several tense and aspect constructions, and other morphosyntactic processes. In simple declarative sentences such as (9) and (10), the verb (often an eventive verb) takes one of the so-called *-rV* suffixes (which I gloss here as SFX). In the construction, regardless of the tone class of the verb, both the verb root and the suffix surface with low tones. The verb in (9) *rí* ‘eat’ belongs to the HTV class, and *z̀à* ‘sweep’ in (10) is a member of the LTV class.

- | | | | |
|-----|--|------|--|
| (9) | Àdá r̀i-r̀i jí.
Ada eat-SFX yam
‘Ada ate yam.’ | (10) | Àdá z̀à-r̀à ̀l̀ò.
Ada sweep-SFX house
‘Ada swept the house.’ |
|-----|--|------|--|

The *-rV* suffix is made up of the consonant *r*, and *V*, which is a copy of the vowel of the preceding verb stem. The suffix is toneless as it copies the tone of the verb to which it attaches to. With some verbs (often stative verbs) (Nwachukwu, 1983a, 1984), the verbs are L toned without the suffix regardless of the tone class of the verb. The verb in (11) is a HTV, while that in (12) is a LTV.

- | | | | |
|------|---|------|--|
| (11) | Òbí mà yá.
Obi know 3SG.ACC
‘Obi knows it.’ | (12) | Òbí k̀ù ̀ǹwá.
Obi carry child
‘Obi is carrying a baby.’ |
|------|---|------|--|

Déchaine (1993) observes that the suffix never co-occurs with other inflectional material in the language. And it appears to be obligatory whenever overt aspect or modality is absent. In terms of its semantic content, there are different opinions. Native speaker linguists like Nwachukwu, Emenanjo and Uwalaka glossed the suffix as a past tense marker, while Manfredi (1997) argues that it is a default inflection, and marks the

²There is a third tone class high-low (HL) attested in some dialects. In two-tone-class dialects, HL tone verbs merge with H tone verbs in some contexts, and in other contexts they merge with L tone verbs (Déchaine, 1993; Nwachukwu, 1995).

verb as finite.³ Déchaine (1993) suggests that it might be a kind of default factative marker in affirmative clauses. One of the main arguments against referring to the suffix as a past tense marker is that it has an unambiguous temporal interpretation —with eventive verbs such as (9) and (10), it is past; and with a stative verbs (13) and (14), it is non-past.

- | | | | | | |
|------|----------------------|--------|------|-----------------------------------|-------|
| (13) | Àdá mà-rà | ímma | (14) | Àdá nwè-rè | égo |
| | Ada be.beautiful-SFX | beauty | | Ada have-SFX | money |
| | ‘Ada is beautiful.’ | | | ‘Ada has money.’ / ‘Ada is rich.’ | |

Note that I do not consider verbal compounds as well as verbal auxiliaries in this study. I concentrate on clauses with only a lexical (finite) verb in simple basic affirmative clauses. These are verbs with a CV syllable structure. I consider negative clauses in Section 4.5.

4.3.2 Tone change under subject extraction

This section focuses on the tone overwriting under subject extraction. I show that this is not a property of relative clauses but of subject A'-movement in general. I illustrate this with long-distance A'-dependencies. I also show that the reflex is A'-movement related as the dependencies that the reflex shows up in exhibit movement properties.

4.3.2.1 Basic verb tone pattern in subject relativization

It has long been observed that the tones on the verb under subject relativization are different from those on the verb in simple declarative clause. Based on this, one can tell whether the element that is being relativized is a subject or a non-subject. Under subject relativization, the low tones on the verbs (and the suffix) in (9) and (10) in Section 4.3.1 surface as downstep (indicated here as ^{!á}). Earlier descriptive literature considers this form of the tone on the verb as the subject relative tone (Green and Igwe, 1963; Igwe and Green, 1964).⁴ Consider the examples in (15) below. Note that both HTVs and LTVs have the same downstep under subject relativization.

- (15) *Subject relative clauses*
- | | | | |
|----|--|-------|---------|
| a. | Nwá ^{!rí-!rí} jí | sà-rà | éfééré. |
| | child eat-SFX yam wash-SFX plate | | |
| | ‘The child that ate yam washed the plate.’ | | |
| b. | Nwá ^{!zá-!rá} ùlò | sà-rà | éfééré. |
| | child sweep-SFX house wash-SFX plate | | |
| | ‘The child that swept the house washed the plate.’ | | |

A reason for tagging this tone change as relative tone is that the tone overwriting is not observable when a subject is (locally) questioned, focused or topicalized (Robinson (1974) cited in Tada (1995)), as shown in (16).

³Over the years the affix has been glossed differently, as past (tense) (Emenanjo, 1978; Déchaine and Manfredi, 1998; Ezè and Manfredi, 2001), aspect (Manfredi, 1995, 1997) finite (Manfredi, 2009) or simply as affix/suffix (Manfredi, 2005, 2011).

⁴In the traditional literature, subject relative clauses are referred to as relative A and non-subject relative clauses as relative B, and the downstep tones were called mid tones (Green and Igwe, 1963; Igwe and Green, 1964). But later studies on tone have shown that the tones are not mid but downstep tones.

- (16) a. Ònyé rì-rì jí?
 who eat-SFX yam
 ‘Who ate yam?’ *wh-question*
- b. Àdá, ó rì-rì jí.
 Ada 3SG eat-SFX yam
 ‘As for Ada, she ate yam.’ *topicalization*

The examples in (17) below illustrate that the downstep tones are a property of only subject relative clauses as they are absent under non-subject relative clauses. Sentence (17-a) exemplifies object relativization and (17-b) is relativization of an adjunct.

- (17) *Non-subject relative clauses*
- a. jí Àdá rì-rì
 yam Ada eat-SFX
 ‘the yam that Ada ate’
- b. áhíá Àdá zù-rù jí
 market Ada buy-SFX yam
 ‘the market that Ada bought yam’

4.3.2.2 Long-distance dependencies

A look at sentences with embedded clauses shows that this tonal reflex on the verb is not a quirk of subject relative clauses. The reflex is attested under all (long-distance) A'-movement dependencies that involve the subject (18). Sentence (18-a) is the baseline declarative sentence, and sentences (18-b-g) illustrate long-subject extraction using the A'-movement constructions discussed in the preceding Chapters 2 and 3.

- (18) *Long-distance subject extraction*
- a. Òbí chère nà Àdá rì-rì jí.
 Obi think-SFX that Ada eat-SFX yam
 ‘Obi thinks that Ada ate yam.’ *baseline*
- b. Ònyé kà Òbí chère-ré ___ 'rì-'rì jí?
 who FOC Obi think-SFX eat-SFX yam
 ‘Who does Obi think that ate yam?’ *wh-question*
- c. Àdá kà Òbí chère ___ 'rì-'rì jí.
 Ada FOC Obi think eat-SFX yam
 ‘Obi thinks that ADA ate yam.’ *focus*
- d. ónyé Òbí chère-ré ___ 'rì-'rì jí
 person Obi think-SFX eat-SFX yam
 ‘the person that Obi thinks that ate yam’ *relative clause*
- e. Ó bù Àdá kà Òbí chère-ré ___ 'rì-'rì jí.
 3SG COP Ada FOC Obi think-SFX eat-SFX yam
 ‘It is Ada that Obi thinks that ate yam.’ *cleft*
- f. Kèdú ónyé Òbí chère-ré ___ 'rì-'rì jí?
 WH.COP person Obi think-SFX eat-SFX yam
 ‘Who does Obi think that ate yam?’ *kèdú question*
- g. Òlé'é ónyé Òbí chère-ré ___ 'rì-'rì jí?
 WH.look person Obi think-SFX eat-SFX yam
 ‘Who does Obi think that ate yam?’ *òlé'é question*

The same effect is present under long subject extraction from clauses with two levels of embedding as shown in (19) below. The examples in (19-b&c) show that the tonal reflex is found in the clause where the subject is extracted from. In (19-b), the subject is A'-moved from the final clause and this is where we see the downstep tones, while in (19-c), the subject XP is moved from the intermediate, hence the tonal reflex is on the verb of the intermediate clause.

- (19) a. Òbí chè-rè [CP nà Úchè mà [CP nà Àdá rì-rì jí.]]
 Obi think-SFX that Uche know that Ada eat-SFX yam
 'Obi thinks that Uche knows that Ada ate yam.'
- b. Ònyé kà Òbí chè-rè [CP nà Úché má [CP ___ 'rì-'rì jí?]]
 who FOC Obi think-SFX that Uche know eat-SFX yam
 'Who does Obi think that Uche knows that ate yam?'
- c. Ònyé kà Òbí chè-ré [CP ___ 'má [CP nà Àdá rì-rì jí?]]
 who FOC Obi think-SFX know that Ada eat-SFX yam
 'Who does Obi think knows that Ada ate yam?'

The reflex is not found under long-distance topicalization (20) just as it is absent in local topicalization (cf. (16-b)). An explanation for this is that topicalization unlike the A'-dependencies illustrated in (18) involves base-generation and not movement (Georgi and Amaechi, 2019). The *that*-trace effect (Pesetsky and Torrego, 2001; Douglas, 2017; Pesetsky, 2017), that is, the incompatibility of the embedding complementizer with a following subject gap, can be repaired by (a) dropping the complementizer (*nà*, as illustrated in (19)), or (b) by using a resumptive pronoun in the embedded subject position (see Uwalaka (1991) and Amaechi and Georgi (2019) for discussion of the *that*-trace in Igbo). The data in (20-b) demonstrate that in cases where there is a resumptive pronoun in the extracted subject position, the reflex is also absent. In the two sentences in (20) the verb in the embedded clause bears low tones.

- (20) a. Àdá, Òbí chè-rè nà ó rì-rì jí.
 Ada Obi think-SFX that 3SG eat-SFX yam
 'As for Ada, Obi thinks that she ate yam.' *topicalization*
- b. Ònyé kà Òbí chè-rè nà ó rì-rì jí?
 who FOC Obi think-SFX that 3SG eat-SFX yam
 'Who does Obi think that s/he ate yam?' *that-trace effect*

If this is a reflex of A'-movement, why is it absent in local subject questions / subject focus? Amaechi and Georgi (2019) argue that a local wh-/focus subject does not move but stays in-situ. Hence, we do not get the reflex on the verb under local wh-/focus (cf. (16-a)). But they provide evidence from long-distance displacement that show that non-local wh-/focus subject indeed moves. Apart from the more obvious fact that the wh-/focus subject phrase is displaced to the left edge of the matrix clause, and this is followed by the focus marker, the verb in the embedded clause surfaces with downstep tones (cf. (18)).

So far we have seen that the tone overwriting on the verb is not a property of only subject relative clauses but occurs in all overt A'-subject movement dependencies without resumption. We have also seen that the distribution of the reflex is such that it is indicated only in the clause where the subject XP that triggers this reflex originates from but not in the clauses that have been crossed over nor in the clause the XP lands in.

4.3.2.3 Movement properties

Here I present classic movement tests to show that the tone overwriting on the verb under subject extraction is indeed a reflex of A'-movement in the language. The data in (21) illustrate that the dependencies that exhibit the tone overwriting on the verb are sensitive to islands such as CNPC and adjunct islands. In (21-a) we have an object relative clause, and (21-b) demonstrates that extracting the subject of this object relative clause is illicit. Example (22) shows that extracting a subject out of an adjunct results in ungrammaticality. Note that in the adjunct clause, even with downstep tones on the verb, the sentence is still not acceptable. Also note that deleting the complementizer in (22-b) does not in any way improve the sentence.

(21) *CNPC-island*

- a. Òbí hù-rù jí [OP_i Àdá rì-rì ____i.]
 Obi see-SFX yam Ada eat-SFX
 'Obi saw the yam that Ada ate.'
- b. *Ònyé kà Òbí hù-rù jí [OP_i ____j 'rì-'rì ____i]?
 who FOC Obi see-SFX yam eat-SFX
 Lit: 'Who did Obi see the yam that ate?'

(22) *Adjunct island*

- a. Àdá sù-rì ófé [màkà nà Òbí sù-rù ákpù.]
 Ada cook-SFX soup because that Obi pound-SFX fufu
 'Ada prepared soup because Obi pounded fufu.'
- b. *Ònyé kà Àdá sù-rì ófé [màkà nà ___ 'sù-'rù ákpù?]
 who FOC Ada cook-SFX soup because that ___ pound-SFX fufu
 Lit: 'Who did Ada prepare soup because pounded fufu?'

The reconstruction effect illustrated in (23) and strong cross-over in (24) provide further evidence that these dependencies involve movement. The bound reading of the pronoun requires that it is c-commanded by the quantified XP; this can only hold in (23-b) when the fronted XP reconstructs into its base position. The strong cross-over effect in (24-b) indicates that the extracted XP cannot be coreferent with the matrix clause subject pronoun, as this is usually considered to be a Principle C effect.

(23) *Variable binding*

- a. Nwáànyì òbùlà_i chè-rè nà [DP nwá 'yá_i] gà-émé-rí.
 woman every think-SFX that child 3SG FUT-NMZL.do-eat
 'Every woman thinks that her child wild win.'
- b. [DP Nwá 'yá_i] kà nwáànyì òbùlà_i chè-ré gá-émé-rí.
 child 3SG FOC woman every think-SFX FUT-NMZL.do-eat
 'Every woman thinks that HER CHILD wild win.'

(24) *Strong cross-over*

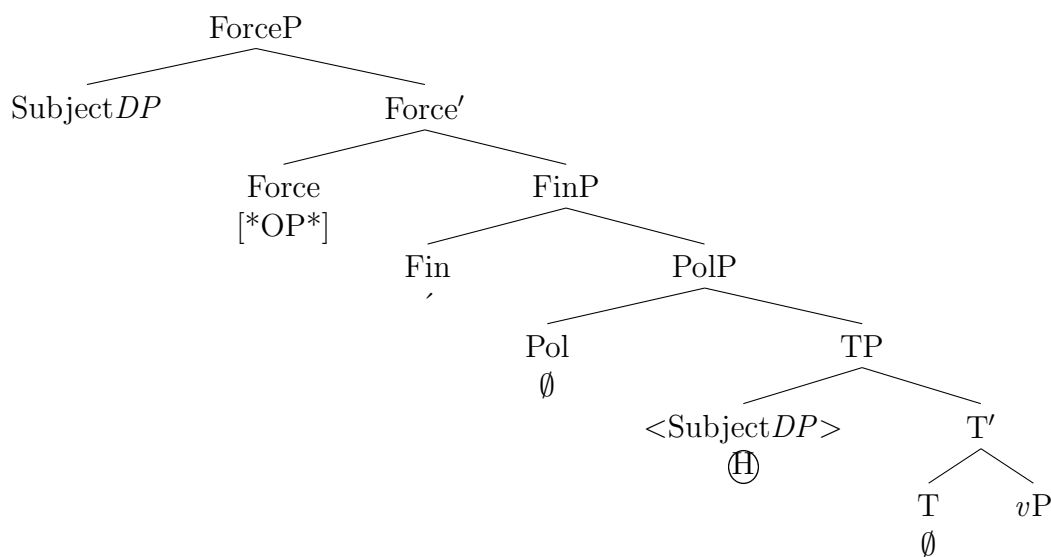
- a. Ó chè-rè nà Àdá rì-rì jí.
 3SG think-SFX that Ada eat-SFX yam
 'She thinks that Ada ate yam.'
- b. Ònyé kà ó chè-ré ___ 'rì-'rì jí.
 who FOC 3SG think-SFX eat-SFX yam
 *for which x, x thinks that x ate yam
 ✓for which x, y thinks that x ate yam

In the following section, I provide an account for the downstep tone under subject extraction.

4.3.3 The nature of tone overwriting

I argue in this section that the downstep tone on the verb is an instantiation of an interaction between Spec-TP and Fin in the C domain (which I discuss in the next Section 4.4). Previous studies have focused on the downstep tone attested in subject relative clauses and other constructions involving relative clauses (Goldsmith, 1976, 1981b; Nwachukwu, 1976). These studies have not been adequate in capturing and accounting for this tone overwriting, which is also found under long-distance subject extraction in other A'-movement dependencies. Goldsmith (1976) proposes a preverbal floating H tone which precedes the verb stem in relative clauses, and that the verb stem has downstep tone. Nwachukwu (1976), on the other hand, postulates that the tone of the verb stem in subject relativization is downstep in relation to the preceding NP 'which invariably ends on a H tone' (p.102). I suggest that these two tone configurations in subject relativization —the downstep tone on the verb and the final high tone on the relative head noun are two independent tones spelling out different syntactic heads. I will argue in Section 4.4 that the final high on the relative head noun is a reflex of Fin when an XP moves to the specifier of Force or Foc, while the downstep tone on the verb signals subject extraction. I assume that there is a floating H tone (represented in (25) as \textcircled{H}) in subject Spec-TP position when subjects are extracted. This is based on the standard EPP, the requirement that clauses have a subject (Rizzi and Shlonsky, 2007). The H tone realizes a gap in Spec-TP (which arises when the subject has moved away. This is not the case in local subject questions (because they remain in Spec-TP), hence no H tone is found. In the structures below < > indicates lower copies/traces that are not pronounced.

(25) *Floating H tone of Spec-TP*



Following the EPP assumption, the floating H tone (25) can be viewed as satisfying the EPP feature on T but since there is no segmental element to bear the floating tone, the tone moves rightward and appears on the closest verbal element, overwriting the low tones on the verb. The *that*-trace example illustrated in (20-b) in Section

4.3.2.2 provides support for this claim. The data demonstrate that when there is a (resumptive) pronoun present in Spec-TP, the tone is absent. This is expected because there is no gap in the subject position. Further evidence bearing on the idea that the H tone in Spec-TP spells out the trace of subject comes from subextraction from the subject. In Igbo, extraction is allowed from certain DPs in subject position. One example is subextraction of a conjunct (26) with a resumptive pronoun inside the conjunct phrase. This is expected given that what we have in the subject position is not a gap. Hence, no downstep tone on the verb, see (26-b).

(26) *No downstep on the verb under subextraction from the subject DP*

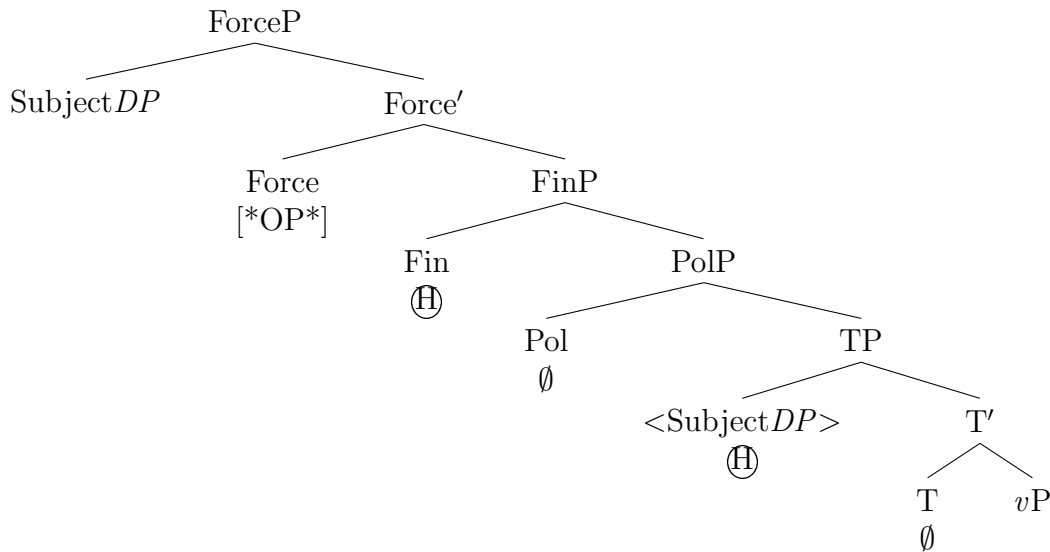
- a. Úchè chè-rè nà [Òbí nà Àdá] rì-rì jí.
 Uche think-SFX that Obi and Ada eat-SFX yam
 ‘Uche thinks that Obi and Ada ate yam.’
- b. Ònyé_i kà Úché chè-rè nà [yá_i nà Àdá] rì-rì jí?
 who FOC Uche think-SFX that Obi and Ada eat-SFX yam
 lit: ‘Who did Uche think that him and Ada ate yam?’

With the idea that it is the floating H tone in Spec-TP that overwrites the tone on the finite verb under subject extraction, the question remains how this H tone surfaces as downstep on the verb, and not as a H tone. I argue that this downstep is a phonetic realization of the interaction of the H tone now on the verb, and the H tone that spells out the Fin head, that is, the final high tone on the relativized head noun (that I will discuss in Section 4.4). There are four reasons why a floating H tone and not a floating L tone, for instance, is assumed to occupy Spec-TP. First is that a floating L tone associating with the L tone on the finite verb could not possibly trigger a downstep tone, at least no such tone pattern has been reported for any language to the best of my knowledge. The second reason is that when one takes a look at the auxiliaries under subject extraction in the language, what surfaces on the auxiliaries is a H tone not a low or downstep tone, see (27).

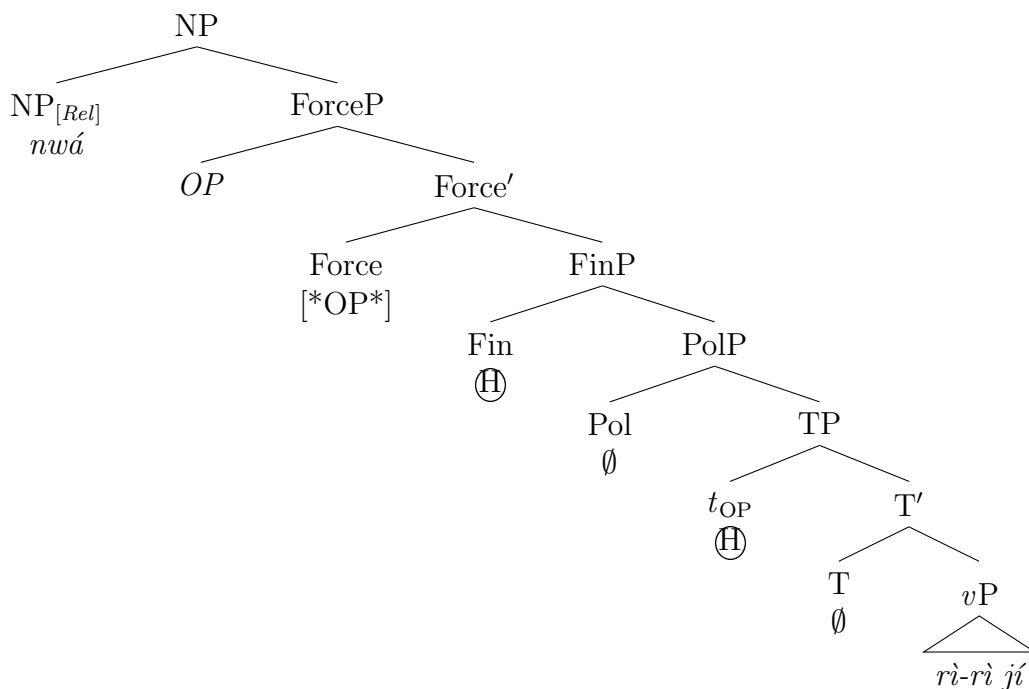
- (27) a. Òbí mà nà Àdá gà-èrí jí.
 Obi know that Ada FUT-NMZL.eat yam.GEN
 ‘Obi knows that Ada will eat yam.’
- b. Ònyé kà Òbí má gá-éí jí?
 who FOC Obi know FUT-NMZL.eat yam.GEN
 ‘Who does Obi think will eat yam?’

The third (indirect) argument is that under long-subject dependencies with resumption (cf. (20-b)), the resumptive pronoun in the original base position of the wh-subject bears a H tone and not a low that is associated with questions (see Chapter 3 for treatment of the interrogative low tone).

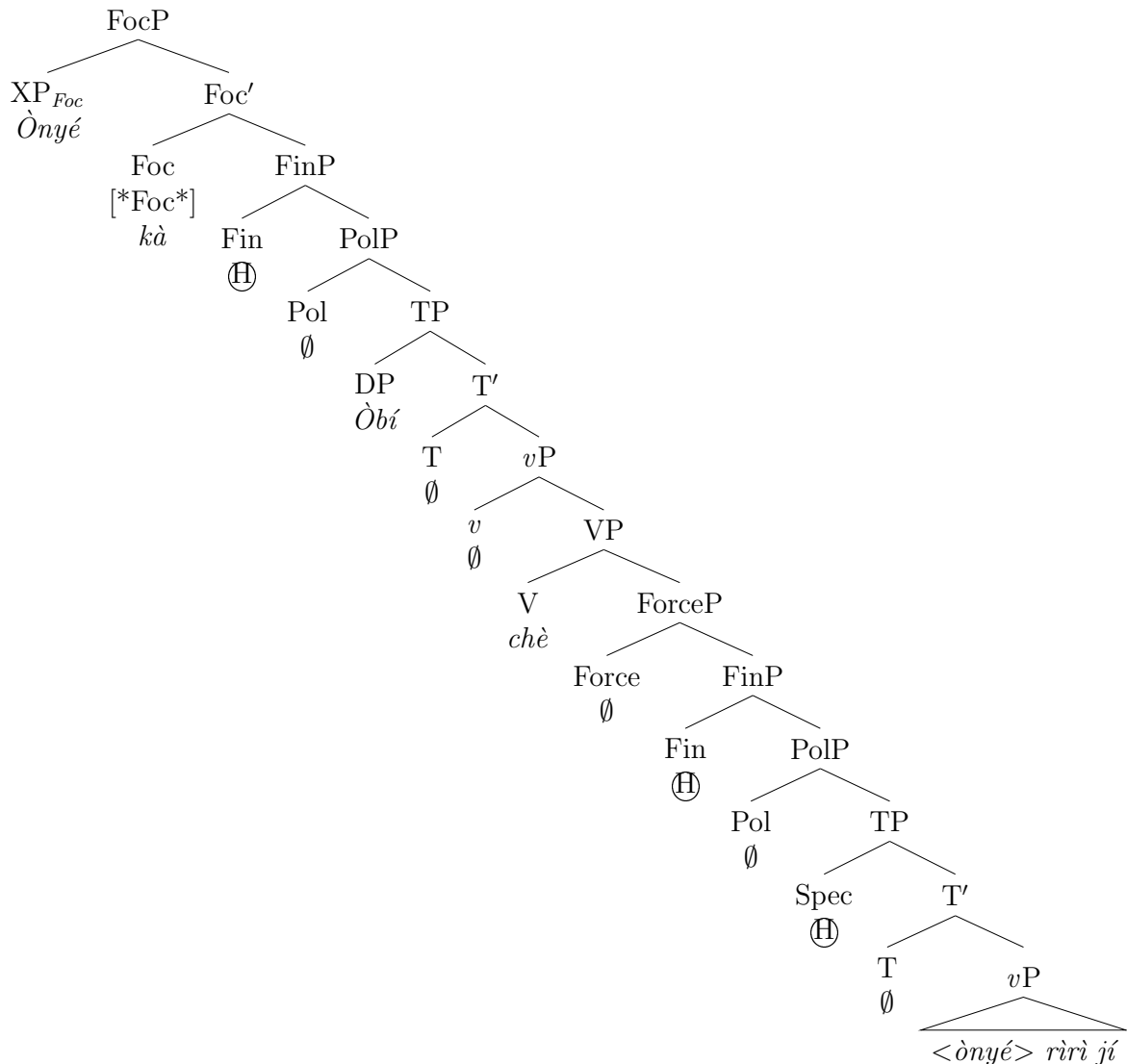
I propose that the subject floating H tone overwrites the L tone on the verb, and the surface downstep on the verb is triggered by the preceding H tone in Fin (cf. (28)) as a phonetic effect. I argue in Section 4.4 that a floating H tone realizes Fin when an XP moves overtly to Spec-FocP or Spec-ForceP.

(28) *Floating H tone in Fin and Spec-TP*

The structure in (29) is for the subject relative clause in (15-a) in Section 4.3.2.1. Recall from the discussion in the preceding Chapters 2 and 3 that I assume that what moves in a relative clause is an empty operator. And this movement is obligatory in relative clauses (required to trigger predicate abstraction), hence a relative subject operator (but not a local *wh*-/focus subject) moves to Spec-ForceP. In (29), this empty operator moves from its base subject position, Spec-TP to Spec-ForceP in a split CP approach assumed in the present study, and this triggers the floating H tone in the base subject position.

(29) *Subject relative clause*

I assume the following structure for long-subject *wh*-extraction since a local *wh*-subject does not move. The structure is for sentence (18-b).

(30) *Long-distance wh-subject movement*

I assume that there is a Force projection in the embedded clause, and in addition, a Fin projection (see further arguments for the floating H tone of Fin in Section 4.5). This is necessary for the downstep reflex on the verb in the embedded clause. I follow Amaechi and Georgi (2019) in assuming that Foc is not projected in embedded clauses.⁵

The idea that languages adopt different ways of marking the subject position under extraction (which are different from those used for objects) is not new. Some strategies of subject extraction have been reported for related languages. For instance, in Yoruba (Carstens, 1986; Pulleyblank, 1986a; Adesola, 2005) and Vata (Koopman and Sportiche, 1986), resumptive pronouns are in the preverbal subject position under wh-subject movement as exemplified in (31) and (32) but for non-subject movement there

⁵Amaechi and Georgi (2019) argue that there is neither a Focus Projection in embedded clauses nor a Force projection. The embedded clause in long-subject dependencies is a TP (Grimshaw, 1997). This is based on the argument that Igbo lacks embedded wh-questions (Goldsmith, 1981b), and in addition, the embedded complementizer *nà* is absent in this dependency (cf. (18)). A problem for this proposal is that there will be no H tone of Fin necessary for the phonetic implementation of the downstep on the verb in the present analysis.

is no resumptive pronoun, only a gap.

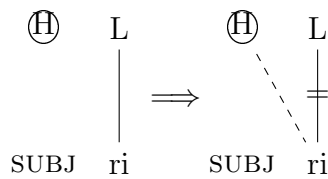
- (31) *Yoruba (Adesola, 2005, 91,133)*
- a. Ta ni **ó* ra isu?
 who be he buy yam
 ‘Who bought yam?’
- b. Kí ni Àjàyí rà ___?
 what be Ajayi buy
 ‘What did Ajayi buy?’
- (32) *Vata (Koopman and Sportiche, 1986, 360-361)*
- a. àló ò nù mí là?
 who he did it WH
 ‘Who did it?’
- b. yī Kòfí nù ___ là?
 what Kofi did WH
 ‘What did Kofi do?’

Adesola (2005) argues that the (non-agreeing) subject resumptive pronoun *ó* in (31-a), which is present in wh-/focus constructions occurs because a null operator cannot satisfy the EPP requirement of T. The inability of T to attract a null operator into its specifier position forces the insertion of an expletive pronoun in subject position, to satisfy the EPP. In the next section, I provide an analysis for the downstep on the finite verb in Igbo as well as the derivation in structural terms.

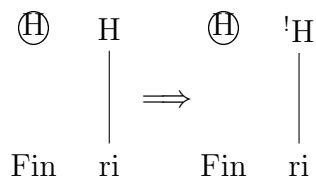
4.3.4 Analysis of the downstep

Analyses of downstep tones in most tone languages have either assumed that the source of downstep is an unassociated floating L tone wedged between two H tones, or that there is no floating L tone involved in downstep but instead, downstep is simply the phonetic realization of a sequence of H tones (see Pulleyblank (1986b); Gussenhoven (2004); Yip (2002); Paster and Kim (2011); Zimmermann (2017) and references cited therein). Following Clark (1990), I adopt the latter analysis for the downstep tone on the verb under subject extraction in Igbo.⁶ I propose that the downstep occurs as a result of the succession of the H tone in Fin (see Section 4.4) and the H tone in Spec-TP, which docks on the following verbal element. Recall from Section 4.3.1 that the *-rV* suffix lacks an inherent tone and only copies the tone of the verb stem (Déchaine, 1993), hence I illustrate with only the verb stem. The tree structures in (29) and (30) are the outcome of syntax, after the H tone is inserted into Spec-TP; (33) illustrates what happens in the (postsyntactic) phonological component, that is, tone overwriting; and (34) is the phonetic interpretation of the output of phonology in (33). The autosegmental representation in (33) illustrates the subject floating H tone that deletes the L tones on the verb stem, as shown in example (15-a).

⁶I have only considered simple CV verb stems with an *-rV* suffix in this present study. I have to state here that further research with other verbal complexes such as compound verbs, auxiliary constructions, etc is required. For instance, while some verb compounds undergo the tone change on the finite verb under subject extraction, others appear not to. Thanks to Larry Hyman for pointing out the behaviour of the compound verbs to me. Douglas Pulleyblank suggests comparing the tone pattern under subject extraction to those found with nominals in associative constructions.

(33) *Finite verb tone overwriting*

When the output of the tone overwriting co-occurs with the floating H tone of the Fin head, downstep is triggered in the phonetics (34).

(34) *Downstep tone implementation*

The downstep on the verb provides further support for the claim that the final H tone on the subject and the downstep tones on the verb are in distinct syntactic positions. This is in line with the proposal by Clark (1990) who shows that whenever two successive syllables are linked to phonologically distinct H tones in the language, the second H is pronounced as downstepped from the pitch level of the first H. And if successive syllables link to the same H, the outcome is a sequence of Hs on the same pitch (Déchaine, 1993).

4.3.5 Interim summary

This section has focused on the tonal reflex of movement that occurs on the verb under subject extraction. I showed that this effect is not restricted to relative clauses, in contrast to what the previous literature says, but actually occurs in all A'-movement dependencies under subject extraction. I proposed that a floating H tone is inserted in Spec-TP under subject extraction viz., if there is a gap (unpronounced copy) in Spec-TP, which I assume appears on the verb when there is no segment in Spec-TP to bear the tone. I also provide an account of the downstep tone on the verb, which shows that the fact that we get the downstep tonal overwriting on the verb does not mean that the reflex is on *v* but rather it is a phonetic realization of a sequence of two H tones, that of the floating H tone in Spec-TP, and the H tone in Fin. In the next section, I consider the H tone in Fin.

4.4 Tone as C head

In addition to the downstep tone on the verb under A'-movement of the subject, two other tone changes have also been reported with regards to relativization in the language. One is the final H tone on the relativized subject, and the other is the final H tone on the subject under non-subject relativization (Swift et al., 1962; Green and Igwe, 1963; Goldsmith, 1976; Nwachukwu, 1976). With regard to the latter tone, that

is, the final H tone on the subject under non-subject extraction, Robinson (1974) cited in Tada (1995) reports that this tonal overwriting is found under A'-dependencies other than relative clauses, too. Tada (1995) shows the cyclic effect of this tone. And Manfredi (2018) explicitly argues that the H tone is 'a last-resort spellout operation, ensuring that the remnant of movement is prosodically visible' (p.15). In this section, an attempt is made to unify these two tones. I propose that the final high tone on the subject under subject relativization, and that on the subject under non-subject A'-movement are one and the same H tone that realizes the Fin head in the C-domain. I start with a discussion of the final H tone on the subject under subject relativization in Section 4.4.1. The final H tone on the subject under non-subject extraction is presented in Section 4.4.2. And in Section 4.4.3 I provide an account unifying the two tones.

4.4.1 The subject final tone overwriting

In the previous section, it was observed that in Igbo, subject extraction triggers tonal overwriting on the verb. In addition to this tone overwriting on the verb, there is another tonal reflex that has been reported in the language which is present under subject relativization. This is the final H tone found on the subject DP in relative clauses (Green and Igwe, 1963; Goldsmith, 1976; Nwachukwu, 1976). This final H tone is noticed when the subject DP ends with a L tone where the L tone surfaces as H or LH (Tada, 1995). Consider the following sentences in (35) from Manfredi (2018, 6). Relevant for our discussion here is the tone change on the initial subject and that on the verb discussed in the preceding Section 4.3. In the declarative example (35-a), the subject DP ends with a L tone, and the verb (and suffix) also bears L tone (cf. Section 4.3.1). Under subject relativization, (in addition to the downstep on the verb) the final L tone of the head noun of the relative clause (that is, the subject) surfaces as H (35).

- (35) *Local subject relativization*
- a. **M̀gbàdà** rì-rì úgwú.
 antelope climb-SFX hill
 'The antelope climbed uphill.'
- b. **m̀gbàdà** ¹rì-¹rì úgwú.
 antelope climb-SFX hill
 'the antelope that climbed uphill'

I will argue that this H tone is a realization of the Fin head which appears on the head noun under subject relativization. I will also show that this final H tone on the relativized subject is only observed on local relativized subjects and not under long-distance relativization of the subject. Crucially the floating H tone that I assume is found under subject extraction and occupies Spec-TP, discussed in Section 4.3 is different from this H tone. This is demonstrated in sentences such as (35-b), where the two tones co-occur. The final H tone on the subject in (35-b) is absent when the clause contains negation (negative clauses have different verbal morphophonology), as illustrated in (36), which is the negative clause corresponding to (35-b).

- (36) **m̀gbàdà** ná ¹á-rì-ghí úgwú.
 antelope PRT É-climb-NEG hill
 'the antelope that didn't climb uphill'

Goldsmith (1976) postulates that the preverbal floating H tone, which precedes the verb stem and *ná* occupy the same position. According to him, the floating H tone docks on the subject DP in the absence of the optional relative marker *ná*.⁷ And when this marker is present it bears the preverbal floating H tone. I follow Goldsmith in assuming that the floating H tone that surfaces on the relativized subject and *ná* are mutually exclusive. See Section 4.5 for the discussion on the *ná* particle.

Evidence that this tonal overwriting is a reflex of movement comes from the fact that the final H tone on the subject DP is absent in the environment where subjects have been argued to not have moved from their base position in Spec-TP. This means that in local subject focus where the subject does not undergo A'-movement (Amaechi and Georgi, 2019), the final H tone is not attested. Local subject focus has the same structure as (35-a). The reflex is also absent in topicalization (37), which has been argued to involve base-generation and not movement (Georgi and Amaechi, 2019).

- (37) a. **Ṃgbàdà**, ó rì-rì úgwú.
 antelope 3SG.NOM climb-SFX hill
 ‘As for the antelope, it climbed uphill.’

Further evidence that the final H tone is a reflex of A'-movement, and not A-movement comes from the reversal construction. Amaechi (2018) argues that the subject-object reversal construction exemplified in (38) involves A-movement and not A'-movement. In the reversal construction, the position of the subject and object can be flipped without a change a meaning (Nwachukwu, 1987; Uwalaka, 1988). Important for present concerns is that the preverbal subject in (38-b), which has moved from the postverbal position, which it occupies in (38-a) does not bear a H tone. It surfaces with the same tones in both pre- and postverbal position.

- (38) *Reversal construction*
 a. **Ú'jọ** tẹ-rẹ **ṁgbàdà**.
 fear grip-SFX antelope
 ‘The antelope was afraid.’
 b. **Ṃgbàdà** tẹ-rẹ **ú'jọ**.
 antelope grip-SFX fear
 ‘The antelope was afraid.’

Amaechi (2018) shows that in these cases, the subjects have not moved to the specifier of C but rather to Spec-TP, hence nothing triggers the realization of the H tone in Fin. But in relativization where the null operator has moved from the internal argument position to Spec-ForceP of the relative clause, the H tone is realized and surfaces on the subject relative head noun. One might wonder whether this H tone on Fin is only found in relative clauses or also in wh-/focus constructions under long-subject movement. The example in (39-b) shows that there is obviously no such tone change on the extracted subject. In both the declarative sentence in (39-a) and the focus construction in (39-b), the subject *Úchè* has the same final L tone. The same is true for long-distance subject relativization, there is no final H tone on long-distance relativized subject. The data in (40) illustrate this point. (40-a) embeds the sentence in (35-a), and (40-b) shows long-distance relativization of the embedded subject, more like the relativization in

⁷I show in Section 4.5 that the particle *ná* is not a relative marker but a complementizer that lowers to T in A'-dependencies containing negation.

(35-b), but long-distance. What is important for present concerns is that we do not get the final H tone on the relativized subject in (40-b) (cf. (35-b)).

(39) *No final H tone on long-distance focus moved subjects*

- a. Òbí **chè-rè** nà Úchè rì-rì jí.
Obi think-SFX that Uche eat-SFX yam
'Obi thinks that Uche ate yam.' *baseline*
- b. Úchè kà Òbí **chè-ré** — 'rì-'rì jí?
Uche FOC Obi think-SFX eat-SFX yam
'Obi thinks that UCHE ate yam.' *focus*

(40) *Long subject relativization*

- a. Úchè chè-rè nà **Mgbàdà** rì-rì úgwú.
Uche think-SFX that antelope climb-SFX hill
'Uche thinks that the antelope climbed uphill.'
- b. **mgbàdà** Úché **chè-ré** — 'rì-'rì úgwú.
antelope Uche think-SFX climb-SFX hill
'the antelope Uche thought that climbed uphill'

Given that we do not see the final H tone on long-distance displaced subjects in (39-b) and (40-b), one might think that we do not find the effect under these dependencies. I will show, however, that there is indeed evidence for this Fin head tone under long-subject extraction. Tada (1995) observes that under long-distance wh-/focus subject extraction, the final L tone of the verb in the immediate preceding clause becomes H (p.1631). Note the tone change on the matrix verb in (39-b) and (40-b) (which is different from the downstep tone change discussed in the previous section). Another support for this H tone of Fin under long-subject extraction is the tone change on the matrix subject (cf. (40-b)). I discuss this shortly in Section 4.4.2. I will analyze the tone change on the matrix verb in (39-b) and (40-b) (under long subject extraction) as being the equivalent of the tone change on relativized (local) subjects, that is, they are both realizations of a floating H tone triggered in subject A'-movement dependencies.

The following example in (41) with two levels of embedding shows the pattern of this movement reflex. In (41-a), where the subject is extracted from the final clause, we see this tonal reflex only on the verb of the intermediate clause but not on the verb of the matrix clause. In sentence (41-b), where the subject of the intermediate clause is A'-moved, the reflex appears on the verb of the matrix clause and nothing happens in the final clause.

- (41) a. Ònyé kà Òbí chè-rè [CP nà Úché **má** [CP — 'rì-'rì jí?]]
who FOC Obi think-SFX that Uche know eat-SFX yam
'Who does Obi think that Uche knows that ate yam?'
- b. Ònyé kà Òbí **chè-ré** [CP — 'má [CP nà Àdá rì-rì jí?]]
who FOC Obi think-SFX know that Ada eat-SFX yam
'Who does Obi think that knows that Ada ate yam?'

What these examples show is that in both local and long-subject A'-movement dependencies, there is a tonal reflex triggered in C but this tone reflex is realized on different elements in matrix and embedded clauses. I provide an account for this different docking of the floating tone on Fin in Section 4.4.3. In the following section, I show that the dependencies where this final H tone on local relativized subject occurs exhibit

movement properties.

4.4.1.1 Movement properties

The following movement diagnostic facts show that the final H tone on a local relativized subject occurs in dependencies that involve A'-movement. This is shown with a CNPC island and an adjunct island. (42) illustrates that subject A'-movement out of the embedded relative clause is ungrammatical, and (43) shows that extraction of the subject from the *because*-clause is also ungrammatical. The sentences in (42-b) and (43-b) are ungrammatical regardless of the tone change.

(42) CNPC-island

- a. Àdá rì-rì jí [OP_i Òbí s̀i-r̀i ____i].
 Ada eat-SFX yam Obi cook-SFX
 'Ada ate the yam that Obi cooked.'
- b. *Ònyé_j kà Àdá rì-rì jí [OP_i ____j 's̀i-'r̀i ____i].
 who FOC Ada eat-SFX yam cook-SFX
 lit: 'Who did Ada ate the yam that cooked.'

(43) Adjunct island

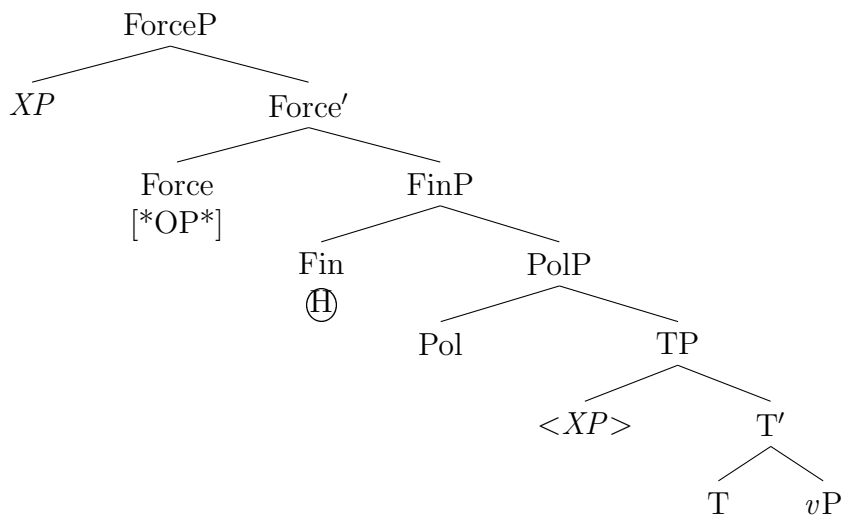
- a. Àdá gà-rà [màkà nà m̀gbàdà r̀i-r̀i úgwú].
 Ada go-SFX because that antelope climb-SFX hill
 'Ada went because the antelope climbed uphill.'
- b. *m̀gbàdà Àdá gà-rà [màkà (nà) ___ 'r̀i-'r̀i úgwú].
 antelope Ada go-SFX because that climb-SFX hill
 lit: 'The antelope that Ada went because climbed uphill'

We see that the dependencies that trigger this tonal reflex are island-sensitive.

4.4.1.2 Analysis

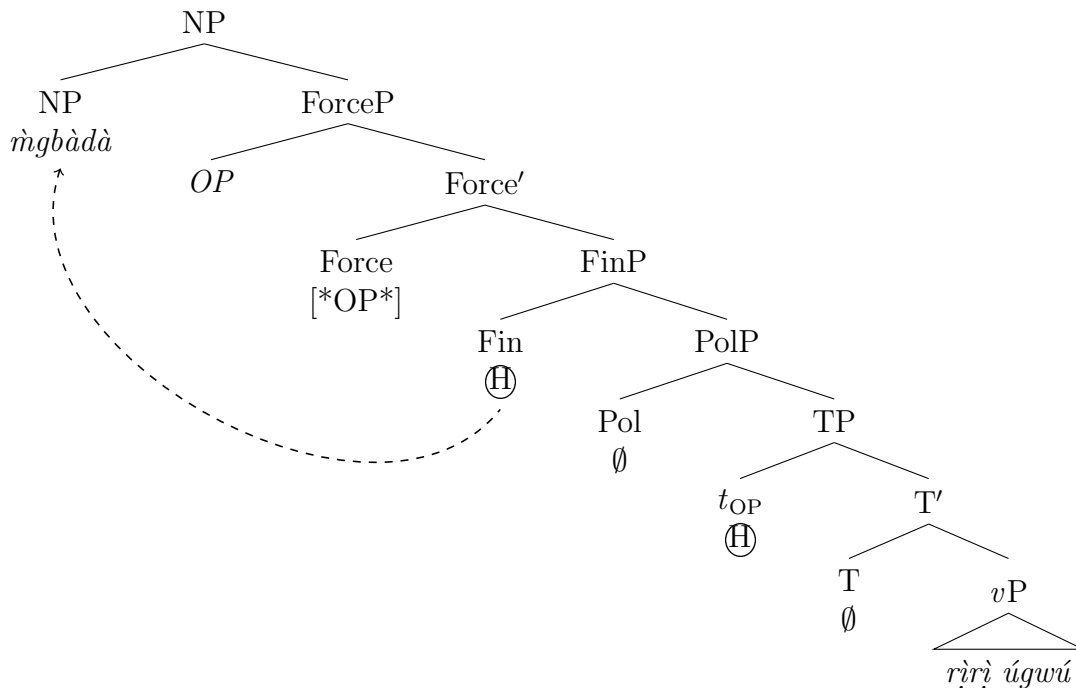
I assume that there is a floating H tone in Fin. This floating H tone is triggered when the subject undergoes A'-movement to Spec-FocP or Spec-ForceP; cf. structure in (28) in Section 4.3.3.

(44) Floating H tone in Fin

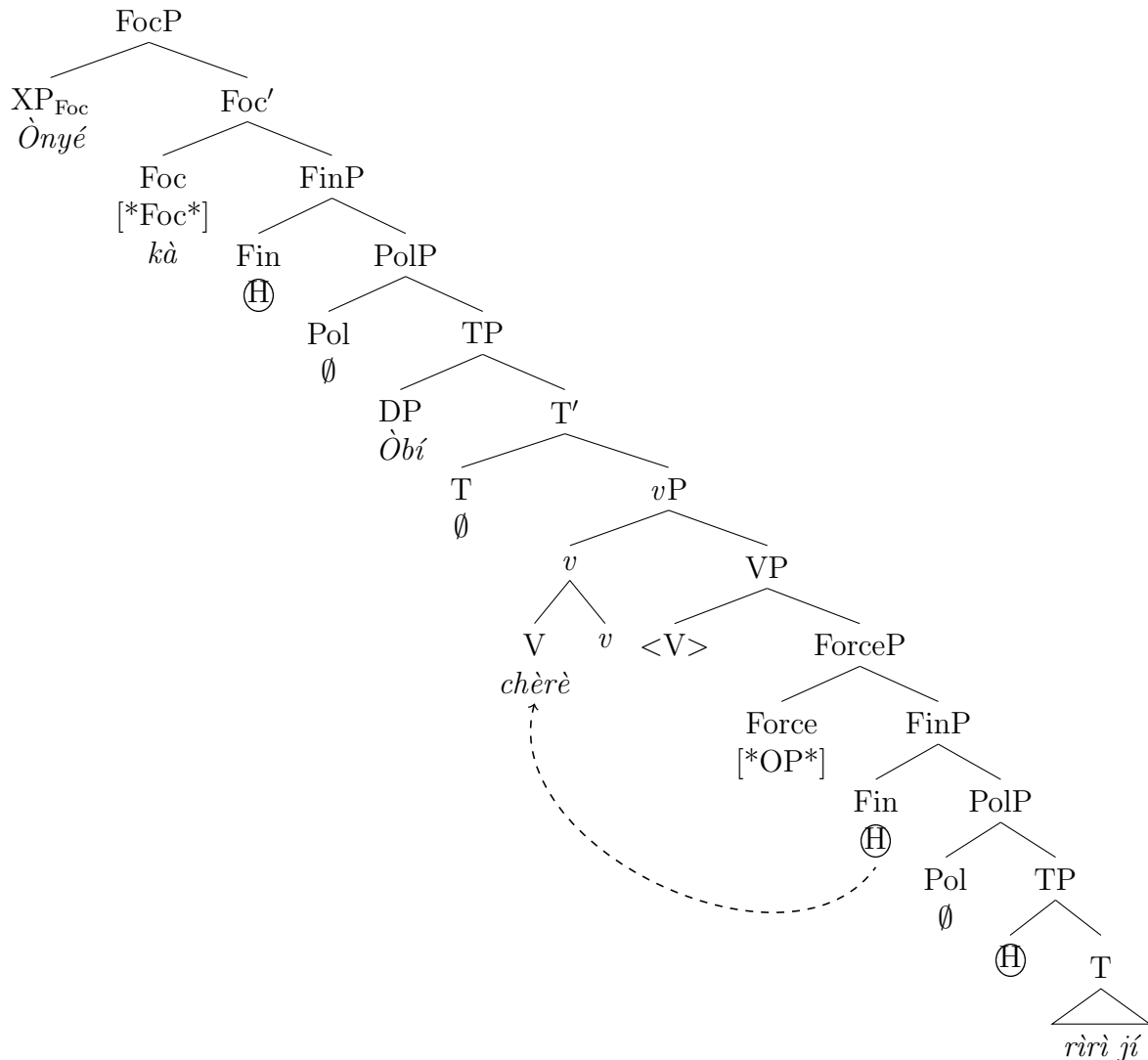


The floating H tone on Fin surfaces on the head noun of the (local) subject relative clause, overwriting the final tone on the subject, see (45). Recall from the discussion in Section 4.3 that there is also a floating H tone in Spec-TP that overwrites the tone on the verb. I assume the floating H tone on Fin attaches to the subject relative head noun under local subject relativization. The tone floats to the left (unlike the tone in Spec-TP which floats to the right). But I will soon show that the leftward direction of this floating H tone on Fin is because of a blockade caused by the floating H tone in Spec-TP.

(45) *Subject relative clause*



In (45), the floating H tone in Fin surfaces on the element to its left, that is, the relative NP *mgbàdà*. This is expected because the head noun is the closest overt element to Fin on its left—in linear terms; the closest element is the OP; but since this is not pronounced, the tone cannot dock onto it, so it floats further and finds the head noun. But when the subject is moved long-distance as in the cases of long-distance relativization or wh-/focus movement, since there is no head noun to the linear left of the Fin head, the floating H tone surfaces on the next element on its left, which is the embedding verb. Consider the structure in (46) below. I assume the following structure for long-subject wh-/focus extraction since local wh-subject does not move. The structure is for the sentence in (18-b) in this chapter.

(46) *Long-distance wh-subject movement*

One might expect the H tone of the embedded Fin head in (46) to surface on the moved subject (given the examples from local subject relativization), but it does not since the subject that is moved long-distance is not the closest element to the embedded Fin head. The floating H tone is realized on the closest next element, which is the verb of the matrix clause as shown in examples (39) and (40).

To recap, in this section I provided an account for the final H tone on head nouns in subject relative clauses. I showed that this final H tone only appears on the subject under local subject relativization. But under long-subject relativization (and other A'-movement dependencies), we see evidence of the floating H tone in Fin on the verb in the matrix clause. I capture this pattern by assuming that the floating tone originates in Fin and floats leftwards to the next overt element on its left. In the following section, I consider another tonal reflex, which is the final H tone on crossed-over subject.

4.4.2 Final high tone on crossed-over subject

Another tonal overwriting, which has received some attention, is the final H tone on crossed-over subjects under overt XP extraction (Robinson, 1974; Tada, 1995; Man-

fredi, 2018). The final L tone of the subject that is crossed surfaces as H. Consider the following examples in (47). In the declarative sentence in (47-a), the subject *Úchè* bears a final L tone, but in the A'-movement dependencies in (47-b-e), this final L tone of the subject in (47-a) changes to a H tone.

- (47) *Tone overwriting on crossed-over subject*
- a. **Úchè** rì-rì jí n'áhíá.
Uche eat-SFX yam P-market
'Uche ate yam at the market.' *baseline*
- b. Gí'ní kà **Úché** rì-rì ___ n'áhíá?
what FOC Uche eat-SFX P-market
'What did Uche eat at the market?' *DO wh-question*
- c. Jí kà **Úché** rì-rì ___ n'áhíá?
yam FOC Uche eat-SFX P-market
'Uche ate YAM at the market.' *DO focus*
- d. Jí **Úché** rì-rì ___ n'áhíá?
yam Uche eat-SFX P-market
'the yam that Uche ate at the market' *DO relativization*
- e. Èbéé kà **Úché** rì-rì jí ___?
where FOC Uche eat-SFX yam
'Where did Uche eat yam?' *ADJ wh-question*

That the final H tone on the subject in (47) is A'-movement related is supported by the topicalization example in (48-a), where the tonal reflex is not present on the subject DP. Topicalization has been argued to involve base-generation and not movement (Collins, 1993). Sentence (48-b) exemplifies an in-situ wh-question, where we also see that there is no tone change on the subject when the non-subject is not overtly moved (Tada, 1995).

- (48) a. Jí, **Úchè** rìrì yá n'áhíá?
yam Uche ate it P-market
'As for yam, Uche ate it at the market.' *DO topicalization*
- b. **Úchè** rì-rì jí n'èbé'é?
Uche eat-SFX yam P-where
'Where did Uche eat yam?' *ADJ wh-in-situ*

The reflex occurs on all clauses that have been crossed-over by the A'-movement dependency (Manfredi, 2018). This is illustrated in (49) below. The example is Manfredi's example (25a). The indirect object of the second embedded clause is wh-moved, and the final H tone is observed on all three subjects that have been crossed. (49-b) shows that the reflex is only on crossed-over subjects as the object of the matrix clause is extracted it does not cross-over the embedded subject, and hence, there is no final high tone on the embedded subject. (49-b) is Tada's example (21).

- (49) a. Ònyé kà **Úché** chè-rè [nà **Ógú** sì-rì [nà **Ézé** nyè-rè ___
who FOC Uche think-SFX that Ogu say-SFX that Eze give-SFX
ákwà?]]
cloth
'Who did Uche think that Ogu said that Eze presented with cloth?'

- b. Ònyé kà **Úché** gwà-rà ___ [nà Ógù zù-rù àkwá?]
 who FOC Uche tell-SFX that Ogu buy-SFX egg
 ‘Who did Uche tell that Ogu bought eggs?’

4.4.2.1 Movement properties

Classic movement tests show that the dependencies where this reflex surfaces involve A'-movement. These are illustrated with a CNPC island in (50), an adjunct island in (51), and binding Principle A in (52). (50) illustrates long-distance subject extraction out of a relative clause, while (51) exemplifies object extraction out of an adjunct clause. These examples are all ungrammatical (regardless of whether the tone change applies or not), hence, the dependencies are island-sensitive. Finally, the data in (52) illustrate reconstruction of the anaphoric element below the subject because the anaphor in the fronted XP is bound by the subject.

(50) *CNPC-island*

- a. Ézè chère-rè nà Úché mà ónyé [OP_i Àdá hù-rù ____i].
 Eze think-SFX that Uche know person Ada see-SFX
 ‘Eze thinks that Uche knows the person that Ada saw.’
- b. *Kèdú ónyé_j Ézé chère-rè nà Úché mà ónyé [OP_i ____j
 WH.COP person Eze think-SFX that Uche know person
 'hú¹-rú ____i]?
 see-SFX
 ‘Lit.: Who does Eze think that Uche knows the person saw?’

(51) *adjunct island*

- a. Úché lò-rò ákpú [màkà nà Ézè sì-rì ófé.]
 Uche swallow-SFX fufu because that Eze cook-SFX soup
 ‘Uche ate fufu because Eze prepared some soup.’
- b. *Gí¹ní kà Úché lò-rò ákpú [màkà nà Ézé sì-rì ___?]
 what FOC Uche swallow-SFX fufu because that Eze cook-SFX
 Lit: ‘What did Uche eat fufu because Eze cook?’

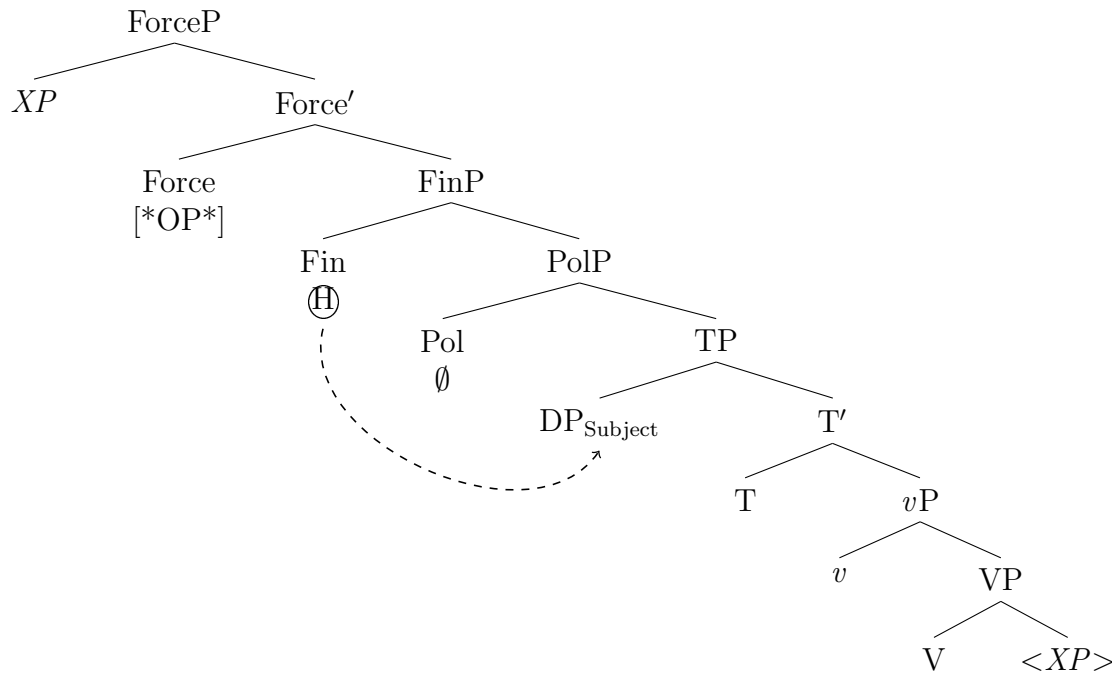
(52) *Principle A*

- [Kèdú fòtó [ònwé 'yá]_i] Úché_i sè-rè ___?
 WH.COP picture self 3SG Obi draw-SFX
 ‘Which picture of himself_i did Obi_i draw?’

The island effect examples in (50) to ?? demonstrate the inability of the focused phrases to move out of an island. This is clearly not as a result of the focused phrases moving long-distance, since there is no problem with long-distance movement in the language, as shown in (49). The reconstruction data also illustrate the dependencies involve movement.

4.4.2.2 Analysis

The data presented in the sections above illustrate that the final H tone on the crossed-over subject is indeed a reflex of movement. I assume that a floating H tone is realized on Fin when an XP moves to the specifier of ForceP or FocP. The structure in (53) below is similar to that in (44) in Section 4.4.1.2 only that in (53), the XP that undergoes movement is not the subject.

(53) *Floating H tone in Fin*

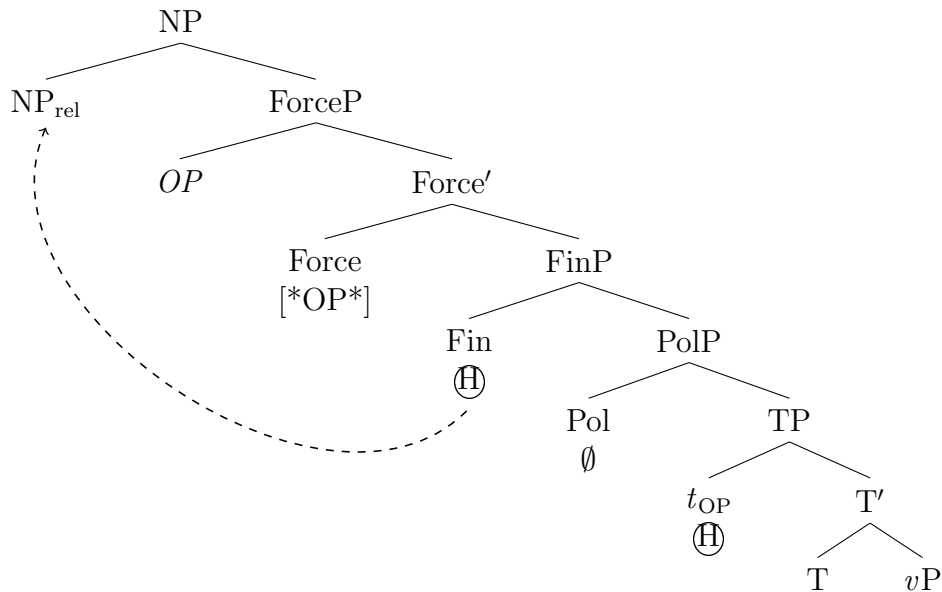
The floating H tone of the Fin head surfaces on the linearly adjacent subject to its right under overt XP movement to Spec-ForceP, as shown in (53).

In this section, I considered another final H tone on the subject DP when it is being crossed over. A question that arises at this point is whether this final H tone on crossed-over subjects is to be distinguished from the final H tone on the local subject relative head noun (or on the matrix verb under long-subject extraction) discussed in Section 4.4.1. If they are both realizations of the same Fin head, why is it then that the H tone docks leftwards on the subject relative head noun or on the matrix verb under long-distance extraction, and rightwards on the subject in Spec-TP under XP extraction? I attempt to provide an answer to this question in the next section.

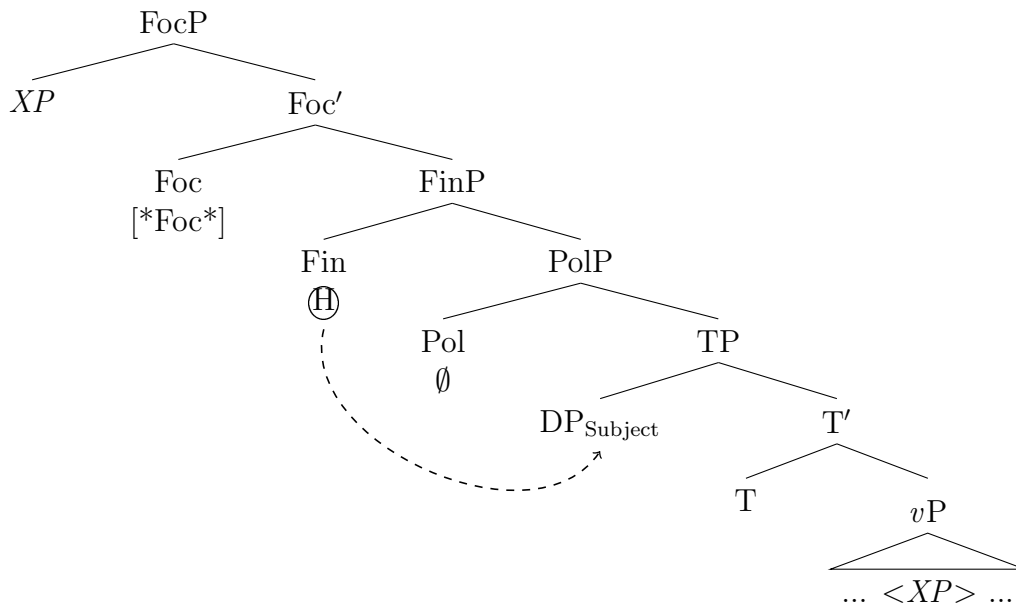
4.4.3 Unifying the subject DP final H tones

I propose that the final H tone on the subject under local subject relativization, which I assume appears on the matrix verb in long-distance subject extraction, and the final H tone on crossed-over subjects are one and the same floating H tone on Fin. (I am grateful to Andrew Murphy for suggesting the idea of unifying the tones.) This final H tone in the two cases, I assume, realizes the Fin head. A point of divergence of these two final H tones is that while in the case of local subject relativization and long-subject movement, the floating H tone appears to associate leftwards on the subject relative head noun that I assume is base-generated (or on the matrix verb under long-subject extraction), while in the other case of overt XP extraction, the floating H tone shifts rightwards to the subject in Spec-TP. Compare (54) and (55) below.

- (54)
- Floating H tone on Fin occurs on relativized subject*



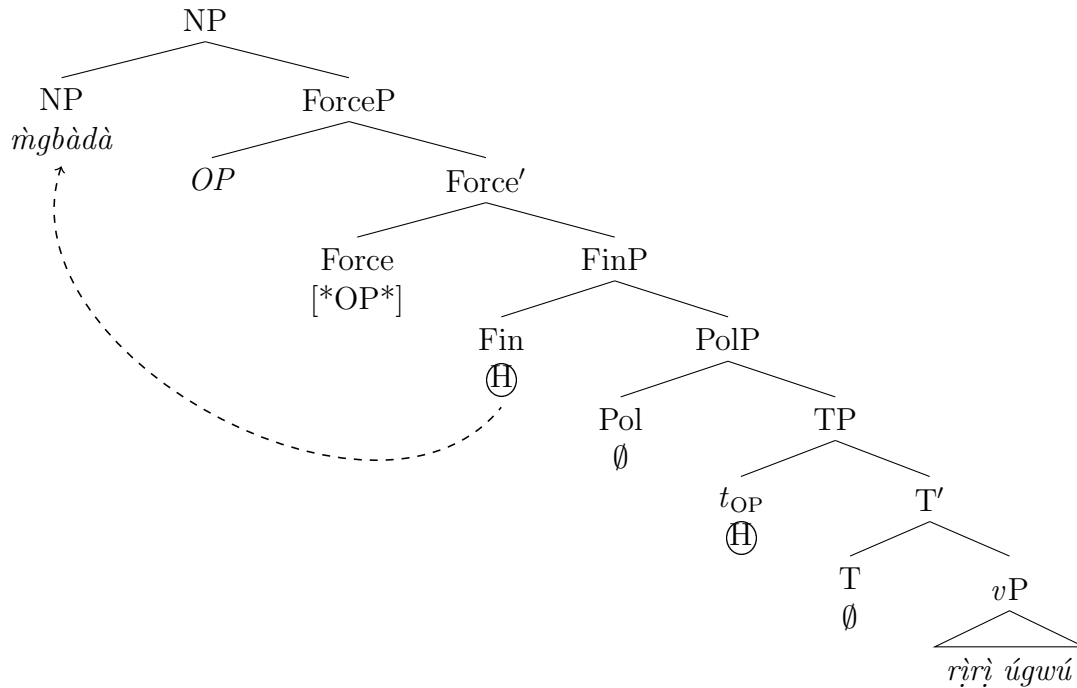
- (55)
- Floating H tone on Fin under non-subject extraction appears on subject in Spec-TP*



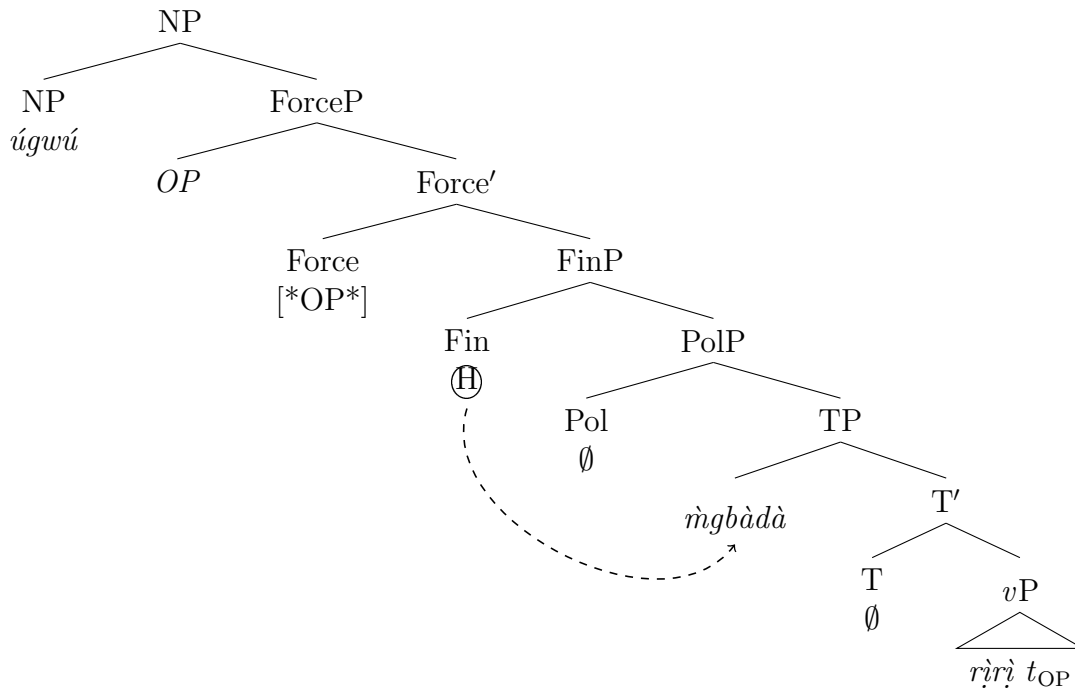
Recall from the discussion in Section 4.3 that I propose that the floating H tone that spells out Spec-TP also shifts rightwards, overwriting the L tones on the finite verb under subject extraction. I posit that the preferred direction of attachment of the floating H tone that originates in Fin is rightwards. This is what we see if a non-subject is extracted. However, floating of the H tone on Fin to the right is blocked if another H-tone linearly intervenes, viz. the one originating in Spec-TP. As a repair (since floating tones must be associated), it floats to the left (Yip, 2002). Thus, the inability of the floating H tone on Fin to dock rightwards in (54) is due to the fact that the Spec-TP is also realized by a floating H tone. The floating H tone in Fin head looks leftwards in order to attach to a tone bearing unit. In the case of local subject relativization, the closest element is the subject relative head noun, and this is where

we find the floating H tone of Fin, overwriting the final tone of the subject relative head noun. This is illustrated in the structure in (56).

(56) *Fin floating H tone overwriting under subject relativization*



Under long-subject extraction, the data in (39-b) in Section 4.4.1 show that this H tone travels further as it surfaces on the verb in the matrix clause. For the final H tone on crossed-over subjects, I assume that the Fin tone that surfaces on the subject in Spec-TP to be the default. This is represented in (57) below. There is the floating H tone that realizes the Fin head. But crucially, the element satisfying the EPP requirement of T is not a tone. Thus, there are no two contiguous floating H tones in (57). The structure in (57) illustrates object relativization.

(57) *Fin floating H tone overwriting under non-subject extraction*

I postulate that the floating H tone of Fin head attaches to the overt element linearly adjacent to its right. For subject relativization, the floating H tone of Fin is first discharged. It looks for an element to its right, but since Spec-TP is also occupied by a tonal morpheme, which also would seek an element to attach to, the floating H tone of Spec-TP blocks further movement of the floating H tone on Fin head. Hence, the floating H tone on the Fin head moves in the opposite direction and attaches to the relative NP (skipping the Spec-ForceP position since the element in this position is the null operator). In Chapter 2, under the discussion of relative clauses, I argue for a base-generation analysis of Igbo relative clause with null operator movement in the clause internal argument position. This means that in the present account, the Spec-ForceP is only occupied by a null operator. Thus the floating H tone of Fin head ignores the empty element and moves a step further and thus find the relativized subject to which the relative ForceP is adjoined and attaches to it. The subject floating H tone docking thus takes place after the floating Fin tone must have found a host. For the floating H tone in Spec-TP, it docks rightwards to the following verb, and overwrites the L tones on the verb. Following this tone overwriting, an environment that triggers downstep is created, as the H tone of Fin head now on the relativized subject is contiguous with another H tone in a different syntactic position (Clark, 1990). The advantage of having the floating H tone of Fin head finding an element to occur on before the floating H tone in Spec-TP is that having the order the other way, that is, where floating H tone of Spec-TP docks on the verbs and overwrites the tones on the verb, it would be predicted from the analysis that the floating H tone of the Fin head could still move rightwards and attach to the verb, ignoring the empty Spec-TP (as it does with the null operator on Spec-ForceP in the other direction), and since there is no floating tone in Spec-TP. But the crucial aspect that would be lost is that the required H tone sequence in order to be able to have the phonetic implementation of the downstep tone on the verb is lost. In the cases where non-subjects are A'-moved, we only have a single floating H tone, which is that of the Fin head. The subject position is not empty in this environment.

As expected, the floating H tone on Fin, looks rightwards, and immediately finds an element in Spec-TP and associates with it. There is no need for it to look in the other direction. In this way, I assume that the final H tone on a relativized subject and the final H tone the subject when it is crossed over are unified. The difference in the two instances is only an issue of the direction of the docking of the floating H tone of the Fin head.

4.4.4 Summary

In this section, I have provided an account of the final H tone on the subject under relativization. I showed that this final H tone is not a property of only subject relativization but also of other A'-movement dependencies involving subjects. I showed that the final H tone on the subject relative head noun is only present in local subject relativization, but under long-subject extraction, the reflex is observed on the verb in the immediate preceding clause. I also presented data that show another final H tone on crossed-over subjects, a tone that is observed under overt XP movement to Spec-ForceP or Spec-FocP. I proposed a unification of these two final H tones that appear to be realized on the subject. I argued that the final H tones in the two cases are the same floating H tone on Fin, and that the preferred direction of floating of this tone is rightwards. This is what we see under non-subject extraction, where the final H tone surfaces on the subject DP. The exception to this generalization is that of the final H tone under subject extraction. I argued that in this case, the rightwards direction of the floating H tone of Fin is blocked by the floating H that realizes Spec-TP proposed in Section 4.3. In the following section, based on data from negative clauses, I provide further evidence that shows that the floating H tone observed on subject DPs discussed in this section occupies the Fin head in a split-CP system. Crucially, in negative structures, this Fin head is filled by the *ná* particle.

4.5 The interaction of A'-movement and Negation

In the preceding sections I presented phonological reflexes of movement involving tones in Igbo. I showed that these are effects we see when there is a feature relation between the C head and an element in its specifier. I also provided evidence that the tonal changes involve A'-movement dependencies as they can hold over an unbounded distance, they exhibit island, reconstruction and strong cross-over effects. The reflexes above were shown to occur in affirmative clauses. This section presents a morphological pattern that occurs under A'-movement out of negative clauses: the particle *ná*.

This section is organized as follows: First, I consider the syntax of negation in Igbo in Section 4.5.1. I adopt Déchaine's (1993) idea that under negation in the language, the T head is supported morphologically in a way different from non-negative sentences. In addition, I postulate that there is a polarity projection above TP (Laka, 1990; Culicover, 1991; Zanuttini, 1997) ensuring that polarity is close to the C domain. This solves a locality problem as negation under TP is too far to effect C. Section 4.5.2 outlines the basic properties of the particle *ná* and shows that the constructions where the particle appears exhibit the hallmarks of A'-movement dependencies. Section 4.5.3 presents an analysis of the particle. I posit that the particle is a complementizer that realizes the Fin head, and propose that the low position of the complementizer results from postsyntactic lowering to T. I also argue that in both matrix and embedded clauses,

and regardless of the polarity of the clause, Fin is projected. In Section 4.5.4 I consider an alternative analysis that could possibly account for the preverbal position of *ná*. I show that this analysis cannot be upheld for Igbo. Section 4.5.5 concludes.

4.5.1 The syntax of negation in Igbo

Sentential negation, which appears to be the only form of negation in Igbo, is expressed with a H toned prefix *á-/é-* (glossed here as *É*) depending on the vowel of the following verbal element (ATR-harmony) and a toneless negative postverbal marker *ghi* (Green and Igwe, 1963; Emenanjo, 1978; Déchaine, 1993). The suffix copies the tone and ATR value of the preceding verb. See (58) and (59) below. Recall from Section 4.3.1 that the verb in (58) belongs to the H tone verb class, and that in (59) to the L tone class.

- (58) *Negative clauses*
- a. Àdá **é-'rí-ghí** jí.
Ada É-eat-NEG yam
'Ada didn't eat yam.'
 - b. Àdá **á-zà-ghì** ùlò.
Ada É-sweep-NEG house
'Ada didn't sweep the house.'

The prefix is only obligatory with full subject DPs and with the non-clitic pronouns but incompatible with pronominal subject clitics (PSCs).⁸ Consider the examples in (59) with PSCs.

- (59) *Negative clauses with pronominal subject clitics*
- a. Ò rí-'ghí jí.
3SG eat-NEG yam
'S/he didn't eat yam.'
 - b. Ì zá-'ghí ùlò.
2SG sweep-NEG house
'You didn't sweep the house.'

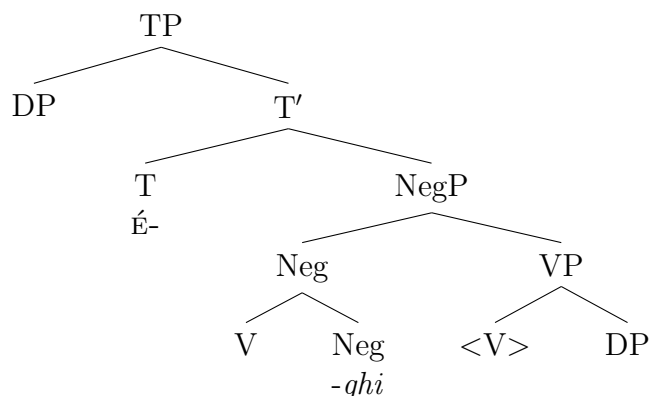
Note that in (58-a), after the H tone prefix, HTVs become downstep and the negative suffix bears a H tone. And with LTVs (58-b), after the H tone prefix, both the verb and the negative suffix surface with L tones. With regards to the downstep on the verb in (58-a), Déchaine (1993) following Clark (1990) describes it as a 'phonetic interpretation mechanism to a sequence of high tones' (Clark, 1990, 42). Whenever two successive syllables are linked to phonologically distinct high tones, the second H is pronounced as downstepped from the pitch level of the first H. And if successive syllables link to the same H, the outcome is a sequence of highs on the same pitch. In other words, the H tone on the prefix and the H on the verb are contained in distinct syntactic domains (Déchaine, 1993). For the clitic subjects constructions in (59), the initial PSCs bear L tones and the following verb, both the HTV and LTV bear H tone under this construction, while the negative suffix is downstep (Emenanjo, 1978, 172). Déchaine argues that the position occupied by the PSCs and the H prefix in (58) are the same, given that the PSCs 'supplant' (p.602) the prefix in (58). Déchaine claims that the H tone of the prefix in (58) is shifted and realized on the verb in (59), and the downstep

⁸See Eze (1995) and Anyanwu (2012) for PSCs in Igbo

on the verb shifted to the negative suffix. This is because for the LTV in (59-b), the verb bears H tone, but the L tone is preserved in (58-b). Temporal differences between eventive and stative verbs are preserved under negation - eventive, past and stative non-past (cf. Section 4.3.1).

There are two analyses of negation in Igbo. One approach (Emenanjo, 1985; Clark, 1990) views negation in Igbo as a combination of a preverbal H tone prefix and a negative suffix, similar to negation in Standard French. The other approach (Déchaine, 1993) observes that negation is not a discontinuous morpheme in the language. A main argument for this approach is that unlike in French, where the preverbal negative marker is peripheral to negation, the prefix in Igbo is obligatory in negative forms without PSCs. In rapid speech, however, the suffix could be omitted but not the prefix (Obiamalu, 2013). On the other hand, Déchaine (1993) argues that the H tone prefix is a kind of tense agreement support (similar to English *do*-support).⁹ She observes that the verb moves to NEG, but not above it, and the H tone prefix is inserted to support the empty T above NEG. Evidence that the verb moves to a higher functional head in Igbo is based on the fact that some of the aspectual heads are suffixes, and the auxiliary or main verb precedes negation (Déchaine, 1993, 594ff). Déchaine assumes the structure in (60).

(60) *Structure of negation*



Déchaine argues that negation between T and V is a barrier for movement of V-to-T. As V may not raise beyond NEG, T above NEG stays empty. Thus, the empty T head is morphologically supported by default agreement spelled out by the harmonic prefix *É-* (with inherent high tone), which harmonizes to the V. She argues that although V raises to NEG, the complex V+NEG does not raise any further. Note that the *É-* prefix

⁹With regards to tense support in sentential negation, different strategies have been reported. Laka (1990) observes that English displays *do*-support (i) and Basque resorts to fronting of the auxiliary, with the alternation of the normal verb-auxiliary order (ii). The following examples are from Laka (1990, 86).

(i) *English*

- a. Mary left.
- b. Mary didn't leave.

(ii) *Basque*

- a. Mari joan da.
Mary left has
'Mary has left.'
- b. Mari ez da joan.
Mary not has left
'Mary hasn't left.'

does not indicate tense on its own but rather it only supports the T head in negative constructions. Déchaine argues explicitly that Igbo does not have morphological tense. She shows that the so-called *-rV* suffix (cf. Section 4.3.1) does not indicate tense, but rather it is an instantiation of affirmative polarity as it mutually excludes the negative marker *-ghi*. One of the arguments she presents is that the observed difference between stative and event verbs (cf. Section 4.3.1) that we see with the *-rV* suffix, that is, with stative verbs, there is a non-past interpretation, and with event verbs, the reading is always past, is preserved under negation. Compare (61) and (62) below.

- | | | | |
|------|--|------|---|
| (61) | <i>Event verb</i> | (62) | <i>Stative verb</i> |
| | a. Àdá rì-rì jí.
Ada eat-SFX yam
'Ada ate yam.'
'Ada eats yam.' | | a. Àdá bù-rù íbù.
Ada ICV-SFX fat
'Ada is fat.'
'Ada was fat.' |
| | b. Àdá é-'rì-ghí jí.
Ada É-eat-NEG yam
'Ada didn't eat yam.'
'Ada doesn't eat yam.' | | b. Àdá é-bù-ghì íbù.
Ada É-ICV-NEG fat
'Ada is not fat.'
'Ada wasn't beautiful.' |

A further piece of evidence that *-rV* suffix is not tense comes from the difference between transitive and intransitive alternants of certain sentences (Manfredi (1997) Section 5.5). Manfredi shows that for the transitive sentence (63-a), the interpretation is past, while for the intransitive one (63-b), the interpretation is nonpast.¹⁰ The form of the verb with the *-rV* suffix does not change in both sentences in (63). Note that Manfredi (1997) argues that *-rV* is a default aspect inflection. But I follow Déchaine (1993) in assuming that the suffix does not indicate aspect but rather polarity (see also the discussion in Section 4.6 for arguments that *-rV* does not encode aspect).

- (63) *Temporal interpretation with transitive and intransitive alternants (Manfredi, 1997, 114)*
- | | | |
|----|--|----------------|
| a. | Ó s̀-r̀-r̀ ánú (n'òkú).
3SG boil-ASP meat on.fire
'S/he cooked meat [by boiling it]' | <i>past</i> |
| b. | Ánú s̀-r̀-r̀ n'òkú
meat boil-ASP on.fire
'Meat is cooking [in a pot].' | <i>nonpast</i> |

Another argument Déchaine (1993) provides concerns the distribution of the *-rV* and negative *-ghi* suffixes. There is the following constraint on the combination of inflectional affixes. The data in (64) and (65) are adapted from Déchaine (1993, 601). The *-rV* (factative) suffix never co-occurs with the negative suffix in the language.

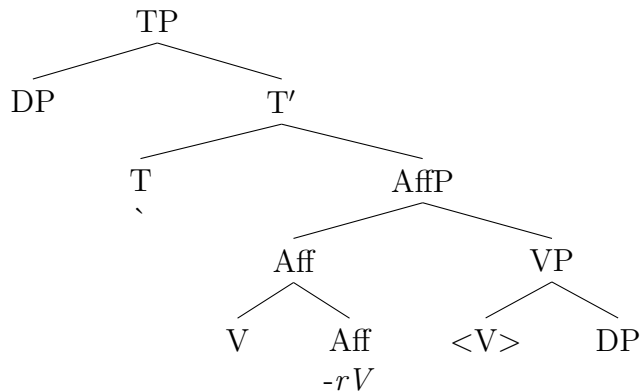
- | | | | |
|------|-------------------------|------|--------------------------------------|
| (64) | a. V - rV
b. V - NEG | (65) | a. *V - rV - NEG
b. *V - NEG - rV |
|------|-------------------------|------|--------------------------------------|

Based on this evidence Déchaine argues that the *-rV* factative and *-ghi* negation are

¹⁰The sentence in (63-a) can also receive a nonpast interpretation, but for (63-b), only a nonpast interpretation is present.

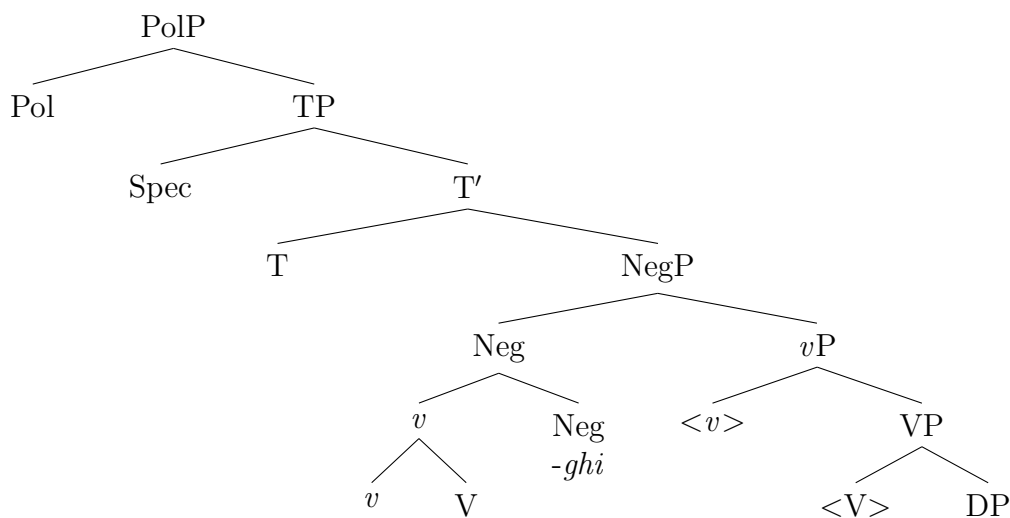
instantiation of the same head.¹¹ If *-rV* were tense, there should be no reason for it not to be able to co-occur with negation. Based on this, Déchaine claims that the host of V when it is marked with the *-rV* factative or with *-ghi* negation is not T. Going by this proposal, in the structure in (60) in this section, the position marked Neg can also be (Aff)irmative when the clause is non-negative and the *-rV* suffix will be generated in Aff head as shown in (66) below.

(66) *Structure of an affirmative clause*



Déchaine (Section 8.2.4.2) further observes that in both the negative and the non-negative (that is, factative, in her terms) clauses, some material appears in T to mark Agreement—in the negative it has both segmental and tonal content, the *É-* prefix (60); in the factative it has only tonal content, a L tone (66) (observable on the subject DP in some varieties of the language (Goldsmith, 1976; Clark, 1990)). In line with this analysis, I take this to suggest that in some way, the polarity of the clause has a special effect on T.¹² I will argue for an approach to negation, where there are two positions in the clause structure, viz. Pol and Neg, where negation is hosted (Laka, 1990; Culicover, 1991; Zanuttini, 1994, 1997), see the structure in (67) below.

(67) *PolP above TP*



The higher position (PolP) is where the polarity value of the clause is established. And

¹¹Déchaine (1993) notes that the incompatibility of *-rV* factative with other suffixes also indicates that it might be a kind of default aspect marker as suggested by Manfredi (1991).

¹²For Déchaine (1993) both negation and affirmation are under the category σ which is below TP.

the lower (NegP) position is where the negative suffix is generated (Zanuttini, 1991, 1994). Given this assumption, the negative suffix is to be generated in the Neg head below TP, while the syntactic features that indicate the polarity value of the clause (whether affirmative or negative) is in the Pol head. An advantage of this approach as we will come to see later in Section 4.5.3.3 is that polarity above TP makes polarity close enough to the C domain which accounts for the effect of it under A'-movement as I will show. I follow Déchaine (1993) in assuming that the verb moves to Neg. In the structure in (67), the lexical verb moves to the *v* head, and the complex *v*+V moves to Neg. In the next section I discuss the morphological reflex that is present under extraction from negative clause in Igbo.

4.5.2 Extraction from negative sentences

In the preceding Sections 4.3 and 4.4, I showed that there are tonal reflexes of movement when an XP moves to Spec-ForceP or Spec-FocP. In this section I present a morphological reflex that involves the addition of a morpheme in a clause containing negation and A'-movement. Extraction from a negative clause, such as (68-a) triggers the morpheme *ná* (glossed here as PRT). This particle occurs after the subject DP and before the verb complex; cf. (68-b). The initial H tone on the *É*- prefix becomes downstep as a result of the H tone on the particle *ná* (Igwe and Green, 1964, 44).

(68) *Extraction from a negative clause triggers ná*

- a. Úchè á-[!]hù-ghí Òbí.
Uche *É*-see-NEG Obi
'Uche didn't see Obi.'
- b. Ònyé kà Úchè **ná** [!]á-hù-ghí ___?
who FOC Uche PRT *É*-see-NEG ___?
'Who did Uche not see?'

Note that the particle is not present under A'-movement dependencies that are affirmative as shown in (69), and as all the data in the preceding sections indicate.

(69) *No ná in affirmative clauses*

- a. Úchè hù-rù Òbí.
Uche see-SFX Obi
'Uche saw Obi.'
- b. *Ònyé kà Úchè ná hù-rù ___?
who FOC Uche PRT see-SFX ___?
intended: 'Who did Uche see?'

This particle has been reported to appear in relative clauses in the language (Green and Igwe, 1963; Igwe and Green, 1964; Goldsmith, 1976; Nwachukwu, 1976). In this section, I show that the particle is not restricted to relative clauses but occurs in all A'-movement dependencies. Furthermore, I discuss the syntax of the particle, and I show that the dependencies where the *ná* particle appears exhibit properties of A'-movement dependencies.

4.5.2.1 The syntax of *ná*

The *ná* element surfaces in A'-movement dependencies, as illustrated with the examples in (69) and (70). (69) illustrates wh-question with focus fronting, while the data in (70) demonstrate this for other A'-movement dependencies in the language. These data show that *ná* is not a property specific to relative clauses. The data also demonstrate that there is no subject/non-subject asymmetry with regards to this reflex. Sentence (70-a), for instance, illustrates object focus, (70-b) exemplifies subject relativization and (70-c) shows adjunct *kèdú* question.

- (70) *A'-movement dependencies with ná*
- a. Òbí kà Úchè **ná** 'á-hụ-ghí.
Obi FOC Uche PRT É-see-NEG
'Uche didn't see OBI.' *object focus*
- b. ónyé **ná** 'á-hụ-ghí Òbí
person PRT É-see-NEG Obi
'the person who didn't see Obi' *subject relativization*
- c. kèdú mgbè Úchè **ná** 'á-hụ-ghí Òbí?
WH.COP time Uche PRT É-see-NEG Obi
'When did Uche not see Obi?' *adjunct kèdú question*

The following data in (71) demonstrate that the reflex is absent under A'-dependencies without (overt) movement. (71-a) shows that the particle is not found under local subject wh-/focus which has been argued to not involve movement (Amaechi and Georgi, 2019).¹³ (71-b) illustrates that the particle is illicit in in-situ object questions, and (71-c) shows that the particle is not allowed in topicalization contexts (recall that topicalization does not involve movement, but base-generation, see Chapters 2 and 3). Note that the following sentences in (71) are grammatical without the *ná*.

- (71) *No ná under non-A'-movement dependencies*
- a. *Ònyé ná 'á-hụ-ghí Òbí?
who PRT É-see-NEG Obi
intended: 'Who didn't see Obi.'
- b. *Úchè ná 'á-hụ-ghí ònyé?
Uche PRT É-see-NEG who
intended: 'Who did Uche not see?'
- c. *Úchè, ó ná 'á-hụ-ghí Òbí.
Uche 3SG PRT É-see-NEG Obi

¹³To express the subject question in (71-a), speakers use the *kèdú* or *òlé'é* question strategy. And for a cleft answer to the *kèdú* question in (i-a), a relative clause is embedded in the answer that allows for *ná*, as in (i-b), while (i-c) is ungrammatical.

- (i) a. Kèdú ónyé **ná** 'á-hụ-ghí Òbí
WH.COP person PRT É-see-NEG Obi
'Who did not see Obi?'
- b. Ó bù Àdá bù ónyé **ná** 'á-hụ-ghí Òbí
3SG COP Ada COP person PRT É-see-NEG Obi
'It is Ada that did not see Obi.' [lit. 'It is Ada that is the person that did not see Obi.']
- c. *Ó bù Àdá **ná** 'á-hụ-ghí Òbí
3SG COP Ada PRT É-see-NEG Obi
intended: 'It is Ada that did not see Obi.'

intended: 'As for Uche, he didn't see Obi.'

Other A'-dependencies that involve movement even with resumption in internal argument position take the particle *ná*. For instance, certain structures such as coordination structures can be repaired by having a resumptive pronoun inside the conjunct phrase under extraction as in (72-c). But in comparison to topicalization, which also takes a resumptive pronoun, the coordination structure with clausal negation is licit with the particle *ná*. This in principle suggests that the two A'-dependencies even though, they both attest resumption are not the same; in fact, Georgi and Amaechi (2019) argue that extraction from a coordination indeed involves movement (viz., &Ps are not islands in Igbo), unlike topicalization.

- (72) *Ná under A'-movement dependencies*
- a. Úchè á-'hù-ghí Òbí nà Àdá.
Uche É-see-NEG Obi and Ada
'Uche didn't see Obi and Ada.'
 - b. *Ònyé kà Úchè ná 'á-'hù-ghí ___ nà Àdá?
who FOC Uche ná É-see-NEG and Ada
lit: 'Who did Uche not see and Ada?'
 - c. Ònyé kà Úchè ná 'á-'hù-ghí yá nà Àdá?
who FOC Uche ná É-see-NEG 3SG and Ada
lit: 'Who did Uche not see him and Ada?'

Another property of this reflex of movement in relation to the tonal reflex found on crossed over subjects discussed in Section 4.4.2 is that the two reflexes are mutually exclusive (Green and Igwe, 1963; Goldsmith, 1976). This means that the final H tone on crossed over subject is only present in affirmative context, and *ná* is present in the negative counterpart. In the negative examples so far, the final L tone on the subject *Úchè* remains L under the extraction examples, where it has been crossed over in the non-subject extraction examples such as (68-b).

4.5.2.2 Long-distance A' movement dependencies

Further support for the fact that the particle *ná* is present only along the path of negation comes from long-distance extraction. Consider the examples in (73) and (74) below, which involve extraction of elements from embedded and matrix clauses with different polarity. In (73-a), the matrix clause is negative, while the embedded clause is affirmative. (73-b) illustrates A'-movement of the object of the embedded affirmative clause. The data show that *ná* is only allowed in the matrix negative clause but not in the embedded affirmative clause, even though the movement is from this embedded clause. Example (74-a) shows a reverse in the polarity of the matrix and embedded clauses. Here, the matrix clause is affirmative and the embedded clause is negative. (74-b) exemplifies the same movement of the embedded object. And what we see is that the particle *ná* is not licit in the matrix affirmative clause but only allowed in the embedded negative clause.

- (73) *Long-distance extraction*
- a. Àdá á-'má-ghí [nà Úchè hù-rù Òbí.]
Ada É-know-NEG that Uche see-SFX Obi
'Ada didn't know that Uche saw Obi.'

- b. Ònyé kà Àdá ná 'á-má-ghí [nà Úchè (*ná) hù-rù ___?]
 who FOC Ada PRT É-know-NEG that Uche PRT see-SFX
 'Who did Ada not know that Uche saw?'
- (74) a. Àdá mà [nà Úchè á-'hù-ghí Òbí.]
 Ada know that Uche É-see-NEG Obi
 'Ada knows that Uche didn't see Obi.'
- b. Ònyé kà Àdá (*ná) mà [nà Úchè ná 'á-hù-ghí ___?]
 who FOC Ada PRT know that Uche PRT É-see-NEG
 'Who did Ada know that Uche didn't see?'

The example in (75-a) shows two levels of embedding with negation in all three clauses. The subject of the intermediate clause is A'-moved to the left edge of the matrix clause. But the particle surfaces only in the intermediate clause, that is, the extraction site of the A'-moved subject and in the matrix clause but not in the embedded final clause (75-b). This indicates that the particle occurs only in negative clauses that have been affected by A'-movement.

- (75) *Two levels of embedding with long-subject extraction*
- a. Ézè é-'ché-ghí [nà Àdá á-'má-ghí [nà Úchè á-'hù-ghí Òbí.]]
 Eze É-think-NEG that Ada É-know-NEG that Uche É-see-NEG Obi
 'Eze didn't think that Ada didn't know that Uche didn't see Obi.'
- b. Ònyé kà Ézè ná 'é-ché-ghí [___ *(ná) 'á-má-ghí [nà Úchè
 who FOC Eze PRT É-think-NEG PRT É-know-NEG that Uche
 (*ná) 'á-hù-ghí Òbí?]]
 PRT É-see-NEG Obi
 'Who did Eze not think that didn't know that Uche didn't see Obi?'

The data in (75-b) also illustrate an interesting effect with regards to long-distance subject extraction. Recall from Chapters 2 and 3 (see also Uwalaka (1991); Amaechi and Georgi (2019)) that Igbo attests the *that*-trace effect. See examples (39) and (41) above. (41) is repeated here as (76).

- (76) *That-trace effect*
- a. Ònyé kà Òbí chè-rè [CP nà Úché **má** [CP ___ 'rì-'rì jí?]]
 who FOC Obi think-SFX that Uche know eat-SFX yam
 'Who does Obi think that Uche knows that ate yam?'
- b. Ònyé kà Òbí **chè-ré** [CP ___ 'má [CP nà Àdá rì-rì jí?]]
 who FOC Obi think-SFX know that Ada eat-SFX yam
 'Who does Obi think that knows that Ada ate yam?'

Under long-subject extraction from an affirmative clause (76-b), the complementizer *nà* disappears, but in the negative sentence in (75-b), the particle *ná* is licit. I will argue that both the declarative complementizer in (76) and what I call a particle in (75) are both elements in the C domain, but they realize different heads. I will also argue that the different position of the particle, that is, the post-subject DP position of the particle is the result of lowering of the particle from Fin to T. But first I show that the constructions where this *ná* particle occurs exhibit the hallmarks of movement dependencies.

4.5.2.3 Movement diagnostics

In this section, I present data that show that the dependencies in which the *ná* particle appears exhibit the hallmarks of movement. I show this with island and reconstruction effects, as well as strong cross-over. For islands effects, I show this using adjunct island in (77). The island data show that even though the dependencies are unbounded (cf. (75)), they are sensitive to islands. (77-b) shows that extraction of an XP out of the adjunct clause containing negation, which is an island, results in ungrammaticality.

(77) *Adjunct island*

- a. Òbí sì-rì jí [màkà nà Úchè á-'zù-tá-ghí òsikápá.]
 Obi cook-SFX yam because that Uche É-see-NEG rice
 'Obi prepared yam because Uche did not buy rice.'
- b. *Gí'ní kà Òbí sì-rì jí [màkà (nà) Úchè ná 'á-zù-tá-ghí __?]
 what FOC Obi cook-SFX yam because that Uche PRT É-see-NEG
 lit: 'What did Obi prepare yam because Uche did not buy?'

(78) *Principle A*

- a. Òbí_i á-'hù-ghí fòtó [ònwé 'yá]_i
 Obi É-see-NEG picture SELF 3SG.ACC
 'Obi didn't see a picture of himself.'
- b. [Fòtó [ònwé 'yá]_i] kà Òbí_i ná 'á-'hù-ghí __.
 picture SELF 3SG.ACC FOC Obi PRT É-see-NEG
 'It's a picture of himself that Obi didn't see.'

(79) *Strong cross-over*

- a. Ó chère nà Òbí á-'hù-ghí Àdá
 3SG.NOM think that Obi PFX-see-NEG Ada
 'He thinks that Obi didn't see Ada.'
- b. Ònyé kà ó chère nà Òbí (ná) 'á-'hù-ghí __?
 who foc 3SG.NOM think that Obi PRT PFX-see-NEG
 *for which x, x thinks that Obi didn't see x
 ✓for which x, y thinks that Obi didn't see x

The binding principle A in (78) shows that the anaphoric element preceding the subject can be bound by the subject. This indicates that the anaphoric is being reconstructed to a position below the subject. The strong cross-over example (79) indicates that the gap in the embedded negative clause cannot be c-commanded by a pronoun co-indexed with it, as this is a violation of principle C when the fronted XP reconstructs into the gap position.

4.5.3 Analysis

I have shown so far that the *ná* particle found in clauses that contain negation under extraction is a morphological reflex of A'-movement. The particle occurs only when an XP overtly moves to Spec-ForceP or Spec-FocP, and its position is after the subject DP. *Ná* also mutually excludes the final H tone on the subject under extraction (cf. Section 4.4) (Green and Igwe, 1963; Goldsmith, 1976). I argue in this section that *ná* is a complementizer despite the fact that it does not occur at the left edge of the clause, a position where complementizers are often found in languages. I also propose that the

particle (and the final H tone on the subject that it mutually excludes) realizes the Fin head in a split-CP system (Rizzi, 1997). In accounting for the post-subject position of the particle, I argue that the particle undergoes lowering from the Fin head in the C domain to T as a result of the negative feature on the Pol head.

4.5.3.1 Is *ná* a complementizer?

In the examples involving non-subject extraction that we have seen so far, we see that the *ná* particle appears after the subject and before the verbal complex; cf. (68-b). Note that *ná* also surfaces under subject extraction (75) but its post-subject position is more obvious when we consider non-subject extraction. This post-subject position is not a typical position for complementizers in the language. For instance, the declarative complementizer *nà* with a L tone (cf. (41)) occurs before the subject. The complementizer *mà* that introduces embedded yes/no questions (see Chapter 3) also occurs before the subject. The focus marker *kà*; cf. (68-b), is also found before the subject. I assume that *ná* is also a complementizer even though it occurs in a non-typical complementizer position. A data point which provides support for this assumption that *ná* is a complementizer is that the element is triggered only under overt XP A'-movement out of negative clauses. In this sense, it behaves like the focus marker *kà*, which is also triggered under overt focus XP movement. But unlike *kà*, it does not display a subject/non-subject asymmetry. Note that (Goldsmith, 1976) proposes that the particle is a relative marker but this stance of treating *ná* as a relative marker cannot be upheld since the particle is present in other A'-movement dependencies, such as focus movement (cf. Chapters 2 and 3) which do not contain any relative clause structure.

Igwe and Green (1964, 44) refer to the particle (in relative clauses) as a lexical prefix, which bears a H tone and crucially, they note that this is different from the homophonous imperfective auxiliary; cf. (80). But the suggestion by Nwachukwu (1976, 490) that the particle is an auxiliary required under negative relative clauses cannot be upheld. There are a number of facts that show that the particle *ná* in negative A'-movement contexts is not verbal. The particle, like the other complementizers in the language, does not take inflectional affixes. But auxiliaries do take inflectional affixes (80-b). The negative affixes, for instance, can co-occur with the auxiliaries (80-c). This is expected if the particle is a C element as most of the affixes in the language are often present on the verb. Example (80-d) shows that having the negative affixes on the post-subject *ná* is ungrammatical. If *ná* were an auxiliary, the negative affixes should have attached to it and not to the following auxiliary, as in (80-b). Note that the imperfective auxiliary *nà* in (80-a) bears a L tone. In the negative sentences in (80-b), the *É-* prefix that supports T (Déchaine, 1993) and the negative suffix occur with the auxiliary, and the auxiliary has a H tone (downstep here, but we could tell that it is originally H since it becomes a downstep in this negative context).

- (80) *Ná is not an auxiliary*
- a. Òbí nà-èrí ʼjí.
 Obi IPFV-NMZL.eat yam.GEN
 'Obi is eating yam.'
- b. Òbí á-'ná-ghí è-rí ʼjí.
 Obi É-IPFV-NEG NMLZ-eat yam.GEN
 'Obi is not eating yam.'

- c. Gí'ní kà Òbí ná 'á-ná-ghí èrí ___?
 what FOC Obi PRT É-IPFV-NEG NMLZ.eat
 'What is Obi not eating?'
- d. *Gí'ní kà Òbí á-'ná-ghí ná èrí ___?
 what FOC Obi É-PRT-NEG IPFV NMLZ.eat
 intended: 'What is Obi not eating?'

Auxiliaries in the language take the nominalized form of the verb as complement; cf. (81). In this form of the verb, there is the nominalizing harmonizing prefix (*a-/e-*), which bears the polar tone of the verb, and the direct object in auxiliary constructions is marked with the genitive case (Déchaine, 1993; Manfredi, 1997).

Another possible suggestion is that the *ná* particle is a clitic. But unlike clitics in Igbo, it tends to have a fixed pre-verbal position.

- (81) a. Gí'ní kà Àdá ná 'é-rí-ghí?
 what FOC Ada PRT É-eat-NEG
 'What did Ada not eat?'
- b. *Gí'ní kà ná Àdá 'é-rí-ghí?
 what FOC PRT Ada É-eat-NEG
 intended: 'What did Ada not eat?'
- c. *Gí'ní kà Àdá 'é-rí-ghí ná?
 what FOC Ada É-eat-NEG PRT
 intended: 'What did Ada not eat?'

Most Igbo clitics are enclitics following their hosts, and can occur both after verbs and nouns (Emenanjo, 2015). I illustrate this behaviour of clitics with the clitic *gà*, which means *all*.

- (82) *Clitic placements* (Emenanjo, 2015, 262)
- a. Ndí à gâ bù òkè mí.
 the.ones DEM CL COP the.one 1SG
 'These are all mine.'
- b. Ndí à bù gâ òkè mí.
 the.ones DEM COP CL the.one 1SG
 'These are all mine.'
- c. Ndí à bù òkè mí gâ.
 the.ones DEM COP the.one 1SG CL
 'These are all mine.'

Finally, recall from Section 4.4.1 that the final H tone on subjects under subject relativization (example (35-b) repeated here as (83-a)) is the realization of the Fin head. It turns out that when the *ná* particle is present, the final H tone on the subject disappears ((83-b) is (36)). In other words, the subject DPs retain their inherent tones (that is, no final H tone) in the presence of the *ná* (Igwe and Green, 1964, 45).

- (83) *No final H tone on relativized subject in the presence of ná*
- a. ìngbàdá 'rì-'rì úgwú.
 antelope climb-SFX hill
 'the antelope that climbed uphill'

- b. **m̀gbàdà** ná 'á-rí-ghí úgwú.
 antelope PRT A-climb-NEG hill
 'the antelope that didn't climb uphill'

A similar effect is also noticed with the final H tone on crossed over subjects (cf. Section 4.4.2)

(84) *No final H tone on crossed over subject in the presence of ná*

- a. **Ézè** rì-rì jí.
 Eze eat-SFX yam
 'Eze ate yam.'
- b. Jí kà **Ézé** rì-rì.
 yam FOC Eze eat-SFX
 'Eze ate YAM.'
- c. **Ézè** é-'rí-ghí jí.
 Eze É-eat-NEG yam
 'Eze didn't eat yam.'
- d. Jí kà **Ézè** ná 'é-rí-ghí.
 yam FOC Eze PRT É-eat-NEG
 'Eze didn't eat YAM.'

In the baseline declarative sentences in (84-a&c), the subject DP *Ézè* ends with a L tone. Under A'-extraction in (84-b) without clausal negation, the subject DP bears a H tone. In the negative counterpart in (84-d), where *ná* surfaces, the subject DP has a L tone (see also (75) above). This indicates that the final H tone on the subject are *ná* are mutually exclusive.

I conclude from all these tests that although *ná* occurs in a 'strange' position in the negative clauses where it appears, the particle is a complementizer rather than an auxiliary or a (verbal) clitic. I will argue that at some point in the derivation, *ná* starts out at the clause initial position as would a 'normal' complementizer. In this regard, there are two major possible analyses to account for the surface position of the particle. One is an account which assumes that the subject of the clause is raised to a higher specifier position within the C domain so that the subject precedes the position of the complementizer. The other alternative analysis is that of lowering of the particle from C to a head below the subject position. I will argue for the latter for the particle in negative clauses. A potential empirical advantage of the lowering analysis is that it is in concord with local dislocation of the final H tone on the subject proposed in Section 4.4. But before I consider these analyses, I will argue that *ná* (and final H tone on subject) occupies the Fin head in the C domain.

4.5.3.2 On the position of *ná*

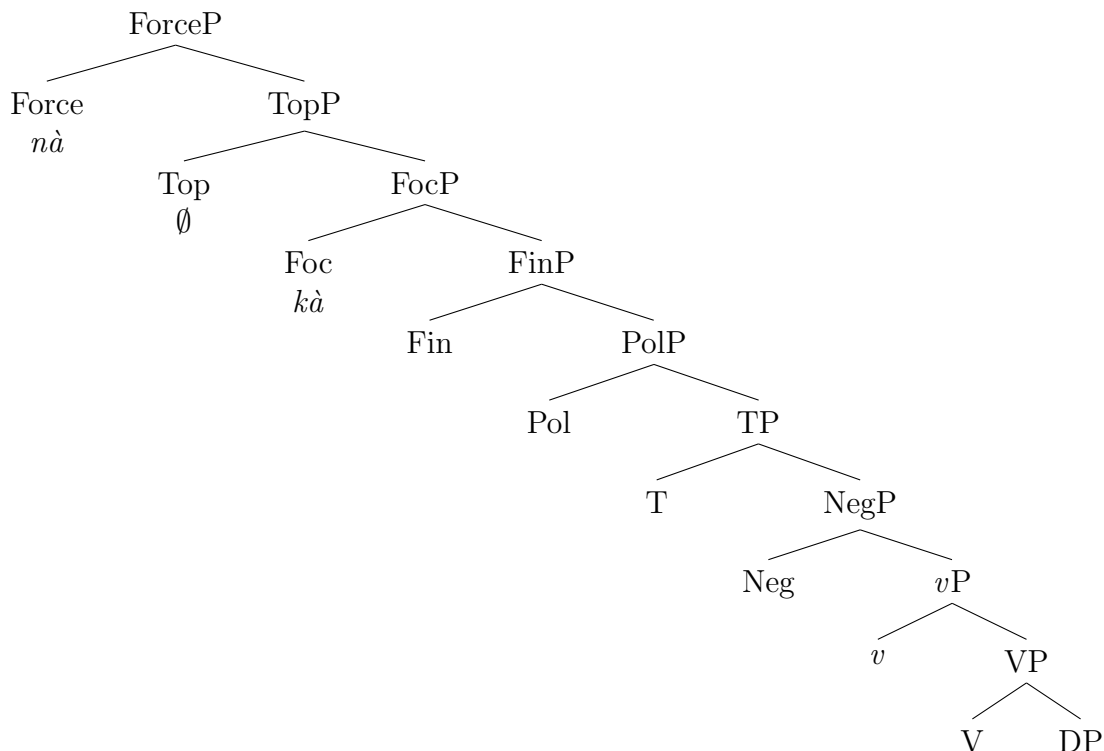
The main task in the previous section has been to show that the particle that is present when an XP undergoes A'-movement from a negative clause is a complementizer even though it does not occur in a 'normal' complementizer position. Most of the arguments have been successful in showing that the particle is neither a verbal element nor a clitic in the language. Based on this, I postulate that the particle is a complementizer. The task in this present section is to outline the position of this complementizer in the CP domain. So far, we have come across various (morphological) C elements in the language. For instance, there is the complementizer *nà*, which introduces embedded

declarative clauses (85-a); there is also the complementizer *mà* (85-b), which introduces embedded yes/no questions (cf. Chapter 3). We also have *kà*, which occurs in subjunctive clauses such as (85-c), and this complementizer also functions as the focus marker in (85-d) (see also Goldsmith (1981a,b) for complementizers in Igbo).

(85) *Complementizers in Igbo*

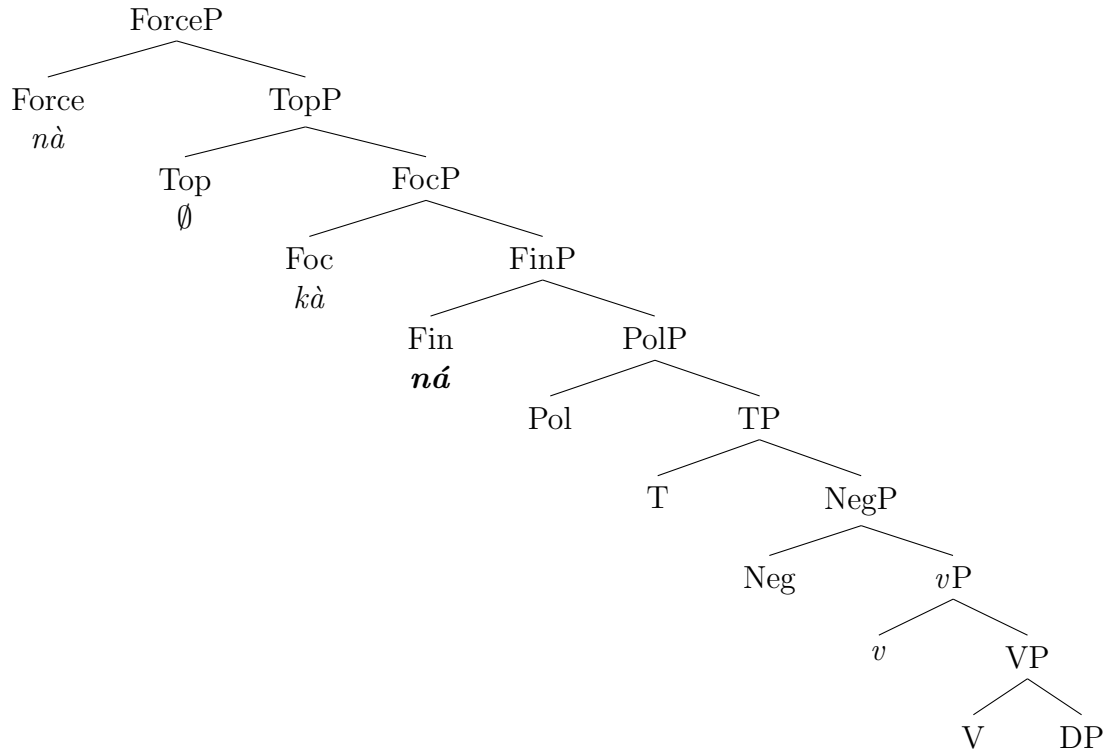
- a. Òbí chè-rè **nà** Àdá rì-rì jí.
Obi think-SFX that Ada eat-SFX yam
'Obi thinks that Ada ate yam.'
- b. Òbí jù-rù **mà** Àdá ò rì-rì jí.
Obi ask-SFX if Ada 3SG eat-SFX yam
'Obi asked whether Ada ate yam.'
- c. Òbí chọ-rọ **kà** Àdá rí-é 'jí.
Obi want-SFX that Ada eat-Á yam.GEN
'Obi want Ada to eat yam.' [lit. 'Obi wants that Ada eat yam.']
- d. Jí **kà** Àdá rì-rì.
yam FOC Ada eat-SFX
'Ada ate YAM.'

In Chapter 3, I showed that the declarative complementizer *nà* is in Force (cf. Amaechi and Georgi (2019)), and also argued that the complementizer *mà* in embedded yes/no questions occupies the Force head. I will assume here that the *kà* complementizer in (85-c) is also Force. But *kà* in (85-d) has been shown to realize the Focus head (Osuagwu, 2015; Amaechi and Georgi, 2019). Thus, assuming a split-CP system (Rizzi, 1997), we have the following structure in (86) for Igbo. Note that Topic seems not to be marked in the language.

(86) *Force and Focus in the C domain*

I postulate that the particle *ná* realizes Fin in the structure in (86). Empirical support for this is that the particle occurs below the declarative complementizer *nà* (cf. (75)) and the focus marker *kà* (cf. (68-b)). The examples also show that *ná* co-occurs with these other complementizers. We have also encountered data bearing on the fact that *ná* cannot be Topic as it is never found in topicalization contexts (cf. (71-c)). (See also arguments in Section 4.5.4 that subjects in Igbo do not occupy a Topic position).

(87) *Ná realizes Fin*



Recall from the discussion in the preceding Section 4.5.3.1 that *ná* and the floating H tone under subject relativization are mutually exclusive. Hence, I assume the following vocabulary Items (88) for Fin:

(88) *Vocabulary Items for Fin*

- a. /*ná*/ ↔ [Fin] / $\begin{matrix} [\text{uFoc}] \\ [\text{uRel}] \end{matrix} \text{--- Pol}_{[\text{NEG}]}$
- b. /' / ↔ [Fin]

Fin spells out as *ná* if the polarity feature of the adjacent Pol projection is negative, otherwise, it is realized as a H tone. That negation and affirmation spell out differently should not be surprising given that in clauses without A'-movement, the T head is argued by Déchaine (1993) to be supported differently in the language. In the negative clause, it is supported by the H tone prefix *É-*, and in an affirmative clause, it is supported by a L tone (cf. Section 4.5.1 above). Note from the Vocabulary Items in (88) that Fin is not only sensitive to negative polarity on the head to its right, but also to the presence of a (checked) movement-triggering feature on its left, [uFoc] on the Foc head for focus movement, or [uRel] on the Force head for relativization. In relative clauses, FocP is not present and hence, ForceP is next to FinP.

In a nutshell, I have argued in this section that *ná* realizes Fin in a split-CP system. In what follows I present an account of the surface position of the particle *ná*. But

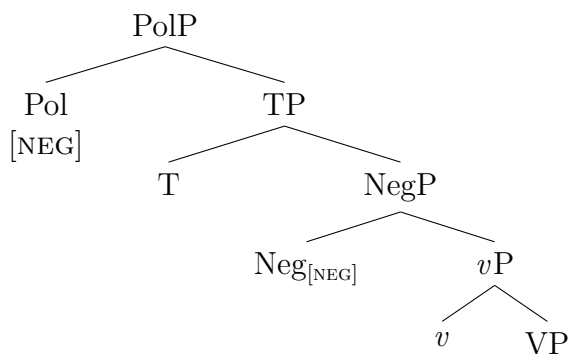
before I do that I address a potential problem that the structure in (87), where PolP is below FinP, helps to solve for the implementation of the lowering analysis that will be argued for.

4.5.3.3 Locality and the PolP projection

In a structure where the Fin projection is immediately above TP has the potential advantage for Local dislocation of the floating H tone to surface on the subject in Spec-TP, as argued for in Section 4.4. But a problem with this kind of structure is that negation (or affirmation in the case of affirmative clauses) which triggers Fin is low in the structure, below TP. Hence, we have a non-local dependency. Note that this locality problem is faced by any analysis for *ná*, whether a C-lowering or a subject raising analysis. The issue here is that the feature that triggers *ná* in Fin is not local enough. This is the reason for postulating the structure in (67) in Section 4.5.1, where there is a polarity projection above TP. This way, Fin is adjacent to the Pol projection, and so cyclic lowering can be applied, as I argue below.

Déchainé (1993) presents convincing evidence that shows that both affirmation and negation are present and distinguished in the grammar of Igbo. Just as Neg heads its own functional projection, affirmation also heads the positive counterpart (cf. Section 4.5.1). While the morphological realization of affirmation is the *-rV* factative suffix, negation is realized with the suffix *-ghi*. I assume following earlier works by Laka (1990); Culicover (1991); Haegeman and Zanuttini (1991); Zanuttini (1991, 1994, 1997); Martins (2000) among others, that both negation and affirmation are different instantiation of a broader syntactic category. I adopt Zanuttini's (1994) term polarity for this category. Polarity projects its own phrase and c-commands TP. According to Zanuttini (1994), PolP is where the polarity value of the clause is established, and it contains both affirmation and negation. Languages express sentential negation (or affirmation) via the feature that is present in PolP (p.428). The other lower NegP (or AffP in the case of affirmative clauses, as in (66)) position is where the negative element is generated but which does not carry syntactic features corresponding to syntactic negation. In order to check the negative feature [NEG] on Pol, the Pol head seeks for a value bearing the relevant [NEG] feature in its c-command domain. This feature is present on the negative lexical element in NegP.

(89) *Polarity projection*

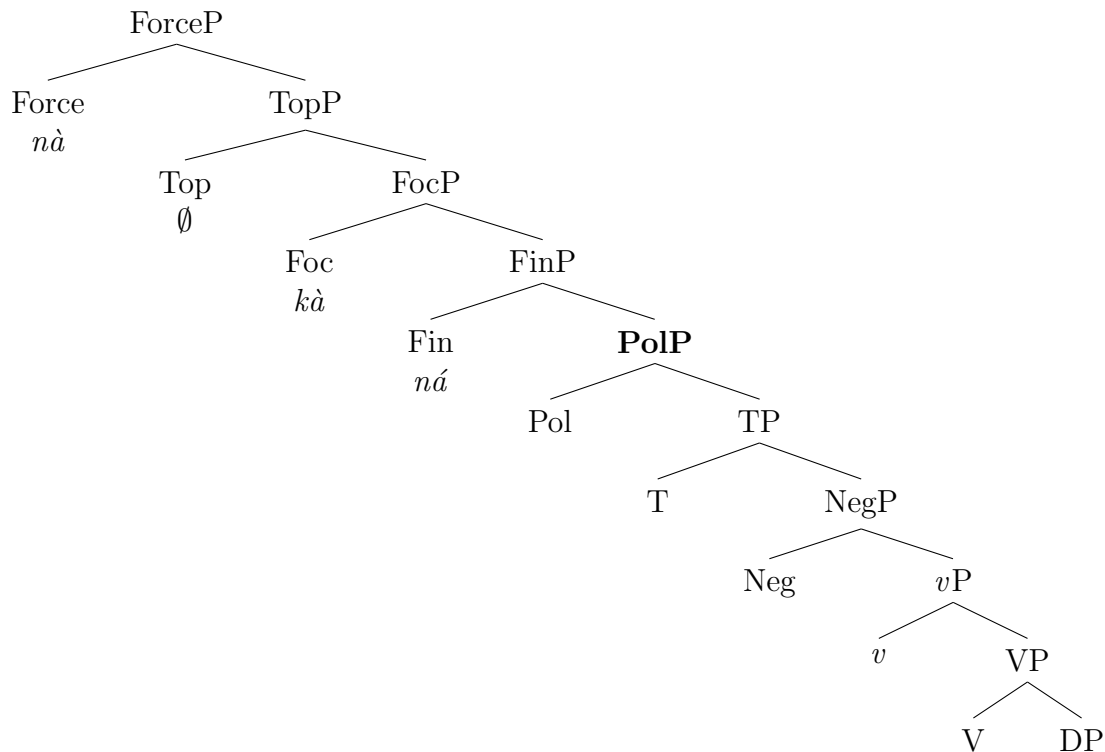


Assuming the Agree operation, which triggers the exchange of feature values between two elements in the syntactic structure (Chomsky, 2000, 2001), the [NEG] probe feature on Pol looks downwards, seeking for a goal with the matching feature in its c-command domain. It finds Neg below TP. This lexical negative element checks the [NEG] feature

on Pol. Zanuttini (1994) shows that there is variation across languages with respect to the strength of the [NEG] feature of Pol. In languages such as Spanish and Portuguese, where the [NEG] feature on Pol is strong, checking must take place before spell-out. And in these languages, the negation marker precedes the verb due to movement to Pol. In other languages, e.g., French, where the feature is weak, checking takes place after spell-out, and the negative marker will not necessarily precede the verb. I assume that Igbo belongs to the latter set of languages, where checking takes place after spell-out, and the negative suffix follows the verb. There is no overt movement of the negative lexical item to Pol.

With the above structure in (89), where we have Pol above TP, and where the polarity feature of the clause is established, I assume that the features that cause the occurrence of the particle *ná*, that is, negative polarity on Pol and an A'-movement-triggering feature on a head in the C-domain, are close enough to interact. See the representation in (90) below.

(90) *Pol below Fin*



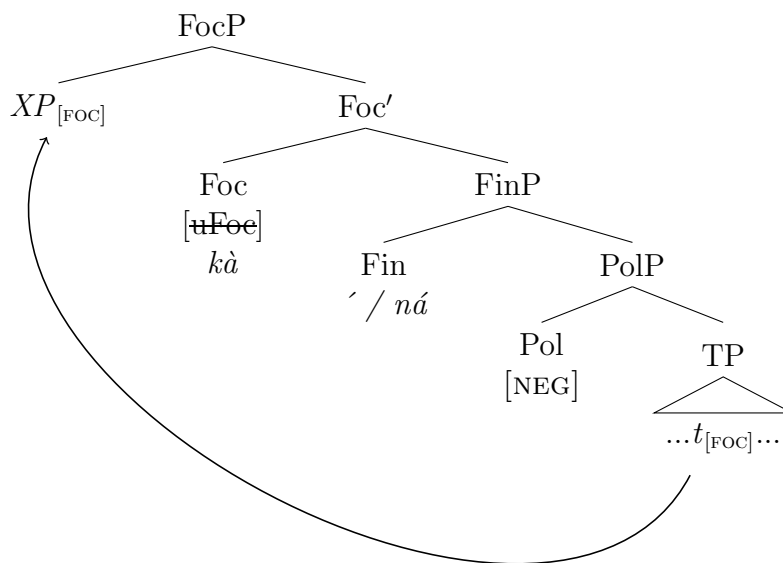
Having solved the locality problem, I take it that the preverbal position of *ná* in the A'-movement negative sentences is the result of post-syntactic lowering of Fin to T. I show this in the next section.

4.5.3.4 C-Lowering

I assume the Fin is realized when an XP moves to Spec-ForceP or Spec-FocP, given that we get the reflex only when an XP moves to the specifier of Force and Foc (but not Top). Note that this realization of Fin is not restricted to a specific polarity of the clause out of which movement takes place. Fin simply spells out differently whether the clause is negative or affirmative. Put differently, the Fin projection is obligatorily when there is an Agree relation between a head (Force or Foc) in the CP domain and

an XP bearing the corresponding feature in the c-command domain of the head. After successful Agree between the head and the XP, the XP also moves to the specifier position of the head with which it has agreed. I illustrate this with focus movement in the structure in (91). An important aspect of the structure proposed in (91) is that the presence of Fin is sensitive both to the negative polarity on the head to its right, and to the checked [uFoc] feature on the Foc head to its left. Thus, assuming the operation Agree (Chomsky, 2000, 2001) which specifies that when an XP (which is often referred to as the goal) moves, the features of the XP are copied to the head (which is often referred to as the probe with unvalued features) to whose specifier the XP moves. Agree is triggered by probe features that seek a value.

(91) *Fin obligatory under A'-movement dependency*



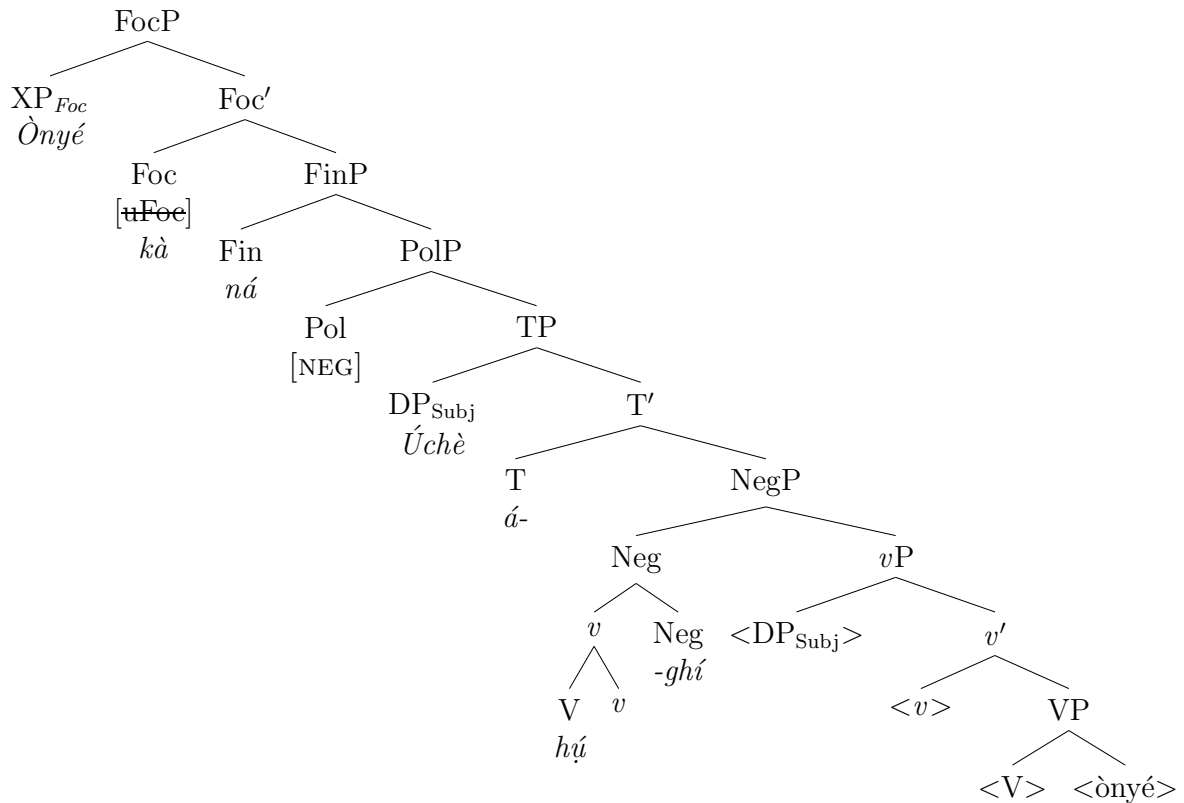
In (91) above, the moving XP has a Foc feature, and this feature is copied to the Foc head, since the XP moves to Spec-Foc, and the head has unvalued feature that needs to be checked. I propose that in Igbo, when this relation between the moving XP and Foc holds, the Fin head, to the right of the checked Foc feature, interacts with Pol below it. See the Vocabulary Items in (88) in Section 4.5.3.2.¹⁴

Based on the above empirical facts discussed in Section 4.5.2, I argue for a lowering analysis to account for the unusual low position of the *ná* particle.¹⁵ Basically, the subject is not dislocated to a specifier in the C domain but stays in Spec-TP. I assume the following structure in (93) for the sentence in (68-b) repeated here as (92).

(92) Ònyé kà Úchè **ná** 'á-hụ-ghị ___?
 who FOC Uche PRT É-see-NEG
 'Who did Uche not see?'

¹⁴Another way to model this interaction of Fin is to assume that after the [uFoc] feature on the Foc head has been checked, the Foc head additionally agrees with Fin, and Fin agrees with Pol below it.

¹⁵See also Pietraszko (2019) for a lowering analysis in Ndebele relative clauses. Ndebele also has the property that the subject immediately follows the relativized head noun and precedes what Pietraszko refers to as the (associative) linker that links the relativized NP to the DP containing the relative clause. She shows that a relative CP is dominated by a DP shell headed by an augment vowel. And she argues that the linker always undergoes lowering onto D.

(93) *Focus movement out of a negative clause*

The structure in (93) illustrates a direct object question, so the direct object undergoes wh-/focus movement to Spec-FocP, hence the Foc head is realized as *kà*. The verb moves (cyclically) to Neg (as I have argued for in Section 4.5.1); the subject undergoes movement to Spec-TP (EPP-property of Igbo, see Chapter 1); the Fin-head is realized as *ná* because the adjacent head, Pol hears the feature [NEG] (it is a negative sentence) and there is A'-movement in the sentence, hence the context for spelling out Fin as *ná* is given (cf. (88)). In the structure, *ná* is in Fin below FocP, while the subject DP is in Spec-TP, but this does not give us the order of the sentence in (68-b), where *ná* surfaces after the subject DP. I propose that the position of *ná* is a result of postsyntactic lowering of Fin to T. I assume Embick and Noyer's (2001) proposal that lowering follows all movement in syntax and occurs before Vocabulary Insertion. Embick and Noyer (2001) define lowering structurally, as in (94).

(94) *Lowering of X⁰ to Y⁰ (Embick and Noyer, 2001, 561)*
 $[XP\ X^0 \dots [YP \dots Y^0 \dots]] \rightarrow [XP \dots [YP \dots [Y^0\ Y^0 + X^0] \dots]]$

Lowering targets the head of the projection selected by the lowering head. In this sense, the operation is sensitive to hierarchical structure. I propose that Fin lowers cyclically to Pol and T, as represented in (95). Having Fin next to Pol as in the structure in (90) creates the environment for postsyntactic lowering since the heads involved are structurally adjacent (Embick and Noyer, 2001). Lowering proceeds cyclically from Fin-to-Pol, the head of its complement, and complex Fin-Pol lowers to T. This derives the correct order in (68-b), where the subject DP precedes *ná*.

- (95) *Postsyntactic lowering of ná*

$$[\text{FocP XP}_{\text{foc}} [\text{Foc}' \text{FOC} [\text{FinP Fin} [\text{PolP Pol}_{\text{[NEG]}}] [\text{TP SUBJ} [\text{T}' \text{T} [\text{NegP Neg} [\text{vP } v [\text{VP} \dots]]]]]]]]]] \Rightarrow [\text{FocP XP}_{\text{foc}} [\text{Foc}' \text{FOC} [\text{FinP } \mathbf{Fin} [\text{PolP } \mathbf{Pol}_{\text{[NEG]}}] [\text{TP SUBJ} [\text{T}' \mathbf{Fin-Pol-T} [\text{NegP Neg} [\text{vP } v [\text{VP} \dots]]]]]]]]]]$$

An argument for lowering to T and not to Neg is that *ná* precedes auxiliaries in Igbo. See (80-c) repeated here as (96). This is based on the assumption that auxiliaries head their own projections below T but above *vP* (Adger, 2003).

- (96) Gí'ní kà Òbì ná 'á-ná-'ghí èrí _____?
 what FOC Obi PRT É-PROG-NEG NMLZ.eat
 'What is Obi not eating?'

In the next section I will argue that *Fin* is projected also in embedded clauses. This explains why we see these reflexes not only in matrix clauses but also in embedded clauses.

4.5.3.5 *Fin* projection in embedded clauses

The distribution of the particle *ná* in long-distance movement cases discussed in Section 4.5.2.2 follows if this movement is successive-cyclic (that is, the moving XP makes a stop-over at least in the CP-domain of every clause) and I assume that the intermediate movement steps are triggered by the same features as the the final movement step (Abels, 2012). Amaechi and Georgi (2019) argue that embedded questions in Igbo lack a Focus projection as Igbo does not allow embedded *wh*-questions (Goldsmith, 1981b). Hence, I assume that embedded clauses in Igbo only has Force and *Fin* projections. Apart from lacking a Focus position, Amaechi and Georgi also point out that in long-distance *wh*-non-subject dependency in embedded clauses ForceP projects, but this does not project in long *wh*-subject-dependency. The argument they present is that movement of a *wh*-subject from Spec-TP to Spec-ForceP violates Spec-to-Spec anti-locality (Erlewine, 2016). That is, the movement from the specifier of TP to the specifier of ForceP is too close. This analysis predicts that the declarative complementizer *nà* is realized under non-subject extraction. This is indeed the case as the example in (49-a) in this chapter (repeated here as (97-a)) shows. But for subject extraction, the complementizer disappears, as shown in (41) in Section 4.4.1 (repeated here as (97-b)). I follow Amaechi and Georgi in assuming that Force is present under non-subject extraction but absent under subject extraction. But, in addition to this, I will argue that in both subject and non-subject extraction, *Fin* is projected. An argument for this is that the floating H tone which I argue to realize the *Fin* head is present in both long-distance subject and non-subject extraction as the examples in (97) indicate. Under the long-non-subject in (97-a), we see this final H tone on the subject from where the object has been extracted. Furthermore, this reflex is also present on all the clauses crossed. I propose that the reflex in all the crossed clauses is as a result of *Fin* that is also projected in all these clauses, and that the moving XP makes successive-cyclic stops at the edge of the clauses. Similarly for subjects, we also see the effect of *Fin*. Remember from the discussion in Section 4.4.1 where I argued that the final H under long-subject extraction is realized on the verb in the immediately preceding clause. Also recall that it is this H tone that I showed brings about the downstep tone on the verb under long-subject extraction. Important for our present concerns is that this H tone, which realizes *Fin* under the present analysis is

present on the verb in the immediate preceding clause as the example in (97-b) indicates. Interestingly, we also see the final H tones on the subjects of the matrix and intermediate clauses.

(97) *Extraction from embedded affirmative clauses*

- a. Ònyé kà **Úché** chè-rè [nà **Ógú** sì-rì [nà **Ézé** nyè-rè
 who FOC Uche think-SFX that Ogu say-SFX that Eze give-SFX
 ákwà?]
 cloth
 ‘Who did Uche think that Ogu said that Eze presented with cloth?’
- b. Ònyé kà **Òbí** chè-rè [CP nà **Úché** **má** [CP 'rì-'rì jí?]
 who FOC Obi think-SFX that Uche know eat-SFX yam
 ‘Who does Obi think that Uche knows that ate yam?’

Crucially, the data from negation provides a clearer morphological support that Fin is projected under long-subject extraction. Recall from Section 4.5.3.1, that under long-distance subject extraction from negative clauses, *ná* is found; cf. (98-a). ((98-a) is example (75-b) above). Note that having a resumptive pronoun in the extracted subject in the clause in (98-a) is ungrammatical. This means that *ná* in (98-a) does not obey the complementizer-trace effects. Also recall that *ná* lowers to T and follows the subject as argued above in Section 4.5.3.4. All points to the fact that *ná* in the intermediate clause in (98-a) is not the complementizer in Force (this is if Force were assumed to be projected in the first place, which I argue is not. If this were the case, we would predict that in matrix clauses where Foc is projected and *ná* occurs after the subject, it must have lowered from the Force head through Foc, and finally to the position after the subject. But this is not borne out by the data as *ná* does not attach to the focus marker *kà* in Foc head).

(98) *Extraction from embedded negative clauses*

- a. Ònyé kà **Ézè** ná 'é-ché-ghí [*(**ná**) 'á-má-ghí [nà **Úché**
 who FOC Eze PRT É-think-NEG PRT É-know-NEG that Uche
 (*ná) á-'hú-ghí **Òbí**?]
 PRT É-see-NEG Obi
 ‘Who did Eze not think that didn’t know that Uche didn’t see Obi?’
- b. Ònyé kà **Ézé** (*ná) mà [nà **Úché** **ná** 'á-'hú-ghí ?]
 who FOC Eze PRT know that Uche PRT É-see-NEG
 ‘Who did Eze know that Uche didn’t see?’

The data in (98-a) also show that we see the reflex in the crossed-over matrix clauses as *ná* occurs after the matrix subject *Ézè*. And this matrix subject does not bear the final H tone as in the examples in (97). This is based on the proposal that the final H tone and *ná* realizes Fin, and they only differ with respect to the polarity of the clause. The data in (97-b) and (98-a) show that Fin does not conform to the *that*-trace, only the *nà* in Force does. Now coming to non-subject extraction from negative clauses (98-b), there is *ná* since the extraction is out of a negative embedded clause. This demonstrates that Fin is projected, but in the crossed-out matrix clause, which is non-negative, *ná* is illicit. Rather what is observed is that the matrix subject surfaces with a final H tone since the clause is an affirmative one. This similarly suggests that Fin is projected in the matrix clause but this is realized as a H tone as a result of the

affirmative polarity of the matrix clause.

To conclude, in this section I have provided an analysis for the particle *ná* that surfaces in A'-movement dependencies that occur out of a negative clause. I provided data that show that the particle is neither a verbal element nor a clitic. Based on this, I argued that *ná* is a complementizer that shows up in an 'unusual' position. Although the particle surfaces in an 'abnormal' position, I proposed that its position within the CP domain is that of Fin, and that Fin selects PolP as its complement. The polarity value of a clause is determined at PolP (Zanuttini, 1996, 1997). In order to account for the post-subject position of the particle, I postulate that Fin undergoes lowering to T. In the next section, I will consider an alternative analysis in accounting for the position of *ná*, and I will show that this analysis is faced with problems the present lowering account does not face.

4.5.4 Subject raising: An alternative analysis

The fact that the complementizer element *ná* follows the subject in negative clauses with A'-movement could in principle also be accounted for by proposing that *ná* is in the regular C position but the subject DP moves across it, to an even higher position. A subject raising account would lead us to expect that since the subject moves to a left-peripheral position, that preverbal subjects in Igbo display properties of dislocated subjects or dislocated XPs in general. But subjects in Igbo do not appear to be dislocated, as I will show. Note that apart from the individual intricacies of this analysis, it faces the same locality problem faced by the lowering analysis, in that negation (in more general term polarity) which triggers this reflex is not close enough to the C domain. Hence, in the subject raising analysis considered here, I assume that the structure of negation is that proposed in (67) in Section 4.5.1 where Pol is above TP and I assume a split CP system.

A similar pattern with a C element occurring after the subject has been reported in (more or less closely) related languages, Dàgáárè (Bodomo and Hiraiwa, 2004, 2010), Swati, and is one of the strategies in Zulu (Henderson, 2007); for these, a subject raising analysis has been proposed. I consider what the arguments for subject raising are and whether they can also apply to Igbo or not. But I will show that we cannot uphold this analysis for Igbo.

In their discussion of left-headed (ex-situ) head-internal relative clauses (HIRCs) in Dàgáárè (Gur, Niger-Congo, spoken in Ghana), Bodomo and Hiraiwa (2004, 2010) show that in Dàgáárè relative clauses the relativized head noun is obligatorily fronted. But in addition to this, the particle *náng*, which they show is the complementizer, comes before the finite verb, see (99).¹⁶

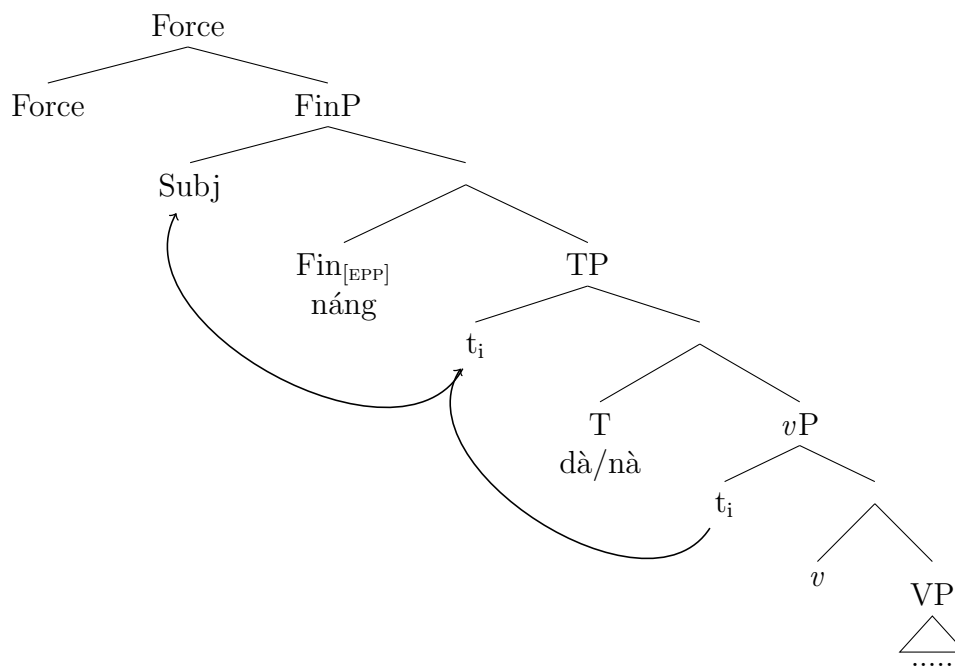
(99) *Relative clauses in Dàgáárè (Bodomo and Hiraiwa, 2010, ex.10)*

- a. ò nyé lá à pógó_i ná e_i/*ò_i **náng** nòng Dàkóráá.
 1SG see F D woman DEM Ø/3SG C like Dakoraa
 'I saw the woman who likes Dakoraa.' *subject relative clause*
- b. ò nyé lá à pógó_i ná Dàkóráá **náng** nòng e_i/*ò_i.
 1SG see F D woman DEM Dakoraa C like Ø/3SG
 'I saw the woman who Dakoraa likes.' *object relative clause*

¹⁶Thanks to Katharina Hartmann for bringing the Gur languages' relativization to my attention.

The complementizer element *náng* in Dàgáárè occurs in an ‘unusual’ low position. Based on adverb placement tests in relative clauses, which show that time adverbs can either occur between C and the verb or at the end of the relative clause (but not in any other position), Bodomo and Hiraiwa argue that the subject in relative clauses in (99) moves to Spec-FinP, a position lower than that occupied by the relativized head noun, ForceP. They postulate that the Fin head has an EPP feature like T and requires the subject —the closest element —to move to its specifier (100). Bodomo and Hiraiwa claim that such subject movement over C is well attested in some other Gur languages (Hiraiwa, 2005a,b).

- (100) *Subject movement to Spec-FinP in Dàgáárè relativization (Bodomo and Hiraiwa, 2010, ex.36)*



In Igbo adverbs occur strictly in final position, and also in relative clauses, as the examples in (101) show. The adverb can neither occur between *ná* and the verbal complex (101-b) nor between the relativized head noun and the subject (101-c). (101-d) indicates that the adverb is also illicit between the subject and *ná*. Adverbs only occur in clausal initial position in case of focus or topicalization. Hence, we cannot apply the adverb placement test to Igbo.

- (101) *Adverb placement in relative clauses*

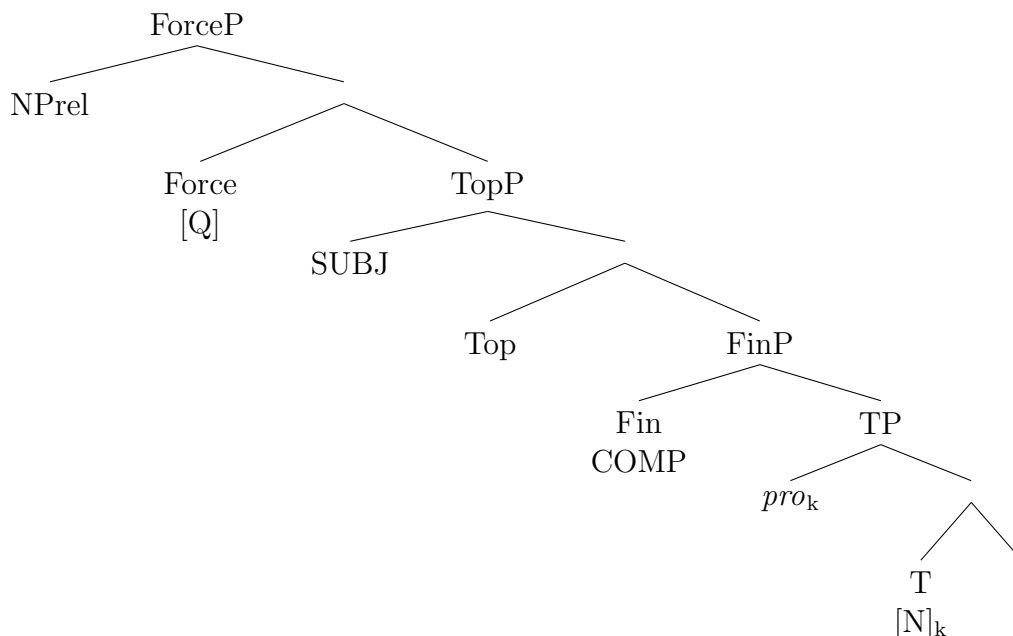
- a. ónyé Úchè **ná** 'á-hù-ghí n'ùtùtù
 person Uche PRT É-see-NEG P-morning
 'the person Uche didn't see in the morning'
- b. *ónyé Úchè **ná** n'ùtùtù 'á-hù-ghí
 person Uche PRT P-morning É-see-NEG
- c. *ónyé n'ùtùtù Úchè **ná** 'á-hù-ghí
 person P-morning Uche PRT É-see-NEG
- d. *ónyé Úchè n'ùtùtù **ná** 'á-hù-ghí
 person Uche P-morning PRT É-see-NEG

Henderson (2007) provides an account of agreement in Bantu relative clauses. In the study, Henderson groups the relatives into three types. Of importance here is Henderson's type 2 relatives, where the complementizer (*a* in Zulu, and *la* in Swati; cf. (102)) follows the relative clause internal subject, and does not display agreement with the relativized head noun. However, the verb agrees with the subject. The pattern is one of the strategies found in Zulu, and it is also attested in Swati (102).

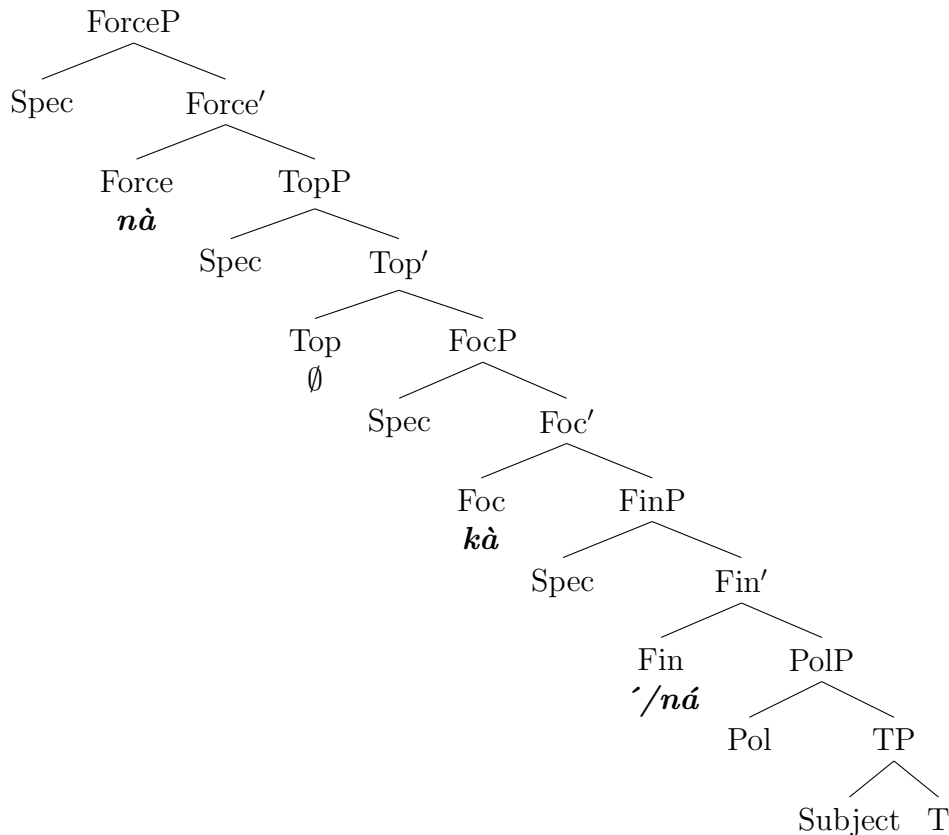
- (102) *Bantu agreement with subject only relative clauses* (Henderson, 2007, 168)
- a. incwadi isitshudeni **a**-isi-yi-funda-yo
 9letter 7student REL-7AGR-9OM-read-RS
 'the letter that the student is reading' Zulu
- b. umfati tintfombi **la**-ti-m-elekelela-ko
 1woman 10girl REL-10AGR-9OM-help-RS
 'the woman whom the girls help' Swati (Zeller, 2004)

Based on the idea that subjects in some Bantu languages are topics residing in the CP domain (Letsholo, 2002), Henderson (2007) proposes that the subjects of the relative clauses in (102) are in Spec-TopP position. Henderson offers an analysis, where the relativized head noun (NPrel) is in Spec-ForceP and the subject of the relative clause occupies Spec-TopP. The true structural subject is a null pronominal *pro* that is coreferential with the overt subject. Henderson further assumes that the complementizer is in Fin below Top; cf. (103) below.

- (103) *Structure of Bantu agreement with subject only relative clauses* (Henderson, 2007, 171)



I will argue in what follows that subjects in Igbo do not move to Spec-TopP or any other specifier in the CP domain. This is because subjects in Igbo do not display any of the properties of topics or XPs in the C domain. Assuming the split-CP system, we know that there are four potential positions the subject could move to, that is, the specifier positions in (104).

(104) *The CP domain*

Given the discussion on the structure of the CP in Igbo assumed so far, we now have a number of elements in most of the heads in the C domain that indicate whether an XP is in their specifier or not. For instance, we know the subject does not move to Spec-ForceP as subjects in Igbo do not precede the declarative complementizer *ná* in Force (105). Similarly, subjects in Igbo do not occupy the Spec-FocP position. We know that when a (non-subject) XP is in the specifier of Foc, the Foc head is realized by the focus marker *kà* (cf. Chapters 2 and 3). But root wh-/foc-subjects in Igbo do not move to Spec-Foc at all. We know this from the fact that wh-/foc-subjects are incompatible with *kà* (see Robinson (1974); Tada (1995); Amaechi and Georgi (2019) and Chapters 2 and 3). I take this to mean that the subjects do not move to Spec-FocP in Igbo. Subject cannot in actual fact move to Spec-FocP as this position is already occupied by a wh-/foc-moved XP, see (68-b). Amaechi and Georgi (2019) show that only one XP can move to Spec-FocP in Igbo. Under multiple wh-questions, only one wh-phrase moves to Spec-FocP and the others stay in-situ.

(105) *Multiple questions in Igbo (Amaechi and Georgi, 2019, 9)*

- a. Ònyé kà Òbí hùrù n'èbé'é?
whom FOC Obi saw P-where
'Who did Òbí see where?'
- b. N'èbé'é kà Òbí hùrù ònyé?
P-where FOC Obi saw whom
'Who did Òbí see where?'
- c. *Ònyé kà n'èbé'é kà Òbí hùrù?
whom FOC P-where FOC Obi saw
'Who did Òbí see where?'

Movement of the subject to Spec-FinP would also predict that we get final H tone on subject in affirmative clauses, and *ná* in negative clauses. But this is not the case; cf. (71). The only specifier position we are left with in (104), is that of Topic. For some languages, such as some Bantu languages, it has been shown that subjects are dislocated to a Topic position, see among others Letsholo (2002); Henderson (2007); van der Wal (2015), and references cited therein. An argument for this claim is that subjects in these languages have properties of topics. In what follows I show that subjects in Igbo do not display any of the topic properties.

Cross-linguistically, it has been shown that non-referential expressions cannot be topics (Schneider-Zioga, 2000, 2007; Sheehan, 2016; Pietraszko, 2019). But these expressions can function as subjects in Igbo as the examples in (106) indicate. The subject in (106-a) can receive a kind-reading. (106-b) shows that under extraction from negative clause, we get *ná*. Hence subjects in Igbo are not topics.

(106) *Non-referential expression as subject*

- a. Éwú é-'nwé-ghí úkwú àbúó.
goat É-have-NEG leg two
'Goat(s) do not have two legs.' *generic reading*
- b. Gínì kà éwú **ná** 'é-nwé-ghí ___?
what FOC goat PRT É-have-NEG
'What do goats not have?'

Another interesting distinction between subjects and topics noted by Goodall (2001) cited in Sheehan (2016) is that clauses with fronted topics are islands for extraction, whereas clauses with preverbal subjects are not. This means that in all the extraction from negative clauses that we have considered so far, if the subjects were topics, extraction would have been disallowed as the following pairs of sentences show (cf. (68-b) & (107)). The sentence in (107-a) illustrates topicalization of the subject, and (107-b) shows that extraction of the object from such sentence results in ungrammaticality. We do not find such blocking effects in sentences with the *ná* particle, see, for instance, example (68-b).

(107) *No extraction from topic clauses*

- a. Úchè, ò hù-'ghí Òbí.
Uche 3SG see-NEG Obi
'As for Uche, he didn't see Obi.'
- b. *Ònyé kà Úché ò **ná** 'hù-'ghí ___?
who FOC Uche 3SG PRT see-NEG
lit: 'Who did as for Uche not see?'

A final argument for the non-topicality of subjects comes from the nature of topicalized subjects in the language. In Igbo, subject topics require the presence of an agreeing pronoun (often a pronominal clitic in the case of third person singular) before the verbal complex in order to function as topics. See (107-a) repeated here as (108-a). But the particle is not compatible in topic clauses (108-b) given that topicalization involves base-generation and not movement (cf. Section 4.5.2.1).

- (108) a. Úchè, *(ò) hù-'ghí Òbí.
Uche 3SG see-NEG Obi
'As for Uche, he didn't see Obi.'

- b. *Úchè, ò ná hú-¹ghí Òbí.
 Uche 3SG PRT see-NEG Obi
 intended: ‘As for Uche, he didn’t see Obi.’

We can conclude from these observations that subjects in Igbo are not in the topic position, nor in any other specifier position of the C-domain. As such an analysis assuming subject raising cannot be upheld for the position of the subject in clauses containing *ná* under the extraction from negation contexts.

4.5.5 Interim summary

This section has focused on the interaction of A'-movement and negation in Igbo. I presented an overview of the syntax of negation in Igbo, where I followed Déchaine's (1993) analysis that negation in Igbo is not to be treated as bipartite but that the H tone *É-* prefix found in negation supports the T head and the proper negative affix is the suffix *ghi*. I further posit that the polarity value of the clause is established in Pol above TP, and that Neg below TP is where the negative marker is base-generated (Zanuttini, 1997). I showed that under A'-extraction from a negative clause, the *ná* particle appears. I treated this particle as a complementizer that realizes the Fin head, and it is in complementary distribution with the floating H tone found on the subject in affirmative A'-movement dependencies. To account for the surface position of the particle after the subject DP, I postulate postsyntactic Fin-to-Pol-to-T-lowering.

What I have done so far in the above three sections is to account for the different tones and a particle found under A'-movement dependencies in Igbo. I have unified some of these tones. I argued that the final H tone on subject under subject extraction, which surfaces on the relativized head noun in subject relative clauses or on the verb of the immediate preceding clause in the case of long-distance subject extraction, is one and the same as the final H tone on crossed over subjects. I argued specifically that this H tone realizes the Fin head in a split CP system (Rizzi, 1997) in affirmative clauses, and is present on all clauses crossed. I also showed that this H tone has a negative counterpart *ná*. Thus, the final H tone and *ná* only differ with respect to the polarity of the clause. The fact that we get one of these in every clause crossed by A'-movement indicates that Fin is obligatorily projected in matrix and embedded clauses in the language. The other downstep tone reflex indicates the grammatical relation of the extracted argument. Downstep on the verb signals subject extraction. I have argued that downstep is a phonetic implementation of the H tone of Fin in affirmative clauses and the floating H tone that realizes the subject gap in Spec-TP. Although the Igbo tone facts with regards to A'-movement appear to be exotic, we find similar tone effects in other domains of the language (Green and Igwe, 1963; Igwe and Green, 1964; Clark, 1990; Déchaine, 1993; Nwachukwu, 1995; Emenanjo, 2015). Tone overwriting under A'-extractions has also been reported for related languages such as, H tone on crossed verbs in Asante Twi (cf. (3)) (Schachter and Fromkin, 1968; Korsah and Murphy, 2019); downstep deletion with several consequences for tone assignment in Kikuyu (Clements et al., 1983; Clements, 1984), extraction marked with tonal and fusional affixes in Akɔɔse (Zentz, 2014), and high-low tone melody in Bamileke Medumba (Keupdjio, 2020).

4.6 Perfective (non-)extraction

In the preceding sections I considered phonological and morphological movement reflexes attested in Igbo, and I argued these reflexes interact and are related. The focus of the present section is to explore a restriction found under A'-movement from perfective clauses. It is observed that extracting an XP out of an imperfective clause is grammatical but moving an XP out of a perfective clause results in ungrammaticality. Consider (109) below.

- (109) *Relativization from imperfective and perfective clauses*
- | | | |
|----|---|---------------------|
| a. | ónyé ná-èrí 'jí
person IPFV-NMZL.eat yam.GEN
'the person who is eating yam' | <i>imperfective</i> |
| b. | *ónyé è-rí-é-lá 'jí
person NMZL-eat-Á-PFV yam.GEN
intended: 'the person who has eaten yam' | <i>perfective</i> |

A first question that comes to mind looking at the pair of sentences in (110) is what is 'special' about perfectives in Igbo that bans extraction from them? This chapter centers around this issue. I will argue that the source of the restriction found in the perfective is the result of two nominal layers present in the perfective but absent in the imperfective counterpart. To begin, I present an overview of the basic facts on the extraction restriction in Section 4.6.1. Afterwards, I introduce the basic properties of the perfective construction in Igbo in Section 4.6.2, where I suggest that the so-called open vowel suffix in the language indicates polarity. In Section 4.6.3, I investigate the source of the genitive case found with the direct object of the verb in the perfective. Section 4.6.4 examines the extraction restriction and suggests an analysis involving a kind of subadjacency violation. Finally, I conclude in Section 4.6.5.

4.6.1 Basic facts

We saw in the preceding Sections 4.3 to 4.5 that Igbo allows extraction from clauses such as factative affirmative and negative clauses, which could have past or present interpretation, but extraction from perfective clauses is not allowed. The following sentences in (110) and (111) exemplify this.

- (110) *Extraction from factative clause*
- | | |
|----|---|
| a. | Àdá rì-rì jí.
Ada eat-SFX yam
'Ada ate yam.' |
| b. | Gí'ní kà Àdá rì-rì ___?
what FOC Ada eat-SFX
'What did Ada eat?' |
- (111) *Extraction from perfective clause*
- | | |
|----|---|
| a. | Àdá è-rí-é-lá 'jí.
Ada NMZL-eat-Á-PFV yam.GEN
'Ada has eaten yam.' |
| b. | *Gí'ní kà Àdá è-rí-é-lá ___?
what FOC Ada NMZL-eat-Á-PFV
intended: 'What has Ada eaten?' |

This extraction restriction is not limited to wh-questions but to all other kinds of A'-movement dependencies as shown in the following sentences in (112). This cuts across all grammatical functions—subjects (109-b), objects (112-a-b), indirect objects (112-c) and adjuncts (112-d).

(112) *Extraction restriction with A'-movement*

- a. *Jí Àdá è-rí-é-lá ____ .
yam.ACC Ada NMZL-eat-Á-PFV
'the yam that Ada has eaten' *relative clause*
- b. *Kèdú íhé Àdá è-rí-é-lá ____ ?
WH.COP thing Ada NMZL-eat-Á-PFV
'What is it that Ada has eaten?' *kèdú question*
- c. *Òbí kà Àdá è-nyé-lá ____ jí.
Obi FOC Ada NMZL-give-PFV yam
'Ada has given OBI yam.' *focus*
- d. *Ó bù n'Ònìchà kà Àdá è-rí-é-lá 'jí ____ .
3SG COP P-Onitsha FOC Ada NMZL-eat-Á-PFV yam.GEN
'Ada has eaten yam IN ONITSHA.' *cleft*

The examples in (113) exemplify the restriction for long-distance movement. (113-a) is the baseline declarative sentence with perfective morphology in the embedded clause. In (113-b), the object of the matrix clause is wh-moved, and the result is grammatical. But in (113-c) and (113-d), where the subject and the object of the embedded clause with perfective morphology is extracted respectively, the sentences are ungrammatical. The presence or absence of the complementizer in (113-c) does not in any way improve the sentence. Notice also that the harmonizing prefix is placed in parenthesis. This is because in the cases of the pronominal subject clitics (cf. (119)) the prefix is absent but this also does not make the sentence better.

(113) *Long-distance extraction*

- a. Úchè gwà-rà Òbí nà Àdá è-rí-é-lá 'jí.
Uche tell-SFX Obi that Ada NMZL-eat-Á-PFV yam.GEN
'Uche told Obi that Ada has eaten yam.'
- b. Ònyé kà Úchè gwà-rà ____ nà Àdá è-rí-é-lá 'jí?
who FOC Uche tell-SFX that Ada NMZL-eat-Á-PFV yam.GEN
'Who did Uche tell that Ada has eaten yam?'
- c. *Ònyé kà Úchè gwà-rà Òbí (nà) ____ (è)-rí-é-lá 'jí.
who FOC Uche tell-SFX Obi that NMZL-eat-Á-PFV yam.GEN
lit: 'Who did Uche tell Obi that has eaten yam.'
- d. ?*Gí'ní kà Úchè gwà-rà Òbí nà Àdá è-rí-é-lá ____ ?
what FOC Uche tell-SFX Obi that Àdá NMZL-eat-Á-PFV
lit: 'Who did Uche tell Obi that has eaten yam.'

Observe that the restriction holds under A'-movement dependencies but not base-generated dependencies. This is evident by the topicalization example in (114) which is grammatical with perfective morphology. See Chapters 2 and 3, where I argued that topicalization does not involve movement.

- (114) Jí, Àdá è-rí-é-lá 'yá.
yam.ACC Ada NMZL-eat-Á-PFV 3SG.GEN
'As for the yam, Ada has eaten it.' *topicalization*

There is also evidence which bears on the fact that the movement concerned here is A'-movement and not A-movement. In subject-object reversal construction (cf. Section 4.4), where it is possible to alternate the position of the pre-verbal subject and the post-verbal object (Nwachukwu, 1987; Uwalaka, 1988), perfective morphology on the verb is allowed, see (115). Amaechi (2018) argues that the subject-object reversal involves A-movement and not A'-movement.

- (115) *No restriction under A-movement*
a. Àdá à-kwá-á-lá úkwàrà.
Ada NMZL-ICV-Á-PFV cough
'Ada has coughed.'
b. Úkwàrà à-kwá-á-lá Àdá.
cough NMZL-ICV-Á-PFV Ada
'Ada has coughed.'

Furthermore, extraction from imperfective clauses are grammatical in the language, as already exemplified with subject relativization in (109-a).

4.6.2 The structure of the perfective in Igbo

In this section I examine the syntax of the perfective construction in Igbo, and I also discuss the nature of the genitive case found on the direct object of the verb in the perfective.

4.6.2.1 Basic features of the perfective

The perfective form of the verb consists of an *a-/e-* harmonizing prefix (glossed here as NMZL) which is followed by the verb root. Following the verb root is the so-called open vowel suffix (OVS) (which is glossed here as Á), and this in turn is followed by the perfective suffix *-lá* Nwachukwu (1983a).¹⁷ See (116) below.

- (116) a. Àdá è-rí-é-lá 'jí.
Ada NMZL-eat-Á-PFV yam.GEN
'Ada has eaten yam.'
b. Àdá á-zà-á-lá úlò.
Ada NMZL-sweep-Á-PFV house.GEN
'Ada has swept the house.'

A property of the perfective (and imperfective) is that the direct object of the verb is marked with genitive case. This case is tonal (Déchaine, 1993; Manfredi, 1997, 2005; Déchaine and Manfredi, 1998).

¹⁷For arguments that the construction is perfective and not perfect tense, see (Emenanjo, 1978, 180)

4.6.2.2 The nominalizing prefix

The harmonizing *a-/e-* prefix on the verb in (116) has been claimed to nominalize the verb. Evidence for this is that the object bears genitive instead of accusative case (Déchaine, 1993, 620). In both perfective (116) and imperfective (117-b) where the prefix surfaces on the verb, the direct object gets genitive case. This genitive case is absent in (117-a) where the prefix is not found. The direct object in (117-a) gets to be assigned accusative by the verb but not in (116) and (117-b,c). The direct object *jí* in (117-a) surfaces with a H tone, and when it is the object of a nominalized verb, it surfaces with a downstep [!]*jí*. (117-c) exemplifies the future construction, where the prefix appears and the direct object is genitive.

- (117) a. Àdá rì-rì jí.
 Ada eat-SFX yam.ACC
 ‘Ada ate yam.’
 b. Àdá nà-èrí [!]jí.
 Ada IPFV-NMZL.eat yam.GEN
 ‘Ada is eating yam.’
 c. Àdá gà-èrí [!]jí.
 Ada FUT-NMZL.eat yam.GEN
 ‘Ada will eat yam.’

Déchaine (1993) suggests that the absence of genitive in (117-a) is related to the absence of the nominalizing prefix.¹⁸ Other constructions where the nominalizing prefix is found are in the so-called bound verb complement (BVC) construction (Emenajo, 1978; Nwachukwu, 1983a, 1987) and on the non-initial verb in a serial verb construction (SVC).¹⁹ These are illustrated in (118) below.

- (118) a. Àdá rì-rì jí èrí.
 Ada eat-SFX yam.ACC NMZL.eat
 ‘Ada actually ate the yam.’
 b. Àdá jì ògàjì èrí [!]jí.
 Ada hold spoon NMZL.eat yam.GEN
 ‘Ada is eating yam with a spoon.’

The BVC (118-a) consists of a copy of the verb and the harmonizing prefix. Note that the direct complement of the first verb in the BVC construction does not bear the

¹⁸The same downstep is attested in associative constructions. Manfredi (1991) referred to these cases of noun-internal downsteps as the realization of inherent (genitive) case.

¹⁹The non-initial verb of the SVC in (118-b) can take either the harmonizing prefix or the OVS, but not both. V2 must be inflected with at least one of them. There is a difference in temporal interpretation between the two affixes. Compare (118-b) to (i). Thanks to Jeremiah Nwankwegu for pointing out the temporal difference to me.

- (i) Àdá jì(-rì) ògàjì rí-é [!]jí.
 Ada hold-SFX spoon eat-Á yam.GEN
 ‘Ada ate yam with a spoon.’

It is probably this temporal distinction, and the optionality of the -rV inflection on V1 that led Déchaine (1993, 310) to suggest that the OVS is the source for the past interpretation in sentences like (i). Note that Déchaine did not discuss SVCs where the non-initial verb takes the harmonizing prefix.

genitive case tone since the first verb preceding the direct object is not nominalized and it assigns its normal accusative case. The BVC appearing after the direct complement of the verb adds emphasis to the expression. In the SVC example (118-b), the object of the second verb gets genitive case.

With the pronominal subject clitics (PSCs), the prefix is lacking, as it is compatible only with full DP subjects and pronominal subject non-clitics; cf. Eze (1995). Consider (119) and (120). The PSC bears a H tone, and a following HTV gets a downstep tone, while a following LTV bears a L tone. Note that we get the genitive case on the direct object even though the harmonizing prefix is absent.

(119) *Pronominal subject clitics in perfective construction*

- a. Ó 'rí-é-lá 'jí.
 3SG eat-Á-PFV yam.GEN
 'S/he has eaten yam.'
- b. Í zà-á-lá úlò.
 2SG sweep-Á-PFV house.GEN
 'You've swept the house.'

Eze (1995) shows that PSCs are in complementary distribution with the verbal prefix in (116). He argues that both the prefix and PSCs are base-generated in the same (AgrS) head. A question at this point is the following: if the prefix nominalizes the verb, and is responsible for genitive case on the object in the perfective, as it has been claimed, what then is the function of the OVS. I attempt to answer this question in the next subsection.

4.6.2.3 The open vowel suffix (OVS)

Another inflection found in the perfective is the OVS (glossed as -Á in (119)). The suffix bears a H tone, and it harmonizes not just to the +/–ATR of the preceding verb stem, but also to its level and position (Green and Igwe, 1963). There are four possible realizations of the suffix (Nwachukwu, 1983a). There are few verbs in the language that take the suffix optionally, and a few others do not take it at all (Swift et al., 1962; Nwachukwu, 1983a; Déchaine, 1993; Manfredi, 2018). The OVS appears in a number of contexts in the language, and often it is been described differently based on the contexts where it appears. In this section, I attempt to unify all the uses of the morpheme.

4.6.2.3.1 On the syntactic function of the OVS There are a number of distinct structures in which the “so-called” OVS is found. We can distinguish at least five uses of V+OVS in the grammar of Igbo. One of the environments where the OVS occurs is in the perfective construction as already illustrated in (116) (see also (120-a)). Other contexts where the suffix appears are on the non-initial verb of a serial verb construction (SVC) (120-b) and/or on the non-initial verb in an (overt) coordinate structure such as (120-c). The suffix is also found in conditional (*if*) clauses (120-d) and subjunctive clauses (120-e), as well as in imperatives (120-f) (Green and Igwe, 1963; Manfredi, 1991; Déchaine, 1993).

- (120) *Constructions where the OVS is found*
- a. Àdá è-rí-é-lá 'jí.
Ada NMZL-eat-Á-PFV yam.GEN
'Ada has eaten yam.' *perfective*
- b. Àdá zù-rù òkúkò gbù-ó sí-é rí-é.
Ada buy-SFX chicken kill-Á cook-Á eat-Á
'Ada bought a chicken, killed, cooked and ate (it).'
- c. Àdá sù-rù ákpú mà sí-é óf'é.
Ada pound-SFX fufu MA cook-Á soup.GEN
'Ada pounded fufu and also cooked soup.' *conjunction*
- d. (Ó bú-rú nà) Àdá sí-é óf'é
3SG COP-SFX that Ada cook-Á soup.GEN
'If Ada prepares the soup' *conditional clause*
- e. (Ó chò-rò) kà ànyí kpé-é 'ékpéré.
3SG want-SFX that 3PL pray-Á prayer.GEN
'S/he wants that we pray.' *subjunctive*
- f. Rí-é y'á!
eat-Á 3SG.GEN
'Eat it!' *imperative*

The object DPs occurring after the verbs with OVS in all the above examples bear the genitive case (Manfredi, 1991; Déchaine, 1993; Déchaine and Manfredi, 1998). The question is what is responsible for the genitive case in (120). If it is the OVS that assigns this case in the above contexts, how then does the case assignment in the perfective works since the nominalizing prefix is also argued to assign genitive case (cf. Section 4.6.2.2). I will return to this question after considering the function of the OVS in the above contexts.

There seems to be a consensus in the literature on the language that the *e-* prefix is indeed a nominalizer, but until now, there is no clear analysis on the syntactic nature of the OVS. There are different views about the OVS in the literature. Déchaine reports that in a certain Africanist tradition, OVS on the non-initial verb in SVCs is labeled a quasi-conjunctive 'consecutive' marker (Welmers, 1973; Lord, 1975). But she argues against this analysis. Déchaine shows that in all other environment where the OVS is found, it does not seem to function as a consecutive marker. She suggests that all the constructions where the verb occurs with OVS have a common feature that they are all governed by some higher functional head. Another view about the OVS is that the suffix is an 'aspectual delimitor' (Manfredi, 1991, 185). This is based on a minimal contrast with a few verbs that optionally take the OVS in the perfective. A similar observation being made by Winston (1973) cited in (Déchaine, 1993, 310) is that in the Southern dialects the OVS in combination with the perfective suffix signals a completed event, while the perfective by itself does not. In this section I consider the constructions with the OVS, and attempt to find what the function and the underlying syntax of the OVS is.

4.6.2.3.2 OVS is not aspect One piece of data demonstrating that the OVS could not possibly be indicating aspect in the environments where it occurs is the way the suffix interacts with negation. Crucially, in all the above environments where the OVS appears, the suffix is incompatible with the negation suffix *-ghi* in the language. This

points to the fact that if the suffix were indicating aspect, nothing should disallow its co-occurrence with negation. The ungrammatical sentences in (121) are attempts to negate the sentences in (120) with OVS. This fact also shows that the OVS does not mark tense in the language. For if it were tense, nothing should really exclude the suffix from occurring with negation. The verb forms in (120) allow for both past and non-past interpretation. For instance, with the perfective and SVC, the interpretation is past, but this is not the interpretation with the imperative and subjunctive.

- (121) a. *Àdá è-rí-é-lá-ghí !jí.
Ada NMZL-eat-Á-PFV-NEG yam
Intended: ‘Ada hasn’t eaten yam.’ *perfective*
- b. *Àdá sù-rì jí rí-é-ghí.
Ada cook-SFX yam eat-Á-NEG
Intended: ‘Ada prepared yam and didn’t ate (it).’ *SVC*
- c. *Àdá sù-rù ákpù mà sí-é-ghí ófé.
Ada pound-SFX fufu C cook-Á-NEG soup
Intended: ‘Ada pounded fufu but didn’t prepare the soup.’ *conjunction*
- d. *(Ó bú-rù nà) Àdá sí-é-ghí ófé
3SG COP-SFX that Ada cook-Á-NEG soup
Intended: ‘If Ada does not prepare the soup’ *conditional clause*
- e. *(Ó chò-rò) kà ànyí kpé-é-ghí èkpéré.
3SG want-SFX that 3PL pray-Á-NEG prayer
Intended: ‘S/he wants that we not pray.’ *subjunctive*
- f. *Rí-é-ghí yá!
eat-Á-NEG 3SG
Intended: ‘Don’t eat it!’ *imperative*

In comparison, the imperfective aspect (and future) which is expressed by an auxiliary can be negated. (122) is the negative counterpart of (117-b). The imperfective contains the nominalizing prefix but lacks the OVS.

- (122) Àdá á-¹ná-ghí èrí !jí.
Ada É-IPFV-NEG NMZL.eat yam
‘Ada is not eating yam.’

The data in (121) above do not necessarily mean that the perfective or other sentences in (120) can not be negated. This is possible in the language, but in the cases where this is done, the OVS morphology on the verb is lost. In other words, the negative counterpart of the sentences in (120) do not have verbal forms morphologically identical to their corresponding indicative/subjunctive form (cf. (125)). Thus, the syntax of the OVS is incompatible with the syntax of negation in the language. The data illustrate that the combination of OVS with negation *-ghi* is ruled out. The patterns in (123-a) and (123-b) are allowed but not the ones in (123-c) and (123-d). The fact that the OVS is incompatible with *-ghi* negation, also predicts that the suffix will not be compatible with the factative *-rV* suffix as this has been shown to also be in complementary distribution with negation (see Section 4.5.1). This prediction holds, see (124). Note that in some dialects there is the option of either using the OVS or the *-rV* in the formation of perfectives (Manfredi, 1991, 185). The alternative use of the *-rV* and OVS also suggests that the idea that the *-rV* is a default aspect marker (Manfredi, 1997) cannot be upheld as this would mean that in the perfective where the OVS occurs

with the perfective suffix, the structure contains two aspectual markers.

- | | | | |
|-------|--|-------|--|
| (123) | a. V + OVS
b. V + OVS + PFV
c. *V + OVS + NEG
d. *V + OVS + PFV + NEG | (124) | a. V + OVS
b. V + -rV
c. *V + OVS + -rV
d. *V + -rV + OVS |
|-------|--|-------|--|

To negate the perfective, for instance, the form of the negation is the same as that of the negating a factative sentence (with no OVS) and in addition we find the morpheme *be* with the meaning ‘yet’ (Déchaine, 1993; Obiamalu, 2013), which seems to replace the perfective suffix. And to negate the imperative, a different negative morpheme *-la* is used, as in (125) below. The direct objects in (125) do not bear the genitive tone.

- | | | |
|-------|---|-------------------|
| (125) | a. Àdá é-'rí-bè-ghì jí.
Ada É-eat-yet-NEG yam.ACC
‘Ada hasn’t eaten yam.’ | <i>perfective</i> |
| | b. É-'rí-lá yá!
É-eat-NEG 3SG.ACC
‘Don’t eat it!’ | <i>imperative</i> |

The incompatibility of negation with imperatives is not new in the literature on imperatives. For instance, languages like Modern Greek and Spanish ban true negative imperatives. In other word, imperatives are not compatible with negation. Hence, negative commands are instead formed with other sentence types such as subjunctive, infinitive, indicative or gerund (Rivero, 1994; Rivero and Terzi, 1995; Zanuttini, 1994, 1996, 1997; Han, 2001; Zeijlstra, 2006).²⁰ Note that in Igbo it seems to be the case that the form of the imperative is in fact the same as the subjunctive even in the affirmative going by the OVS verb morphology in both constructions (120). Hence, it is not the case that the imperative verb is replaced by a subjunctive when it is negated, unlike in Romance languages. Consider the following Spanish example in (126). A speculation might be that Igbo does not have true imperatives (that is, no special morphological marking that indicates the imperative) not only in the negative but also in the affirmative, and it uses the subjunctive to express commands.²¹

- | | | |
|-------|--|--|
| (126) | <i>Spanish imperatives (Zeijlstra, 2006, 406)</i> | |
| | a. ¡Lee!
read.2SG.IMP
‘Read!’ | |
| | b. ¡No leas!
NEG read.2SG.SUBJ
‘Don’t read!’ | |

²⁰Zanuttini (1997) accounts for the (in)compatibility of negation and imperatives by postulating that the clause structure of imperatives are defective in that they lack a [Mood] feature. Analyses such as Han (2001) and Zeijlstra (2006), for instance, propose that negative imperatives are banned if the syntax derives a structure in which the imperative operator ends up in the scope of negation. This is based on the fact that the illocutionary force (that is, the imperative operator) cannot be negated as this yields an incoherent interpretation. However, when the imperative verb is replaced by a subjunctive, nothing leads to ungrammaticality, since the subjunctive does not carry along a feature that encodes illocutionary force, and thus it may be c-commanded by the negation (Zeijlstra, 2006, 416).

²¹See König and Siemund (2007) for different strategies languages use to mark imperatives.

I take it that *-la* in (125-b) is an allomorph of *ghi* that occurs in the context of subjunctives and imperatives. For the indicative, the negative marker *-ghi* is used. The observation that languages may require different negative markers for indicative and subjunctive is not new. This goes back to Sadock and Zwicky (1985) cited in Zeijlstra (2006). Note that in the other constructions where the OVS is present, *-la* can not be used as a negative marker. I take it that since the other constructions in (120) do not take the negative marker *-la*, this (in)directly points to the fact that their structure does not include a subjunctive mood. But the question still remains what exactly all the constructions in (120) have in common that permits the OVS verb morphology.

Given that the OVS is in complementary distribution with the negative marker and the affirmative factative *-rV* suffix, I assume that the suffix occupies the same position as these polarity items within the clause structure.

4.6.2.3.3 OVS as an affirmative polarity marker In the previous section, I showed that the OVS does not mark aspect, neither does it indicate tense in the language. This conclusion is reached based on the interaction of the suffix and negation in the language. Here, I propose that the suffix is an affirmative polarity marker in the language. If the suffix indicates affirmation, we expect it to never be compatible with negation or any form of polarity item in the language. The OVS can not co-occur with the indicative negation marker *-ghi* (127-a) nor with the *-la* subjunctive negation marker (127-b). The sentences are illicit as an attempt to have both affirmation and negation in a single clause.

- (127) a. *Àdá è-**rí-é-lá-ghí** jí.
 Ada NMZL-eat-Á-PFV-NEG yam.GEN
 Intended: ‘Ada hasn’t eaten yam.’ *perfective*
- b. ***Rí-é-lá** yá!
 eat-Á-NEG 3SG
 Intended: ‘Don’t eat it!’ *imperative*

The OVS is also incompatible with negative polarity items (NPIs) in the language. See (128) and (129). NPIs such as *-be* ‘yet’, *cháchá* ‘at all’ and *òbùlà* ‘any’ are found only in negative contexts (Déchaine, 1993; Osuagwu et al., 2016). The NPI *-be* ‘yet’ is restricted to perfective negation. Recall that it is this morpheme that differentiate a simple factative negative sentence from a perfective negation (cf. (125)).

- (128) *OVS does not occur with NPIs*
- a. Àdá é-**rí-bè-ghì** jí.
 Ada É-eat-yet-NEG yam.ACC
 ‘Ada hasn’t eaten yam.’
- b. *Àdá é-**rí-bè-é** jí.
 Ada É-eat-yet-Á yam.ACC
 ‘Ada has eaten yam yet.’
- (129) a. Àdá é-**rí-bè-ghì** jí cháchá.
 Ada É-eat-yet-NEG yam.ACC at.all
 ‘Ada hasn’t eaten yam at all.’
- b. *Àdá è-**rí-é-lá** jí cháchá.
 Ada NMZL-eat-Á-PFV yam.GEN at.all
 ‘Ada has eaten yam at all.’

In example (128), we try to replace the negation marker *-ghi* with the OVS affirmation marker, and the sentence is ungrammatical in (128-b) as *-be* occurs in a clause with negative polarity. The same is observable in (129), with the NPI *cháchá*, which also lacks a negative licenser in the clause. Note that in the sentences in (129) while in (a), the negative marker licenses not just the polarity *-be* but *cháchá* as well, whereas in (b) the negative marker is lacking. Like the OVS, the *-rV* can not license NPIs in the language. The examples in (130) show the NPIs *-be* and *cháchá* in sentences with affirmative polarity marked by the *-rV* are unacceptable.

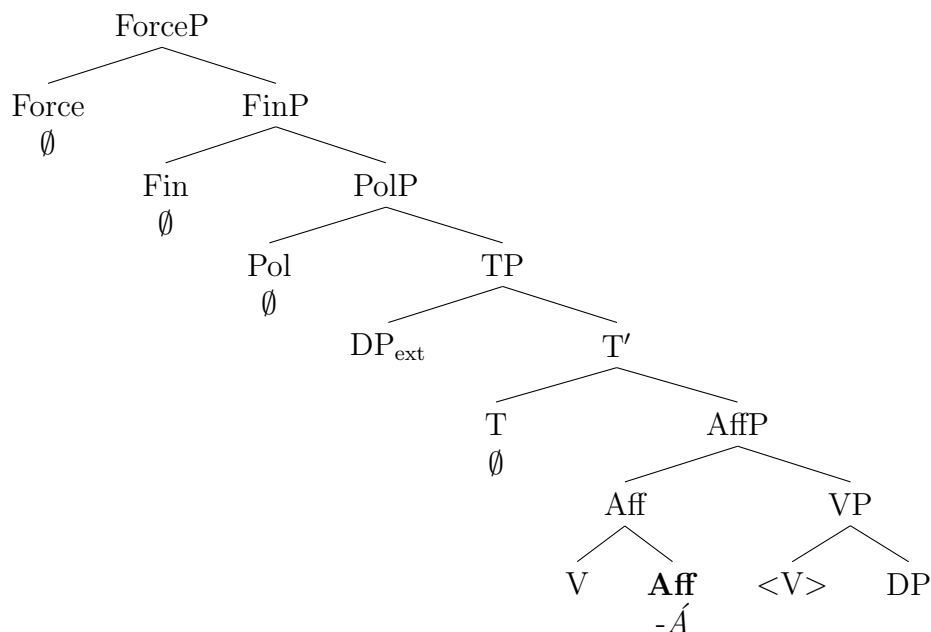
- (130) a. *Àdá (é)-'rì-bè-rì jí.
 Ada é-eat-yet-SFX yam.ACC
 'Ada ate yam yet.'
 b. *Àdá rì-rì jí cháchá.
 Ada eat-SFX yam.ACC at.all
 'Ada ate yam at all.'

Lastly, the examples in (131) show that both OVS and *-rV* cannot co-occur. This is expected if they both indicate the same affirmative polarity.

- (131) a. *Àdá rì-é-rí jí
 Ada eat-Á-SFX yam.ACC
 b. *Àdá rì-rì-é jí.
 Ada eat-SFX-Á yam.ACC

The arguments above suggests that OVS marks polarity. Given that the distribution of the *-rV* suffix and the OVS pattern alike, and that they are both instantiation of affirmation polarity, the question remains what then distinguishes their use, and when does the use of one exclude the other? Yet another question is why we get genitive case with the OVS but not with the *-rV*. Also, why is the OVS required by most verbs but not by all? These questions remain open and are subject to further study.

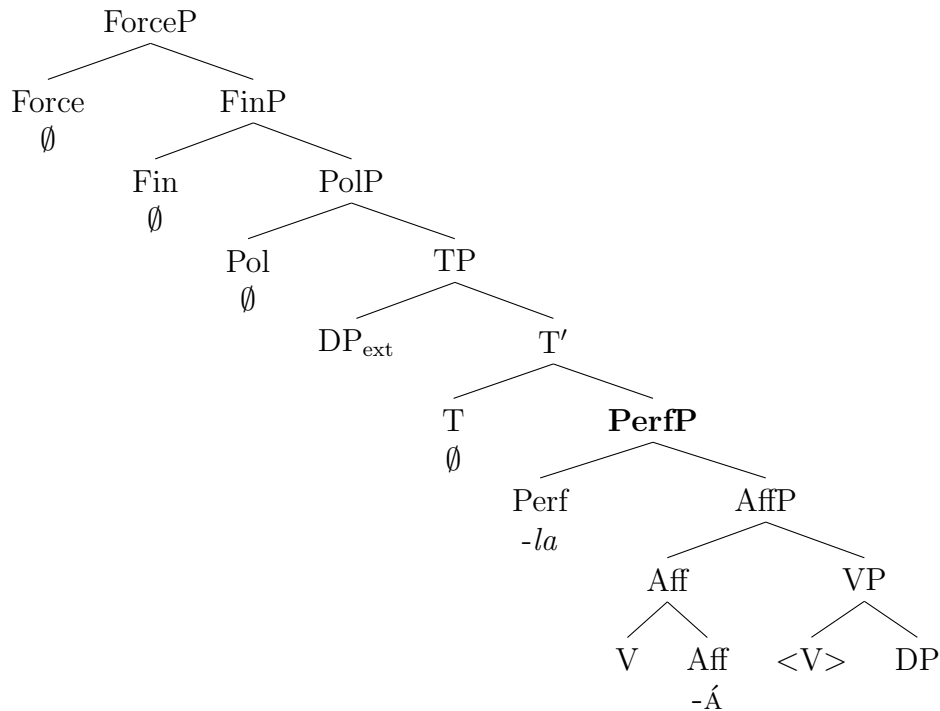
Having argued that the OVS is a polarity marker in the language, I assume that it is base-generated in the same position as other polarity markers in the language. This is a projection that hosts polarity affixes, Neg in negative clauses, and Aff in affirmative clauses, that is, Neg or Aff below TP (cf. Section 4.5.1).

(132) *OVS is base-generated in Aff*

In the structure in (132), the OVS is base-generated in Aff, and the verb raises to Aff to pick up the inflection.

4.6.2.4 The perfective suffix

The final suffix *-lá* in the perfective construction in (116) bears a H tone regardless of the tone of the verb stem. Nwachukwu (1983a) reports that the suffix is the only affirmative suffix that takes the OVS. Nwachukwu also shows that the suffix is different from the homophonous negative imperative (cf. (125-b)). I assume that the suffix realizes the Perf head in the structure in (133) below. The perfective projection is below TP and above the AffP projection where the OVS is base-generated.

(133) *The structure of the perfective*

4.6.3 On the source of genitive case in the perfective

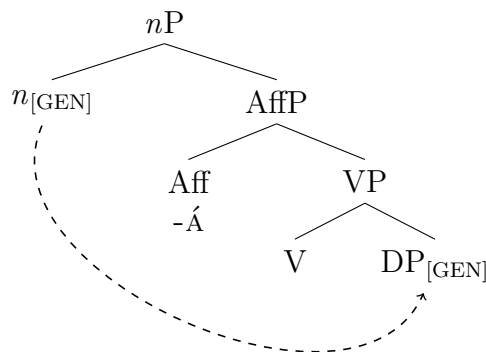
One of the observations about the OVS is that the objects occurring after the verbs with the OVS in all the constructions where the suffix appears bear the genitive case (cf. Section 4.6.2.3) (Manfredi, 1991; Déchaine, 1993). Note that genitive case on the direct object is present in the constructions regardless of whether the verb takes the OVS overtly or not. But also recall from the discussion in Section 4.6.2.2 that the nominalizing prefix is also claimed to induce genitive case on the direct object of the verb. The examples in (134-a,b) below show the individual affixes and the genitive case they trigger on the direct object.

- (134) a. Àdá nà-èrí !jí.
Ada IPFV-NMZL.eat yam.GEN
'Ada is eating yam.'
- b. Rí-é y!á!
eat-Á 3SG.GEN
'Eat it!'
- c. Àdá è-rí-é-lá !jí.
Ada NMZL-eat-Á-PFV yam.GEN
'Ada has eaten yam.'

(134-c) shows that the perfective combines these two affixes, that is, the nominalizing prefix and the OVS. Suppose that the affixes independently assign genitive as (134-a,b) show, the question is then which one of them triggers the presence of genitive case and block structural case valuation on the direct object in the perfective in (134-c). I take it that the presence of these two affixes that induce genitive on the object suggests that the perfective construction in Igbo is 'more' nominal than the imperfective. As we will see shortly in Section 4.6.4 these two elements, the nominalizing prefix and

the OVS together induce the extraction restriction in the perfective. I argue that the perfective construction involves two layers of nominalization, a low nominalization and a high one. The ‘low’ nominalization is marked by the OVS, and I posit that this checks the genitive case on the direct object of the perfective.²² As I will show soon, I take the fact that the subject does not get genitive case as an argument for the claim that it is the lower n head that assigns genitive as I assume that case is assigned under c-command. If it was the higher n that assigned genitive, the subject should get it, too (since it is in the c-command domain of the higher n head). In the structure in (135), the affirmative polarity marked by the OVS has a nominal projection above it which checks case on the object of the clause. Remember that the genitive case is also present in all other constructions where the suffix is present (cf. (120)). I assume that in all the constructions OVS projects a nominal structure that is responsible for the genitive case on the object.

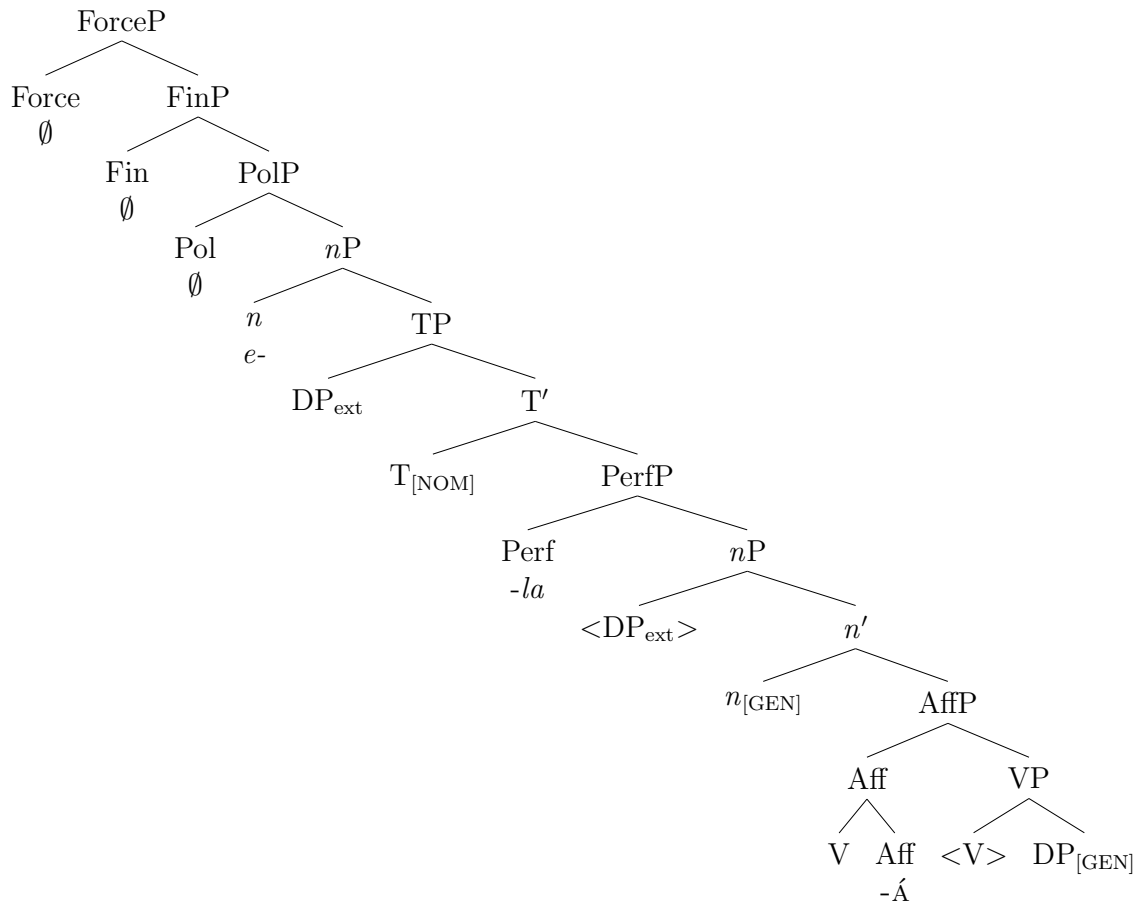
(135) *Nominalization of the OVS*



The ‘high’ nominalization is above the nominalization in (135), and in between these nominal structures we have the perfective projection, as in (136).

Clausal nominalization cross-linguistically has been shown to be constructions in which clauses have nominal properties. Borsley and Kornfilt (2000) propose that this is ‘a consequence of the association of a verb with one or more nominal functional categories instead of or in addition to the normal verbal functional categories, appearing above any verbal functional categories. Following the mixed extended projections proposal (Borsley and Kornfilt, 2000; Kornfilt and Whitman, 2011), I assume the following nominal structure for the perfective in Igbo (136).

²²As to why there is a case alternation with OVS, which I suggest to be an affirmative polarity marker is not clear. But a well-known case where polarity has an effect on case is the genitive of negation reported for languages such as Russian and Polish. For an overview, see Harves (2013).

(136) *The structure of the perfective*

In the structure in (136) above, the OVS is base-generated in Aff head, and the Aff projection is contained inside an *nP*. The *n* head assigns genitive case to the direct object. The perfective marker *-la* realizes Perf head, and the Perf projection is below the TP projection. Crucially above the TP is the ‘high’ nominalization with the head *n* realized by the nominalizing prefix. The external argument in (136) is generated in the specifier of the ‘low’ *nP*. The reason for this is that the subject in the perfective does not bear genitive case nor does it get a default accusative case.²³ When we replace the subject DP in all the perfective examples we have had so far, we only get the nominative pronominal subject clitic and not the genitive (nor the default accusative case).²⁴

²³Default case in Igbo is the accusative as this is the case we see in contexts where no case is assigned to a DP (Schütze, 2001; McFadden, 2007). For instance, the accusative case is found with coordinated subjects in (i), and with the bare DP reply to the subject in (ii).

- (i) a. Gí nà yá gà-èrí !jí.
 2SG.ACC and 3SG.ACC FUT-NMZL.eat yam.GEN
 ‘You and him will eat yam.’
 b. A: Ònyé gà-èrí !jí. B: Yá!
 who FUT-NMZL.eat yam.GEN? 3SG.ACC
 A: ‘Who will eat yam?’ B: ‘Him/Her!’

²⁴Recall from Section 4.6.2.1 that with the pronominal subject clitic, the harmonizing prefix is absent. But we do get the same extraction effect with the subject clitic. Extraction of the direct object for instance is illicit (i).

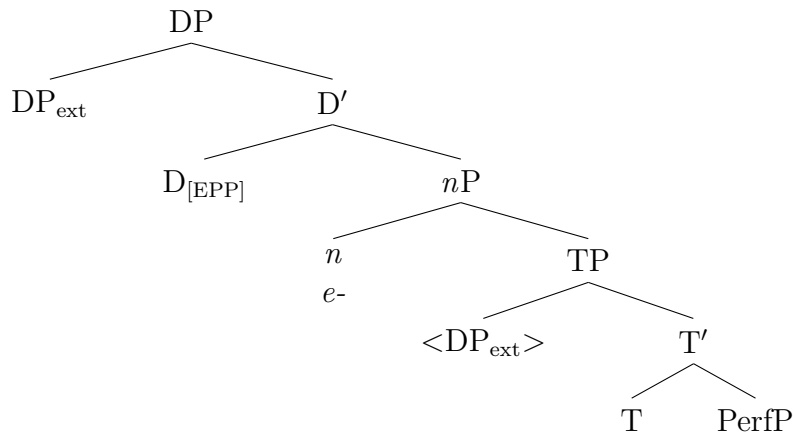
- (137) a. Àdá è-rí-é-lá 'jí.
Ada NMZL-eat-Á-PFV yam.GEN
'Ada has eaten yam.'
- b. Ó rí-é-lá 'jí.
3SG.NOM eat-Á-PFV yam.GEN
'She has eaten yam.'
- c. *!Yá / Yá è-rí-é-lá 'jí.
3SG.GEN 3SG.ACC NMZL-eat-Á-PFV yam.GEN
'She has eaten yam.'

I assume that the external argument raises to Spec-TP to satisfy the EPP requirement on T. In doing this, it values the nominative case on T, following standard assumption that nominative case form is only possible for pronouns that are maximally close to finite T (McFadden, 2007). Having its case features already checked by T, the 'high' *n* can no longer assign genitive case to the external argument. This is based on the assumption that nominals in Igbo can only receive one case. Evidence that the external argument moves to Spec-TP in Igbo is that the language exhibits subject expletives (138). It has been shown that the only function overt expletives like English *there* has is to satisfy the EPP property of the TP projection (Bošković, 2012). Another test proposed by Bošković for movement to Spec-TP is subject-object asymmetries such as the *that*-trace effect since they affect only subjects in this position. The subject-object asymmetries is well attested in Igbo as shown in Chapters 2 and 3 (see also Amaechi and Georgi (2019)).

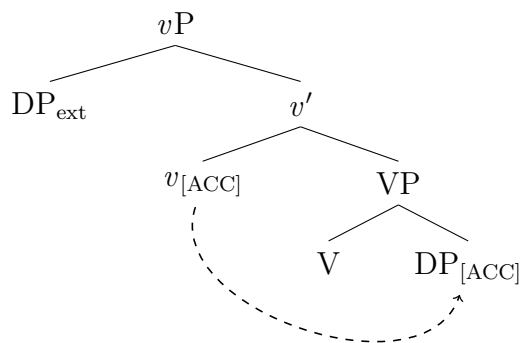
- (138) É nwè-rè nwó'ké 'nó ébé áhù.
IMPERS have-SFX man COP.LOC place that
'There is a man there.'

By having the *e*-nominalizer in the 'high' *n* does not give us the correct order of the subject preceding the nominalizing prefix. In line with works on extended nominal projections, *nP* is located below DP. Just as the specifier of TP has an EPP feature, I assume that the specifier of nominal DP in (139) is also endowed with this feature. This causes the external argument in Spec-TP to raise further to satisfy the EPP feature on D.

(i) *Gínì kà ó rí-é-lá ___?
what FOC 3SG.NOM eat-Á-PFV
'What has s/he eaten?'

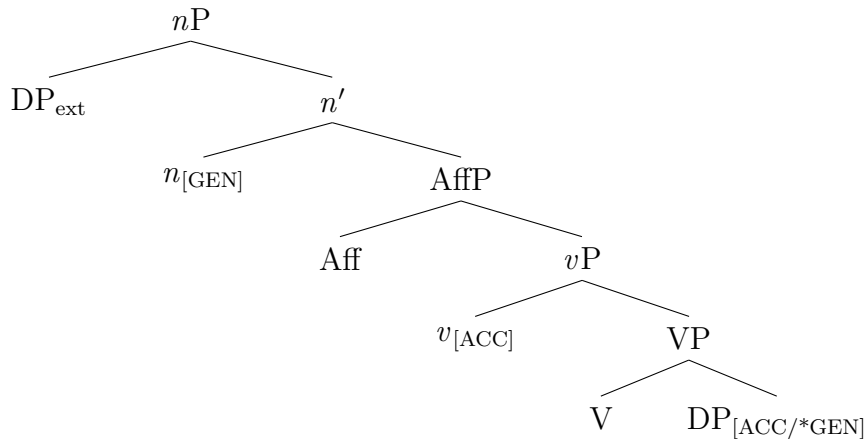
(139) *External argument moves to Spec-DP*

Regarding the size of the verbal constituent that the ‘low’ *nP* embeds, at least two pieces of evidence show that this is a VP. First is that the direct object of the verb receives genitive case, not accusative as it would normally in a clause. This means that the *v* head (and its projection *vP*) which licenses accusative case on the object is not present to do so (Kornfilt and Whitman, 2011; Toosarvandani, 2014).

(140) *Accusative case on direct object assigned by v*

This shows that *v* which values accusative case on the direct object is not able to do so when *n* is present. If *n* were to embed a *vP*, it is predicted that *v* should still be able to value the case on the direct object as accusative, as in (140).²⁵

²⁵Toosarvandani (2014) argues that in Northern Paiute nominalization embeds a *vP* since the direct objects of the verb bear accusative case exactly as they would in a clause, since *v* is present to assign them accusative case. But this is not the case in Igbo, as the direct object bears no accusative case.

(141) *Case on direct object*

Another test proposed in the literature is the possibility of having negation inside nominalization (Baker and Vinokurova, 2009; Toosarvandani, 2014). But this does not appear to be applicable in Igbo. This is because event nominalizations which are often reported to allow verbal negation inside them, do not behave the same way in Igbo. The perfective in Igbo does not allow verbal negation. See the discussion in Section 4.6.2.3. Generally, there is no nominal (constituent) negation in Igbo, only verbal negation (Obiamalu, 2013). And negation appears not to be compatible with the perfective. To negate the perfective clause, the perfective inflections on the verb stem are dropped, and the verb takes the same inflection as a normal negation of the factative with the addition of the morpheme *-bè* adding the meaning ‘yet’ to the construction (Déchaine, 1993). Compare the factative (142) and the perfective (143) below.

(142) *Negation of the factative and the perfective*

- a. Àdá rì-rì jí.
Ada eat-SFX yam.ACC
‘Ada ate yam.’
- b. Àdá é-¹rí-ghí jí.
Ada É-eat-NEG yam.ACC
‘Ada didn’t eat yam.’

- (143) a. Àdá è-rí-é-lá [!]jí.
Ada NMLZ-eat-Á-PFV yam.GEN
‘Ada has eaten yam.’
- b. Àdá é-¹rí-bè-ghì jí.
Ada É-eat-BE-NEG yam.ACC
‘Ada has not eaten yam.’

There are also a number of differences between the perfective in (143-a) and the negative sentence in (143-b). In the negative sentence in (143-b), the direct object does not bear the genitive case. Furthermore, the verbal prefixes in the sentences in (143) are different, both occurring with different tones. While the *é-* prefix in (143-b) is the high toned harmonic vowel that is found in negative structures (cf. Section 4.5.1), the harmonizing prefix in the perfective clause is a toneless harmonic one that takes the opposite tone of the verb it attaches to. Indirect evidence that illustrates that these two prefixes are not the same is that the negative *é-* prefix can co-occur with auxiliaries (144) but the nominalizing prefix cannot occur with auxiliaries, it may only combine

with a verb root. This is not surprising as the absence of modals in nominalized verbs, such as gerunds, is a fact that has been reported in the literature (Abney, 1987).

- (144) a. Àdá nà-èrí !jí.
Ada IPFV-NMZL.eat yam.GEN
'Ada is eating yam.'
- b. Àdá á-'ná-ghí éri !jí.
Ada É-IPFV-NEG NMZL.eat yam.GEN
'Ada is not eating yam.'

In spite of the nominal nature of the perfective, the construction differs from nouns in a number of ways. First is that the perfective in Igbo takes adverbial modifiers. Nominalized clauses are often distinguished based on whether the modifier of the nominalized predicate can be an adverb or an adjective (Alexiadou et al., 2007; Kornfilt and Whitman, 2011). The fact that we have adverbial and not adjectival modifiers in the perfective suggests that there is a verbal category involved.²⁶ Consider the following in (145) and (146). In (145), the adverbial noun *òfúmá* does not combine with the noun *ńrí*. But in the perfective (146-a), *òfúmá* is the modifier that is selected. Hence we can only have an adverb in the sentence in (146).

- (145) a. ézígbó ńrí
genuine food
'good food'
- b. *òfúmá ńrí
fine food
- (146) a. Àdá è-mé-é-lá òfúmá.
Ada NMZL-do-Á-PFV fine
'Ada has done well.'
- b. *Àdá è-mé-é-lá ézi'gbó.
Ada NMZL-do-Á-PFV fine

The occurrence of an adverbial modifier suggests that the nominalization of the clause is high in the clause. The structure in (136) also shows that other verbal morphology are added to the verb stem before the nominalizer. This accounts for the fact that the nominalized verb in the perfective in Igbo also selects for arguments like 'regular' verbs in the language. Like 'regular' verbs they take derivational and extensional affixes and allow adverbial modification. In addition, perfectives in Igbo do not appear in argument positions, positions that DPs typical occupy. Hence, perfectives do not function as clausal subject or object of a preposition. In this instance, the perfective behaves like a verbal clause. Also, the subject bears a nominative case in both perfective and other verbal clauses without nominalization. This too, indicates that perfective has a verbal structure. In fact, the absence of a genitive case on the subject demonstrates that the perfective is less nominal compared to clauses in other languages where the subject bears the genitive case (Cole and Hermon, 2011). I assume that the nominative case of the subject DP is assigned by T just as in non-perfective clauses. Cross-linguistically,

²⁶Most works on Igbo word class all seems to come to the conclusion that there are no true adverbs in the language (see Emenanjo (2015), Chapter 15 and references cited there in). Emenanjo refers to words such as *òfúmá* 'well/fine' and *òzìgbó* 'immediately', which Ezejideaku (1989) (cited in Emenanjo (2015)) called 'pure' adverbs as adverbial nouns.

nominal clauses are often treated as having a DP structure. These clauses have been described as nominal constituents that embed a verbal projection (see Borsley and Kornfilt (2000); Cole and Hermon (2011); Kornfilt and Whitman (2011)). Often it is the case that nominalization in languages where the phenomenon has been well-studied only affects embedded clauses and not matrix clauses. But the perfective case discussed here is in matrix clauses.

4.6.4 The extraction restriction

An extraction restriction is observed in perfective clauses involving relativization (Nwachukwu, 1976, 272). Although not clearly formulated by Nwachukwu, he notices that in the non-relative clauses with perfective (in Nwachukwu's term perfect tense), the morphology of the verb is different from that of relative clauses with perfective morphology. Consider the following paradigm in (147) and (148) below. In the relative clauses in the (b) sentences, one notices that the nominalizing prefix is missing, and in addition, the OVS is being replaced by the *-rV* suffix (glossed here as SFX). Recall that for both full subject DPs and non-clitic subjects, the nominalizing prefix is obligatory (cf. Section 4.6.2.2).

(147) *Extraction restriction under perfective (Nwachukwu, 1976, 69, 104)*

- a. Ógù **e-gbú-o-le** nnùnụ.
 Ogu NMZL-kill-Á-PFV bird
 'Ogu has killed a bird.'
- b. [Ènwe ányị **gbū-ru-le**] dī áh̃wà.
 monkey 1PL kill-SFX-PFV COP many
 'The monkey we killed are many.'

(148) *Extraction restriction under perfective (Nwachukwu, 1976, 69, 105)*

- a. Ógù **e-rí-e-le** nnùnụ.
 Ogu NMZL-eat-Á-PFV bird
 'Ogu has eaten a bird.'
- b. [Àg'a há **rī-ri-le**] dī asáà.
 Ag'a 3PL eat-SFX-PFV COP seven
 'The ag'a yams they have eaten are seven in number.'

Nwachukwu (1976, 272) proposes a rule of *-rV* infixing in the perfective under relativization. I will argue in this section that the paradigm above indicates an extraction restriction, which cuts across all *A'*-movement dependencies in the language.

From the discussion above in Section 4.6.2.1, it is clear that the verb form of the perfective has nominal characteristics. There is the presence of the nominalizing prefix. In addition, there is the so-called OVS, which is also claimed to block accusative, and the direct object in the perfective gets a genitive case. In this section I illustrate the extraction restriction found in the perfective in Igbo and provide an analysis for it. I argue that the extraction restriction is created by the nominalization in the perfective. First, I start by considering the source of the restriction in Section 4.6.4.1. I establish the fact that neither the nominalizing prefix (Subsection 4.6.4.1.1) nor the OVS (Subsection 4.6.4.1.2) independently block extraction out of the perfective. The extraction restriction is attested when these two elements occur in a structure. Section 4.6.4.2 suggests an analysis involving a subadjacency violation.

4.6.4.1 On the source of the extraction restriction

Given that we have already seen that extraction from perfective clauses is restricted in Igbo, one might begin to wonder what the source of this restriction in the perfective is. In this section, I argue that both the nominalizing prefix and the OVS need to be present for the effect to be triggered. I illustrate this by showing that in clauses where one of these affixes but not the other occurs, extraction is not barred.

4.6.4.1.1 Extraction from clauses with the nominalizing prefix As discussed in Section 4.6.2.2, there are other environments where the nominalizing prefix found in the perfective occurs. Also recall that in those constructions the direct objects get genitive case, too. If the nominalizing prefix is the source of the restriction in the perfective, extraction from those other constructions, where the prefix occurs, should in principle also be barred. But this is not the case as I will show in this subsection. In all the constructions where we find only the nominalizing prefix but not the OVS extraction is licit. Apart from the perfective, the nominalizing prefix is attested in imperfective (and future) constructions, in SVCs and in the BVC constructions. The sentences in (149) indicate that extraction from all these constructions is grammatical. (149-a) is the subject *kèdù*-question of the imperfective sentence in (117-b), (149-b) illustrates an ex-situ wh-question involving the direct object of the sentence in (118-a), and (149-c) involves ex-situ focus of the object of the second verb of the SVC in (118-b).

- (149) *Extraction from clauses with nominalizing prefix*
- | | | | | | | |
|----|-------------------------------|--------|-----|---------------|---------|---------------------|
| a. | Kèdù | ónyé | __ | nà-èrí | 'jí? | |
| | WH.COP | person | | IPFV-NMZL.eat | yam.GEN | |
| | 'Who is eating yam?' | | | | | <i>imperfective</i> |
| b. | Gí'ní | kà | Àdá | rì-rì | __ | èrí? |
| | what | FOC | Ada | eat-SFX | | NMZL.eat |
| | 'What did Ada eat?' | | | | | <i>BVC</i> |
| c. | Jí | kà | Àdá | jì | ngàjì | èrí |
| | yam.ACC | FOC | Ada | hold | spoon | NMZL.eat |
| | 'Ada eating YAM with a spoon' | | | | | <i>SVC</i> |

These examples illustrate the point that the nominalizing prefix on the verb is not solely responsible for the extraction restriction that is found in perfective constructions in Igbo.

4.6.4.1.2 Extraction from clauses with OVS Here, I demonstrate that the OVS is not the sole determinant of the extraction restriction in the perfective either. Like we saw from the previous Subsection 4.6.4.1.1 that movement from constructions with the nominalizing prefix does not block extraction, I show that the OVS also does not ban extraction from the clauses where it surfaces. Recall from Section 4.6.2.3 that apart from the perfective, the OVS is found on the non-initial verb in an SVC, in clausal conjunction, conditional (*if*) clauses, subjunctive clauses and in imperatives.²⁷ Extraction from conjunction, conditional and imperative clauses are out for independent reasons. For instance, extracting the object of the verb with OVS in (120-c) (without

²⁷There are clauses apart from the perfective where the nominalizing prefix and OVS are found. Igwe and Green (1964) referred to these as Subject verb form tense II main initiating. An example is given below.

a resumptive pronoun in the base position) is not possible as this is a violation of the coordinate structure constraint. (150-a) shows that it is possible to extract the object of the second verb with OVS in an SVC.

- (150) Gí'ní kà Àdá jì ògàjì rí-é ____.
 what FOC Ada hold spoon eat-Á
 'What did Ada eat with a spoon?'

I take this to mean that neither the nominalizing prefix nor the OVS alone are responsible for the island effect in the perfective. Both need to be present for the restriction to hold. Further support that these two affixes have to be present for the restriction to hold comes from data from other Igbo varieties. The Onitsha dialect, for instance, uses *-gó* as the perfective marker rather than *-lá*, and there is no OVS in the perfective. Consider (151-a) below. But under A'-movement, the nominalizing prefix is lost, and the *-rV* suffix is added (151-b).

- (151) *Onitsha -go*
 a. Àdá 'é-rí-gó 'jí.
 Ada NMZL-eat-PFV yam.GEN
 'Ada has eaten yam.'
 b. Gí'ní kà Àdá rì-gò-rò ____?
 what FOC Ada eat-PFV-SFX
 'What has Ada eaten?'

What this shows is that we can extract from the perfective after all, only that the nominalizing prefix must be absent for extraction to be allowed in these varieties.

4.6.4.2 Towards an analysis

So far, I have shown that movement out of a perfective clause is restricted in Igbo. I have argued that the source of this restriction is the result of the nominalization of the clause caused by the nominalizing prefix and the OVS. Given that we have such a restriction in Igbo and that it involves nominalization, one might think of it as an island effect. We know that nominal structures often block subextraction. This is the case in the contexts subsumed by the complex NP constraint (CNPC). The CNPC is one of Ross's (1967) fundamental island constraint in generative grammar. This constraint disallows extraction from clauses attached to noun. The constraint states why sentences such as the following in (152) are ungrammatical in English. In (152-a), a DP is *wh*-moved from the relative clause CP that accompanies a head noun. And in (152-b), the *wh*-movement is from a complement CP of a noun.

- (152) a. *_[DP₁ Which book] did John meet _{[DP₂ a child [CP who read t_i]]} ?
 b. *_[DP₁ Which book] did John hear _{[DP₂ a rumour [CP that you had read t_i]]} ?
 (Müller, 2011, 44)

It is not only clausal CPs but other complement XPs of nouns such as PPs and (certain) DPs contained in a DP that are subject to the CNPC violation (Manzini, 1992;

(i) Unù è-si-e!
 2PL NMZL-cook-Á
 'You people have cooked.' (Implying praise or sarcasm) (Igwe and Green, 1964, 29)

Adger, 2003; Citko, 2014; Bošković, 2015). In (153-a), a DP is wh-moved from a PP complement, and in (153-b,c), the movement is from a DP complement.

- (153) a. *Who did John listen to [_{DP} the children's recitation [_{PP} about t_i]] ?
 b. *What was Bill interested in [_{DP} Amy's description [_{DP} of t_i]] ?
 c. *Whose did [_{TP} she buy [_{DP} t_i book]] ?

The CNPC bans movement from phrases which are dominated by a DP. This is defined in (154).

- (154) *Complex NP constraint (CNPC) (Müller, 2011, 43):*
 No element contained in an XP dominated by a DP may be moved out of that DP.

A question one might ask here is whether we could use this complex NP constraint to account for the Igbo extraction restriction. The answer is no because there is no sign of a CP structure below the nominal heads. And more generally, an island explanation is not very likely, given that islands are simple XPs with certain properties that block movement out of them. But what we see in Igbo is that it is not one projection that induces the blocking effect, but the simultaneous presence of two projections (the high and the low n), that are also not structurally adjacent, but separated by other projections, that together induce the effect. Hence, an analysis of this extraction restriction need to account for the fact that these two projections 'work' together; and this reminds us of the subjacency condition.

Chomsky (1973) proposes the subjacency condition, a condition that forbids movement from crossing more than one nominal or clausal category in a single step.²⁸

- (155) *Subjacency condition (Müller, 2011, 10)*
 In a structure $\alpha \dots [\beta \dots [\gamma \dots \delta \dots] \dots] \dots$, movement of δ to α cannot apply if β and γ are bounding nodes.

The subjacency condition rules out movement over more than one NP or S node (DP or TP in modern terminology), these nodes are referred to as bounding nodes. Going by this condition, movement from Y to X in the following structures in (156) violates subjacency.

- (156) a. $\dots X \dots [TP \dots [DP \dots Y \dots]] \dots$
 b. $\dots X \dots [TP \dots [TP \dots Y \dots]] \dots$
 c. $\dots X \dots [DP \dots [DP \dots Y \dots]] \dots$

In (153-b), the moved wh-phrase crosses two DP nodes, and in (153-c), the wh-phrase also crosses two bounding nodes TP and DP. Hence, the movement results in ungrammaticality. The subjacency condition is able to account for a number of islands, such as that of relative clauses, CP complement of nouns, embedded constituent questions

²⁸Chomsky's original definition of the subjacency condition is as in (i).

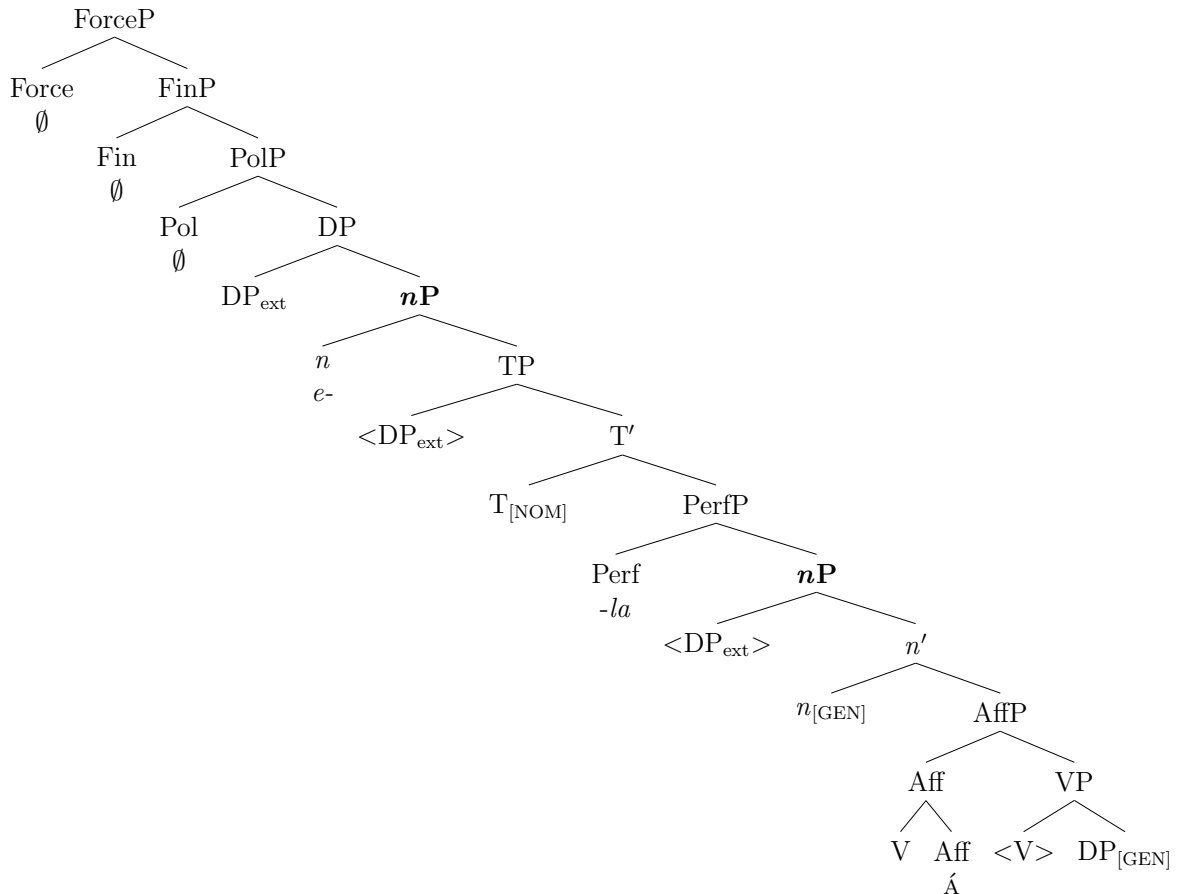
- (i) *Subjacency condition (Chomsky, 1973, 247)*
 No rule can involve X, Y, X superior to Y, if Y is not subjacent to X.

From the definition, X is superior to Y refers to the fact that X is higher in the phrase marker than Y (specifically every major category containing Y contains X but not vice versa), and Y is subjacent to X if not more than one cyclic node intervenes between them.

and NP subjects.²⁹

I posit that the extraction of the perfective clause in Igbo is blocked since the XP element to be extracted from the clause would have to cross two nominal projections. These nominal nodes are marked by the low *nP* node in (157), which assigns genitive case to the direct object of the verb, and the high nominal phrase, which I assume also nominalizes the perfective clause.

(157) *Extraction from the perfective involves crossing two nominal nodes*



The nominal bounding nodes in the perfective are the boldfaced *nP* nodes in the structure in (157), the low nominal projection in whose specifier the external argument is base-generated, and which is below the PerfP projection; and the high *nP* projection, which is above TP.

4.6.5 Interim summary

In Igbo, it is impossible to extract out of a perfective clause without altering the morphology of the verb. I have argued in this section that this restriction is the

²⁹Although subjacency is able to give a unified explanation for the CNPC and the observation that extracting an XP out of a DP that is contained in another DP is illicit, the condition has been shown to make some wrong predictions, such as the following (i) (Davies and Dubinsky, 2004; Müller, 2011).

- (i) a. [DP₁ Which author] did [TP you read [DP a book about t₁]] ?
 b. [DP Who₀₁] did [TP you see [DP a picture of t₁]] ?

result of double nominalization in the perfective, which is caused by the nominalizing prefix and the OVS. I accounted for the extraction restriction as a kind of subjacency violation. In accounting for the morphological make up of the perfective, I also argued that the OVS, whose status is debated in the literature, is in fact an affirmative marker.

4.7 Summary

In this chapter, I have discussed five reflexes of movement in Igbo: three tonal ones (downstep tone on the verb under subject extraction, final H tone on relative subject head nouns, and final H tone on crossed-over subjects), and 2 morphological ones (the *ná* particle found under extraction from negative clauses and the extraction restriction in the perfective). I have shown that they arise in all dependencies that involve A'-movement (contrary to claims in the previous literature), but not in those that involve A-movement or base-generation of an XP in an A'-position. I argued that Igbo uses a floating H tone to indicate a subject gap in Spec-TP. When subjects are moved, whether local or across a long-distance, there is a floating H tone, and this floating H tone overwrites the tone of the verb in affirmative clauses. I unified the final H tone on the subject relative head noun, and the final H tone on crossed-over subjects. I argued that these two final H tones are the same, and that they realize the Fin head in a split CP system (Rizzi, 1997). I showed that the final H tone on subject relative head nouns appears on the subject under local subject relativization, but under long-subject extraction, this H tone surfaces on the verb in the immediately preceding clause. I proposed a default rightwards direction for the association of the floating H tone of Fin. Under non-subject extraction, the H tone associates with the subject to its right, but under subject extraction, this association is to the left as a result of the other floating H tone that occupies Spec-TP. In negative clauses, I showed that the *ná* particle also realizes Fin, but under negative polarity. The position of the particle after the subject is accounted for using postsyntactic lowering (Embick and Noyer, 2001). Finally, I presented an extraction restriction found in the perfective. I argued that this extraction arises as a result of two nominal layers present in the perfective in Igbo.

Chapter 5

Conclusions

In this dissertation, I examined the morphosyntax of *it*-clefts in Igbo. I showed that there are two types of *it*-clefts, one involving focus movement and one involving relativization inside the cleft clause. I came to this conclusion based on a detailed comparison of the syntax of relative clauses and focus fronting in the language. Furthermore, I investigated several types of constituent question formation strategies in Igbo that are also cleft-like. In the course of examining these A'-constructions, several morphophonological effects were found. I explored these effects and showed that they are reflexes of movement. In the end, I presented a comprehensive picture of A'-dependencies (focus/wh-fronting, relativization versus topicalization) and cyclicity effects in these constructions in Igbo. Thus, the dissertation provided a systematic study of A'-dependencies in Igbo which has not been done so far.

In Chapter 2, I investigated cleft constructions, where I demonstrated that Igbo has two different kinds of clefts, see (1). I argued that these two cleft constructions not only differ with respect to their cleft clause, but also that the cleft pronoun and the copula in the two clefts are different.

- (1) *Cleft constructions in Igbo*
- a. Ó bù jí kà Àdá rì-rì.
3SG COP yam FOC Ada eat-SFX
'It is yam that Ada ate.'
- b. Ó bù jí Àdá rì-rì.
3SG COP yam Ada eat-SFX
'It is the yam that Ada ate.'

For the cleft construction exemplified in (1-a), I argued that the cleft pronoun is expletive and the copula is a copula of specification. I showed that this cleft type involves focus movement of the clefted constituent. Using a range of diagnostics including the presence of a focus marker, the absence of a relative clause structure, the lack of further focus movement of the clefted constituent (Abels, 2008; Reeve, 2012b) and the incompatibility of focus with adverbial clauses (Haegeman et al., 2014), I argued that this cleft type is best analyzed under a focus-based analysis of clefts (É.Kiss, 1998b, 1999). I postulated that the clefted constituent (except for local subjects) moves overtly from its base position inside the cleft clause to the specifier of the focus projection. A subject/non-subject extraction asymmetry is observed under this kind of cleft, where (local) subject focus does not involve movement, but non-subjects undergo movement. I showed that in the cleft construction in (1-b) the cleft pronoun is non-expletive and forms a discontinuous definite description with the cleft clause. The copula in this

kind of cleft is a predicational copula, and I demonstrated that the cleft clause is a relative clause. I argued that the clefted constituent is base-generated, and there is movement of an empty operator inside the cleft clause. Thus, I posited a specificational analysis (Hedberg, 2000) for this type of cleft. The differences between the two cleft constructions are summarized in Table 5.1 below.

	Clefts involving focus fronting	Clefts involving relativization
involves focus fronting	✓	✗
presence of a focus marker	✓	✗
exhibits subject/non-subject asymmetry	✓	✗
expletive pronoun	✓	✗
contains a copula of specification	✓	✗
contains a predicational copula	✗	✓
presence of a relative clause structure	✗	✓

Table 5.1: Clefts involving focus fronting vs. clefts involving relativization

The structures that I proposed for the two cleft constructions in (1) are given in (2). (2-a) is for clefts with focus fronting (1-a), and (2-b) is for clefts involving relativization (1-b).

- (2) a. $[_{TP} \acute{O} [_{T'} T [_{VP} b\grave{u} [_{FocP} j\acute{i}_{[Foc]} [_{Foc'} k\grave{a} [_{TP} \grave{A}d\acute{a} [_{T'} T [_{VP} r\grave{i}r\grave{i} <j\acute{i}_{[Foc]}>]]]]]]]]$
 b. $[_{TP} \acute{O} [_{T'} T [_{VP} b\grave{u} [_{DP} j\acute{i} [_{ForceP} OP [_{Force'} Force [_{TP} \grave{A}d\acute{a} [_{T'} T [_{VP} r\grave{i}r\grave{i} <OP>]]]]]]]]]]$

I also investigated the syntax of relative clauses in order to compare the structure of the cleft clauses with relative clauses as they appear to be similar. I argued for a head external analysis for Igbo relative clauses. Under this analysis, the relative clause head noun is base-generated outside of the relative CP and there is movement of an empty operator inside the adjoined relative clause (Chomsky, 1977).

In Chapter 3, I showed that the distinction made between the two cleft constructions examined in Chapter 2 is reflected in the different wh-question formation strategies attested in the language. I examined three wh-question formation strategies. It was observed that wh-questions in the language are biclausal, with an initial (pro)nominal element that surfaces with a low tone, which is followed by the copula. These wh-questions are illustrated in (3).

- (3) *Wh-questions in Igbo*
- a. $\grave{A}d\acute{a} r\grave{i}-r\grave{i} \quad j\acute{i} \quad n'\grave{u}t\acute{u}t\grave{u}$
 Ada eat-SFX yam P-morning
 'Ada ate yam in the morning.' *baseline*
- b. $(\grave{O} \quad b\grave{u}) \quad g\acute{r}\acute{n}\acute{i} \quad k\grave{a} \quad \grave{A}d\acute{a} r\grave{i}-r\grave{i} \quad n'\grave{u}t\acute{u}t\grave{u}$
 3SG COP what FOC Ada eat-SFX P-morning
 'What did Ada eat in the morning?' *focus wh-question*
- c. $K\grave{e}d\acute{u} \quad \acute{i}h\acute{e} \quad \grave{A}d\acute{a} r\grave{i}-r\grave{i} \quad n'\grave{u}t\acute{u}t\grave{u}$
 WH.COP thing Ada eat-SFX P-morning
 'What did Ada eat in the morning?' *k\grave{e}d\acute{u} wh-question*

- d. Òlé'é íhé Àdá rì-rì n'ùtùtù
 WH.look thing Ada eat-SFX P-morning
 'What did Ada eat in the morning?' *òlé'é wh-question*

I showed that there is an initial low tone in all the wh-questions in (3-b-d), and argued that the low tone realizes the Int(errogative) head in the C domain. The wh-question formation exemplified in (3-b) involves focus fronting, and the other two strategies in (3-c-d) involve relativization. For wh-questions involving focus fronting, I followed Goldsmith (1981b); Amaechi and Georgi (2019) in assuming that they involve overt movement of the wh-phrase (except for local subject) to the left periphery of the clause. I argued that the copula *bú* in this kind of wh-question is a copula of specification. For the *kèdú* wh-question illustrated in (3-c), I showed that the initial *kè* element is a defective noun in Igbo, and it bears the Int low tone. I demonstrated that the copula *dú* is a predicational copula. The copula is followed by the relative head noun which in turn is followed by the relative clause. I showed that the *òlé'é* wh-question illustrated in (3-d) is similar to *kèdú* wh-questions in that they both have a relative clause subpart. I demonstrated that the initial element in the *òlé'é* wh-question is a pronoun that bears the Int low tone. For the predicative element *lèé* following the pronoun, which is the imperative of the verb *look* (Nwachukwu, 1995), I argued that this predicative element is being grammaticalized to a copula in the language. This finding contributes to the literature on the grammaticalization path of copulas from the imperative of *look* (Creissels, 2017).

In Chapter 4, I discussed five reflexes of movement in Igbo. These are three tonal movement reflexes viz., downstep tone on the verb under subject extraction, the final H tone on the relative subject head noun (Green and Igwe, 1963; Nwachukwu, 1976; Emenanjo, 1978), and the final H tone on crossed-over subjects (Tada, 1995; Manfredi, 2018); furthermore, I studied two morphological reflexes of movement viz., the *ná* particle found under extraction from negative clauses and the extraction restriction in the perfective. I showed that these reflexes arise in all dependencies that involve A'-movement (contrary to claims in the previous literature), but not in those that involve A-movement or base-generation of an XP in an A'-position. The data in (4) illustrate the tonal reflexes. (4-a) is the baseline declarative sentence, where the finite verbs in both matrix and embedded clause bear low tones, and the subject of the matrix clause ends with a final low tone. Example (4-b) illustrates long-distance subject focus. There are three tone changes in (4-b). First is that the embedded verb bears downstep tones compared to the low tones in the baseline declarative in (4-a). Secondly, the final low tone of the verb in the matrix clause surfaces as high, and lastly, the final low tone of the matrix subject also becomes high.

- (4) *Tonal overwriting under A'-movement*
- a. Úchè chè-rè nà Òbí rì-rì jí.
 Uche think-SFX that Obi eat-SFX yam
 'Uche thinks that Obi ate yam.' *baseline*
- b. Òbí kà Úché chè-ré — 'rì-'rì jí?
 Obi FOC Uche think-SFX eat-SFX yam
 'Uche thinks that OBI ate yam.' *focus*

I argued that Igbo uses a floating H tone to indicate the gap of a subject in Spec-TP. The reason for the occurrence of the tone is the EPP-requirement of Igbo, which

demands that this Spec-TP position be filled. Hence, when subjects are moved, whether locally or long-distance, a floating H tone originates in Spec-TP. I demonstrated that this floating H tone overwrites the tone of the verb in affirmative clauses. I unified the final H tone on the head noun under subject relativization, and the final H tone on crossed-over subjects. I proposed that these two final H tones are the same, and that they realize the Fin head in a split CP system (Rizzi, 1997). I showed that the final H tone on subject relative head nouns appears on the subject under local subject relativization, but under long-distance subject extraction, this H tone surfaces on the verb in the immediately preceding clause. I posited a default rightwards direction for the association of the floating H tone of Fin. Under non-subject extraction, the H tone of Fin associates with the subject to its right, but under subject extraction, this rightward movement of the high tone of Fin is blocked given that the element in Spec-TP is also a floating high tone that realizes the subject gap. As a result of this blockade, the floating high tone of Fin associates with the closest overt element to its left. Under local subject relativization, this is the relativized subject, and under long-distance extraction it is the verb in the immediately preceding clause. I demonstrated that the downstep tone on the verb under subject extraction is the result of the phonetic realization of two contiguous high tones (Clark, 1990), these are the H tone of Fin in the C domain and that of the gap in Spec-TP (which overwrites the tone on the verb to its right).

The following data in (5) and (6) show the morphological reflexes. The data in (5) illustrate A'-extraction from a negative sentence. Under A'-movement out of a negative clause, the particle *ná* surfaces. Sentence (5-b) shows a direct object question. The sentences in (6) exemplify relativization out of a clause with imperfective (6-a) and perfective (6-b) morphology, respectively. While (6-a) is grammatical, (6-b) is not.

- (5) *Extraction from a negative clause triggers ná*
- a. Úchè á-[!]hụ-ghị Òbí.
Uche É-see-NEG Obi
'Uche didn't see Obi.' *baseline*
- b. Ònyé kà Úchè **ná** [!]á-hụ-ghị ___?
who FOC Uche PRT É-see-NEG
'Who did Uche not see?' *wh-question*
- (6) *Extraction from imperfective and perfective clauses*
- a. ónyé ná-èrí [!]jí
person IPFV-NMZL.eat yam.GEN
'the person who is eating yam' *imperfective*
- b. *ónyé è-rí-é-lá [!]jí
person NMZL-eat-Á-PFV yam.GEN
intended: 'the person who has eaten yam' *perfective*

In negative clauses, I showed that the *ná* particle realizes Fin under negative polarity. The position of the particle after the subject is accounted for using postsyntactic lowering (Embick and Noyer, 2001). I exemplified the extraction restriction found in the perfective and argued that this extraction arises as a result of two nominal layers present in the perfective in Igbo. I proposed an analysis involving a violation of the Subjacency Condition.

This study has provided empirical facts about Igbo with regards to A'-constructions

and the structural differences between these constructions, as well as reflexes of movement. The study showed that Igbo uses a certain set of (biclausal) A'-dependency formation strategies (focus movement, relativization) across different constructions (wh-questions, *it*-clefts). Igbo is extraordinarily rich in reflexes of movement, especially tonal ones. This has not been reported for many tone languages so far. The dissertation has also offered insights into the structure of the C domain of Igbo.

Although this dissertation has focused on A'-dependencies in Igbo, there are several aspects of these dependencies that I have not been able to explore. One area for further research is the structure of 'how' and 'why' questions in the language. Cross-linguistically it has been noted that 'how' and 'why' questions behave differently. This also appears to be the case in Igbo. For instance, in the 'why' question exemplified in (7-a), the use of an auxiliary is obligatory. For 'how' questions, the two sentences in (7-b,c) are acceptable. In both sentences, we also find an auxiliary. These auxiliaries are not required in other questions like 'who', 'what' and 'where'. The 'how' question is expressed with *kèdú*, and it is only in this form of *kèdú* question that the complementizer *kà* occurs (cf. (7-c)).

(7) 'How' and 'why' questions

- a. Gí'ní kpà-tà-rà Àdá *(jì) gbú-ó òkúkò?
 what cause-DIR-SFX Ada AUX kill-Á chicken
 'Why did Ada kill the chicken?'
- b. Kèdú ètù Àdá *(sì) gbú-ó òkúkò?
 WH.COP manner Ada AUX kill-Á chicken
 'How did Ada kill the chicken?'
- c. Kèdú kà Àdá *(sì) gbú-ó òkúkò?
 WH.COP C Ada AUX kill-Á chicken
 'How did Ada kill the chicken?'

Another area that requires further research concerns tonal reflexes of movement. In this dissertation I have only considered simple verbs with CV syllable structure. Further investigation with regards to tone changes under A'-movement dependencies on verbal complexes such as compound verbs is necessary. This is because certain compound verbs retain their tones under nominalization and in the affirmative past, for instance, but others do not (Clark, 1990).

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