The definition of head and the syntactic structure of verbs in the composition of Yorùbá serial verb constructions

by

Oluwabukola Oluwaseun Ariyo

B.A., University of Ado-Ekiti, Nigeria, 2008
M.A., University of Ibadan, Nigeria, 2012

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We acknowledge and respect the Lək̓ʷəŋən (Songhees and Xʷsepsəm/ Esquimalt) Peoples on whose territory the university stands, and the Lək̓ʷəŋən and W̱ SÁNEĆ Peoples whose historical relationships with the land continue to this day.

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Supervisory Committee

Dr. Martha McGinnis, Supervisor

School of Languages, Linguistics and Cultures, University of Victoria

Dr. Catherine Léger, Member
School of Languages, Linguistics and Cultures, University of Victoria

Dr. Bronwyn Bjorkman, Outside Member

Department of Languages, Literature and Cultures, Queen's University

Abstract

I investigate serial verb constructions (SVCs) in Yorùbá within the Minimalist framework, addressing two fundamental questions: (i) which verb serves as the syntactic head of the extended projection associated with the SVC in Yorùbá, and (ii) what hierarchical relation exists between verb phrases in these constructions. Focusing specifically on SVCs in which both verbs are transitive and select distinct internal arguments, this dissertation employs multiple empirical and syntactic diagnostics to establish the head of these complex predicate formations. The analysis shows that the first verb (V_1) functions as the head of the extended projection in Yorùbá SVCs. Three primary lines of evidence support this determination: (i) verb nominalization and clefting operations, which systematically target V_1, while excluding the second verb (V_2); (ii) adverbial modification patterns, wherein manner adverbs scope exclusively over V_1, despite the ability to modify any verb in simple Yorùbá clauses; (iii) the distribution of functional categories including aspectual markers, negation, and modals, which appear only before V_1.

Drawing on Chomsky's bare phrase structure theory (1995, 2000) and Stepanov's late adjunction hypothesis (2001, 2007), I establish the structural properties of the verbs in the SVC. I show that VP_2 is an adjunct to the VP_1, rather than a complement. This conclusion is substantiated through the examination of extraction asymmetries, where wh-movement and focus movement proceed freely from V_1. and its complements (including DP, PP, infinitival CP, and finite CP complements), and extraction from VP_2 is categorically blocked regardless of the syntactic category or structural position of the displaced element. This extraction behavior suggests that VP_2 is in an adjoined position, making it inaccessible to syntactic movement. Additional evidence from adjunct placement possibilities and reflexive binding across V_1 and V_2 shows that the object DP of V_1 cannot be an antecedent to the object DP of V_2, corroborating this structural analysis.

This work contributes to the cross-linguistic understanding of SVCs by demonstrating that the mono-clausal properties characteristic of SVCs, including unified event structure, shared external arguments, and single tense, aspect, and mood specifications, can derive from adjunction configurations rather than being exclusively derived from the complement structure. This research advances both the descriptive understanding of Yorùbá syntax and theoretical discussions concerning headedness, complement/adjunct distinction, and complex predicate formation.

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List of Abbreviations

3Pl = Third person plural pronoun

3SG = Third person singular pronoun

ADV = Adverb

ASP = Aspect

C = Complementizer

CED = Condition on Extraction Domain

CL = Clitic

CV = Consonant+vowel

DEF =Definite

D = Determiner

EPP = Extended Projection Principle

EXP = Experiential aspect

F = Focus

FUT = Future tense

LF = Logical Form

MOD = Modal

MP = Minimalist program

NEG = Negation

Nml = Nominalizer

NOM = Nominative

PERF = Perfective

PF = Phonological Form

PL = Plural

P = Preposition

PROG = Progressive

PRT = Particle

PST = Past tense

REL = Relative clause marker

RP = Resumptive pronoun

SVC = Serial verb construction

SVO = subject-verb-object

T = Tense

v = Functional verb

V = Verb

Dedication

This dissertation is dedicated to my parents, husband and children.

To my parents (Mr and Mrs Fapohunda), for planting the seeds of curiosity and perseverance that have blossomed into this achievement. Your love and belief in me have been my foundation.

To my beloved husband (Dr. Samuel Ariyo), for being my rock, my cheerleader, and my partner in every sense. Thank you for the sacrifices you made, the unending conversations you handled, and for never doubting that I could do this.

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Chapter 1: Introduction

1.0 Introduction

This dissertation aims to establish the identity of the head verb within SVCs [*](henceforth SVCs) in Yorùbá and to propose a syntactic framework that accounts for the relational hierarchy between the verbs that co-occur in these constructions. SVCs are a widely recognized and extensively studied syntactic phenomenon, particularly in the languages of Africa, Oceania and Asia. Despite the breadth of existing research, it continues to present both descriptive and theoretical challenges. The concept of SVCs has been defined in diverse ways across the literature, with scholars tailoring definitions to suit specific linguistic analyses and theoretical orientations. However, a universally accepted definition of SVCs remains elusive (see Aikhenvald, 2006; Baker, 1989; Bamgbose, 1973, 1974; Collins, 1997; Crowley, 2002; Matthews, 2006; Oyelaran, 1982; Stewart, 1998; Taiwo, 2014, among others). For instance, Bamgbose (1974, p. 17) characterizes SVCs as a "combination where all verbs share a common subject in the surface structure," a view that has gained substantial traction among researchers but has also been subjected to expansion and reinterpretation. One such expanded view is offered by Collins (1997, p. 462), who defines SVCs as "… a succession of verbs and their complements (if any) with one subject and one tense value that are not separated by any overt marker of coordination or subordination." This definition highlights key syntactic properties of SVCs, such as the shared subject and tense as well as the absence of explicit coordinating or subordinating elements characteristics echoed in the works of Aikhenvald (2006) and Matthews (2006). These scholars emphasize the structural

[*] I utilized Claude.ai solely for stylistic refinement. I have reviewed and actively approved all suggested revisions and accept complete responsibility for the dissertation's contents.

integration of verbs in SVCs, arguing for a mono-clausal analysis that differentiates SVCs from other multi-verb constructions like coordination or subordination.

While early studies of SVCs were primarily descriptive in nature documenting their occurrence, structure, and variation across languages the focus has since shifted towards more theoretical inquiries, particularly from the 1990s onwards. This theoretical turn has brought to the fore complex questions about the internal structure of SVCs, most notably concerning the identification of the head verb within these constructions. Establishing the head is not merely a matter of hierarchical labelling; it has profound implications for our understanding of argument structure, clause type, event composition, and syntactic projection (see Aboh, 2009; Baker, 1989; Baker & Stewart, 2002; Collins, 1997; Lawal, 1993; Matthews, 2006, among others).

The cross-linguistic investigation into headhood in SVCs has revealed significant variation. Some proposals, such as that of Baker and Stewart (2002), argue that both verbs in an SVC can function as heads, especially when they each contribute to a higher functional category. Other approaches adopt a more restrictive stance, suggesting that only one verb assumes the head role. In some languages, it is argued that the first verb is the syntactic head due to its position and role in tense/aspect assignment (Law, 1996), while in others, the second verb is identified as the head based on its control over argument realization or semantic scope (Aboh, 2009). This diversity of analysis reflects the intricate nature of SVCs and the difficulty of applying a one-size-fits-all syntactic model to account for their structure.

Furthermore, the debate on verb headhood in SVCs intersects with broader theoretical discussions regarding the nature of the syntactic relationships between the verbs. Scholars have proposed various structural relations to capture this complexity, ranging from complementation, where one verb selects or licenses the other as its complement, to

adjunction, where the second verb is attached without selection, and a sisterhood relation in which the verbs form a double-head structure. Each of these analyses carries different implications for the theory of syntax, particularly concerning how syntactic dependency, argument sharing, and clause union are modelled in multi-verb constructions.

This dissertation contributes to ongoing discourse by examining Yorùbá SVCs within a theoretical syntactic framework. It aims to identify consistent patterns that may reveal which verb serves as the head of the extended projection corresponding to the SVC and to articulate the nature of the syntactic relation binding the verbs within these constructions. In doing so, it builds upon prior research while offering new insights into the structure of SVCs, both in Yorùbá and, by extension, in typologically similar languages. The constructions in (1a–d) are examples of SVCs in Yorùbá. (1a) illustrates SVC with the events described by the verbs understood to be in the past tense (the Yorùbá language lacks a marker for present and past tense forms; constructions are understood through the context of speech). The construction in (1b) is an example of SVC with aspect marking (in this case, perfective aspect) marked by *ti*, while the construction in (1c) illustrates future tense marked by *á/ máa*. The construction in (1d) is an example of SVC with a negative marker.

(1)a Olú ka ìwé lórí ajá kọ́ àwon akeko nípa ẹranko.
Olú read book on dog teach some students about animal
'Olú read a book on dogs and taught some students about animal.'
Intended: 'Olú read a book on dogs in order to teach some student about animal, and he taught some students about animal.')[1]

b Olú ti ka ìwé lórí ajá kọ́ àwon akeko nípa ẹranko.
Olú Asp read book on dog teach some students about animal

[1] All SVCs analyzed in this dissertation are interpreted as constructions that express both purpose and coordination.

‘Olú has read a book on dog to teach some students about animal.’
Intended: ‘Olú has read a book on dogs in order to teach some student about animal, and he taught some students about animal.’)

c Olú á ka ìwé lórí ajá kọ́ àwon akeko nípa ẹranko.
Olú Fut read book on dog teach some students about animal
‘Olú will read a book on dog and teach some students about animal.’
Intended: ‘Olú will read a book on dogs in order to teach some student about animal.’

d Olú kò ka ìwé lórí ajá kọ́ àwon akeko nípa ẹranko.
Olú Neg read book on dog teach some students about animal
‘Olú did not read a book on dog to teach some students about animal.’
Intended: ‘Olú did not read a book on dogs to teach some student about animal, and he did not teach some students about animal.’

All verbs within the Yorùbá SVCs must share the same grammatical subject. This subject appears only once at the beginning of the construction and serves as the external argument to all verbs in the series. SVCs in Yorùbá show unified tense interpretation and aspect marking across all verbs in the construction. The tense/aspect marker appears only once, typically before the first verb, and its scope extends over the entire verb series. This creates a temporal and aspectual coherence that reinforces the single-clause interpretation. SVCs in Yorùbá do not have any overt connectors, unlike coordinate constructions where the markers such as *àti* ‘and’, *ṣùgbón* ‘but’ are used or subordinate constructions where the complemetizers *kí*/*pé* are used.

The constructions in (2a)-(2f) are examples of coordinate constructions, which represent a fundamental syntactic structure in which the two grammatically equivalent elements are linked together through coordinating conjunctions. In these particular examples, we observe two distinct types of coordination based on the semantic relationship between the conjoined elements. Examples (2a)-(2d) demonstrate additive coordination through the use of

the conjunction *sì* 'and'. This conjunction serves to connect semantically compatible elements and contribute cumulatively to the overall meaning of the construction. In contrast, examples (2e) and (2f) illustrate adversative coordination through the conjunction *ṣùgbọ́n* 'but'. This conjunction establishes a contrastive relationship between the coordinated elements, indicating that the second conjunct presents information that contrasts with the first conjunct. The choice between *sì* and *ṣùgbọ́n* reflects the speaker's intention to signal either a harmonious addition of information or a deliberate contrast between the coordinated elements, respectively.

(2)a Bùkọ́lá ti se ìrẹsì Olú sì ti jẹ ẹ́.
Bùkọ́lá Asp cook rice Olú and Asp eat it
'Bùkọ́lá has cooked rice and Olú has eaten it.'

b Bùkọ́lá se ìrẹsì ó sì ti jẹ ẹ́.
Bùkọ́lá cook rice 3Sg and Asp eat it
'Bùkọ́lá cooked rice and he/she has eaten it.'

c Bùkọ́lá máa se ìrẹsì ó sì máa jẹ ẹ́.
Bùkọ́lá Fut cook rice 3Sg and Fut eat it
'Bùkọ́lá will cook rice and he/she will eat it.'

d Bùkọ́lá se ìrẹsì Olú sì máa jẹ ẹ́.
Bùkọ́lá cook rice Olú and Fut eat it
'Bùkọ́lá cooked rice and Olú will eat it.'

e Olú kò ka ìwé lórí ajá ṣùgbọ́n ó kọ́ àwon akeko nípa ẹranko.
Olú Neg read book on dog but 3Sg teach some students about animal
'Olú did not read a book on dog but he/she taught some students about animal.'

f Olú ka ìwé lórí ajá ṣùgbọ́n kò kọ́ àwon akeko nípa ẹranko.
Olú read book on dog but Neg teach some students about animal
'Olú read a book on dog but did not teach some students about animal.'

The examples presented in (1) and (2) are presented to show the difference between SVCs in Yorùbá and other types of constructions that can be easily mistaken for SVCs, thereby addressing a crucial analytical challenge in Yorùbá syntax and cross-linguistic studies of serialization phenomena. SVCs in Yorùbá represent a distinctive grammatical phenomenon in which multiple verbs appear in sequence within a single clause, without overt coordination or subordination markers, and typically share the same subject, expressing a related sequence of actions.

The difference between SVCs and coordinate construction in Yorùbá is clearly seen in the interpretation of both constructions. The verbs in the SVC represent lexically distinct events that are interpreted as purposive and coordinated at the level of their individual semantic contributions. They undergo a process of semantic integration, forming a complex predicate expression. This complex predicate denotes a single, unified macro-event rather than a sequence of independent actions. This unified event is conceptualized as being performed by a single agent who maintains control throughout the event structure. Thus, SVCs exhibit a dual nature: on the one hand, the component verbs retain their distinct lexical meanings and event-structural properties, suggesting coordination of separate sub-events; on the other hand, these sub-events are bound together through semantic composition to express a coherent, monoeventive predicate. This integration is reflected in the syntactic and semantic properties, including shared external argument (subject), single tense and aspect marking.

Coordination in Yorùbá, as illustrated in example (2), presents a different structural and semantic configuration from SVCs. In coordination, the verbs encode a sequence of

independent actions, each projecting its own event structure. Unlike SVCs, these coordinated events do not undergo semantic integration to form a unified macro-event, rather, they remain conceptually distinct, with each verb denoting a separate predicate that could be asserted independently. A coordinated structure allows for independent specification of tense and aspect for each verb. Coordinated clauses permit a separate external argument.

For emphasis and conceptual clarity, the working definition of SVCs adopted in this dissertation draws, in part, from the influential characterization provided by Collins (1997). In the context of Yorùbá, I define SVCs as syntactic structures in which two or more verbs, potentially accompanied by their objects, co-occur within a single clause without any intervening overt or covert markers such as a conjunction. SVCs in Yorùbá exhibit a fundamental structural characteristic: they constitute a single grammatical clause despite containing multiple verbs. This single-clause property manifests in several ways that distinguish SVCs from other multi-verb constructions in the language.

However, the superficial similarity between SVCs and other multi-verb structures in Yorùbá can lead to misanalysis, particularly for researchers unfamiliar with the language's intricate syntactic properties. The examples in (1) serve to illustrate authentic SVCs, demonstrating the characteristic properties that define this construction type, including the absence of coordinating conjunctions, the shared subject across all verbs in the series, and the semantic integration that creates a single complex predicate. In contrast, the examples in (2) present alternative construction types that, while containing multiple verbs, do not constitute SVCs. These alternative structures include coordinate constructions which explicitly mark the relationship between clauses and maintain distinct propositional content for each conjunct. Unlike SVCs, these coordinate structures permit separate temporal references and distinct truth conditions for each of the coordinated elements. This contrastive presentation is methodologically crucial because it establishes clear diagnostic criteria for identifying SVCs

in Yorùbá. The SVCs under analysis in this dissertation are restricted to those involving verbs with transitive valence; that is, verbs that take direct objects like the ones presented in (1). This focus enables a more thorough and systematic exploration of argument structure within SVCs. Additionally, I adopt the theoretical framework of Kratzer (1996) in treating the subject of these constructions as an external argument; that is, an argument introduced outside the core verbal projection, typically by a functional head introduced as v (little v). This syntactic assumption provides a basis for understanding subject sharing across serial verbs and contributes to the broader analysis of argument distribution and structural uniformity in Yorùbá SVCs.

The term "construction" in "serial verb construction" differs from its technical meaning in Construction Grammar (Goldberg, 2003), where constructions are conventionalized form-meaning pairings stored in the mental lexicon and acquired as holistic units. Here, I employ "construction" in the descriptive typological sense established in research on African and Southeast Asian languages. Within this framework, SVCs denote mono-clausal structures in which multiple verbs combine to encode a single complex event, typically sharing grammatical arguments such as the subject. Crucially, I do not posit that SVCs understood in this typological sense are necessarily stored as lexical units. Rather, they are compositionally generated through syntactic processes, with their semantic interpretation arising from the interaction between verbal argument structure and event-structural properties. This distinction is essential because this dissertation treats SVCs as syntactically productive patterns rather than pre-specified constructions in the Construction Grammar framework.

1.1 Research questions and objectives

This dissertation investigates two central questions regarding Yorùbá SVCs, both of which carry significant empirical and theoretical implications within the Minimalist framework (Chomsky, 1995, 2000). Yorùbá is a Niger-Congo language (Williamson & Blench, 2000) predominantly spoken in southwestern Nigeria. The core questions addressed are as follows:

i. **Which verb serves as the syntactic head of the extended projection associated with Yorùbá SVCs?**

Within Minimalism, identifying the head of a construction is crucial for determining how syntactic operations such as merge, agree, and labelling are computed. This question interrogates whether one verb in a Yorùbá SVC projects the primary verbal spine (e.g., vP or VP) while other verbs are adjoined or incorporated, or whether the construction involves a more symmetric or distributed structure. Evidence from adverbial scope over verb phrases, as well as the interaction of these verb phrases with higher or functional categories such as modals and focus markers, is examined. This is to determine which of the verbs controls functional projections, such as Voice. The analysis evaluates whether headship can be determined based on selection properties, feature checking, or morphosyntactic asymmetries within the serial construction.

ii. **What is the hierarchical and derivational relationship between the VPs in Yorùbá SVCs?**

This question addresses whether SVCs instantiate a single clause (mono-clausal analysis) with complex predicate formation, or whether they derive from a multiclausal structure subject to syntactic restructuring. Under the Minimalist architecture, this involves analyzing how feature valuation operates across multiple verbal domains within a single derivation. The dissertation explores possibilities such as VP shell structures, argument sharing through

functional projections, and the role of internal Merge in licensing movement and scope. Particular attention is paid to whether the verbs are base-generated in a hierarchical configuration (e.g., as in a split vP analysis) or derived through adjunction or complex predicate formation.

1.2 Theoretical background

This research employs Chomsky's bare phrase structure theory (1995, 2000), which posits that syntactic structures are constructed exclusively through the operation called merge. In this framework, syntactic objects are built strictly via merge. Lexical items are inserted directly from the lexicon with no pre-specified projection levels (words from the lexicon are inserted directly without predetermined hierarchical levels). SVCs in Yorùbá, as in example (1), present an interesting puzzle: they contain multiple verbs within a single clause but lack explicit connecting words or markers that would typically indicate coordination or subordination between clauses. This raises the question of how multiple verbs can appear together in one clause without being formally linked or embedded. The bare phrase structure framework offers three potential solutions to this puzzle: First, the adjunction analysis proposes that the second verb (V_2) attaches to the verb phrase structure created by the first verb (V_1). This approach utilizes merge to enable the new verb to combine directly with the existing verb phrase. Second, the multiple head analysis (Baker & Stewart, 2002) suggests that both verbs can be integrated as main elements within the same extended grammatical projection, potentially under a light verb phrase (vP) structure. Third, the light v analysis (Aboh, 2009) proposes that the second verb forms its own small verb phrase, which then attaches to or becomes embedded within the verb phrase of the first verb.

Building on this theoretical framework, the late adjunction hypothesis serves as a tool to explain the structure of SVCs examined in this work. The late adjunction hypothesis (LAH) (Stepanov, 2000, 2001) is grounded in the minimalist phrase structure system, most

notably in the bare phrase structure (Chomsky, 2000), which involves building syntactic objects from either the lexicon or already formed syntactic objects through the operation Merge during the derivation. Under this view, adjuncts are merged after all derivational cycles are completed. That is, adjuncts are merged into the structure after the main argument structure has been constructed, and the necessary movements have been realized. Therefore, adjuncts are assumed to be realized post-cyclically. The motivation for adopting the late adjunction hypothesis is to account for the adjunct island effect as it impacts SVCs in Yorùbá. The adjunction conditions and extraction as described in Stepanov's analysis clearly distinguish adjuncts from arguments (adjunct/argument asymmetries). The late adjunction provides insight into why we observe an adjunct island effect in Yorùbá SVCs, as it affects one of the verb phrases. Wh-words cannot originate from within an adjunct phrase/clause (Bosković, 2010). A comprehensive analysis of this theory and approach is discussed in Chapter 4 of this work. Another motivation for adopting this theory also follows from Stepanov's economy of derivation, where minimal tampering is warranted. The late adjunction does not alter an already established structure (least tampering); it prevents the redefinition of an existing projection.

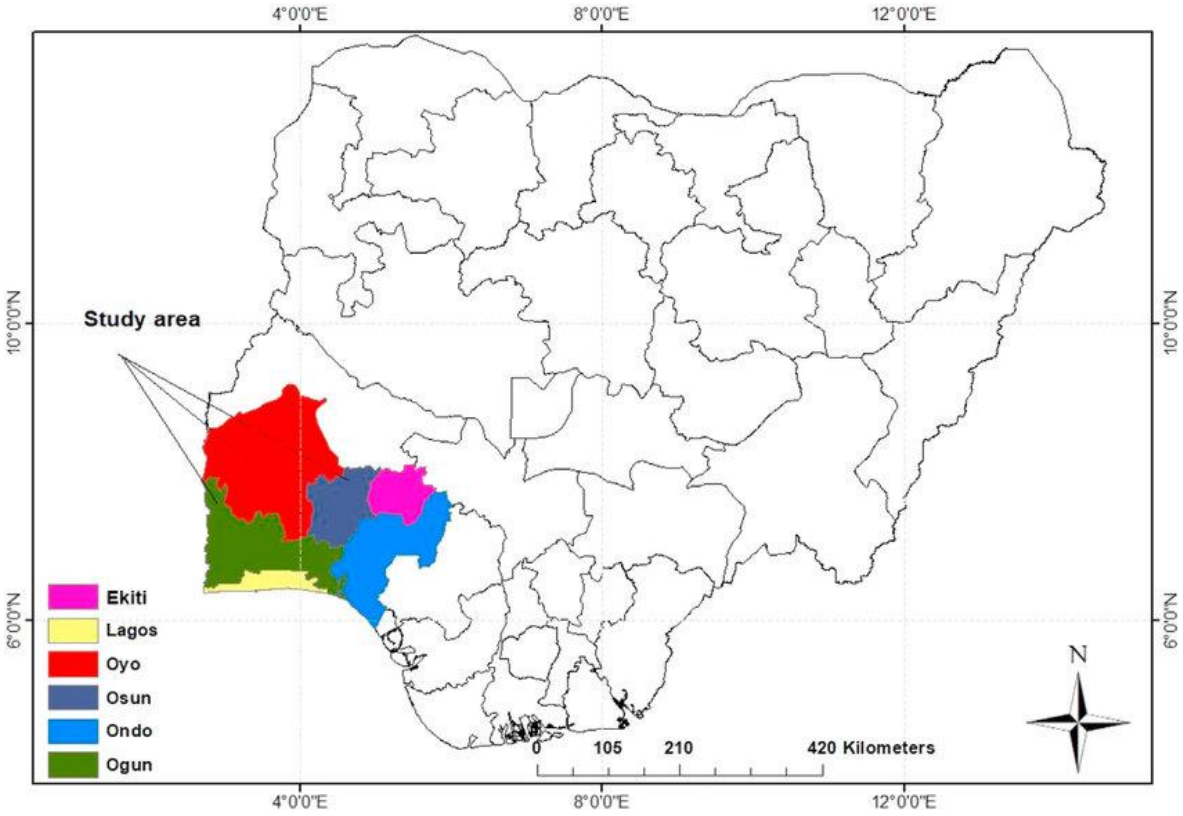
1.3 Overview of Yorùbá people and language

Greenberg (1963, p. 8) classified the Yorùbá language as belonging to the broader Niger-Congo family, positioning it within one of Africa's largest and most diverse language groups. More restrictively, Yorùbá belongs to the Kwa subfamily, which represents a significant branch of Niger-Congo languages primarily spoken across West Africa (see Williamson & Blench, 2000). This classification situates Yorùbá alongside other related languages within a linguistic continuum that spans from modern-day Ghana to Nigeria, highlighting shared historical and structural features that reflect ancient migration patterns and cultural exchanges throughout the region. The Niger-Congo classification system, as

proposed by Greenberg, has been instrumental in understanding the genetic relationships between African languages. The Kwa subfamily specifically encompasses languages that share specific phonological, morphological, and syntactic characteristics, distinguishing them from other Niger-Congo branches, such as the Bantu or Atlantic languages.

The Yorùbá people are an ethnolinguistic group primarily located along the western coast of Africa, with most residing in Nigeria. Southwest Nigeria is one of the country's six geopolitical zones. The zone comprises six different states: Ekiti, Lagos, Oyo, Osun, Ondo and Ogun. These states are presented in Figure 1.

Figure 1 Map of Nigeria



(Omotayo, 2020, p. 2)

In addition to Nigeria, substantial Yorùbá communities can also be found in the eastern regions of the Republic of Benin and Togo. This regional distribution highlights the

historical and cultural richness of the Yorùbá people, whose influence extends beyond modern political boundaries.

The transatlantic slave trade had a profound impact on the dispersion of the Yorùbá people. As a large portion of the enslaved Africans brought to the Americas originated from West Africa, many descendants of the Yorùbá now reside throughout the Western Hemisphere. Significant Yorùbá-influenced populations are found in Brazil, Cuba, Trinidad and Tobago, Haiti, and the United States, where elements of Yorùbá language, religion, and culture have merged with local traditions. In Brazil and Cuba, for instance, Yorùbá religious beliefs played a central role in the development of Candomblé and Santería, Afro-American religions that continue to honor Yorùbá deities, or orișa.

Migration patterns over the last century have also resulted in a significant Yorùbá presence in Europe, especially in the United Kingdom (Adejumo, 2023). This migration is closely linked to Nigeria's colonial past under British rule. Educational opportunities, economic aspirations, and political exile have prompted many Yorùbá individuals to settle in the UK and other European countries, where they maintain cultural connections and continue to practice elements of their heritage.

Today, the Yorùbá are regarded as one of the largest and most influential cultural groups in Africa, with an estimated global population of approximately 40 million. Historically, they established advanced societies featuring thriving urban centres such as Ife, Oyo, and Ibadan. Their economic foundation has traditionally been based on farming, particularly crops like yam, cassava, and maize, alongside vibrant trade networks and intricate art production. Markets in Yorùbá towns and cities have long served as hubs of commercial activity, predominantly managed by women who play a significant role in local economy.

Yorùbá art encompass woodcarving, sculpture, metalwork, beadwork, and textile design. These artistic traditions are not merely decorative; they often serve religious, ceremonial, or political purposes. For instance, carved masks and figures are used in rituals to honor the gods and ancestors, while beaded crowns and regalia signify royal authority. Central to Yorùbá spirituality is the belief in a dual reality. The world is understood as comprising two interconnected realms: Ayé, the tangible world of humans and nature (Balogun, 2021), and Orun, the invisible spiritual realm inhabited by ancestors, spirits, and a vast pantheon of deities known as orișa. These deities act as intermediaries between the supreme creator, Olódùmarè, and the human world. Each orișa governs specific aspects of life and nature, such as fertility, war, wisdom, and rivers, and is associated with colours, rituals, foods, and songs. Devotion to the orișa is expressed through elaborate festivals, prayers, offerings, and dances.

Oral tradition holds that music and dance are integral to the Yorùbá way of life, deeply intertwined with religious, social, and political contexts. Music accompanies births, weddings, funerals, harvests, and initiation rites, reinforcing communal bonds and cultural identity. Yorùbá traditional music is distinguished by its rhythmic complexity and spiritual focus, often directed towards praising the orișa. Drumming is a core element, with specific drum types such as the talking drum (dùndún) capable of mimicking the tonal patterns of spoken Yorùbá, thereby "speaking" praise, warnings, or stories. Singing is equally important, often performed in call-and-response formats to encourage communal participation. Additional instruments, such as metal bells (agogo), ṣekere (beaded gourds), flutes, and horns, enrich the soundscape. Language plays a crucial role in Yorùbá music and culture, as well as in the expression of identity.

Yorùbá is a tonal language, where the meaning of a word can change based on pitch. It has three primary tones: high, mid, and low, which are not only linguistically relevant to

Yorùbá phonology, but are also intricately woven into Yorùbá music and poetry. Many traditional songs and chants align musically with the tonal inflection of the language, making it both a linguistic and musical experience. Despite centuries of displacement and diaspora, the Yorùbá have maintained a strong cultural identity that continues to thrive and evolve both in Africa and across the world.

1.3.1 Yorùbá consonants and vowels inventory

There are 19 phonemic consonant sounds in the Yorùbá language, as presented in Table 1 below. The /kp/ and /gb/ sounds are complex sounds for non-native speakers of Yorùbá. (see Grawunder et al., 2011, for more details).

Table 1 Yorùbá consonants

	bilabial	labiodental	alveolar	post alveolar	palatal	velar	labiovelar	glottal
Plosive	b		t d			k g	kp gb	
Fricative		f	s	ʃ				h
Nasal	m		n			ŋ		
Affricate				ʤ				
Approximant					j		w	
Lateral approximant			l					
Tap			r					

There are seven oral vowels in Yorùbá: [i, e, ɛ, a, o, ɔ, u], with their orthography form as these: (i, e, ẹ, a, o, ọ, u) presented in Table 2. Each of these vowels excluding (e and o), also has a nasal counterpart orthographically written as (in, ẹn, an, ọn, un)[2].

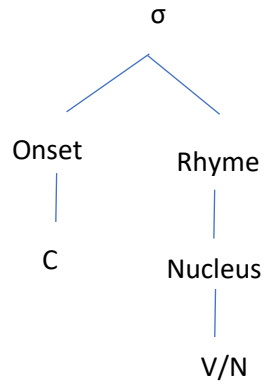
[2] Yoruba does not end any word with a consonant sound; instances where words seem to end with a consonant sound are instances of syllabic nasal (following orthography).

Table 2 Yorùbá oral vowels

	Front	Central	Back
High	i		u
Mid	e		o
	ẹ		ọ
Low		a	

The syllable structures of Yorùbá words are: CV (it allows a maximum of two segments in a syllable), V (it allows syllables with null onsets). Also, the syllabic nasals (represented as N) are tone-bearing units in the language, and they act like vowels too[3].

(3) Maximal syllable in Yorùbá (Kenstowicz, 2006; Olúbunmi, 2015)



(Olúbunmi, 2015, p. 68)

The examples in (4) below are examples of words with Yorùbá vowels (both nasal and oral) and the syllabic nasal, demonstrating the phonemic contrast between oral and nasal vowel qualities as well as the distinctive behavior of syllabic consonants. Yorùbá words do not end with a consonant sound (NO-CODA); any apparent instance of words ending with a consonant is an instance of a nasal vowel (Vn), and they do not accommodate a consonant cluster. Any sequence of words with a sequence of consonants is an instance of syllabic nasal followed by a consonant.

[3] Nasal consonants in Yoruba can also bear tone just like vowels. They can therefore occupy the nucleus of a syllable in the language.

(4) ẹranko - animal

agbọ́n – wasp

àgbo - herb

olùkọ́ - teacher

eyín - tooth

òrọ̀mbo - citrus

ǹkan – something

bàtà – shoe

gbẹ̀gìrì – bean soup

olóúngbò - cat

1.3.2 Overview of Yorùbá morphology

Yorùbá is an isolating language (Haspelmath & Sims, 2010) which has an analytic morphology. It is analytic in the sense that words are formed basically without inflections. Apart from bare words, Yorùbá words can be derived either by reduplication or compounding. These are the two primary processes for lexical expansion in Yorùbá, excluding loanwords. The reduplication process follows two directions: partial reduplication and full reduplication (Ehineni, 2017). Full reduplication is a derivation process where segments are duplicated. Full reduplication can be found in Yorùbá agentives, adjectives, and adverbs, as shown in the examples below (5). Sometimes, the non-reduplicated version of the words is a verb phrase, especially with the agentive; they may not have a complete meaning without reduplication. I will skip the details on this because it is not relevant to this study.

(5)a Agentives

darandaran ‘shepherd’

gbọ́mọgbọ́mọ ‘kidnapper’

woléwolé ‘house-inspector’

b Adjectives

fíofío ‘very tall’

díẹ̀díẹ̀ ‘very little’

ńláńlá ‘very big’

c Adverbs

tipátipá ‘forcefully’

pátápátá ‘completely’

kíákíá ‘quickly’

Partial reduplication, on the other hand, is derived by copying or duplicating some part of a bare word. Usually, the initial consonant of a word is copied, and a vowel sound is inserted between the copied consonant and the bare word from which it was copied. Some nouns in Yorùbá are derived through this process, as seen in (6).

(6) gbígbẹ ‘dryness’ derived from gbẹ ‘dry’

kíkan ‘sourness’ derived from kan ‘sour’

pípọ́n ‘ripeness’ derived from pọ́n ‘ripe’

gbọgbọrọ ‘longness’ derived from gbọrọ ‘long’

Compounding is another process for deriving or expanding lexical items in Yorùbá. This involves combining two or more separate roots to form a new lexical item. This is very productive with nouns in the language, as seen in examples (7).

(7)a ilé-ìwé
house-book
'school'

b ẹyẹ-ilé
bird-house
'pigeon'

c ọmọ-ẹ̀yìn
child-back
'disciple'

The nouns in Yorùbá do not inflect for case, nor do they inflect for number. Plurality is often marked by a third-person plural determiner or by quantifiers or numerals (Ajiboye, 2010), as seen in the examples presented in (8) and (9).

(8)a àwọn ilé-ìwé
Pl house-book
'schools'

b àwọn ẹyẹ-ilé
Pl bird-house
'pigeons'

c àwọn ọmọ-ẹ̀yìn
Pl child-back
'disciples'

(9)a ilé-ìwé méjì
House-book two
'two schools'

b ẹyẹ-ilé méje
Bird-house seven
'seven pigeons'

c ọmọ-ẹ̀yìn méfà
Child-back six
'six disciple'

1.3.3 Brief insight into Yorùbá syntax

Yorùbá is an SVO (subject-verb-object) language. The verbs in Yorùbá do not conjugate for tense, unlike French verbs, and their forms remain constant, unlike some English verbs. The Yorùbá language depends heavily on aspectual marking and mood to portray the tense of a construction contextually. Let us examine the examples in (10).

(10)a Olú ti lọ.
Olú Perf.Asp go
'Olú has gone.'

b Olú lọ.
Olú go
'Olú went.'

c Olú lọ lana.
Olú go yesterady
'Olú went/left yesterday.'

d Olú ń lọ.
Olú Prog.Asp go
'Olú is going.'

In all of these constructions (10a)-(10d), the verb *lọ* ‘go’ has different tense inflections in English. In the construction in (10a), the perfect aspect marker (Nurse et al., n.d.) provides the context for interpreting the tense in Yorùbá (with the event understood to be completed) or with (10c) with a temporal adverb. The construction in (10d) shows the progressive aspect marker. The construction in (10b) is slightly different because no marker is present. However, within a speech context, the event will be understood to be in the past. Speech context also determines the interpretation of an event in the current state, as in example (11a). However, the future tense is marked with the modal *máa/á* ‘will’ as seen in (11c). The modal *máa/á* functions as a grammaticalized future marker that precedes the main verb in the clause structure. This marker exhibits phonological variation between its full form, *máa*, and the contracted form *á*, with the choice often determined by phonological factors, such as prosodic considerations. The presence of this modal unambiguously signals a future temporal interpretation, contrasting with the unmarked present tense and the perfective aspect marker *'ti*', which is often used for past events.

(11)a Olú múra àti lọ ilé. (present event)
Olú prepare to go home
‘Olú prepares to go home.’

b Olú máa/á lọ ilé. (future event)
Olú Fut go home
‘Olú will go home.’

Another significant aspect of Yorùbá syntax is headedness. In considering the classification of head-initial and head-final languages, the Yorùbá language falls under the head-initial (left-headed) classification. In languages, "headedness" means that one part of a grammatical structure is seen as "head" and is thought to be more determining than the other parts that go with it. The head in the Yorùbá grammatical structure is realized before any of

its dependents, as shown in (12)-(14). The examples in (12) are verb-object structures, where the verb (which is the head) precedes the object. The examples in (13) are preposition constructions, and the preposition (which is the head) precedes the complement. The examples in (14) are complementizer constructions, and the C head precedes the TP.

(12)a lọ ilé
go home
'go home'

b ra ìwe
buy book
'buy book'

(13)a Olú rí i ní ilé.
Olú see it at home
'Olú saw it at home.'

b Olú ra ìwe lati ọjà.
Olú buy book from market
'Olú bought a book from the market.'

(14)a Olú rò pé ó máa ra ìwe.
Olú think that 3Sg Fut buy book
'Olú thought that he/she would buy a book.'

b Olú sọ pé Ayọ̀ wá ilé.
Olú say that Ayo come home
'Olú said that Ayo came home.'

Further to the discussion of headedness, in Chapter 2 of this dissertation, I examine the implications of headedness in the Yorùbá language on the choice of the verb head in Yorùbá

SVCs, addressing a fundamental question in the syntactic analysis of multi-verb constructions regarding which verb functions as the grammatical and semantic center of the serialized sequence. The concept of headedness is particularly complex in SVCs because these structures involve multiple predicates within a single clausal domain.

1.4 Overview of chapters

The introductory chapter has provided a brief introduction to the Yorùbá people, their culture, and language. Chapter 2 provides an in-depth discussion on the head in Yorùbá SVCs, while exploring issues around adverb placement, verb nominalization, and some functional categories. The chapter will provide evidence through empirical facts and theoretical perspectives, establishing a comprehensive framework for understanding how headedness operates in multi-verb constructions and its broader implications for Yorùbá syntax. The discussion of headedness in Chapter 2 begins with a detailed examination of the criteria used to identify the head verb in serial constructions, drawing on both morphosyntactic and semantic diagnostics. The chapter investigates how adverb placement patterns provide crucial evidence for head identification, as adverbs typically modify or scope over the head verb rather than subordinate verbs in the series. This analysis reveals that adverb positioning can serve as a reliable test for determining structural prominence within serialized sequences, contributing to our understanding of the hierarchical organization of these constructions.

Chapter 3 examines the distinction between the complement and adjunct dichotomy in the Yorùbá language, providing analyses of various syntactic structures that illuminate fundamental questions about argument structure and the nature of verb argument relationships. This chapter addresses one of the most persistent challenges in syntactic theory: determining which elements are selected by verbs as complements versus which elements are optionally adjoined to provide additional semantic information. The chapter presents a

systematic investigation of diagnostic tests for distinguishing complements from adjuncts in Yorùbá, including extraction possibilities. These diagnostics are applied to a range of construction types.

Chapter 4 presents the theoretical analysis of the relation between verbs in Yorùbá SVCs, offering a formal syntactic account of how multiple verbs combine to form cohesive grammatical units while maintaining their individual lexical properties and argument structure requirements. This chapter begins with a comprehensive review of existing theoretical approaches to SVCs across various languages, examining proposals that range from mono-clausal analyses, which treat all verbs as forming a single complex predicate, to multiclausal approaches, which maintain separate clausal domains for each verb. The chapter evaluates these competing analyses against Yorùbá data, identifying their strengths and limitations in accounting for the specific properties of Yorùbá serialization.

Chapter 5 presents the conclusion and findings, synthesizing the empirical discoveries and theoretical insights developed throughout the dissertation while highlighting their contributions to our understanding of Yorùbá syntax and SVCs more generally. This concluding chapter summarizes the key findings regarding headedness in Yorùbá SVCs, the complement-adjunct distinction, and the relational structure of serialized verbs, demonstrating how these apparently separate phenomena interact to create the complex grammatical system observed in Yorùbá.

Chapter 2: The discussion of the verb that heads the extended projection in Yorùbá SVCs

2.0 The idea of heads and SVCs

SVCs represent a distinctive grammatical phenomenon that allows the co-occurrence of multiple verbs within a single clause without the use of overt coordination or subordination markers. This syntactic feature, found in numerous languages across various language families, has generated considerable interest and debate among linguists. Let us consider the Yorùbá SVC examples in (15).

(15)a Bùkọ́lá tẹ́ ọmọ fọ aṣọ.
Bùkọ́lá lay child wash clothes
'Bùkọ́lá lay the child and wash clothes.'

b Olú kan ilẹ̀kùn wọ ilé.
Olú knock door enter house
'Olú knocked (on the) door and entered (the) house.'

Because of this complex and multifaceted phenomenon, there is continuous research on the verb phrase that should be considered the head of SVCs in languages with such constructions. The question of headedness in SVCs remains one of the most contentious issues in contemporary syntactic theory, as it touches upon fundamental assumptions about phrase structure, argument sharing, and the nature of clausal architecture.

In the extensive literature on SVCs, scholars have proposed various analyses that reflect different theoretical orientations and empirical observations based on diverse linguistic data. Some scholars have argued in favor of designating one of the verbs as the syntactic head of the construction (Aboh, 2009; Li, 1991; Matthews, 2006; Paul, 2008). These analyses typically propose that one verb projects the main clause structure while the other verb(s)

occupy(ies) a subordinate or complement position within that structure. The choice of which verb serves as the head often depends on semantic factors, such as which verb contributes the primary event structure, pragmatic considerations regarding information structure, or purely syntactic criteria, including which verb determines the argument structure of the entire construction.

On the other hand, Baker and Stewart (2002) present a contrasting analysis in which both verbs in consequential SVCs are treated as heads of their own projections. This dual-head approach suggests a more symmetrical structure, where neither verb is syntactically subordinate to the other; instead, both contribute equally to the syntactic architecture of the clause. Their analysis has been particularly influential in accounts of SVCs in West African languages. It has sparked considerable debate about whether such structures violate or require modification of fundamental principles such as the binary branching hypothesis or constraints on multiple heads within a single projection.

It is essential to note that the differing perspectives on this theoretical issue primarily depend on the specific language being studied, as different languages exhibit distinct properties in their SVCs. Language-specific factors such as word order flexibility, tonal patterns, the distribution of aspect markers, negation scope, and the ability of different verbs to license particular types of arguments all play crucial roles in determining which analysis is most empirically adequate for a given language. Furthermore, there may be typological variation in SVCs themselves, with some languages displaying more asymmetric constructions that favor a single-head analysis. In contrast, others show more symmetric patterns that align better with dual-head approaches.

In this chapter, I argue that one of the verbs should be identified as the syntactic head of the extended projection in the SVCs examined here, following the analytical directions

established by Matthews (2006) and others who have favored such an argument based on both theoretical considerations and empirical evidence. This position will be supported through a detailed examination of the syntactic behavior of SVCs in Yorùbá, including tests for the distribution of functional elements that demonstrate an asymmetry between the verbs in these constructions and some other empirical evidence.

2.1 An overview of the definition of head

Zwicky (1985) captures the idea of a head in terms of a constituent that 'dominates' the entire syntactic construction. He argues that the concept of a head may not have been formalized, so there might be different representations of the same idea. He proceeded to discuss the Head-like notion under three divisions: relating syntax to other components, syntactic determination, and operational criteria. He identified seven criteria for head-like elements across these three divisions. Under the syntactic determination of head, there are two criteria: the governors and the determinants of concord. In contrast, there are three criteria under the relationship to other components: semantic argument, subcategorization, and morphosyntactic loci. The last division has two criteria: the distributional equivalent and the obligatory constituent. Zwicky (1985, pp. 4-9) presents these seven criteria as the basis for discussing heads.

Zwicky's head criteria have since seen some reactions from other scholars (Hudson, 1987; Croft, 1996, 2001). Croft (1996) argues that head is a generalization of the concept of agreement, government and modification in traditional grammar (p. 49). Heads represents the hypothesis that there is a general characterization of the dominant member of any asymmetric dependency relation in grammar. Croft discusses heads in terms of semantic relevance while not totally discarding the argument of Zwicky and Hudson, Croft's proposal states that "head is the profile determinant that is the primary information-bearing unit (PIBU), (1996, p. 58)."

This definition implies that a PIBU is a constituent that attracts/absorbs other grammatical constituents in a construction, and should qualify as the head. Croft further argues that the head should be seen as the property of construction rather than some inherent feature of a component. Croft (2001) further argues that Zwicky's criteria would not generally apply to all languages, as languages exhibit different behaviors.

The Minimalist Program provides a technical framework that bridges Zwicky's and Croft's approaches by grounding them in specific syntactic mechanisms, namely, structural position and feature checking operations. Within the Minimalist framework (Chomsky, 1995, 2000), the definition of "head" is not merely positional but functionally determined: a head is the element that values features (through operations like Agree) and projects its properties to create phrasal structure. This makes the distinction between functional heads (such as T, C, and v) and lexical heads (such as V, N, and A) crucial for understanding headedness.

The second component of the minimalist definition concerns the projection of how heads generate hierarchical structure. Projection determines the syntactic relationships of adjunction (where modifiers attach) and complementation (where arguments merge). When we consider which head projects in structures like vP (light verb phrase), the projecting head can be analyzed as satisfying Croft's PIBU (primary information-bearing unit) definition. That is, the projecting head in vP, whether it is the light verb v itself or the lexical verb V that raises to v, making it identifiable as the head according to Croft's criteria. This convergence shows how minimalist structural mechanisms can formalize Croft's more functional-typological insights.

In the labelling of nodes in a structural representation of a construction, there is always an important element within a constituent that gives such a constituent its label. This most important element is often referred to as the head of the constituent, either for lexical categories or functional heads. Some other elements, however, may be structurally combined within such

a head. The head of such a constituent will always be present in the constituent. Let's briefly look at the verb phrase in (16a and 17a)). The defining head of the phrase is the verb *eat*. The breakdown of this phrase is possible with the imperatives in (16b – 16d) as the head is still retained, but not with the examples in (16e)-(16f), same with the simple sentence in (17a), where (17b)-(17d) is grammatical in the sense of retaining the head of the verb phrase (eat) but not in (17e)-(17f) where the verb is missing.

(16)a Eat the cake tonight.
b Eat.
c Eat the cake.
d Eat tonight.
e *the cake
f *tonight

(17)a Tom will eat the cake tonight.
b Tom ate.
c Tom ate the cake.
d Tom ate tonight.
e *Tom the cake
f *Tom tonight

The verb *eat* in (17a) is the indispensable part of the predicate, and it is the head of the verb phrase (VP). This explanation seems to be straightforward and non-complicated, but it becomes difficult to rely on this assumption when it involves multiple verb phrases in a single construction, where further projection is required within the structure. It then becomes a question of which VPs aren't possible heads that would project the competing verb phrases.

2.2 Head of SVC

SVCs are found across a wide range of genetically and geographically diverse languages. They are particularly prevalent in West African languages, including Yorùbá, Gungbe, Ewe, Edo, Nupe, and Akan, among others, where they constitute a core grammatical strategy for expressing complex events. SVCs are also robustly attested in East and Southeast Asian languages, particularly Sinitic languages such as Mandarin and Cantonese, where they interact with aspect markers and resultative constructions. Beyond these regions, SVCs are also prominent in Oceanic languages across the Pacific, as well as in various Creole languages that have emerged from contact situations, suggesting that SVCs may represent a typologically natural or cognitively preferred way of packaging event sequences. Despite this widespread distribution, SVCs exhibit considerable cross-linguistic variation in their structural properties, particularly regarding the marking of tense, aspect, and modality (TAM). In some languages, TAM markers appear only once in the construction and apply to all verbs in the series (shared marking), while in others, each verb may be independently marked or exhibit asymmetric marking patterns. These language-specific structural variations are illustrated in examples (18)-(21), which are drawn from different language families and demonstrate the diverse morphosyntactic strategies employed in SVC constructions across the world's languages. One significant overview of the property of SVCs in languages that have them is the same-subject verb sequence (shared subject requirement), we may also see verb ordering constraints, usually motion verbs would precede result verbs.

(18). Lei^{5} gan^{1} jan^{4}dei^{6} hok^{6}-gwo^{3} Zung^{1}man.^{2} (Cantonese)
you follow people learn-Exp Chinese
'You have learnt Chinese from people' (Matthews, 2006, p. 76)

(19). Ta na-le dao qie rou. (Mandarin)
he take-Asp knife cut meat
'He took the knife to cut meat.' (Li, 199, p. 112)

(20)a Ozo giegie gbo!gbo ivin bolo oka. (Edo)
Ozo quickly plant coconut peel corn
'Ozo quickly planted the coconut and [he] peeled the corn.'
(Baker & Stewart, 2002, p. 15)

b Ozo vbo okhokho igan gie!gie khien.
Ozo pluck chicken feathers quickly sell
'Ozo plucked the chicken feathers and quickly sold them.'
(Baker & Stewart, 2002, p. 21)

(21)a Olú ti ka ìwé lórí ajá kọ́ àwon akeko nípa ẹranko. (Yorùbá)
Olú Asp read book on dog teach some students about animal
'Olú has read a book on dog to teach some students about animal.'

b Olú á ka ìwé lórí ajá kọ́ àwon akeko nípa ẹranko.
Olú Fut read book on dog teach some students about animal
'Olú will read a book on dog and teach some students about animal.'

One of the most significant cross-linguistic properties of SVCs is the same-subject constraint, which requires that all verbs in the series share a single grammatical subject. Additionally, SVCs typically exhibit verb ordering constraints based on semantic or conceptual structure. For instance, motion verbs may precede result verbs, reflecting an iconic mapping between the temporal sequence of events and their linear arrangement in syntax.

In constructions such as the SVCs presented above, where two or more verbs appear within a single clause without overt markers of coordination or subordination, a central

theoretical issue arises: which of these verbs functions as the syntactic head of the overall construction? This question has sparked considerable debate within the field of generative syntax, particularly as it challenges conventional assumptions about hierarchical structure and headedness in multi-verb expressions.

Some scholars (Matthews, 2006; Paul, 2008) have proposed that one verb functions as the structural and semantic head, typically the one conveying the core event or argument structure, while others argue for a more symmetric analysis, where no single verb projects over the others (Baker & Stewart, 2002). Others propose that the structural configuration depends on the verb classes involved, information structure, or the functional projections each verb may select for or introduce.

This issue becomes especially significant in languages like Yorùbá, which display a rich variety of SVCs with subtle distinctions in meaning, argument realisation, aspectual interpretation, and syntactic behaviour. In such contexts, the challenge of identifying the head within SVCs is not merely a matter of labeling, but rather one that affects our understanding of clause structure, projection, and the nature of syntactic dependencies.

One of the central goals of this dissertation is to contribute to this ongoing debate by offering a theoretically informed and empirically grounded analysis of Yorùbá SVCs. By examining which verb determines the extended projection, licenses aspectual and tense features, or selects the internal arguments of the clause, this dissertation seeks to clarify how headedness should be defined in multi-verb structures. The Yorùbá data, with its clear SVC patterns and relatively isolating morphology, offers an ideal testing ground for evaluating competing proposals about verb-headedness, extended projections, and the structure of verbal complexes in natural language. Before proceeding with the presentation and analysis of the heads of VPs in Yorùbá, it is essential to provide an overview of analyses of headedness of SVCs in other languages.

Different defining criteria have been employed across the literature to identify and analyze the heads of SVCs in various languages, reflecting both theoretical frameworks and language-specific empirical considerations. These differences are not merely taxonomic but have substantive implications for how we understand the internal architecture of SVC constructions and their interaction with broader grammatical systems. Essentially, these criteria determine the nature and scope of how the verbs within an SVC interact with other neighboring elements in the syntactic structure. This interaction occurs at multiple levels: horizontally, with other lexical categories such as adverbial modifiers; and vertically, with functional heads in the clausal hierarchy, including tense, aspect, mood, and negation projections. The choice of criteria for headedness, whether based on morphological marking (such as which verb hosts inflectional affixes) or semantic contribution (such as which verb provides the primary predicate meaning), has direct consequences for any structural analysis. This variation in analytical approaches reflects more profound theoretical questions about the nature of headedness itself and whether a unified definition can be maintained across construction types and languages, or whether headedness in SVCs requires construction-specific or parameter-based formulations. Some of the defining criteria discussed in this dissertation are presented in Table 3, and the discussion of how languages utilize these criteria is then presented in the following section. I will be testing these criteria with Yorùbá SVCs and some other criteria to account for the head of the clause.

Table 3 Evidence for head in other SVC languages

Head defining criteria in SVCs	Head types	Languages	Authors
V1 and V2 have separate functional projections.	Double-head SVC	Edo	Baker and Stewart (2002)
Verb doubling possible for V1 only	V1 is the head	Nupe	Baker and Stewart (2002)
V1 is not a lexical head like V2.	V1 is a functional head, V2 is the main Verb head.	Gungbe	Aboh (2009)
V1 is a restricted class; marking is only allowed on V2.	V2 is the head.	Cantonese	Matthews (2006)
Either V1 or V2 allows functional marking.	Either V1 or V2 can be the head.	Mandarin	Li (1991)

2.2.1 Discussion of SVC heads in other languages

In recent literature on SVCs and the head in these constructions, scholars have provided ample evidence for how they arrive at the selection of head in such constructions in the languages they studied (see Aboh, 2009; Baker, 1989; Baker & Stewart, 2002; Collins, 1997; Lawal, 1993; Matthews, 2006). Most of the evidence was premised on how other functional/grammatical categories relate to the verbs in SVCs.

Li (1991) and Paul (2008) argue that either verb can be the head of an SVC in Mandarin. According to Li's discussion on Chinese SVCs, the non-head verb is a bare verb, while the verb suffixed with the perfective aspect marker *le* is the head as shown in (22) below.

(22) a. Ta na-le dao qie rou. (Mandarin)
he take-Asp knife cut meat
'He took the knife to cut meat.' (Li, 1991, p. 112)

b. Ta na dao qie-le rou.
he take knife cut-Asp meat
'He cut the meat with a knife.' (Li, 1991, p. 104)

According to Li (1991), the Mandarin verb that is marked with the aspectual marker qualifies as the head irrespective of the type of verb. This follows Croft's PIBU line of argument that a constituent that attracts another grammatical category would be the head based on the semantics of the construction and not just some inherent feature of a component.

Aboh (2009, p. 17) supports the proposal where V2 is considered the head of Gungbe SVCs. He argues that V1 and V2 do not form a complex constituent either at LF or syntax. According to his analysis, the first verb heads a projection at a higher functional level, while the second verb merges in the lexical field inside a lower VP shell. His proposal simply identifies the first verb as a functional verb with no internal theta role to assign to any object.

Matthews (2006, p. 76) argues that, in Cantonese, the first verb in one type of SVC belongs to a restricted class (coverb), which he calls an asymmetrical SVC. He notes that grammatical marking does not attach to the first verb. On the other hand, the second verb is the main verb, which Matthews calls the head of the whole SVC. He further shows that aspect marking occurs on the second verb as shown in example (23). The aspect marker in the sentence is *gwo*^{3} (an experiential aspect marker); the first verb (V1) *gan*^{1} 'follow' does not have the aspect marker attached to it, but the second verb (V2) *hok* 'learn' has the aspect marking on it (the numbers on each word represent the tone).

(23). Lei[5] gan[1] jan[4]dei[6] hok[6]-gwo[3] Zung[1]man.[2] (Cantonese)
you follow people learn-Exp Chinese
'You have learnt Chinese from people.' (Matthews, 2006, p. 76)

Baker (1989), Lefebvre (1991) and Agbedor (1994) argue that in the SVC of some languages, the notion of head could be applied to multiple verb constituents and not just on one verb constituent. Baker and Stewart (2002) claim that certain types of SVCs have a dual (double) head, which is merged by adjunction. Baker and Stewart show with Edo and Nupe languages that both verbs in SVCs can be modified by clause-level aspect markers separately; they therefore assume a separate projection where each verb head its own category. That is, vP2 adjoins to vP1 and is predicated of it. Also, with the placement/distribution of adverbs in SVC, Baker and Stewart further support their double head adjunction analysis because each verb can be modified by an adverb, as seen in the Edo examples presented in (24)[4].

(24)a Ozo giegie gbo!gbo ivin bolo oka. (Edo)
Ozo quickly plant coconut peel corn
'Ozo quickly planted the coconut and [he] peeled the corn.'

(Baker & Stewart, 2002, p. 15)

b Ozo vbo okhokho igan gie!gie khien. (Edo)
Ozo pluck chicken feathers quickly sell
'Ozo plucked the chicken feathers and quickly sold them.'

(Baker & Stewart, 2002, p. 21)

Liu (2019) argues that an adverb in Chinese cannot modify V1 in either subject-oriented or object-oriented V-V resultative compounds (V–V resultative compounds are not SVCs but they can overlap structurally or superficially with SVCs depending on the language).

[4] See Stewart (2001) on Edo and Martin (2010) on Twi for further discussion on adverb modifications in SVCs.

However, such verbs could be modified by certain adverbs (manner adverbs) when they function in a simple activity predicate. This is not the case with Yorùbá SVCs, as I will demonstrate that Yorùbá exhibits an asymmetry in adverbial modification between simple clauses and SVCs. In simple Yorùbá clauses, adverbs display free modification potential: any adverb can target and modify any verb without grammatical restriction. However, this distributional freedom is constrained in SVCs. Specifically, when a verb occupies the V2 position (the second position in the verbal sequence) within a Yorùbá SVC, it cannot be independently or distinctly modified by an adverb. Instead, V2 can only fall under the adverb modification that takes the proposition (that is, the entire clause) as its scope.

Another empirical support for identifying the head of a serial verb construction comes from verb doubling phenomena observed in Nupe. Baker and Stewart assume that the verb eligible for doubling is the one that undergoes movement to higher head positions within the syntactic structure. According to their analysis, this mobile verb must constitute the head of the construction, as determined by the constraints on X^0-movement a syntactic operation that specifically targets head elements rather than phrasal constituents. The principle underlying their argument is that only heads can undergo head movement, and therefore the verb that participates in doubling reveals itself as the structural head. The Nupe data presented in (25) provides crucial evidence for this claim, demonstrating that only the first verb in the serial verb construction exhibits the capacity to be doubled.

(25) Musa du etsi du kun. (Nupe)
Musa cook yam cook sell
'Musa actually cooked the yam and sold it.'
(Baker & Stewart 2002, p. 13)

In the following subsection, I will provide an overview of what extended projection looks like in Yorùbá as it concerns SVCs in the language. This is crucial to our analysis of functional heads, such as negation, modals, and Aspects, as they interact with Yorùbá SVCs to demonstrate that the relationship between functional heads in Yorùbá is quite different from what has been said about SVCs in other languages.

2.2.2 Aboh's functional head analysis

Aboh (2009) lends support to the structural analysis, in which the second verb (V2) is considered the core lexical head in SVCs in Gungbe. In contrast to the traditional view that treats both verbs as forming a unified verbal complex or a single constituent, Aboh contends that V1 and V2 do not constitute a complex syntactic or semantic unit at neither logical form (LF) nor surface syntax. That is, these verbs do not form a constituent that moves or interprets together; instead, they occupy distinct structural positions in the clause.

(26) Àsiba bɛ lɛsi du.
Asiba collect rice eat
'Asiba collected rice eat.' (i.e., Asiba ate a lot of rice)
(Aboh, 2009, p. 1)

He then provides the structure in (27) as the sentence representation in (26).

(27) [CP…[TP…[V1…[vP…[V2…]]]]. (Aboh, 2009, p. 2)

According to Aboh (2009, p. 2), V1 has no internal theta-role, which is why it can merge within the functional extension of the lexical verb V2. Aboh proposes a split VP structure, where the first verb (V1) does not merge directly within the lexical VP domain. Instead, it functions as the head of a higher functional projection, often related to aspectual or event-structuring functions.

Aboh explains that, with the SVC example in (28a), the external argument belongs to V2 only (there is no instance of subject sharing). The verb *zé* 'take' of the V1 does not assign

any theta role to the supposed object *áwàjìjɛ* 'joy' because it does not have the semantic function; it only encodes the way the event expressed by the V2 has been carried out. However, the same verb 'take' can assign a theta role to an object outside of its use in SVCs as shown in example (28b).

(28)a Sɛtù zé áwàjìjɛ yí yé.
Setu take joy receive 3Pl
'Setu received them with joy.'

b Sɛtù zé gbɔ dɔkpó.
Setu take goat one
'Setu took one goat.'

(Aboh, 2009, p. 17)

Aboh's analysis hinges on the relationship between theta role assignment and the lexical versus functional status of verbal heads. In Gungbe SVCs, V1 cannot assign a theta role, and this loss of argument-licensing capacity is diagnostically significant: it indicates that V1 has been grammaticalized or reanalyzed as a functional head rather than retaining its status as a lexical head. Functional heads, by definition, do not assign theta roles; instead, they encode grammatical features such as tense, aspect, or modality. In contrast, V2 in Gungbe SVCs preserves its theta assigning properties, maintaining the argument structure typical of complete lexical verbs. Because V2 retains this core lexical property, the ability to license and assign thematic roles to arguments, Aboh concludes that V2, not V1, functions as the head of the SVC construction. Therefore, Aboh's account supports identifying V2 as the syntactic and semantic head of Gungbe SVCs specifically because of its preserved lexical status and theta-assigning capabilities. Serial verbs in Yorùbá exhibit a different pattern from that described in Gungbe. In section 2.3, I will provide evidence of the types of argument relations that can exist with the verbs in Yorùbá SVCs.

2.3 Evidence of lexical V_1 and V_2 in Yorùbá SVCs

Some SVCs in Yorùbá display a distinct pattern of verbal behavior that differs systematically from what has been documented for Gungbe. While Gungbe SVCs show specific argument structure properties (such as V1 losing its theta-assigning capacity), Yorùbá SVCs organize argument relations differently. The following subsections present empirical evidence illustrating the range and types of argument relations that can occur between verbs and their associated noun phrases in Yorùbá SVCs. Specifically, this analysis examines how each verb in the serial construction licenses its arguments, whether arguments are shared across verbs or selected independently, and whether both V_1 and V_2 retain their full argument structure properties or show asymmetries in their theta-role assignment capabilities. This investigation will reveal whether Yorùbá patterns with Gungbe in treating V_1 as lexically deficient, or whether Yorùbá maintains a different structural configuration in which both verbs preserve lexical properties.

2.3.1 SVCs with two internal arguments

The event representation where two verbs take distinct internal arguments has been discussed in the literature as a case of coordinate construction (Collins, 1997, 2002) or as ungrammatical sentences, as seen in Edo and Nupe (Baker & Stewart, 2002). This is not the case with some SVCs in Yorùbá, where verbs have separate arguments. Internal objects are not shared across all SVCs in Yorùbá. There are instances where the events conveyed by the two verbs require them to have separate overt objects, and the object of the first verb is not selected or licensed by the second verb as presented with the examples in (29). In (29a), *ìwé* 'book' is the internal argument of the V_1, while *akeko* 'student' is the internal argument of the V_2. In (29b) *ọmọ* 'child' is the internal argument of the V_1, while *aṣọ* 'clothes' is the internal argument of the V_2. These internal arguments are theta-marked by the verbs and thus form part of their argument structure. The verbs in these SVC examples cannot share an object.

(29)a Olú wo ìwé kó akeko.
Olú look book teach student
'Olú looked at the book to teach student.'

b Bùkọ́lá tẹ́ ọmọ fọ aṣọ.
Bùkọ́lá lay child wash clothes
'Bùkọ́lá lais the child and washed clothes.'

The theta roles of the verbs in (29) in relation to their arguments are presented in (30)

(30)a		DP1	DP2	DP3
		Olú	*ìwé* 'book'	*akẹ́kọ*'student'
V_1	*wo* 'look'	agent	theme	-----
V_2	*kó* 'teach'	agent	-------	theme

b		DP1	DP2	DP3
		Bùkọ́lá	*ọmọ* 'child'	*aṣọ* 'clothes'
V_1	*tẹ́* 'lay'	agent	theme	------
V_2	*fọ* 'wash'	agent	------	theme

The pattern of argument sharing in Yorùbá does not follow Collins and Baker's generalization (Collins, 1997, 2002; Baker, 1989; Baker & Stewart, 2002) that internal (object) argument sharing is an obligatory property of serial verb construction. Certain SVCs exhibit distinct internal arguments for each verb, except that V_1's DP object functions as a shared argument of V_2, as shown in (31). The DP object *igi* 'stick is the theme of V_1 *gbé* 'take' and the instrument for V_2 *gbá* 'hit', while the V_2 also select a separate DP *Adé* as its theme.

(31) Olú gbé igi gbá Adé
Olú take stick hit Ade
'Olú took stick and hit Ade (with it).'

The SVC in (32) is a different type in which V_2 is intransitive, and the external argument *Bùkọ́lá* is the only shared argument.

(32) Bùkọ́lá gun igi ṣubú
Bùkọ́lá climb tree fall
'Bùkọ́lá climbed (the) tree and fell.'

The type of SVCs exemplified in (29), which represents the specific subtype of construction that serves as the primary empirical focus of this dissertation, does not provide empirical support for Aboh's functional head analysis. While Aboh's proposal offers a compelling account for certain classes of SVCs, particularly those involving verbs with more grammaticalized or functional properties, the constructions under investigation here exhibit structural and semantic characteristics that are inconsistent with the predictions of a functional head approach. Specifically, the SVCs in (29) differ from the constructions (28a) that motivate Aboh's analysis in several crucial respects. First, the verbs in these constructions retain their full lexical content and argument-taking properties, rather than displaying the reduced semantic specificity typical of functional elements. Consequently, while Aboh's functional head analysis may capture important generalizations about some varieties of SVCs, the data in (29) require an alternative structural account, one that preserves the lexical status of both verbs while still explaining their syntactic integration and semantic composition.

This overview of the verbal status of the verbs in Yorùbá SVCs is the foundation for the analysis I will present moving forward. More importantly, the SVCs under consideration in this work are SVCs in which all co-occurring verbs have their separate complements. This means that all the verbs have what it takes to be the head of the extended projection; however, only one of the verbs eventually assumes the position of the head. In the next two

sections, I will present an analysis of what qualifies the VP_1 to be the head of SVCs in Yorùbá, providing evidence from both the empirical and theoretical domains. All the data will follow the pattern in (33) below, in which the verbs are lexical.

(33) Olú wo ìwé kó akeko.
Olú look book teach student
'Olú looked at the book and teach student.'
Intended: 'Olú looked at the book to teach student and he taught the student.'[5]

2.4 Extended projection and Yorùbá SVCs

Table 3 presents the defining criteria for identifying the head of SVCs across various languages, as established in prior literature. These criteria primarily address the interaction between SVC verbs and extended projections within their respective languages. As demonstrated in the analysis in section 2.2.1, the verb responsible for projecting the extended projection is systematically identified as the head in these languages. The examples provided in that section reveal cross-linguistic variation: in some languages, aspectual marking may be projected by either verb or restricted to a single verb within the sequence, while in other languages, each verb permits independent adverbial modification. However, empirical testing of these defining criteria against the Yorùbá SVCs examined in this study is essential to extend and validate the existing theoretical framework established in the literature.

The analysis of extended projection in constructions with multiple verbs in a mono-clausal construction may present us with a puzzle in identifying the exact verb that projects in languages where there is single tense, aspect, and mood marking. The extended head projection is a concept in syntactic theory, particularly within X-bar theory and the minimalist program, that addresses how lexical heads and the functional categories associated with them form a unified syntactic domain. Grimshaw (2005) refines the concept of extended

[5] The intention is for Olú to look at the book in order to teach the student, and he did just that.

projection and integrates this idea more deeply into argument structure theory and syntactic projections, arguing that syntax is best understood not only through local head-complement relations but also through hierarchically organized projection lines that encode both lexical and functional content in a unified system. This foundational syntactic and semantic principle was initially introduced in Grimshaw (1991). The theory aims to capture the structural and interpretive relationship between lexical categories (such as verbs and nouns) and their associated functional categories (such as tense, aspect, and mood for verbs or determiners for nouns). These functional heads project linearly and hierarchically from the same core, which is the verb or noun. Extended Projection, according to Grimshaw, conveys crucial interpretive information, particularly regarding argument structure, aspect, tense, and modality. Two factors are significant for this study as they pertain to Extended Projection: first, Extended Projection is semantically coherent, meaning each head contributes interpretive content consistent with the projection line; second, it is structurally constrained in that certain heads (e.g., T, Asp, Mod) can only occur in specific places within the extended projection of a verb.

Borer (2004) proposes that argument structure emerges from syntactic configuration rather than from lexical specifications inherent to verbs. In this exoskeletal framework, functional projections, not verbal entries, determine how arguments are structured and interpreted. The verb contributes conceptual content but does not dictate its own argument realization; instead, the functional architecture into which it merges establishes these grammatical relations. This approach proves particularly insightful for analyzing serial verb constructions (SVCs). In SVCs, multiple verbal roots appear within a single clausal domain. Yet, the construction exhibits mono-clausal properties: unified tense and aspect marking, shared arguments, non-shared arguments, and single negation scope. Each verb provides semantic specification, e.g., manner, result, direction, or causation, while the shared

functional structure governs event composition and argument mapping. Whether verbs share an argument, exhibit aspectual unity, or form a single tense domain is determined not by properties of the individual verbs, but by the functional projections that dominate them. The syntactic skeleton defines the grammatical architecture; the verbs merely occupy positions within it, contributing lexical content to an event structure that syntax itself projects.

In languages where multiple verb heads have their functional projections, the complexity of sharing a single functional spine may be overlooked. However, in Yorùbá, there is typically a single tense, aspect, and mood marking that projects either in a simple clause or in a serial verb construction. It is therefore compelling to analyze how two or more lexical verbs in SVCs are connected to single functional categories in terms of projection.

2.4.1 The distribution of aspectual markers

The position/distribution of aspectual markers has been used to determine the verb that serves as the head of a serial verb construction in some Asian and African languages. According to Li (1991, p. 112) on Mandarin SVC, he notes that "the aspect markers are only expected to attach to the head of the predicate VP." As presented in (22) and repeated in (34) below.

(34)a Ta na-le dao qie rou. (Mandarin)
he take-Asp knife cut meat
'He took the knife to cut meat.' (Li, 1991, p. 112)

b Ta na dao qie-le rou.
he take knife cut-Asp meat
'He cut the meat with a knife.' (Li, 1991, p. 104)

In Li's analysis of the sentence (34a) above, the cutting of meat is what the subject wishes to accomplish, while the core/central event is the taking of the knife, vice versa for

(34b). Following Li, Matthews (2006, p. 76) accepts this position and shows with the Cantonese that the head of the SVC hosts aspect marking. In Cantonese, however, the head is the second verb previously shown in (23) and repeated as (35) below.

(35) Lei^{5} gan^{1} jan^{4}dei^{6} hok^{6}-gwo^{3} Zung^{1}man^{2}. (Cantonese)
you follow people learn-Exp Chinese
'You have learnt Chinese from people' (Matthews, 2006, p. 76)

.

In determining the possible head in the Yorùbá SVC, I will test the distribution of the perfective aspect marker *ti* to determine the scope of this functional category. In the Yorùbá SVCs, the aspect marker can only be realized before the first verb, as seen in (36b) and (37b). Suppose it appears anywhere else within the structure; in that case, it will yield an ungrammatical construction, just as seen in the examples (36c) – (36d), where it appears before the second verb and (37c) – (37d), where it appears before both verbs separately.

(36)a Olú se isu gún iyán.
Olú cook yam pound pounded yam
'Olú cooked yam and made pounded yam.'
Intended: Olú cooked yam in order to make pounded yam and he made pounded yam.'

b Olú ti se isu gún iyán.
Olú Perf.Asp cook yam pound pounded yam
'Olú has cooked yam to made pounded yam.'

c *Olú se isu ti gún iyán.
Olú cook yam Perf.Asp pound pounded yam
'Olú cooked yam and has pounded yam.'

d *Olú ti se isu ti gún iyán.
Olú Perf.Asp cook yam Perf.Asp pound pounded yam
'Olú has cooked yam and has pounded yam.'

(37)a Olú mú ọ̀bẹ gé ẹran.
Olú take knife cut meat
'Olú took the knife to cut meat.'
Intended: Olú took knife to cut the meat, and he cut the meat.'

b Olú ti mú ọ̀bẹ gé ẹran.
Olú Perf.Asp take knife cut meat
'Olú has taken knife to cut meat.'

c *Olú mú ọ̀bẹ ti gé ẹran.
Olú take knife Perf.Asp cut meat
'Olú took knife and has cut meat.'

d *Olú ti mú ọ̀bẹ ti gé ẹran.
Olú Perf.Asp take knife Perf.Asp cut meat
'Olú has taken knife and has cut meat.'

The Yorùbá language does not have the morphological inflection as the Chinese language presented as seen (34), however, Li's analysis as discussed under example (34) is applicable to the Yorùbá grammatical examples given in (36b) and (37b). The V_1 expresses the core events in these examples in both constructions, while the V_2 expresses the accomplishment of the actions described by the V_1. In (36b), the verb *se* 'cook' and the verb *mú* 'take' in (37b) project the aspect marker, and that is the reason they are grammatical in the position before the V_1. If V_2 were to project the aspect marking, we shouldn't expect the ungrammaticality in examples (36c) and (37c). We expect to see the ungrammatical result in (36d) and (37d) because Yorùbá allows only one aspect marking. However, the aspect marker can appear before

any verb in a simple clause in Yorùbá, as given in (38). There seems to be a restriction on this placement when it comes to SVCs.

(38)a Olú ti mú ọ̀bẹ.
Olú Perf.Asp take knife
'Olú has taken knife.'

b Olú ti gé ẹran.
Olú Perf.Asp cut meat
'Olú has cut (the) meat.'

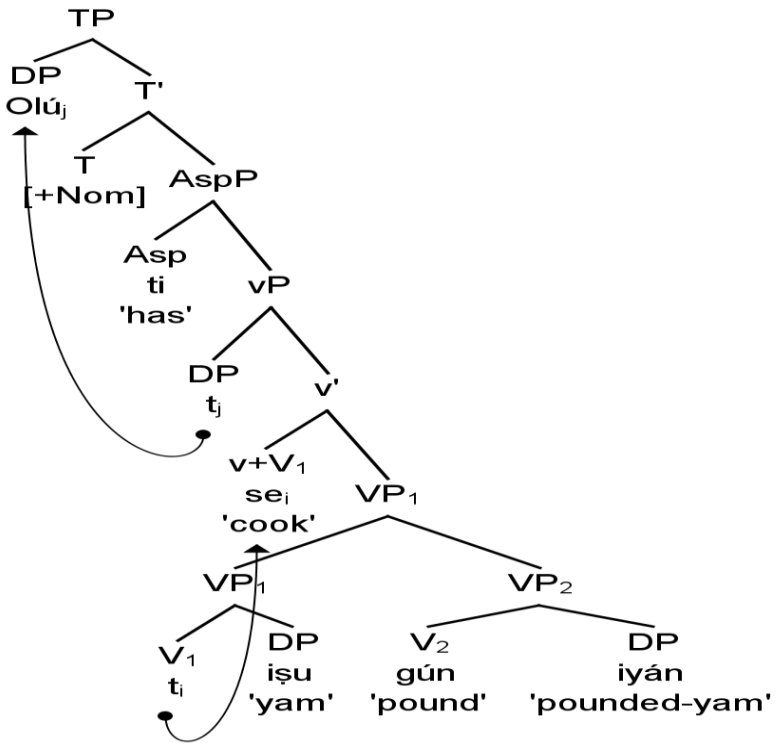
For the present analysis, I propose that the structural representation provided in (39b) below accurately captures the underlying syntactic configuration of the sentence illustrated in (36b). Within this tree diagram, I adopt the analytical position that the second verb phrase (VP_2) is adjoined to the first verb phrase (VP_1), forming an adjunction structure rather than a complementation or coordination configuration. This structural assumption reflects a specific hypothesis regarding the hierarchical organization of SVCs in Yorùbá, wherein the second VP occupies an adjoined position relative to the first VP within the overall clausal architecture.

It should be noted that the theoretical motivation and empirical justification for adopting this particular adjunction analysis are not elaborated upon at this juncture in the discussion. A comprehensive examination of the syntactic evidence supporting the adjunction structure over alternative structural configurations, including potential complement structures, or coordinate constructions, is deliberately deferred to Chapter 4 of this dissertation. In that chapter, I provide an in-depth theoretical discussion of the adjunction hypothesis, presenting extensive empirical evidence from a range of syntactic diagnostics, including but not limited to binding phenomena, and extraction patterns. This postponement

enables a more focused presentation of the immediate analytical concerns in the current chapter, while ensuring that the adjunction proposal receives the thorough and systematic treatment it warrants in the dedicated theoretical discussion that follows.

(39)a Olú ti se iṣu gún iyán.
Olú Perf.Asp cook yam pound pounded yam
'Olú has cooked yam and made pounded yam.'

b.



The tree structure presented above illustrates how the aspectual phrase (AspP) is realized in the syntactic configuration, with the aspectual marker restricted to a position preceding V1. Significantly, however, the semantic scope of the aspectual marker extends over both verb phrases within the serial construction, rather than being confined to V_1 alone. This scope property indicates that the aspectual specification applies to the entire serial verb complex as a unified predicate. Consequently, aspectual marking in Yorùbá SVCs fails to

provide a robust diagnostic for determining the head within the construction. The inability of the aspect to differentiate between V_1 and V_2, given that it takes scope over the entire serial predicate rather than selecting one verb as syntactically more prominent, renders this criterion insufficient for head identification. This finding contrasts with patterns observed in other languages where aspectual marking unambiguously associates with a single verb, thereby providing clearer evidence for the structural head of the serial construction.

2.4.2 Negation in Yorùbá SVCs

According to Fabunmi (2013), there are six negative markers in standard Yorùbá language (dialects of Yorùbá are excluded). These markers are presented in (40) below.

(40)a kò/ò

b kìí

c kọ́

d má/máà

e mọ́[6]

f yé

The markers *kò/ò* and *kìí* are considered sentence negators by Fabunmi as used in the examples (41a) and (41b) respectively, while the marker *kọ́* is considered an NP negator as in example (42). The last three markers: *má/máà*, *mọ́* and *yé* are considered imperative negative markers as in the examples (43a), (43b) and (43c). I believe the use of this marker *yé* is appropriate only in a habitual context, when a habitual action needs to be stopped.

(41)a Olú kò/ò gbé igi.
Olú Neg take/carry stick
'Olú did not carry a stick.'

[6] I am not familiar with the use of this negative marker as a speaker of the language, and none of the participants identified this marker in their use of the language. I consider this negative marker a dialectal variant.

b Olú kìí gbé igi.
Olú Neg take/carry stick
'Olú isn't carrying a stick.'

(42) Olú kọ́ ni ó gbé igi.
Olú Neg Foc 3Sg take/carry stick
'It was not Olú who carried a stick.'

(43)a Má/máà lọ.
Neg leave
'Don't leave.'

b ??Mọ́ sọ̀rọ̀ kankan.
Neg say-word any
'Don't say anything.'

(Fabumni, 2013, p. 2)

c Yé lọ.
Neg go
'Stop going.' (e.g., stop going to the mall)

I will focus on the use of the first three negative markers identified in (40) (*kò/ò*, *kìí*, and *kọ́*) as the position of negation is the same in Yorùbá SVCs regardless of the choice of marker. Adebayo (2021) argues that the negative markers *kò/ò*, *kìí*, and *kọ́* are allomorphs of the morpheme *K*, which are only realized differently on the surface form depending on the environment of use. Adebayo identified aspect, focus and phonological constraints as the determinant of which markers get to be picked for sentential negation. The marker *kọ́,* which Fabunmi called an NP negator, is considered a sentence negator by Adebayo who maintains that it takes focus phrase construction as its complements as seen in (42). Both approaches capture key aspects of the distribution of this negator. The *kọ́* marker can only target a focused DP (as I will show later, if a non-DP is focused, it must be nominalized). In other words, only

a DP can be negated using the negator *kọ́* in Yorùbá, and this is only realized when the DP undergoes focusing. A DP cannot be negated in its base position in Yorùbá. I will leave this matter aside for now as I am more concerned with the scope of negation over the verb phrases in SVCs.

Sentential negation in a SVC in the Yorùbá language does not provide exhaustive evidence for which verb in the series is the head (the verb that projects the negation). In Yorùbá, only one negative marker can be present in a construction. The negative marker always comes before the first verb in an SVC. The scope of negation either covers the actions expressed by both verbs in a serial verb construction or the scope only covers the action expressed by the first verb (the interpretation is entirely based on pragmatics). The sentential negative markers in a SVC can be *kò/ò* or *kìí*, as seen in the following examples.

(44)a Olú mú ìwé wá ilé.
Olú bring book come home
'Olú brought a book home.'

b Olú kò/ò mú ìwé wá ilé.
Olú Neg bring book come home
'Olú did not bring a book home.'

(45)a Olú gbé igi gbá Adé.
Olú take/carry stick hit Adé
'Olú took a stick to hit Adé.'

b Olú kò/ò gbé igi gbá Adé.
Olú Neg take/carry stick hit Adé
'Olú did not take a stick to hit Adé.'

(46) Olú kìí gbé igi gbá Adé.
Olú Neg take/carry stick hit Adé
'Olú doesn't take a stick to hit Adé.' (habitual reading to this sentence)

The scope of the negative marker in the sentences in (44b), (45b) and (46) could either be over both actions expressed in the serial construction or just the action expressed by the V_1. For instance, the two readings of the SVCs in (44b) are given below (47a) and (27b) but never (47c).

(47)a Olú kò/ò mú ìwé, Olú wá ilé.
Olú Neg bring book, Olú come home
'Olú did not bring a book, but he came home.'

b Olú kò/ò mú ìwé, Olú kò/ò wá ilé.
Olú Neg bring book, Olú Neg come home
'Olú did not bring a book, Olú did not come home.'

c *Olú mú ìwé kò/ò wá ilé.
Olú bring book Neg come home
'Olú brought a book and did not come home.'

The reading in (47a) expresses that the action conveyed in V_1 did not happen; however, the action conveyed in V_2 did happen (felicitous). The scope of the negation could be assumed to be over the main verb in that reading, as it is an expectation that the main verb would project any functional category. The sentence in (47b) expresses that neither of the actions occurred: the bringing of the book did not happen, and the act of coming home did not happen. The interpretation in (47c) is unacceptable. Another piece of evidence that shows the scope of negation must include V_1 is illustrated in the example in (48). The sentence in (48) is ungrammatical because establishing that this configuration is unattainable is crucial for demonstrating that negation must necessarily scope over V_1. This evidence eliminates

competing structural analyses and provides definitive support for the obligatory inclusion of V_1 within the scope domain of the negation operator.

(48) *Olú kò/ò mú ìwé sùgbón Ó mú ìwé wá si ilé-ìwé.
Olú Neg bring book but 3Sg bring book come to school
'Olú did not bring a book, but he did bring a book to school.'

2.4.3 The distribution of modals

Modals in Yorùbá are limited in number; two modals could be interpreted as the types that English has; these modals in Yorùbá are *lè* 'may, might, could, can, should' and *gbúdọ̀* 'must'. These modals are used in the examples of serial verbs presented below.

(49)a Bùkọ́lá ro ẹ̀fọ́ jẹ iyán.
Bùkọ́lá stir vegetable eat pounded yam
'Bùkọ́lá prepared vegetable to eat pounded yam.'
Intended: 'Bùkọ́lá prepared vegetable in order to eat pounded yam and she did eat pounded yam.'

b Bùkọ́lá lè ro ẹ̀fọ́ jẹ iyán.
Bùkọ́lá Mod stir vegetable eat pounded yam
'Bùkọ́lá may prepare vegetable to eat pounded yam.'

c *Bùkọ́lá ro ẹ̀fọ́ lè jẹ iyán.
Bùkọ́lá stir vegetable Mod eat pounded yam
'Bùkọ́lá prepared vegetable and may eat pounded yam.'

d *Bùkọ́lá lè ro ẹ̀fọ́ lè jẹ iyán.
Bùkọ́lá Mod stir vegetable may eat pounded yam
'Bùkọ́lá may prepare vegetable and may eat pounded yam.'

(50)a Bùkọ́lá se isu gún iyán.
Bùkọ́lá cook yam pound pounded yam
'Bùkọ́lá cooked yam to make pounded yam.'

b Bùkọ́lá gbúdọ̀ se isu gún iyán.
Bùkọ́lá Mod cook yam pound pounded yam
'Bùkọ́lá must cook yam to pound pounded yam (it).'

c *Bùkọ́lá se isu gbúdọ̀ gún iyán.
Bùkọ́lá cook yam Mod pound pounded yam
'Bùkọ́lá cooked yam and must pound pounded yam.'

d *Bùkọ́lá gbúdọ̀ se isu gbúdọ̀ gún iyán.
Bùkọ́lá Mod cook yam Mod pound pounded yam
'Bùkọ́lá must cook yam to make pounded yam.'

The modals can only appear before the first verb, as shown with the SVCs in (49b) and (50b). Suppose it appears in another position within the construction. In that case, the result will be an ungrammatical sentence, as shown in sentences (49c)–(49d) and (50c)-(50d), where it appears before the second verb and before both verbs, respectively. The fact that these modals can only appear before the first verb tells us something about the possible interpretations these SVCs may have with respect to the actions expressed by the verbs.

For instance, the interpretation of (49b) might be given as; Bùkọ́lá may either decide to prepare vegetable to eat pounded yam, or Bùkọ́lá may prepare something else to eat pounded yam other than vegetable. However, the choice of the ingredient does not change the fact that the goal is to eat pounded yam. The 'possibility condition' contained in the modal is realized on the V_1 alone.

This distributional pattern demonstrates that the SVC complex comprising V_1 and V_2 occupies a structural position lower in the clausal hierarchy than the aspectual marker. This positioning provides clear evidence that V_2 does not project its own complete functional architecture. Crucially, V_2 appears to lack the full array of functional projections typically associated with independent verbal predicates, suggesting a reduced syntactic status within

the serial construction. However, this observation raises important theoretical implications for the identification of heads in Yorùbá SVCs. The hierarchical relationship between the SVC complex and aspectual marking, while informative regarding the overall structural configuration of SVCs, does not serve as a reliable diagnostic for determining which verb functions as the head of the construction. The criterion proves unproductive in this context because the aspectual marker takes scope over the entire SVC complex rather than selecting one verb as its complement or specifier. Consequently, the positional relationship between aspectual marking and the verb sequence fails to distinguish between V1 and V2 in terms of their relative prominence or syntactic head. This necessitates the application of alternative diagnostics that can more effectively differentiate the structural status of the individual verbs within the Yorùbá serial construction.

2.5 Evidence that V_1 is the head of Yorùbá SVCs

Having shown that the existing evidence for defining head in other SVC languages proves inadequate for reliably determining the head of the extended projection in the Yorùbá SVCs under investigation in this study, it becomes evident that alternative linguistic phenomena must be examined to supplement and enhance the current diagnostic framework. This motivates the exploration of other aspects of Yorùbá grammar that have the potential to provide language-specific criteria for head determination. In section 2.5.2, we will see how the patterns of nominalization in Yorùbá SVCs provide crucial empirical evidence supporting the claim that V1 functions as the syntactic head of the overall SVC structure. Before turning to that analysis, however, it is necessary to establish the foundation for understanding nominalization processes more broadly. Scholars differentiate between lexical nominalization, operating at the word level, and clausal nominalization, operating at the phrasal level. Within the domain of lexical nominalization the focus of this analysis cross-linguistic variation is evident in the morphological mechanisms used to form gerundive

nominals comparable to English '-ing' forms. Some languages utilize prefixation (Yorùbá), others employ suffixation (Dagaare) (see Hiraiwa & Bodomo, 2008), and still others deploy alternative morphological operations to derive nominal forms (Koro) (see Sinha & Barbora, 2018). These distinctions are elaborated in the subsequent sections. Therefore, I first provide a comprehensive review of existing frameworks that account for nominalization cross-linguistically, examining the various approaches linguists have proposed to explain how verbal structures are converted into nominal forms. Following this general overview, I then demonstrate how nominalization accounts apply specifically to Yorùbá when nominalization occurs in non-serial verbal environments. This preliminary discussion of nominalization in Yorùbá independent of SVCs serves two essential purposes: first, it establishes the baseline patterns of nominalization in the language, and second, it provides the necessary background against which the distinctive nominalization behavior of SVCs can be adequately evaluated and understood. It is important to note that verb nominalization in Yorùbá does not occur in isolation but rather participates in a broader grammatical pattern involving verb focusing. The intricate relationship between these two phenomena, nominalization and focusing, constitutes a crucial aspect of Yorùbá verbal morphosyntax.

In section 2.5.4, we will see how adverbial modification provides another potential diagnostic for identifying the head of SVCs. Cross-linguistically, adverbs typically attach to or modify the head of the constituent they scope over, making adverbial placement and scope a valuable tool for determining the head in complex verbal structures. In the context of Yorùbá SVCs, empirical observations suggest that when certain adverbs are present in SVCs, they tend to modify V_1 specifically rather than V_2. This modification pattern is theoretically significant: if adverbs systematically target V_1 for modification, this selectivity suggests that V_1 occupies a structurally prominent position within the verbal domain.

2.5.1 Verb nominalization and nominalized verb clefting

Nominalization is the grammatical process of transforming verbs, adjectives, or entire clauses into nouns or noun phrases. This linguistic mechanism has been extensively examined, (Koopman, 2014; Marantz, 1997, 2001; Rau, 2002). According to Rau (2002), nominalization is the linguistic process by which a noun is formed from other lexical categories, most commonly verbs or adjectives through specific morphological operations. This transformation often involves the addition of derivational affixes, shifts in word class, or other morphological changes that allow an action, state, or quality expressed initially by a verb or adjective to be reinterpreted and used as a noun within the grammar of a language. Sinha and Barbora (2018) argue that there are two operational levels with respect to nominalization: derivational and clausal. They describe derivational nominalization as a process of creating a noun by adding an affix. There is a similar process in Yorùbá, as I will show in this section that, prefixation via reduplication process is used. On the other hand, they claim that clausal nominalization turns a clause into a nominal clause. Sinha and Barbora's analysis is based on the Koro language where lexical nominalization is derived through the nominalizer *-gõ*. The nominalizer *-gõ* is considered an action nominalizer which converts an action verb into a noun in Koro. The nominalizer suffixes to a verb and a definite article *bwde* then comes after it. The table below presents how a verb is nominalized in Koro. Yorùbá shows derivational nominalization through morphological changes, such as prefixation as well.

Table 4 Derivational nominalization process in Koro

Verb	Derived Nominal
paca ‘to teach’	paca -gõ -bwde teach-NMZ-DEF ‘teacher’
fere ‘to write’	fere -gõ -bwde write-NMZ-DEF ‘writer’
pw ‘to cultivate/work on the field’	pw -gõ -bwde farm-NMZ-DEF ‘farmer’
suram ‘to hunt’	suram -gõ -bwde hunt-NMZ-DEF ‘hunter’

(Sinha & Barbora, 2018, p. 160)

Marantz's (1997, 2001) work provides a framework for understanding how verbs are turned into nouns within syntactic structure and how this process is sensitive to different syntactic layers. Marantz employed the distributed morphology (DM) approach to explain how words are constructed from category-neutral roots (√ROOT) to categories such as nouns, verbs, and adjectives through the combination of functional heads, including the verbalizer (v head), nominalizer (n head), and adjectivizer (a head). Marantz (2001) argues that nominalizations are not made in a lexicon. Rather, the roots are underspecified for syntactic categories like N and V (p. 25).

Nominalization is a phenomenon present in the Yorùbá language (Ajeigbe, 1977; Ajiboye, 2001; Ajiboye et al., 2003; Eleshin, 2021). Nominalization in Yorùbá is marked via partial reduplication of a verb or adjective[7]: the initial consonant is copied, followed by a high tone vowel (usually í). The nominalization structure in Yorùbá is given in (47), where the root verb or adjective is reduplicated by repeating the first consonant of the root followed

[7] Some adjectives are derived via full reduplication, as previously discussed in Chapter 1.

by a high-tone vowel *í*, and then the whole root is attached, or in the case of some adjectives, the root is simply reduplicated.

(51) CV́ + verb = nominalized verb

CV́ + adjective/duplicating the root = nominalized adjective

The data set in (52) and (53) shows how verbs and adjectives are nominalized in Yorùbá respectively, using the reduplication schema presented in (51).

(52)a gún gígun
'climb' 'climbing'

b jẹ jíjẹ
'eat' 'eating'

c wò wíwò
'look' 'looking'

(53)a ga gíga
'tall' 'tallness'

b dùn 'dídùn'
'sweet' 'sweetness'

c fun funfun
'white' 'whiteness'

The sentences in (54) exemplify the use of nominalized verbs in simple Yorùbá constructions.

(54)a Wíwò ni Olú wo ìwé.
Nml.look Foc Olú look book
'It was looking that Olú looked at the book.'

b Jíjẹ ni Olú jẹ èso.
Nml.eat Foc Olú eat ffruit
'It was eating that Olú ate the fruit.'

Nominalization and its interaction with SVCs has been discussed for some African languages, (Hiraiwa & Bodomo, 2008; Bodomo et al., 2018; Lefebvre & Brousseau, 2002; Stewart, 2001). None of these discussions have addressed the issue of the head in a serial verb construction using Nominalization and clefting nominalized verbs. In the next subsection, I will discuss how nominalizing a verb and clefting it affects the verbs in Yorùbá SVCs and how these can be used as empirical evidence to determine the verb head.

2.5.2 Verb nominalization and nominalized verb clefting in Yorùbá SVCs

Focus construction is used as a means of emphasizing a constituent or lexical item in a sentence, (Frascarelli, 2000, 2010; Lambrecht, 1994). In Yorùbá, focusing allows a non-verbal element to be preposed (Bamgbose, 1967; Déchaine, 2002; Jonas, 2006; Manfredi, 1993). The verb in Yorùbá cannot appear in its bare form when nominalization applies, hence the need for the reduplication process to change it to a nominal verb before it can be moved to the sentence-initial position. Some Western African languages, such as Gungbe, as reported in Aboh (2006), retain the verb in its bare form if fronted, unlike what we have in Yorùbá. The examples in (55) show how focusing works in the Yorùbá language.

(55)a Olú lọ ata se ọbẹ̀.
Olú grind pepper cook stew
'Olú grinded pepper to cook stew.'

b Olú ni ó lọ ata se ọbẹ̀.
Olú Foc 3Sg grind pepper cook stew
'It was Olú who ground pepper to cook stew.'

c Líl̀ọ̀ ni Olú lọ ata se ọbẹ̀.
Nml.grind Foc Olú grind pepper cook stew
'It was grinding that Olú ground pepper to cook stew.'

d * Sísè ni Olú lọ ata se ọbẹ̀.
Nml.cook Foc Olú grind pepper cook stew
'It was cooking that Olú ground pepper to cook stew.'

The sentence in (55a) does not show any focused element. In example (55b), the subject is preposed to the sentence-initial position of the focus construction, occurring before the focus marker *ni*, and its base position is occupied by a resumptive pronoun *ó*. In (55c), we see the focus of the verb *l̀ọ̀* 'grind', which expresses the emphasis on the grinding as opposed to any other action. The example in (55d), which tries to emphasize the second verb, is unacceptable in Yorùbá; this implies that only the first verb in the serial verb construction gets more attention and interaction with the functional category, which is a focus phrase in this case. This is further discussed with the nominalization strategy for verbs.

Nominalization interacts with the two verbs of SVCs in Yorùbá differently with respect to how the verbs are nominalized. The focus marker in Yorùbá is *ni*, and every focused element precedes the focus marker in a sentence. The first verb (V_1) in a Yorùbá SVC can be nominalized and moved to the left periphery of the construction, while this is not possible for the second verb (V_2). The V_2 cannot undergo the same process of nominalization and clefting as V_1 would in an SVC, as presented in (56)-(59).

(56)a Olú gbé igi gbá Adé.
Olú take/carry stick hit Adé
'Olú took a stick and hit Adé (with it).'

b Gbígbe ni Olú gbé igi gbá Adé.
Nml.carry Foc Olú take/carry stick hit Adé
'It is carrying that Olú carried the stick and hit Adé (with it).'

c *Gbígba ni Olú gbé igi gbá Adé.
Nml.hit Foc Olú take/carry stick hit Adé
*'It is hitting that Olú carried the stick and hit Adé (with it).'

(57)a Olú ta ìresì kọ́ ilé.
Olú sell rice build house
'Olú sold rice to build a house.'

b Títà ni Olú ta ìresì kọ́ ilé.
Nml.sell Foc Olú sell rice build house
'It is selling that Olú sold rice to build a house.'

c *Kíkọ́ ni Olú ta ìresì kọ́ ilé.
Nml.build Foc Olú sell rice build house
*'It is building that Olú sold the rice to build a house.'

(58)a Olú gbá igi wọ ilẹ̀.
Olú hit stick enter ground
'Olú hit the stick into the ground.'

b Gbígbá ni Olú gbá igi wọ ilẹ̀.
Nml.hit Foc Olú hit stick enter ground
'It is hitting that Olú hit the stick into the ground.'

c *Wíwọ ni Olú gbá igi wọ ilẹ̀.
Nml.enter Foc Olú hit stick enter ground
*'It is entering that Olú hit the stick into the ground.'

(59)a Olú kọ́ ilé yá owó.
Olú build house borrow money
'Olú built house to borrow money.'

b Kíkọ́ ni Olú kọ́ ilé yá owó.
Nml.build Foc Olú build house borrow money
'It is building that Olú a built house to borrow money.'

c *Yíyá ni Olú kọ́ ilé yá owó.
Nml.borrow Foc Olú build house borrow money
'It is borrowing that Olú built a house to borrow money.'

In the SVCs given in (56)-(59) above, the (a) constructions are simple SVCs without nominalization of the verbs. In contrast, the (b) and (c) constructions have one of the verbs nominalized and clefted as well. The nominalization of the V_1 in; *gbé* 'carry' (56b), *ta* 'sell' (57b), *gbá* 'hit' (58b) and *kọ́* 'build' (59b) is allowed and grammatical in the SVCs. However, their counterparts in V_2, *gbá* 'hit' (56c), *kọ́* 'build' (57c), *wọ* 'enter' (58c) and *yá* 'borrow' (59c) are nominalized and are ungrammatical in the language.

According to Bodomo (2004), Hiraiwa & Bodomo (2008) on Dagaare, the dislocated nominalized verb in a predicate cleft construction is contrastively focused and moved to the left periphery of the entire construction. It is obligatory for the dislocated verb to be nominalized, and its original copy must remain in its base position, as seen in the example (60) from Dagaare here.

(60) Dááó lá ká ń dà dà bóɔ. (Dagaare)
buy.Nml F C 1Sg. Pst buy goat
'It is buying that I did to a goat (as opposed to e.g., selling it).'
(Hiraiwa & Bodomo, 2008, p. 803)

The pattern of verb nominalization in Dagaare SVC is quite different from what is obtainable in Yorùbá, as it is possible to independently nominalize either of the verbs in Dagaare but not Yorùbá. When the V_2 is clefted in Dagaare, the result is grammatical, as seen in example (61c). This example represents a shared-object construction, which lies beyond the purview of this study. Nevertheless, testing analogous structures in Yorùbá is crucial for providing a complete account.

(61)a. ò dà sɛ là nɛnè ɔɔ. (Dagaare)
3Sg. Pst roast F meat eat
'He roasted meat and ate it.'

b sɛɛ́ lá ká ó sɛ nɛnè ɔɔ.
roast.Nml F C 3Sg. roast meat eat
'It is roasting that he did and ate meat (as opposed to e.g., boiling it).'

c ɔɔ́ lá ká ó sɛ nɛnè ɔɔ.
eat.Nml F C 3Sg. roast meat eat
'It is eating that he roasted and did to meat (as opposed to e.g., throwing it away).'

d sɛ-ɔɔ́ lá ká ó sɛ nɛnè ɔɔ.
roast-eat.Nml F C 3Sg. roast meat eat
'It is roasting and eating that he roasted and did to meat (as opposed to e.g., buying something else).'

(Hiraiwa & Bodomo, 2008, pp. 805-806)

From the above data, (61b) is an example of the clefting of V1, (61c) is an example of V2 clefting and (61d) is an example of the clefting of both V1+V2 together. In the previous Yorùbá examples (the (c) constructions in (56)-(59), I show that the nominalization and clefting of the second verb (V2) are not grammatical as opposed to what we have seen in Dagaare (61). The differences between the two languages are presented in (62) for Yorùbá and (63) for Dagaare.

(62) * Wíwọ ni Olú gbá igi wọ ilẹ̀.
Nml.enter Foc Olú hit stick enter ground
'It is entering that Olú hit stick entered ground.'

(63) ɔɔ́ lá ká ó sɛ nɛnè ɔɔ.
eat.Nml F C 3Sg. roast meat eat
'It is eating that he roasted and did to meat (as opposed to e.g throwing it away).'
(Hiraiwa & Bodomo, 2008, p. 806)

The clefting of the first and second verbs is also not possible in Yorùbá, unlike what is observed in Dagaare (61d), reproduced here as (64). This distributional restriction reveals a fundamental typological difference between these two Niger-Congo languages in their treatment of verbal elements within focus constructions.

(64) sɛ-ɔɔ́ lá ká ó sɛ nɛnè ɔɔ. (Dagaare)
roast-eat.Nml F C 3Sg. roast meat eat
'It is roasting and eating that he roasted and did to meat (as opposed to e.g., buying something else).'

A similar type of SVC used in Dagaare is tested here for Yorùbá SVCs presented in (65) and (66), where clefting of both verbs together is not possible. In these examples, we see that the first verb is a transitive verb while the second verb is also transitive but shares the object of the first verb, this does not change any of the narration for Yorùbá just as we see in the examples in (56-59) where both verbs are transitive.

(65)a Olú sun iṣu jẹ.
Olú roast yam eat
'Olú roasted a yam and ate it.'

b *Sísunjẹ ni Olú sun iṣu jẹ.
Nml.roast-eat Foc Olú roast yam eat
'It is roasting and eating that Olú roasted yam and ate it.'

c *Jíjẹsun ni Olú sun iṣu jẹ.
Nml.eat-roast Foc Olú roast yam eat
'It is eating and roasting that Olú roasted yam and ate it.'

(66)a Olú ra iṣu tà.
Olú buy yam sell
'Olú bought yam and sold it.'

b *Ríràtà ni Olú ra iṣu tà.
Nml.buy-sell Foc Olú buy yam sell
'It is buying and selling that Olú bought yam and sold it.'

c *Títàrà ni Olú ra iṣu tà.
Nml.sell-buy Foc Olú buy yam sell
'It is selling and buying that Olú bought yam and sold it.'

This asymmetry has important implications for theories of focus and information structure in serial verb languages, as it demonstrates that the availability of verbal clefting cannot be predicted solely from the presence of verb serialization in a language's grammar. Rather, language-specific constraints on extraction, and the particular mechanics of the focus system must all be considered in determining which elements are eligible for clefting.

If we flip the transitivity of the verb in the V_1 and V_2 position in such a way that V_1 has an intransitive verb and V_2 has a transitive verb, as seen in (67), we will still have an ungrammatical construction if we combine both verbs for nominalization. However, we will only have V_1 clefting and not V_1+V_2 clefting just as in the case of transitive verbs I had previously shown.

(67)a Olú subú fọ́ àwo.
Olú fall break plate
'Olú fell and broke plate.'

b Sísubú ni Olú subú fọ́ àwo.
Nml.fall Foc Olú fall break plate
'It is falling that Olú fell and broke plate.'

c *Sísubúfọ́ ni Olú subú fọ́ àwo.
Nml.fall-break Foc Olú fall break plate
'It is falling and breaking that Olú fell and broke plate.'

There are no situations that permit the V_2 in Yorùbá SVC to be moved to the left periphery of the construction. As noted earlier, this dissertation primarily concerns itself with verbs that have individual objects. It is worth mentioning here that any verb can be used as V_1 or V_2 as long as the construction is semantically and grammatically accurate in Yorùbá. In examples (68) and (69) below, I demonstrate that the position of the verb determines the contrast observed. The transitive verb *kọ́* 'build' in (68b) is acceptable but not the transitive verb *yá* 'borrow' in (68c), the same transitive verb *yá* 'borrow' that is not accepted (68c) is grammatical in (69b), the transitive verb *kọ́* 'build' that was grammatical in (68b) is not acceptable in (69c) all under the nominalization of the verbs. The only thing I tried to do with this data is to swap the positions of the verbs, maybe it would make any difference, but it seems that the position that these verbs occupy dictates how the syntax or morphology would apply to the verb and not the inherent feature of the verbs themselves. I will discuss this further in chapter 4, where I will establish the structural relation between the verbs in Yorùbá SVCs.

(68)a Olú kọ́ ilé yá owó.
Olú build house borrow money
'Olú built a house to borrow money.'
Intended: 'Olú built a house in order to borrow money, and he borrowed the money.'

b Kíkọ́ ni Olú kọ́ ilé yá owó.
Nml.build Foc Olú build house borrow money
'It is building that Olú built a house to borrow money.'

c *Yíyá ni Olú kọ́ ilé yá owó.
Nml.borrow Foc Olú build house borrow money
'It is borrowing that Olú build house to borrow money.'

(69)a Olú yá owó kọ́ ilé.
Olú borrow money build house
'Olú borrowed money to build house.'
Intended: 'Olú borrowed money in order to build a house, and he built a money.'

b Yíyá ni Olú yá owó kọ́ ilé.
Nml.borrow Foc Olú borrow money build house
'It is borrowing that Olú borrowed money to build house.'

c *Kíkọ́ ni Olú yá owó kọ́ ilé.
Nml.build Foc Olú borrow money build house
'It is building that Olú borrowed money to build house.'

The contrast we see in all the Yorùbá data presented so far shows that the V_2 position does not have equal status to the V_1 position irrespective of the type of verb occupying the position. As I have shown with nominalization and clefting interaction with Yorùbá SVCs, the V_1 takes centre stage in the process, while V_2 seems to be completely ignored in the whole process. This interaction supports my claim that V_1 is the head of the serial verb construction in Yorùbá.

2.5.3 The distribution and scope of adverbs

So far in this chapter, I have been concerned with answering the question of which verb should be the head of the verbs in the Yorùbá SVCs. Further to the argument made in favour of V_1 being the head of the verbs in Yorùbá SVCs, I will be discussing the head of Yorùbá SVCs in the light of Ernst's (2002, 2004) semantic based theory of adverbial modification

(semantic scope of adverbs) in section 2.5.3.1, then proceed to account for the scope of adverb transfers into the syntax of the co-occurring verbs in section 2.5.3.2.

2.5.3.1 Semantic scope of manner adverbs in Yorùbá SVCs

The present analysis proceeds from the assumption that semantic criteria, specifically the scope and interpretation of adverbial modification, provide some reliable basis for identifying the head of the verb phrase in Yorùbá SVCs. (Bowers, 1993; Ernst, 2002, 2004; Jackendoff, 1972; Potsdam, 2000; Travis, 1988). According to Ernst's (2002, 2004) semantic base theory, the licensing of an adverb is done in its base position whenever the relevant semantic rule applies, which gives them the proper interpretation and does not cause any semantic flaws elsewhere in the sentence. Let's briefly look at the adverbs in the examples in (70)-(72).

(70) (*Softly) she (*softly) will (*softly) be [(softly) singing a ballad (softly)].

(71) (*Completely) she (*completely) will (*completely) be [(completely) finishing her work (completely)].

(72) (Again) she (again) will (again) be (again) finishing her work (again).

(Ernst, 2004, pp. 756 - 757)

Ernst explains that adverbs are organized into zones within a clause structure, where example of adverbs like the ones in (70)-(72) occur in the "Low Range". The Low Range position is "the lower part of a clause, starting from the immediately preverbal position and extending all the way to the right in verb-initial languages like English." (Ernst, 2004, p. 757). Ernst further argues that the adverbs found in this position are "event-internal" or verb-modifying such as manner adverbs and measure adverbs as seen in (70)-(71) respectively, and iterative adverbs as in (72). However, with iterative adverbs like 'again', he explains that they may also occur in higher positions, which means that some adverbs may have multiple base positions, while some other adverbs have restrictions on occurrence.

Yorùbá presents us with some pattern on the distribution of adverbs and how they modify verbs or a whole construction. For instance, some manner adverbs like *rọra* 'carefully', *yára* or *tètè* 'quickly', *kánjú* 'hastily' can only occur before the verb or verb phrase they modify; they cannot appear in sentence initial or sentence final position unlike manner adverbs like *díẹ̀díẹ̀* 'slowly' which can only be found in sentence initial or sentence final positions. Likewise, adverbs of time like *lẹ́sẹ̀kẹsẹ̀* 'instantly' and *kíákíá* 'immediately' can only be seen in sentence-initial or sentence-final position. In the examples presented in (73) and (74) below, the adverbs *tètè/ yára*, *rọra* and *kánjú* are a type of adverb that cannot be found in the same environment as the adverbs *kíákíá/díẹ̀díẹ̀*. The examples in (73) demonstrate the correct position for the adverbs, whereas in the examples presented in (74), where I attempted to swap the positions of the adverbs, the result produced ungrammatical constructions.

(73)a Adé kánjú dín adìyẹ.
Adé hastily fry chicken
'Adé hastily fried chicken.'

b Adé tètè/yára se ọbẹ̀.
Adé quickly cook soup
'Adé quickly cooked soup.'

c Adé rọra se ọbẹ̀.
Adé carefully cook soup
'Adé carefully cooked soup.'

d Adé se ọbẹ̀ díẹ̀díẹ̀.
Adé cook soup slowly
'Adé cooked soup slowly.'

e Adé dín adìyẹ kíákíá.[8]
Adé fry chicken immediately
'Adé fried chicken immediately.'

f kíákíá/díẹ̀díẹ̀ ni Adé dín adìyẹ.
immediately/slowly Foc Adé fry chicken
'It was immediately/slowly that Adé fried chicken.'

g kíákíá/díẹ̀díẹ̀ ni Adé rọra dín adìyẹ.
immediately/slowly Foc Adé carefully fry chicken
'It was immediately/slowly that Adé carefully fried chicken.'

(74)a *Adé se ọbẹ̀ tètè/rọra/ kánjú.
Adé cook soup quickly/carefully/hastily
'Adé cooked soup quickly/ carefully/hastily.'

b *Tètè/rọra/ kánjú ni Adé dín adìyẹ.
quickly/carefully/hastily Foc Adé fry chicken
'It was quickly/carefully/hastily that Adé fried chicken.'

c *Adé kíákíá/díẹ̀díẹ̀ se ọbẹ̀.
Adé immediately/slowly cook soup
'Adé immediately/slowly cook soup.'

The distribution of adverbs in simple Yorùbá sentences shown above corresponds to Ernst's analysis on the semantic scope of adverb licensing. Ernst (2002, p. 53) proposed a semantic rule, called the Fact-Event Object (FOE), which restricts the distribution of adverbs based on scope and allows for the possibility of adjoining them to any category.

The scope-based analysis of adverb placement makes the sentences in (73) all grammatical. However, the sentences in (74) do not meet the scope requirement which results

[8] *Kíákíá* can also be used to mean 'quickly' like *tètè*, it can be used as a manner adverb modifying the speed at which something is done. But these two adverbs have different syntactic properties in the language.

to having ungrammatical constructions. For instance, the adverbs *kíákíá/díẹ̀díẹ̀* will adjoin and scope over a proposition but this is not the case as we see it in (74c), where it is found preverbally. Likewise, the adverbs *tètè/ yára*, *rọra* and *kánjú* must scope over VP but we see that the ungrammaticality in (74a) and (74b) is because of the adverb taking the proposition as its scope.

Having shown the positions of some of the adverbs in Yorùbá simple sentences, I now look at their distribution in SVCs; specifically, the manner adverbs in cases of SVCs where they are used. This is illustrated with examples of SVC in (75) - (77).

(75)a Adé kánjú /tètè/rọra/*kíákíá dín adìyẹ se ọbẹ̀.
Adé hastily/quickly/carefully/*immediately fry chicken cook soup
'Adé [quickly/carefully/*immediately fried the chicken] and cooked soup.'

b *Adé dín adìyẹ *kánjú/*tètè/*rọra/*kíákíá se ọbẹ̀.
Adé fry chicken *hastily/*quickly/*carefully/*immediately cook soup
'Adé fried chicken and [*hastily/*quickly/*carefully/*immediately cook soup].

c Adé dín adìyẹ se ọbẹ̀ *kánjú /*tètè/*rọra/kíákíá.
Adé fry chicken cook soup *hastily/*quickly/*carefully/immediately
'Adé [fried chicken and cooked soup hastily/*quickly/*carefully/immediately].'

d kíákíá/*kánjú /*tètè/*rọra ni Adé dín adìyẹ se ọbẹ̀.
immediately/*hastily/*quickly/*carefully Foc Adé fry chicken cook soup
'It was [immediately/*quickly/*carefully that Adé fried chicken and cooked soup]'.

(76)a Adé yára yá owó kọ́ ilé.
Adé quickly borrow money build house
'Adé [quickly borrow money] (to) build a house .'

b *Adé yá owó yára kọ́ ilé
Adé borrow money quickly build house
'Adé borrowed money [quickly build house].

c Adé yá owó kọ́ ilé kíákíá
Adé borrow money build house immediately
'Adé [borrowed money(to) build a house immediately].'

d kíákíá ni Adé yá owó kọ́ ilé
immediately Foc Adé borrow money build house
'It was immediately that Adé borrowed money (to) build house '.

(77)a Adé rọra wá iṣẹ́ san gbèsè
Adé carefully search work pay debt
'Adé [carefully search (for) work] (to) pay debt.'

b *Adé wá iṣẹ́ rọra san gbèsè
Adé search work carefully pay debt
'Adé seach (for) work [(to) carefully pay debt].

c Adé wá iṣẹ́ san gbèsè kíákíá
Adé search work pay debt immediately
'Adé [search (for) work (to) pay debt immediately].'

d kíákíá ni Adé wá iṣẹ́ san gbèsè
immediately Foc Adé search work pay debt
'It was immediately that Adé search (for) work (to) pay debt'.

The adverbs *kánjú, tètè, rọra* 'hastily/quickly/carefully' in (75a) only scope over the first VP (*dín adìyẹ* 'fry chicken'); the modification does not extend to the event expressed by the verb in the second VP (*se ọbẹ̀* 'cook soup'). The sentence conveys that the chicken was fried hastily, quickly or carefully, but not the cooking of the soup. Considering the examples in (73b) and (73c), we would expect that manner adverbs before the verb should not be problematic, but that seems not to be the case with (75b). The semantic scope of the adverbs is limited to the first VP (VP_1) and does not in any way extend to the second VP (VP_2).

Likewise, in the example (76) and (77), it can be said that the borrowing of money was done quickly so that Adé could build a house (the reading in (76a)), but not that the borrowing and the building event was done quickly. Also, in (77a), Adé carefully searched for work, but the construction does not mean that Adé carefully paid debt. The sentences in (76b) and (77b) are ungrammatical because the adverb cannot scope over the second VP independently. The sentences in (75c)-(75d), (76c)-(76d), and (77c)–(77d) are grammatical because the adverb modifies the entire construction; the adverb *kíákíá* 'immediately' does not belong to the low range type of adverb. For instance, the construction in (77d) shows that the adverb precedes the focus marker *ni* in the SVC, which means that it would be realized higher in the structure. I will not go into further details on sentential adverbs, as the concern in this section is restricted to verb modification.

I argue that the first verb is the head of the verb complex in Yorùbá SVCs, following the distribution and the scope of adverbs presented in the constructions in (75)–(77). It is safe to assume that VP_2 has a restricted structural capacity compared to VP_1 with respect to the phrasal material it can accommodate. The only time the VP_2 can be under the scope of modification would be when the adverb targets the entire construction, that is, when the proposition happens to be the argument of the adverb modification. We clearly see here that, the event-internal modification expressed by the low range adverbs in Yorùbá seems to scope over the VP head of the extended projection alone and nothing more. In the next subsection, I will build on the conclusion drawn here to propose the syntax of the SVCs in Yorùbá.

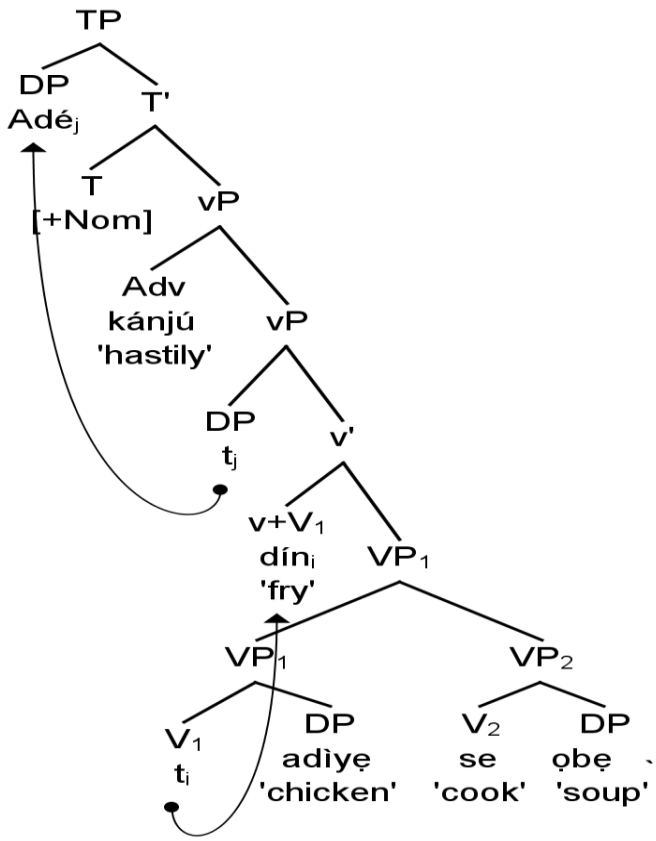
2.5.3.2 Theoretical consideration of low-range adverb placement in Yorùbá SVCs

I have shown in sentences (75a), (76a) and (77a) that the manner adverbs are the type of adverbs that depicts 'event-internal modification' of the verb phrase in Yorùbá. In the consideration of the explanation of 'low range' adverbs previously given, they occur within the domain of verb phrase: before the first verb in Yorùbá (never before the second verb in SVCs).

In English, it could occur before or after the verb and its direct object (if any). I propose that the manner adverbs adjoin to the functional head, vP, which V_1 projects for it to be interpreted accurately. The V_2 does not have this ability, hence the birth of the ungrammatical sentences in (75b), (76b) and (77b). I assume that the semantic scope of these adverbs is directly related to the proper interpretation at LF (logical form). I present the tree structures in (78b) as the possible syntax structure for the sentence in (75a) repeated here in (78a), using just one of the appropriate adverbs from the ones shown in (75a).

(78)a Adé kánjú dín adìyẹ se ọbẹ̀
Adé hastily fry chicken cook soup
'Adé [hastily fried chicken] and cooked soup.'
Intended: 'Adé hastily fried chicken in order to cook the soup, and he cooked soup.'

b



The structure in (78b) treats VP2 as an adjunct to VP_1. I will skip the details on the structural relation for now; the most important point is that the adverb responsible for the event-internal modification is located within the functional domain of the VP_1, excluding the VP_2. The adjunction position of V_2 blocks the scope of the low-range adverb. The structural relation will be further discussed in Chapter 4.

In light of the preceding discussion regarding head determination and the empirical evidence presented in this section, the data originally presented in Table 3 have been revised and expanded to incorporate findings from the Yorùbá. This updated analysis, presented in Table 5, integrates the Yorùbá language data with the cross-linguistic patterns previously identified, thereby providing a more comprehensive typological perspective. The inclusion of Yorùbá is particularly significant as it allows for a more robust evaluation and enables us to test the predictions of the theoretical framework against a broader empirical base. Table 5 thus represents a refinement of the initial dataset, enriched by the Yorùbá evidence.

Table 5 Evidence for the head of extended projection in Yorùbá SVCs

Head defining criteria in SVCs	Head types	Languages	Authors	How about Yorùbá SVCs?
V1 and V2 have separate functional projections.	Double-head SVC	Edo	Baker and Stewart (2002)	x
Verb doubling possible for V1 only	V1 is the head	Nupe	Baker and Stewart (2002)	x
V1 is not a lexical head like V2.	V1 is a functional head, V2 is the main Verb head.	Gungbe	Aboh (2009)	x
V1 is a restricted class; marking is only allowed on V2.	V2 is the head.	Cantonese	Matthews (2006)	x
Either V1 or V2 allows functional marking.	Either V1 or V2 can be the head.	Mandarin	Li (1991)	x
Verb focusing, adverb modification on each verb.	V1 can only be targeted.	Yorùbá		✓

2.6 Proposed analysis for Yorùbá SVCs

In Yorùbá syntax, we have seen that SVCs are characterized by the sequencing of two or more verbs that jointly describe a single event or tightly linked sub-events without the presence of overt coordinators or subordinators. A key feature of Yorùbá SVCs is the strict limitation on the placement of functional categories, such as tense, aspect, negation, and

mood. Crucially, Yorùbá permits only a single occurrence of each of these categories per clause, and this occurrence precedes only the first verb in the serial sequence.

This restriction is not arbitrary; it reflects the syntactic unity of the serial verb construction. All the verbs within the SVC share the same clausal spine, meaning they are interpreted as being under the domain of the same set of functional projections (e.g., tense phrase, aspect phrase, mood phrase). This unity demands that the verbs be semantically compatible (often describing closely related subevents) and that there are no overt or covert markers intervening between the verbs that might indicate a clause boundary or disrupt this unity. Any attempt to place a tense, aspectual, or negation markers before the V_2, not to mention inserting a coordinating conjunction immediately, renders the construction ungrammatical.

For the analysis I am pursuing in this dissertation, it is vital to establish that the data presented so far show that both the V_1 and the V_2 in Yorùbá SVCs each project their complements. This observation contrasts with analyses of languages such as Gungbe, where, according to Aboh (2009), only V_2 functions as the theta role assignor, while V_1 is considered a functional or restructuring head without its argument structure. In Yorùbá, however, the evidence strongly supports a different syntactic and thematic arrangement, in which each verb independently selects and licenses its argument(s) within the clause. This distinction is essential to the direction and theoretical claims of this dissertation, as it emphasizes the need to treat Yorùbá SVCs not merely as examples of functional restructuring, but as constructions where each verb maintains its full lexical status.

Since this dissertation is primarily concerned with constructions in which each verb within the serial sequence projects its complement, understanding the types of argument structures involved is foundational for building a principled syntactic account. Having established the nature of the verbal heads in Yorùbá SVCs, the next question naturally arises: What is the structural relationship between V_1 and V_2?

There are two primary analytical options:

i. Complementation: V_2 functions as a complement to V_1

ii. Adjunction: V_2 adjoins to V_1 (or a projection containing V_1) without being selected by it

Throughout this chapter, I have been working under the assumption that these verbs relate through adjunction. However, this is a critical theoretical decision that requires explicit justification. In what follows, I will examine both structural possibilities in detail and present the evidence that supports an adjunction analysis for Yorùbá SVCs.

2.7 Conclusion

This chapter has offered a comprehensive overview of the ongoing scholarly debate concerning the identification of the syntactic head in SVCs (SVCs), with a particular focus on the Yorùbá language. Drawing on key insights from the literature, I have highlighted the various criteria that have been employed in different languages to determine headship, including semantic roles, structural hierarchy, and grammatical marking in section 2.2. In addition, I examined the syntactic behavior of the verbs within SVCs under two diagnostic operations nominalization and focus marking in section 2.5.2. Against this backdrop, I proposed that the scope of adverbials in Yorùbá provides robust syntactic evidence for determining the head within Yorùbá SVCs in section 2.5.3. Specifically, the adverbial scope tends to align with the first verb in the construction, suggesting that it occupies a structurally dominant position.

The data clearly show that V_1 and V_2 do not pattern alike under these processes, regardless of the transitivity class of the verbs. The first verb consistently demonstrates syntactic independence and compatibility with functional projections, while the V2 exhibits restrictions and structural dependency. This asymmetry underscores a crucial point: the

determination of headship in Yorùbá SVCs is not dependent on verb type or lexical semantics, but rather on structural position. The verb in the initial position functions as the syntactic head of the construction.

Following this, I presented detailed Yorùbá data to substantiate this claim and situated the analysis within broader typological and theoretical discussions of head identification in SVCs across languages. The structural position of the verb, particularly the initial verb phrase, emerges as the most reliable indicator of syntactic headship. Because Yorùbá is a head-first language, my position is substantiated that the V_1 is the head of the verb complex structure, following the left-headedness of the language. Having provided evidence to support the identification of the V_1 as the head in Yorùbá SVCs, the subsequent chapters will shift focus to the structural relationship between the serial verbs themselves.

Chapter 3: The analysis of complement and adjunct structures in Yorùbá

3.0 Introduction

This dissertation pursues a key objective: to examine the structural configuration of verbs within Yorùbá serial verb constructions (SVCs) and to establish whether these constructions instantiate complement or adjunction relations. Chapter 2 established the head properties of Yorùbá SVCs, identifying V_1 as the head of the extended projection. Having established this foundational finding, the nature of the relationship between V_2 and V_1 requires examination. To address this question adequately, it is necessary first to provide a comprehensive account of Yorùbá phrasal and clausal architecture, with particular attention to the diagnostic criteria that distinguish complements from adjuncts within the language's syntactic system. This foundational analysis establishes the theoretical framework for the subsequent investigation in Chapter 4, which examines SVCs and their implications for the complement/adjunct distinction in Yorùbá.

3.1 Background on complement vs adjunct

The distinction between complement and adjunct has long been an area of debate in the literature. Complement and adjunct are core concepts in syntax theory as they play a significant role in determining constituent hierarchy and argument structure in language. While the distinction has been described in the analysis of Indo-European languages, such as English, Yorùbá lacks a robust description of this distinction. When multiple verbs co-occur within a single event structure, the structural relationship between the verbs require an explanation of their hierarchical organization as either complements or adjuncts. One of the goals of this dissertation is to provide an answer to the structure of the verbs in Yorùbá SVCs.

It is therefore necessary to first provide an insight into Yorùbá phrasal and clausal structure in light of complement and adjunct description before extending the analysis to SVCs.

The complement and adjunct dichotomy has been described within various contexts in the literature (Ackema, 2015). Within the minimalist program framework, Hornstein and Nunes (2009) posits a fundamental structural distinction between complements and adjuncts. Specifically, Hornstein argues that adjuncts are realized through concatenation, an operation that renders them structurally less complex than complements. This structural simplicity arises from the nature of concatenation itself, which combines syntactic objects without necessarily creating hierarchical labelling relationships. In contrast, Hornstein maintains that complements constitute integral parts of labelled structures. That is, complements are merged into hierarchical labelled structures through the operation of merge, which creates a set-theoretic object with an identifiable label projected from one of its members. This labelling property distinguishes complement structures from adjunction structures. While complements participate in label projection and are thus fully integrated into hierarchical syntactic architecture, adjuncts are adjoined to already-formed structures without affecting the label of the constituent to which they attach. Consequently, the distinction between complements and adjuncts in Hornstein's account reflects the difference in how these elements are integrated into syntactic structure.

According to Farrell (2005, p. 31), a complement may be discussed in terms of an argument, of the process of state designated by the verb, whereas an adjunct cannot be described in these terms. In other words, adjuncts are not necessary to predicate saturation. There has been discussion around the tests for complements and adjuncts in the literature (Hasegawa, 1988). Some tests include closeness to the head, the "do so" test (for English and Japanese), coordination, and island constraints (Ross, 1967), specifically the adjunct island constraint and the relative clause constraint. Not all these tests may apply to languages in the

same way, i.e., language parameters may restrict the tests that can be applied. Extraction out of an adjunct island has been a test for distinguishing a complement from an adjunct (Huang, 1982), though there has been some contention in recent literature (Bondevik, 2020; Nyvad et al., 2022). Extraction out of adjunct island contexts has served as a widely employed diagnostic for distinguishing complements from adjuncts in syntactic theory. The adjunct island condition stipulates that the extraction of elements from within adjunct phrases results in ungrammaticality, whereas extraction from complement positions typically proceeds without constraint violations. This asymmetry reflects a fundamental structural difference between the two types of dependents.

Huang (1982) demonstrates that adjuncts constitute opaque domains for syntactic extraction, effectively creating "islands" from which movement operations cannot apply. When a wh-word or other operator attempts to move out of an adjunct clause or phrase, the derivation crashes, yielding ungrammatical outputs. In contrast, complement clauses and phrases permit extraction, allowing elements to undergo successive-cyclic movement to higher positions in the structure. This differential behavior with respect to extraction has been attributed to various factors in the syntactic literature, including the timing of merger in the derivation. The extraction test has consequently become a standard diagnostic tool in syntactic argumentation. This chapter explores the analysis of extraction from complements and adjuncts in various syntactic contexts in Yorùbá outside of SVCs.

3.2 Background on complement vs adjunct in Yorùbá

Regarding the use of linguistic parameters to distinguish complements from adjuncts, in Yorùbá, Déchaine (2001) identifies tone change (low tone drop, also called L-drop) as a complement /non-complement asymmetry in Yorùbá. Yorùbá is a tonal language with three tones: mid tone (not marked), ` (low tone), and ´ (high tone). According to Déchaine (2001, p. 89), nominal complements trigger L-drop, but nominal adjuncts do not. Déchaine

observed that the inherent low tone of a monosyllabic verb, as in examples (79a), (79c), (79e) and (79g), changes to a mid-tone when it is followed by a nominal complement, as seen in (79b), (79d), (79f) and (79h).

(79)a mọ̀ ‘know’

b Mo mọ Ayọ̀.
I know Ayọ̀
‘I know Ayọ̀.’

c gbà ‘receive / accept’

d Mo gba aṣọ.
I receive clothes
‘I received clothes.’

e tà ‘sell’

f Mo ta aṣọ.
I sell clothes
‘I sold clothes.’

g wọ̀ ‘wear or enter’

h Olú wọ aṣọ.
Olú wear clothes
‘Olú wore clothes.’

In contrast, the base position of any nominal object does not trigger L-drop if the object undergoes movement, as seen in (80). The example in (80a) shows a low tone drop (a mid tone) on the verb because the complement is in its case receiving position, while the sentence in (80b) does not trigger an L-drop because the object has moved from its case position to an

A-bar position above the subject; hence, the verb retains its tone. L-drop is not observed in the context of wh-movement.

(80)a Olú wọ aṣọ.
Olú wear clothes
'Olú wore clothes.'

b Ki_k ni Olú wọ̀ t_k.
$what_k$ Foc Olú wear t_k
'What did Olú wear?'

Although Déchaine does not offer any illustrative examples in her work that specifically demonstrate the case of an adjunct appearing after these verbs, examining such structures is essential to appreciate the syntactic contrast between complements and adjuncts fully. To fill this gap and provide a clearer understanding of the syntactic behavior of post-verbal adjuncts, the examples in (81) are provided; they serve to illustrate exactly these kinds of constructions. These examples are crucial, as they allow us to observe how adjuncts pattern differently from complements in similar syntactic environments, thereby contributing to a more nuanced analysis of verb phrase structure. The low tone drop does not apply if an adjunct follows the verb.

(81)a Mo mọ̀ dájú.
I know convincingly
'I know convincingly.'

b Mo gbà tọkàntọkàn.
I accept wholeheartedly
'I accept wholeheartedly.'

c Mo tà dáadáa.
I sell well
'I sold substantially.'

Déchaine's analyses of nominal complements as a trigger for L-drop on mono-syllabic verbs in Yorùbá reveal language parameters in the discussion around the distinction between complements and adjuncts. However, this test does not apply to other verbs with non-low tones or to different types of complements that verbs may have other than overt nominal DP, as seen in (82), where the object of *pè* 'call' is not a DP but a small clause.

(82) Ayọ̀ pè mi ní olè.
Ayọ̀ call me Prt thief
'Ayọ̀ called me a thief.'

In the next section, I will discuss the syntactic categories of complements in Yorùbá and analyze the nature of these complements in subsequent sub-sections.

3.3 Some syntactic categories of Yorùbá complements

Yorùbá is a subject-verb-object (SVO) language, meaning that the canonical word order in a well-formed declarative sentence typically consists of a subject followed by a verb and then an object. Each of these core sentence components has the potential to take a complement. That is, we may observe complements of the verb and object predicates, each contributing additional semantic or syntactic information to the phrase/clause in which they appear. In section 3.3.1, I begin by briefly outlining the properties and syntactic behavior of object predicates in Yorùbá. This discussion provides the necessary background for understanding the broader complement system in the language. However, the primary focus of this dissertation is on verb phrases; therefore, greater analytical attention is devoted to examining the nature of verb complements, including how they are licensed and their interaction with other syntactic elements, excluding SVCs (see 3.3.2). This emphasis reflects the central aim of the study: to investigate how verbs project their arguments and interact with other elements within the clause structure in Yorùbá.

3.3.1 Small clauses in Yorùbá

An object predicate describes the direct object of a verb. This type of complement is essential for completing the meaning of the direct object of a verb. Object predicates may take different syntactic forms, depending on the function they serve within the clause. When realized as a noun or noun phrase, they function as a predicative nominal. On the other hand, when they are realized as an adjective, they typically modify or describe a property or state attributed to the direct object. These two patterns, nominal and adjectival object complements, are both attested in Yorùbá and are structurally significant for understanding how predication operates within the clause. To illustrate the syntactic and semantic behavior of object predicates in Yorùbá, a set of representative examples is provided in (83). In (83a), the noun *olè* 'thief' renames the object (the first-person pronoun *mi* 'me'), which is the object complement. In (83b), the noun phrase *adarí-ilé* 'house-leader' modifies a nominal object (Bùkọ́lá), which means *Bùkọ́lá* is also the house-leader, while in (83c), the adjective *funfun* 'white' is the object complement of the object *ògiri* 'wall'.

(83)a Ayọ̀ pè mi ní olè.
Ayọ̀ call me Prt thief
'Ayọ̀ called me a thief.'

b Ó yan Bùkọ́lá ní adarí-ilé.
3Sg appoint Bùkọ́lá Prt leader-house
'He/she appointed Bùkọ́lá as the house-leader.'

c Wọ́n kun ògiri náà ní funfun.
they paint wall the Prt white
'They painted the wall white.'

These examples demonstrate how object predicates are realized in the language and how they contribute to the overall structure and interpretation of the sentence. Having considered

object predicates in Yorùbá constructions, I now turn to verb complements in the following section.

3.3.2 Verb complements in Yorùbá

Chomsky 2000, 2001 develops his earlier proposals on phase theory and makes crucial observations about verb complements. In this framework, the VP verb phrase is embedded inside a vP phase (Chomsky, 2008). In this layered syntactic structure, the lexical verb serves as the head of the VP and plays a crucial role in determining the sentence's grammatical architecture. As the head, the verb not only defines the semantic core of the predicate but also exercises selectional control over its internal argument, commonly referred to as the complement. This complement can take various forms depending on the verb's inherent properties; it might be a direct object determiner phrase (DP), a prepositional phrase (PP), a clausal complement, or other argument types. The selection process is not arbitrary but is systematic; argument structure (Grimshaw, 2005) or subcategorization frame (Levin, 1993). The complement of V is structurally the first element merged, making it the most deeply embedded constituent. This aligns with the binary branching model. This hierarchical ordering of the complement, where the complement is introduced before the external argument, not only reflects the syntactic structure but also has implications for argument interpretation, binding relations, and locality conditions in the syntax. I will address four types of verb complements in Yorùbá, namely, DP complements, PP complements, infinitive complements and finite clause complements.

3.3.2.1 Determiner phrase (DP) complement

A verb complement can be realized as a DP in Yorùbá, which can contain N or D as in (84a)–(84d). It can also be a pronoun, as in (84e)–(84g).

(84)a Olú kọ́ ilé.
Olú build house
'Olú built a house.'

b Olú bẹ ọsàn.
Olú peel orange
'Olú peeled an orange.'

c Olú gbádùn ijó náà.
Olú enjoy dance the
'Olú enjoyed the dance.'

d Olú wọ yàrá yìí.
Olú enter room this
'Olú entered this room.'

e Mo mọ ọ́.
I know 3sg
'I know him/her.'

f Mo gbà á
I receive it
'I received it.'

g Mo tà á
I sell it
'I sold it.'

The nominal expressions are not limited to the ones identified above; there are other nominal expressions, such as numerals and quantifiers, that can also be contained in the DP.

At this point, it is significant to note that the L-drop test for verb complement is only viable for monosyllabic verbs with low tones. In the example given in (84c), the verb *gbádùn* 'enjoy' with a low tone on the last syllable does not change to mid-tone when a nominal complement follows it. The L-drop argument for identifying complement in Yorùbá would be an argument for a particular environment in the language, but not exhaustive, as it excludes

some other environments. This only serves as one part of the evidence for the complement and adjunct distinction in some Yorùbá cases. A complement will be a requirement for the verb to make complete sense of the actions it describes.

3.3.2.2 Prepositional phrase complements

A PP serves as a verb complement when the verb specifically requires it to express one of its semantic roles, including goal, source, location, or instrumental functions. Within Minimalist syntactic theory, structures are constructed through the Merge operation. The PP acquires its semantic role through being merged directly as the verb's complement. The Labelling algorithm (Chomsky, 2013, 2015) determines how these merged structures are interpreted at the semantic and phonological interface levels. When a verb combines with a PP through merge, the resulting constituent is labelled as VP, with the PP functioning as the complement within the verb's extended projection system.

The sentences in (85a)-(85d) have the verbs *lẹ̀* or *gan* 'stick', *dáhùn* 'answer' and *wọ* 'enter', which require a direct PP as their complement. The verb *fi* 'put' in example (85e) is a ditransitive verb that takes both a direct object and a PP complement. In this type of construction, both complements are obligatory.

(85)a ọ̀ṣẹ́ náà lẹ̀/gan mọ́ ilẹ̀.
soap the stick on ground
'The soap is stuck on the ground.'

b Oúnje lẹ̀/gan mọ́ abọ́.
food stick on plate
'Food is stuck on the plate.'

c Olú dáhùn sí ìpè.
Olú answer to call
'Olú answered the call.'

d Olú wọ inú ilé.
Olú enter inside room
'Olú entered inside the room.'

e Olú fi èsì sí ibeere.
Olú put answer to question
'Olú responded to the question.'

3.3.2.3 Infinitival complement clause

Verbs in Yorùbá can take certain types of clausal complements, one of which is the infinitival clause. The infinitive marker in Yorùbá is *láti* 'to', as used in (86). Infinitival clauses in Yorùbá function as complement clauses to various types of matrix verbs, similar to their English counterparts. The infinitive marker *láti* is obligatorily present and cannot be omitted.

(86)a Adé gbìyànjú [láti kó aṣọ].
Adé attempt to pack clothes
'Adé attempted to pack clothes.'

b Adé gbàgbé [láti pè mí].
Adé forget to call me
'Adé forgot to call me.'

c Adé daba [láti jí owó].
Adé propose to steal money
'Adé proposed to steal money.'

d Adé fẹ́ràn [láti ka ìwé].
Adé love to read book
'Adé loves to read books.'

e Mo pèrò [láti lọ ọjà].
1sg intend to go market
'I intend to go to the market.'

Control verbs such as *fẹ́* 'want', *gbìyànjú* 'try', and *bẹ̀rẹ̀* 'begin' take infinitival complements where the subject of the matrix clause controls the understood subject of the embedded infinitive. Infinitival complement clauses are generated through merge as selected verbal complements, just like the DP and PP complements previously discussed. Baker (1997) applies the uniformity of theta assignment hypothesis (UTAH) to argument structure, utilizing UTAH to constrain our understanding of argument structure, specifically how verbs select and assign roles to their arguments. Baker argues that thematic roles are consistently tied to specific syntactic positions. For example, agents are always merged or generated in the specifier of a particular functional projection (Spec-vP), and themes are in the complement position of verbs. To show that the syntactic position of the infinitival complement is the same as the other complements, the infinitival clause can be substituted with a DP complement, as presented in (87) and (88).

(87)a Adé gbàgbé [láti pè mí].
Adé forget to call me
'Adé forgot to call me.'

b Adé gbàgbé [ẹrù].
Adé forget load
'Adé forgot the load.'

(88)a Adé fẹ́ràn [láti ka ìwé].
Adé love to read book
'Adé loves to read books.'

b Adé fẹ́ràn [omi].
Adé love water
'Adé loves water.'

Based on the analysis of UTAH regarding verb argument structure, a verb that selects an infinitival complement as its theme will structurally position this type of complement consistently with how it would position other theme complements (like DPs).

Analysis on movement out of this type of verb complement is provided further in section 3.4, to lay a foundation for the complement and adjunct distinction in Yorùbá. The examination of extraction phenomena from infinitival complements serves as a crucial diagnostic tool for establishing the syntactic status of various clausal elements in Yorùbá. Movement operations, particularly wh-movement and focus movement, reveal significant asymmetries between complement and adjunct structures that are not immediately apparent from surface word order alone. These extraction facts become particularly relevant when examining the syntax of SVCs in Yorùbá.

3.3.2.4 Finite clause verb complement

Some verbs in Yorùbá construction can take another type of clause, different from the infinitival clause discussed previously. This type of complement is called the finite clause, which is introduced by the complementizer *pé* 'that' in Yorùbá. The complementizer *pé* 'that' serves as a crucial syntactic marker that signals the boundary between the matrix clause and the embedded finite clause, establishing a clear hierarchical relationship between the main predicate and its clausal argument as presented in (89).

(89)a Adé sọ [pé Ayọ̀ lọ ilé].
Adé say that Ayọ̀ go home
'Adé said that Ayọ̀ went home.'

b Adé mọ̀ [pé iṣẹ́ náà le].
Adé know that work the hard
'Adé knows that the work is hard.'

c Adé rò [pé oúnje wà].
Adé think that food available
'Adé thinks that food is available.'

d Adé gbà [pé ise le].
Adé accept that work hard
'Adé accept that the work is hard.'

e Adé gbàgbọ́ [pé Bukola ní owo].
Adé believe that Bukola have money
'Adé believes that Bukola has money.'

Some Yorùbá verbs can alternate between taking infinitive clauses and finite clauses as complements without changing meaning or creating grammatical problems, and some verbs can do just fine with this type of alternation. For example the verb bere 'start/begin' can only take an infinitive clause but not finite clause as complement as presented in (90); (90a) is grammatical, (90b) is ungrammatical.

(90)a Adé bẹ̀rẹ̀ [láti ṣe iṣẹ́].
Adé begin to do work
'Adé began to work.'

b Adé bẹ̀rẹ̀ [pé ṣe iṣẹ́].
Adé begin that do work
'Adé begin that do the work.'

However, some Yorùbá verbs can take various types of clausal complements with different syntactic structures while remaining grammatically acceptable. This is illustrated by the verb

gbà ‘accept’, which can take both a finite complement clause introduced by *pé* ‘that’ as in (91a) and an infinitival complement introduced by *láti* ‘to’ as in (91b).

(91)a Adé gbà [pé ise le].
Adé accept that work hard
‘Adé accept that the work is hard.’

b Adé gbà [láti ka ìwé].
Adé accept to read book
‘Adé accepts to read a book.’

Despite the surface differences between finite and infinitival complements in Yorùbá, it's possible to maintain that the underlying complement structures still follow UTAH principles if the thematic roles are consistently assigned at equivalent structural levels across both complement types. Like an infinitival clause, the structural position of the finite clause can also be substituted with a DP complement as presented in (92).

(92)a Adé sọ ọ̀rọ̀.
Adé say word
‘Adé said a word.’

b Adé mọ̀ ìwé.
Adé know book
‘Adé knows book.’ (Adé is brilliant)

Analysis on movement out of this type of verb complement is provided further in section 3.4, in order to lay a foundation for the complement and adjunct distinction in Yorùbá. This is significant in understanding the structure that may be assumed for SVCs in Yorùbá.

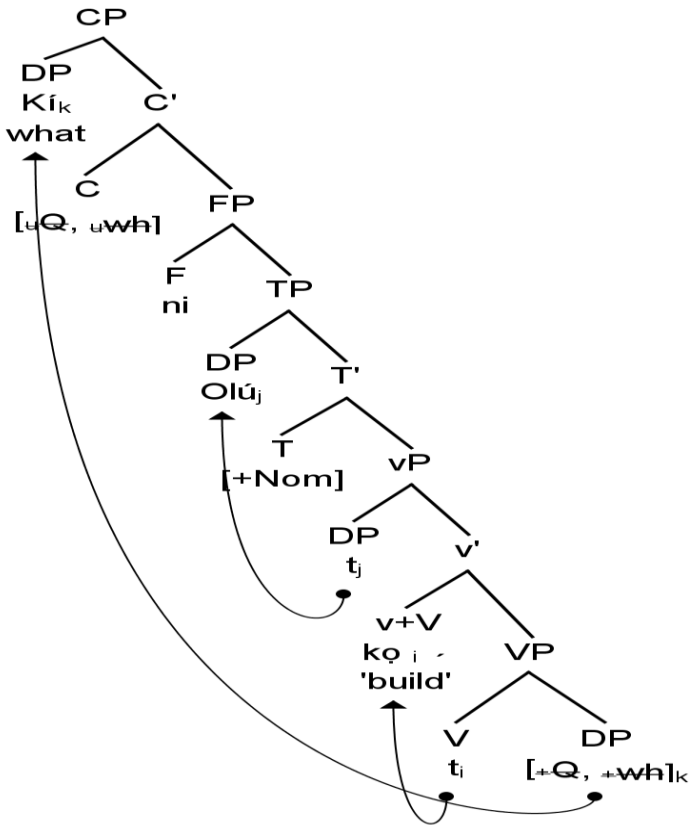
3.4 Wh-movement out of complements

As I have discussed in the previous section, verbs in Yorùbá can take some types of complement ranging from NP complement, PP complement, and clausal complements; it is a general view in linguistic literature that extraction out of complements is often permitted, while extraction out of adjuncts is often blocked. Since Ross's 1967 work, adjuncts have been considered syntactic islands, which means they create barriers that block the formation of A-bar dependencies (such as wh-movement) from extending beyond their boundaries (see Huang (1982), on CED). In the minimalist concepts, CED phenomena are rederived through phase theory, feature checking/agree (Chomsky, 2000, 2001), labelling theory, and edge conditions. Labelling theory (which also explains projection hierarchy) proposes that syntactic objects must be labelled at the interfaces to be interpretable. The labelling algorithm (Hornstein & Nunes, 2008; Chomsky, 2013, 2015) represents perhaps the most significant theoretical development in explaining CED effects. Under this approach, every syntactic object created by the computational system must receive a label that determines its categorial identity and allows it to be interpreted adequately at the conceptual-intentional and sensorimotor interfaces. The labelling process typically relies on the head-complement relationship established through pair-merge, where one element projects its features to label the resulting syntactic object. An element with a feature needs to check for any unvalued features to prevent the derivation from crashing and avoid labelling failure. A DP complement can be a wh-phrase that moves to the specifier position of a complementizer phrase (Spec CP) to check the C head feature. In (93a), the sentence illustrates the DP complement, whereas (93b) shows the DP as a wh-phrase that has been extracted to the left periphery of the construction. The tree diagram in (93c) illustrates how various elements merge and interact through movement operations. The complement *ilé* 'house' merges with the verb *kọ́* 'build' before checking on the C head.

(93)a Olú [vP kọ́ ilé]. (DP complement)
Olú build house
'Olú built a house.'

b $Kí_k$ ni Olú [vP kọ́ t_k]?
What Foc Olú build t_k
'What did Olú build?'

c



I consider *ni* as a focus marker (Jones, 2006), which heads the focus phrase (FP) in Yorùbá syntax. This functional head takes a specifier position that typically hosts nominal constituents that have undergone focus movement. The Focus Phrase occupies a position in the left periphery of the clause. While the internal structure and derivational properties of the

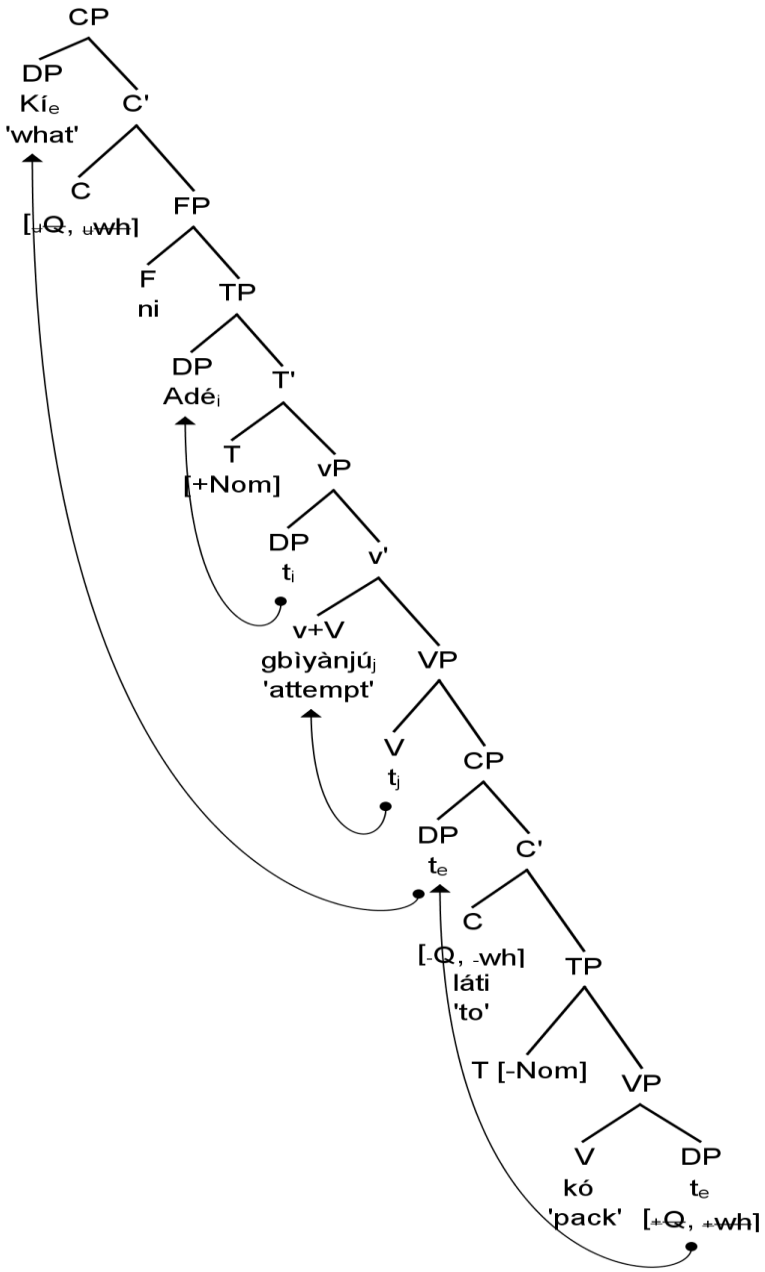
focus phrase are not the primary concern of this analysis, it is essential to establish the parallel between focus constructions and wh-extraction in Yorùbá, as both phenomena involve similar syntactic mechanisms and constraints. In focus constructions, a DP undergoes A-bar movement to the specifier of FP, where it enters into a spec-head agreement relation with the focus head *ni*. This movement is obligatory, suggesting that focus features must be checked overtly in this language.

The crucial observation is that wh-extraction involves the same type of nominal constituent (DP) as focus constructions, and both require obligatory marking at the landing site. However, while focus constructions involve the checking of interpretable focus features through the establishment of an agree relation between the moved DP and the focus head, wh-extraction operates through a different feature-checking mechanism. In wh-questions, the moved wh-phrase must check uninterpretable wh-features located on the complementizer head (C), rather than focus features. This distinction is theoretically significant because it suggests that despite surface similarities in the types of constituents that undergo movement and the obligatory nature of marking, the underlying syntactic operations are driven by different feature sets and target different functional heads within the clausal hierarchy. The same explanation plays out with the infinitival clause complement in (94) below, where the DP (*aṣọ* 'clothes') is extracted out of the dependent infinitival complement clause to the specifier position of the complementizer head as presented in the tree diagram in (94c).

(94)a Adé gbìyànjú [CP láti kó aṣọ]. (Infinitival complement clause)
Adé attempt to pack clothes
'Adé attempted to pack clothes.'

b Kí$_k$ ni Adé gbìyànjú [CP láti kó t$_k$]?
what$_k$ Foc Adé attempt to pack t$_k$
'What did Adé attempt to pack?'

c



Consistent with the analysis presented above, DPs can be extracted from the finite clause complements in Yorùbá. Example (95) below illustrates this phenomenon: (95b) demonstrates subject DP extraction from the finite complement, though crucially, a resumptive pronoun must occupy the position vacated by the extracted subject in Yorùbá

(Adésola, 2005). Resumptive pronouns in Yorùbá represent a grammatical mechanism that handles complex syntactic dependencies through overt pronominal elements rather than abstract gaps. This is not the case with the object DP extraction, as seen in (95c) and the tree representation in (95d). The primary objective here is to demonstrate that DP extraction is feasible from a finite clause complement in Yorùbá.

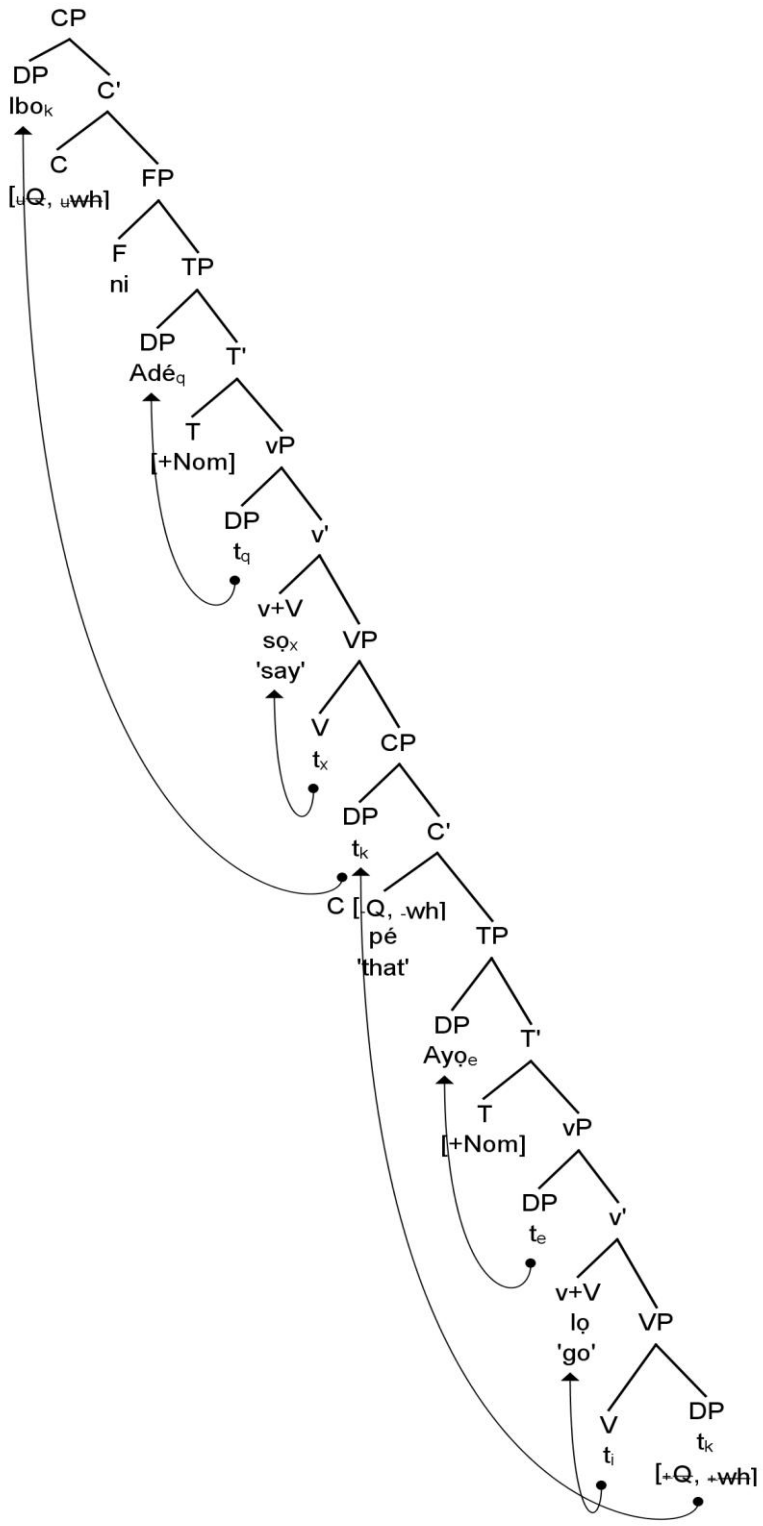
.

(95)a Adé sọ [CP pé Ayo lọ ile]. (Finite clause complement)
Adé say that Ayo go home
'Adé said that Ayo went home.'

b Ta_k ni Adé sọ [CP pé $ó_k$ lọ ile]?
who_k Foc Adé say that RP go home
'Who did Adé say that went home?' (Who did Adé say went home?)

c Ibo_k ni Adé sọ [CP pé Ayọ̀ lọ t_k]?
$where_k$ Foc Adé say that Ayọ̀ go t_k
'Where did Adé say that Ayọ̀ went?'

d



The mechanism underlying this movement involves a feature-checking relationship between functional heads and their targets. Specifically, the complementizer (C) head carries

uninterpretable [wh] features that must be eliminated before the derivation reaches the interfaces for convergence. These unvalued features act as probes that scan their c-command domain to locate matching interpretable [wh] features on appropriate goal elements, in this case, wh-phrases embedded within the larger syntactic construction. Upon establishing this probe-goal relationship, the uninterpretable features on C are checked against the interpretable features on the wh-phrase, leading to feature valuation and subsequent deletion of the uninterpretable features from the derivation (Chomsky, 2000). However, feature checking alone is insufficient to trigger actual displacement of the wh-phrase. The extended projection principle (EPP) feature serves as the driving force behind overt movement. This feature, when present on the complementizer head, creates a categorical requirement that some linguistic element must phonetically realize the specifier position of the CP. The EPP feature thus transforms what could remain as a covert checking relationship into an overt movement operation, compelling the wh-phrase to undergo displacement from its base-generated position to satisfy the structural requirements imposed by the EPP.

The investigation of wh-extraction patterns from verb complements in Yorùbá provides crucial empirical evidence for fundamental structural distinctions that bear on core theoretical assumptions about phrase structure and syntactic operations. The complement-adjunct asymmetry in extraction contexts directly engages with the minimalist program's emphasis on interface conditions and economy principles. When a wh-element extracts from the complement position of a verb, it moves from a position where it satisfies the selectional requirements of that verb, a relationship encoded in the lexical entry and projected into the syntactic structure through merge operations. This extraction typically proceeds without locality violations, as the complement occupies a structurally integrated position within the extended projection of the selecting head. The following section provides an analysis of adjunction in Yorùbá within the context of wh-extraction out of an adjunct construction.

3.5 The syntax of adjunct construction in Yorùbá

Adjunction represents a fundamental syntactic operation that allows phrases and heads to attach to existing phrasal projections without altering their categorical status. In the previous section, I discussed how complements are typically required for the semantic completeness of the head they modify. In contrast, adjuncts are not a semantic requirement for the head. In the discussion on extraction out of complements, I note that the labelling process typically relies on the head-complement relationship established through pair-merge, where one element projects its features to label the resulting syntactic object. Adjuncts present a unique challenge to this system because they are integrated into syntactic structures through set-merge rather than pair-merge. Set-merge creates an unordered relationship between the adjunct and its host, meaning neither element can unambiguously project its features to label the resulting structure. The inability to establish clear labelling relationships renders adjunct structures "frozen" for further syntactic operations. When an element attempts to extract from within an adjunct, it encounters this labelling problem, which creates illegibility at the interfaces. The extracted element cannot establish the necessary feature-checking relationships required for movement because the adjunct structure itself lacks the proper labelling that would make such operations interpretable. I will examine the subordinate clause types of adjuncts. The choice of these adjuncts is to show examples that will not be mistaken for complements.

3.5.1 Subordinate clause adjuncts

This analysis examines three primary types of subordinate clauses that function as adjuncts to the matrix clause in Yorùbá grammar: the causal *because* clause, the conditional *if* clause, and the temporal *before* clause. Additionally, I will provide a comprehensive description of restrictive relative clauses, which, unlike in many other languages, function as adjuncts rather than arguments in Yorùbá. These subordinate constructions serve a crucial role in expanding the semantic richness of Yorùbá sentences by providing supplementary

information about the circumstances, conditions, or temporal relationships surrounding the main event described by the matrix verb.

(96)a Olú wá ilé [CP nítorí ó rí Ayọ̀].
Olú come home because 3Sg see Ayọ̀
'Olú came home because he saw Ayọ̀.'

b Adé kọ̀ oúnjẹ [CP nítorí Ayọ̀ feran Olú].
Adé refuse food because Ayọ̀ love Olú
'Adé refused to eat because Ayo loves Olú.'

Causal subordinate clauses introduced by conjunctions equivalent to *because* establish a direct cause-and-effect relationship between the subordinate clause and the matrix clause. These constructions explicitly articulate the reasoning or motivation behind the action or state described in the main clause.

(97)a Adé a sunkún [CP ti Olú ba gba Ayọ̀].
Adé Fut cry if Olú Prt hit Ayọ̀
'Adé will cry if Olú hits Ayọ̀.'

b Adé a kọrin [CP ti Olú ba wa ilé].
Adé Fut sing if Olú Prt come home
'Adé will sing if Olú comes home.'

The conditional subordinate clauses, marked by conjunctions equivalent to *if*' establish hypothetical or contingent relationships between two propositions. These constructions present scenarios where the realization of the matrix clause is dependent upon the fulfillment of the condition expressed in the subordinate clause.

(98)a Adé wá ile [CP kí-ó-tó kó erù].
Adé come home before-3sg-Prt pack load
'Adé came home before Olú.'

b. Adé kọ́kọ́ ra ilẹ̀ [CP kí-ó-tó kọ́ ilé].
Adé first buy land before-3Sg-Prt build house
'Adé first bought land before building a house.'

Temporal subordinate clauses introduced by conjunctions such as *before* establish chronological relationships between events described in the subordinate and matrix clauses. These constructions are crucial for organizing narrative sequences and expressing the temporal ordering of actions or states.

3.5.2 Wh-extraction out of adjuncts

Extraction out of an adjunct is generally more restricted than extraction out of a complement. Some adjuncts can allow extraction more readily than others (Bondevik et al., 2021; Nyvad et al., 2022). Extraction out of adjuncts in Yorùbá yields ungrammatical sentences as seen in (99)-(101) below.

(99)a *Ta$_k$ ni Adé kọ̀ oúnjẹ [CP nítorí Ayọ̀ feran t$_k$]?
who$_k$ Foc Adé refuse food because Ayọ̀ love t$_k$
'Who did Adé refuse to eat because Ayọ̀ loves?'

b *Ta$_k$ ni Adé kọ̀ oúnjẹ [CP nítorí Ó$_j$ feran Olú]?
who$_j$ Foc Adé refuse food because RP$_j$ love Olú
'Who did Adé refuse to eat because he loves Olú?'

(100)a *Ibo$_i$ ni Adé a kọrin [CP tí Olú ba wa t$_i$]?
where$_i$ Foc Adé Fut sing if Olú Prt come t$_i$
'Where will Adé sing if Olú come?'

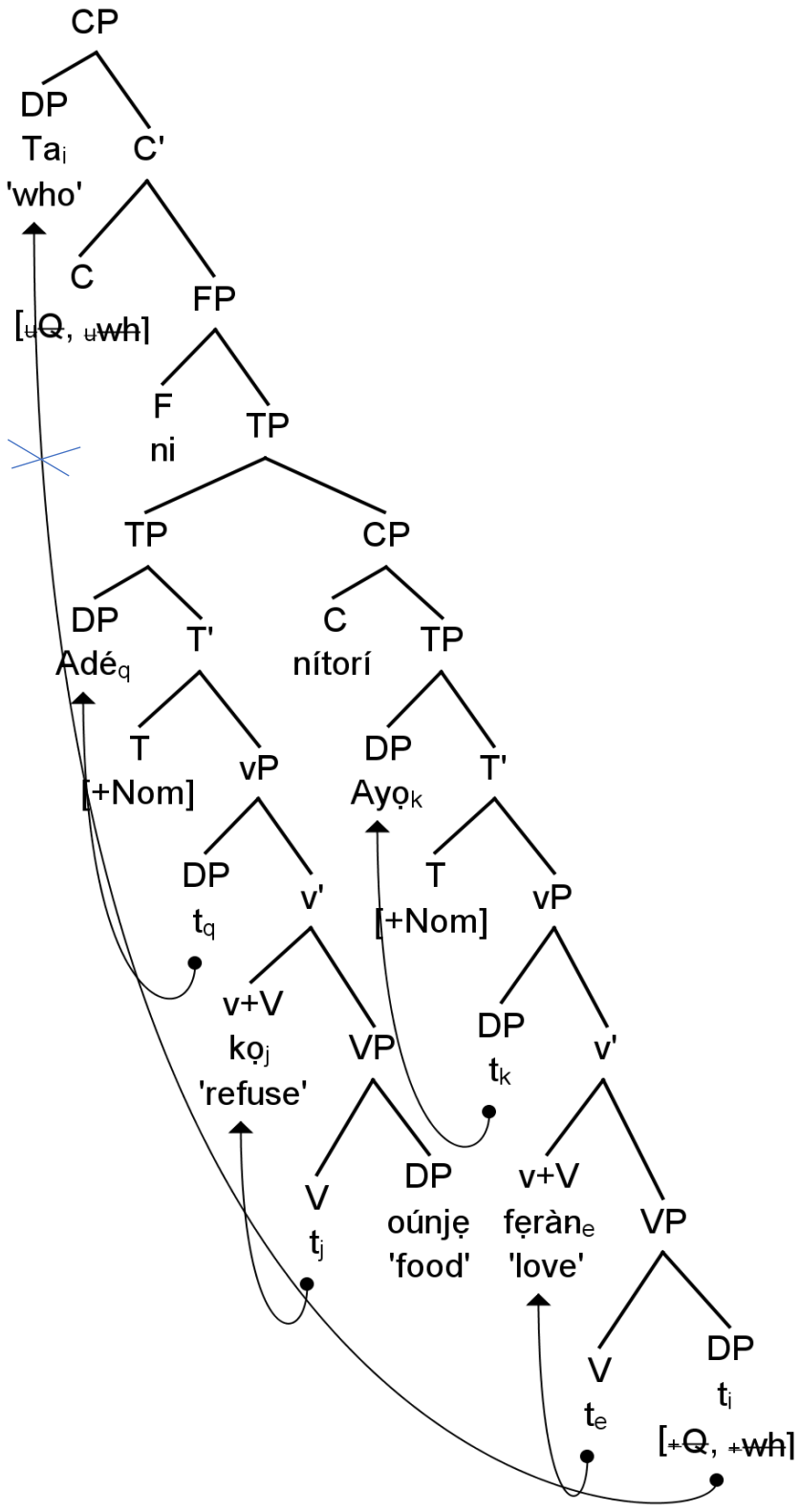
b *Ta$_j$ ni Adé a kọrin [CP tí Ó$_j$ ba wá ilé]?
who$_j$ Foc Adé Fut sing if RP$_j$ Prt come home
'Who will Adé sing if he comes home?'

(101)a *Ki$_k$ ni Adé kọ́kọ́ ra ilẹ̀ [CP ki-o-to kọ́ t$_k$]?
What Foc Adé first buy land before-3Sg-Prt build house
'What did Adé first buy land before building?'

In the sentences provided above, all the (a) constructions are situations where the object of the embedded clause is extracted to the specifier position of the matrix CP. In contrast, the (b) constructions are situations where the subject of the embedded clause is extracted to the specifier position of the matrix CP. In both instances, the constructions are ungrammatical in Yorùbá and English as well. As this is not the situation we see with the complement examples presented in this chapter so far (99)-(101), we can say from the evidence that adjuncts are islands for wh-phrase extraction in Yorùbá; adjunct clauses block movement of any DP contained within the clause. I repeat the sentence in (99a) here as (102a) for convenience and present the tree structure in (102b).

(102)a *Ta$_k$ ni Adé kọ oúnjẹ [CP nítorí Ayọ̀ fẹ́ràn t$_k$]?
Who$_k$ Foc Adé refuse food because Ayọ̀ love t$_k$
'Who did Adé refuse to eat because Ayọ̀ loves?'

b.


CP
DP
Ta$_i$
'who'
C'
C
[uQ, uwh]
FP
F
ni
TP
TP
CP
DP
Adé$_q$
T'
C
nítorí
TP
T
[+Nom]
vP
DP
Ayọ$_k$
T'
DP
t$_q$
v'
T
[+Nom]
vP
v+V
kọ$_j$
'refuse'
VP
DP
t$_k$
v'
V
t$_j$
DP
oúnjẹ
'food'
v+V
fẹràn$_e$
'love'
VP
V
t$_e$
DP
t$_i$
[+Q, +wh]

3.6 Relativization in Yorùbá

Relativization plays a crucial role in DP extraction in Yorùbá by offering an alternative grammatical mechanism that bypasses syntactic movement restrictions. When direct extraction processes such as wh-movement or focus movement are prohibited from specific syntactic positions, relativization functions as a compensatory strategy, creating an alternative derivational pathway for achieving the desired extraction.

The relative clause is introduced by the marker *tí* in Yorùbá, this marker is different from the *tí* for the *finite clause* complementizer, and it is also different from the *tí* for the *if clause* that has been treated in the previous sections of this chapter. The marker *tí* has multifunctional usage in Yorùbá constructions; we can say that the 'tí' marker used in relativization, finite-clause, and conditional clause are homonyms. Languages have different ways in which relativization is exhibited. Givon (1993, p. 126) discuss that English would use case-marked relative pronouns derived from case-marked interrogatives like *who*, *whom*, etc. The relative marker *tí* is realized immediately after the DP that serves as the head, which selects the relative clause as its complement. This is shown in the sentence (103) below.

(103)a [DP obìnrin [CP tí Olú bẹ̀ ti dé].
Woman Rel Olú begged has arrived
'The woman whom Olú begged has arrived.'

b [DP obìnrin [CP tí ó ní owó ti dé].
Woman Rel RP have money has arrived
'The woman who has money has arrived'

c [DP ọmọ [CP tí a rí lana] ra ọkò.
Child Rel we see yesterday buy car
'The child whom we saw yesterday has bought a car.'

In the examples above, the relativization is on two different roles: relativazation of the subject as in (103b), and relativization of the object as in (103a) and (103c). We would observe that in (103b), the relative marker is immediately followed by the resumptive pronoun, showing the subject is relativized. On the other hand, the resumptive pronoun is not required for the object relativization. For the benefit of this work, I will limit my discussion on the relativization of object DP in complement and adjunct constructions to show how extracted DPs behave in both environments.

3.6.1 Relativization in Yorùbá complement constructions

In Yorùbá, extraction from a functional phrase to another phrasal category will not cause any grammatical issues regarding complement construction. We have seen this in the different complement types discussed prior. In this section, I will examine how relativization works in a simple relative clause.

(104)a Adé fẹ́ ọmọge dúdú.
Adé marry young-lady black
'Adé married a black young-lady.'

b [DP ọmọge$_i$ [CP tí Adé fẹ́ t$_i$] dúdú.
young-lady$_i$ Rel Adé marry t$_i$ black
'The young-lady whom Adé married is black.'

c [DP Adé$_i$ [CP tí Ó$_i$ fẹ́ ọmọge dúdú] ti dé.
Adé Rel RP marry young-lady black has arrived
'Adé, who married a black young lady has arrived.'

(105)a ọdẹ mú olè.
Hunter catch thief
'Hunter caught a thief.'

b [DP olèi [CP tí ọdẹ mú t_i] sá.
Thief$_i$ Rel hunter catch t_i run
'The thief whom the hunter caught ran.'

c [DP ọdẹi [CP tí Ói mú olè] sá.
Hunter Rel RP catch thief run
'The hunter who caught the thief ran.'

In these examples, the DPs *ọmọge* 'young-lady' and *olè* 'thief' are the object DPs of the verbs *fẹ́* 'marry' and *mú* 'catch', respectively. These object DPs are the complements of the identified verbs. Extraposing these objects so they can take a relative CP as their complement is grammatical in Yorùbá, as seen in (104b) and (105b). Their counterpart in (104c) and (105c) are instances of subject relativization, hence the presence of the obligatory resumptive pronoun needed to fill the gap caused by the moved subject. However, this rescue mechanism has clear limitations. Despite its ability to circumvent many syntactic barriers, relativization cannot overcome all structural constraints. Specifically, the mere presence of a relative clause marker is insufficient to rescue extraction operations from adjunct positions, indicating that certain syntactic islands remain impermeable even under relativization strategies.

3.6.2 Relativization in Yorùbá adjunct constructions

I have discussed in section 3.2 that adjuncts in Yorùbá pose an island to movement. Any attempt to move an element out of an adjunct clause or phrase will yield an ungrammatical construction. In the examples I provide in (106) and (107), I test the possibility of relativizing an object within an adjunct clause. We have seen consistently so far in this chapter that subject movement is only possible when there is a resumptive pronoun filling the position of a displaced subject, at least with complement constructions. I will test the relativization of a subject DP within an adjunct clause. Although this dissertation primarily focuses on object DP, it is beneficial to treat subject DPs for explicitness.

(106)a obìnrinn náà wá ilé [CP sáájú ọmọ].
woman the come home before child
'The woman came home before the child.'

b. *[DP ọmọ$_i$ [CP tí obìnrinn náà wá ilé [CP sáájú t_i]] ti sùn.
child$_i$ Rel Woman the come home before t_i Asp sleep
Intended: 'The child whom the woman came home before has slept.'

(107)a Adé banújẹ́ [CP nítorí Ayọ̀ fẹ́ràn èèyàn].
Adé unhappy because Ayọ̀ love somebody
'Adé is unhappy because Ayọ̀ loves somebody.'

b *[DP èèyàn$_i$ [CP tí Adé banújẹ́ [CP nítorí Ayọ̀ fẹ́ràn t_i]] pè wá.
somebody$_i$ Rel Adé unhappy because Ayọ̀ love t_i call us
Intended: 'somebody whom Adé is unhappy because Ayo loves called us.'

c * [DP Ayọ̀$_i$ [CP tí Adé banújẹ́ [CP nítorí Ó$_i$ fẹ́ràn Olú]] pè wá.
Ayọ̀ Rel Adé unhappy because RP love Olú call us
Intended: 'Ayọ̀ who Adé is unhappy because he loves Olú called us'

In these adjunct constructions, the relativization attempt of the DPs out of the adjunct constructions yields ungrammatical sentences in (106b), (107b) and (107c), respectively. With this evidence from relativization, an adjunct is indeed an island that blocks movement in Yorùbá. Fox and Nissenbaum (1999, 2004) propose a theory of late merge to address issues related to scope and movement in comparative and relative clause constructions. relative clauses undergo late merge, meaning they are integrated into the syntactic structure after other core elements have already been assembled and potentially moved.

3.7 Conclusion

In this section, I have provided insight into the complement and adjunct dichotomy in the Yorùbá language. I discussed the types of complements and adjuncts and then gave an

explicit analysis of the movement of DPs in both cases. We saw that movement operations are exhibited differently in both instances, movement out of a complement clause or phrase is acceptable, but any kind of movement from an adjunct clause or phrase is not permitted in Yorùbá.

The SVCs in Yorùbá present a particularly revealing testing ground for these distinctions because it involves multiple verbal heads in what appears to be a single clausal domain. The question arises whether apparent verbs in the serial construction function as factual predicates that select their complements, or whether some serve as adjunct-like modifiers. Wh-extraction patterns can empirically diagnose this distinction: if extraction from the complement position of V_2 in a V_1-V_2 sequence patterns like complement extraction (relatively free), this supports an analysis where V_2 maintains its full verbal status and complement-selecting properties. If extraction is blocked or degraded, this suggests V_2 has been reanalyzed as an adjunct-like element.

This empirical program connects to broader minimalist concerns about the nature of syntactic computation. The asymmetric extraction patterns provide evidence for the psychological reality of hierarchical structure and support the view that syntactic operations are sensitive to structurally defined domains rather than linear precedence. The complement-adjunct distinction, as revealed through extraction asymmetries, thus serves as a diagnostic for the fundamental architectural properties that minimalist theory seeks to characterize through its restrictive computational system.

Chapter 4: The analysis of the structure of the VPs in Yorùbá SVCs

4.1 The structural relation between verbs in SVCs

The difference between adjunct and argument relations is a key empirical domain in minimalist syntactic theory (Borer, 2004; Chomsky, 1995; Pylkkänen, 2008; Stepanov, 2001, 2007). This distinction is vital for grasping how linguistic elements are structured and organized in sentences. In Minimalist syntax, arguments are often essential for grammaticality, and the head of a phrase selects them. In contrast, adjuncts are optional elements that add extra information but are never required by the predicate. They modify or provide further detail about the phrase or clause without being integral to its core structure. The adjunct-argument distinction has significant consequences for syntactic theory, influencing various aspects of linguistic analysis, such as: i. Structural representation: In Minimalist theory, arguments are generally merged with the selecting head or a projection thereof, while adjuncts are adjoined to maximal projections. ii. Syntactic operations: The behaviours of arguments and adjuncts can differ regarding movement, extraction, and other syntactic processes. iii. Semantic interpretation: arguments play a role in the core meaning of a predicate, whereas adjuncts modify or enhance that meaning. This is a semantic criterion for the argument/adjunct distinction, focusing on the source of thematic information in the lexical representation. Arguments are dependents whose semantic role comes directly from the predicate's lexical entry (encoded in the verb/predicate itself). In contrast, adjuncts are dependents whose semantic role is contributed through modification added to the predicate rather than inherent to it (see McInnerney, 2022).

I provide insight into the nature of the serial verb constructions in Yorùbá using the syntactic operations described in chapter 3, specifically the extraction process to answer the question of the syntactic relationship between the verb phrases in Yorùbá SVCs. I propose an adjunction structural relation between the VPs in the Yorùbá SVCs. I argue that the VP_2 is

adjoined to VP_1, as presented in Chapter 2, that the V_1 is the head of the extended projection of the SVCs in Yorùbá. The syntactic operation, extraction out of the VPs, justifies the structural representation that I am proposing for the SVCs. This chapter is divided into four sections: Section 4.1 looks at the complement vs. adjunct analysis, Section 4.2 provides the discussion for complement and adjunction in SVCs, while Section 4.3 focuses on the complement vs. adjunction distinction in Yoruba SVCs. Section 4.4 concludes.

4.1.1 Complement vs. adjunct analysis

The distinction between complements and adjuncts represents one of the fundamental architectural properties of natural language syntax. Complements are syntactic constituents required by a lexical head, while adjuncts are optional modifiers that elaborate upon but do not fundamentally alter the core predicate-argument structure. The Minimalist program offers refined accounts of how complements and adjuncts differ in their behavior, timing of introduction, and interface interpretation. The Bare Phrase Structure (Chomsky, 1995) presents the idea that syntactic structure is built through Merge, and the category labels are projected from the head. Within this theory, a complement is considered to merge first as the head directly selects it, while a specifier merges later to the resulting projection. The adjunct is not part of the selection, so it is considered to adjoin freely because it does not affect the core syntactic computation. The temporal ordering of the Merge operations creates a structural asymmetry between complements and adjuncts. Complements are more local to the head than adjuncts, and complements extraction is unrestrained compared to adjuncts.

The phase theory presents a shift from the Bare Phrase Structure (Chomsky, 2008). Specifically under the phase theory, structures are built and sent to the interface in chunks called phases, where phases are (minimally) C (complementizer) and v (light verb), which define the proposition and event domain respectively. Complements can move to the edge of phases to escape spell-out and remain accessible to further operations. Once a phase is

completed, the complements domain then undergoes spell-out and becomes opaque to further syntactic operations (the Phase Impenetrability Condition). There is also a feature checking relation, where complements may bear formal features that must be checked through agree relations with functional heads. Complements are fully computed in narrow syntax. In contrast, adjuncts are excluded from narrow syntax. Chomsky argues that adjuncts do not bear formal feature that requires feature checking by functional heads; they are introduced at a later stage in the derivation. Also, extraction from adjuncts is restricted because adjuncts are not part of the phase derivational workspace.

In the later version of Minimalist theory under the labeling algorithm and adjunction invisibility (Chomsky, 2013), when a head merges with its complement, the head automatically projects and provides the label. This follows from the asymmetry between lexical items (which have categorial features) and phrases (which project the heads). Adjuncts are invisible to labeling, because they are introduced outside of the core narrow-syntactic derivation, therefore, they are excluded from the computational operations that determine labels. When an adjunct merges with an existing phrase (head-complement structure), the phrase automatically provides the label, the adjunct does not compete for label status because it merges freely rather than through feature-driven selection. Adjunct do not alter the categorial properties of the host phrase.

4.1.2 The late adjunction hypothesis

I adopt Stepanov's (2001, 2007) late adjunction hypothesis for the structural relation between the verb phrases in Yorùbá serial verb constructions. The Late Adjunction Hypothesis (LAH) operates within the Minimalist framework of phrase structure, particularly Bare Phrase Structure (Chomsky, 2000). In this system, syntactic objects are constructed through the operation merge, which combines items either directly from the lexical items or

from previously built syntactic structures as the derivation proceeds. Adjunct, according to Stepanov's definition of Merge by adjunction is:

(i) A nonprojecting syntactic object α is Merged with a syntactic object β by adjunction iff the label of α contains no active ("unchecked") uninterpretable feature(s).

(Stepanov, 2001, p.108)

Stepanov argues further that within the definition provided in (i) above, uninterpretable features are allowed to be present inside the label α as part of the complement of the head α but not part of the label itself. That is, any uninterpretable feature must be buried inside the label and not a feature found in the label. Since any uninterpretable feature is not found in the label, it makes it invisible for displacement. The Merge by substitution, as defined by Stepanov (2001, p.108), is given in (ii).

(ii) A nonprojecting syntactic object α is Merged with a syntactic object β by substitution iff the label of α contains active ("unchecked") uninterpretable features(s).

The Late Adjunction Hypothesis (LAH) is a framework that explains the strict timing of the application of substitution and adjunction Merge. The timing is discussed in terms of when the adjunction is Merged. Stepanov (2007, p. 112) states that "any adjunction must take place after all instances of substitution Merge have applied (in other words, postcyclically). Crucially, adjuncts are characterized as not participating in core narrow-syntactic operations such as move or agree, which are reserved for elements bearing uninterpretable features requiring valuation. Stepanov (2007, p.109) argues that the "ungrammaticality of extraction out of adjuncts has to do with a core phrase structural property determining the nature and syntactic behavior of adjuncts." The SVC example in (108), provides the basis for the discussion in this chapter where extraction is possible out of one VP and impossible out of

another VP. In (108b), the extraction *ìwé* 'book'out of VP_1 is grammatical, while in (108c), the extraction of *àwọn akẹ́ẹ̀kọ́* 'some student' out of VP_2 is ungrammatical.

(108)a Olú [$_{VP1}$ ka ìwé lórí ajá [$_{VP2}$ kọ́ àwon akeko nípa ẹranko]].
Olú read book on dog teach some students about animal
'Olú read a book on a dog and taught some students about animal.'

b ìwé$_i$ ni Olú [$_{VP1}$ ka t_i lórí ajá [$_{VP2}$ kọ́ àwon akeko nípa ẹranko]].
Book$_i$ Foc. Olú read t_i on dog teach some students about animal
'A book on dogs is what Olú read to teach some students about animal.'

c *Àwon akeko$_i$ ni Olú [$_{VP1}$ ka ìwé lórí ajá [$_{VP2}$ kọ́ t_i nípa ẹranko]].
Some students$_i$ Foc Olú read book on dog teach t_i about animal
'Some students were what Olú read a book on dog to teach about animal.'

Late adjunction thus forces objects that contain uninterpretable features in their label to be merged cyclically (these would be complements), while the syntactic objects that do not contain uninterpretable features in their label are merged post-cyclically (in this case, an adjunct), which is therefore subject to LAH. Stepanov's feature-based diagnostic specifically references structural Case and wh-features as the uninterpretable elements that distinguish cyclic participants (structural arguments) from post-cyclic elements (structural adjuncts). Following standard assumptions within Minimalist theory, structural Case and wh-features both require elimination before the derivation reaches the interface levels.

Why does timing matter? The timing of adjunction is vital in explaining the structural relation between the verb phrases in Yorùbá SVCs. There are two theoretical implications for the timing of the adjunct analysis pursued in this Chapter: (i). extraction restrictions (by the time the adjunct is merged, all Agree and Merge by substitution operations are already complete, resulting in adjunct island/extraction impossibility), as we will see in sections 4.3.1 and 4.3.2. (ii). Binding asymmetry (adjunct entering late misses certain binding

configurations), as we will see in section 4.3.3. Before delving into the analysis of Yorùbá SVCs' structural relation, I provide an overview of the discussions of complement and adjunct analysis for SVCs in some other languages.

4.2 Complement vs. adjunct analysis for SVCs

The structural relationship between verbs in SVCs in Yorùbá necessitates theoretical clarification. As established in Section 2.5 of Chapter 2, V_1 functions as the syntactic head of the extended projection corresponding to the SVCs. Consequently, it becomes essential to determine the nature of the relationship that V_2 maintains with V_1 within this construction type. Two possible structural configurations exist for these verbs: V_2 may function either as an embedded element (complement) or as an adjunct to V1's VP (or a higher functional projection). Before examining the Yorùbá analysis in Section 4.3, this section provides a cross-linguistic discussion of the complement/adjunct distinction as documented in other SVC languages, with reference to existing Yorùbá scholarship.

4.2.1 Adverb placement for complement/adjunct distinction

Law (1996) proposed a complement structure for SVCs in Mandarin. He argues that in the examples presented in (109) below, the first verb (V1) takes the VP headed by the second verb (V2) as a complement, with its structure in (109c)

(109)a Ta song-le yi-ge xiangzi lai.
He send-PERF one-CL suitcase come
'He sent over a suitcase.'

b Ta na-le nei-ben shu zou.
He hold-PERF that-CL book go
'He took away that book.'

c NPl [vp VI NP2 [vp V2]]

(Law 1996, pp. 200-201)

Law distinguishes between complement structure and adjunct structure in Mandarin SVCs based on adverb placement and ambiguity of adverbial interpretation. According to Law, a VP-adverb comes before the first verb in an SVC with a complement structure in Chinese but may also appear between the two verbs in an SVC with an adjunct structure. Law presents the adverb placement for the construction in (109) as (110).

(110)a Ta kuaikuaide song-le yi-ge xiangzi lai.
He quickly send-PERF one-CL suitcase come
'He quickly sent over a suitcase.'

b *Ta song-le yi-ge xiangzi kuaikuaide lai.
He send-PERF one-CL suitcase quickly come

c Ta manmande na-le nei-ben shu zou.
He slowly hold-PERF that-CL book go
'He slowly took away that book.'

d *Ta na-le nei-ben shu manmande zou.
He hold-PERF that-CL book slowly go

(Law 1996, pp. 212-213)

Law explained that in a simple clause as in (111), these adverbs can appear before the verbs that occur in the V2 position of these SVCs in Mandarin, but they result in an ungrammatical construction when they are used before such verbs in SVCs with a complement structure.

(111) Ta [$_{VP}$ kuaikuaide [$_{VP}$ lai]].
He quickly come
'He quickly come.'

Law observes that the adverb is not allowed before the VP2 in example (109b) because of the structure. Since the V2 is a complement to the V1, then the ungrammaticality of (109b) is expected, as adjunction to a complement is generally impossible (Chomsky, 1986).

Law (1996) provides another analysis for the second type of SVCs in Mandarin, which differs from the one discussed above. In this second type of SVCs, the verbs have separate object complements (transitive verbs in both cases). This is seen in the examples provided in (112a) and (112b), with its structure in (112c).

(112)a Ta na dao qie-le rou.
He hold knife cut-PERF meat
'He cut the meat with a knife.'

b Ta na yaoshi kai-le men.
He hold key open-PERF door
'He opened the door with a key.'

c NPl [vp [vp VI NP2] [vp V2 NP3]]

(Law, 1996, pp. 200-201)

Law argues that V2 is the head of the SVCs in (112a) and (112b) above, while the VP1 adjoins to VP2. Law observes that the scope of an adverb in this type of SVC depends on the place the adverb appears. An adverb may either occur before the first verb or between the verb phrases in these constructions. If the adverb appears before the first verb, the scope of the adverb may either cover the VP1 or both VPs as seen in the example (113).

(113) Ta kuaikuaide na dao qie-le rou.
He quickly hold knife cut-PERF meat
'He quickly cut the meat with a knife.'
Or
' 'He cut the meat with the knife, which he quickly took.'

The first interpretation shows that the adverb's scope is over both verb phrases, while the second interpretation shows that it is only on the first verb phrase. When the adverb appears before the second verb the scope is over VP2, as seen in (114).

(114) Ta na dao kuaikuaide qie-le rou.
He hold knife quickly cut-PERF meat
'He cut the meat quickly with a knife.'

Law explains that in this type of SVC, adjunction to the VPs is permitted. It may be that the adverb adjoins to the matrix VP, which contains the first VP as an adjunct as described in (115a). It may also be that the adverb adjoins to the V1 and the whole adjunct structure adjoins to the VP2 as described in (115b). However, when the adverb occurs between the verbs, it can only adjoin to the VP2 as described in (115c).

(115)a [$_{NP}$ ta [$_{VP}$ kuaikuaide [$_{VP}$[$_{VP}$ na dao [$_{VP}$ qie-le rou]]]] (scope over both VPs)

b [$_{NP}$ ta [$_{VP}$ [$_{VP}$ kuaikuaide [$_{VP}$ na dao]] [$_{VP}$ qie-le rou]]] (scope over VP1)

c [$_{NP}$ ta [$_{VP}$ [$_{VP}$ na dao] [$_{VP}$ kuaikuaide [$_{VP}$ qie-le rou]]] (scope over VP2)

(Law, 1996, P. 216).

4.2.2 A-bar extraction

The viability of object extraction from the verbs constitutes additional evidence supporting the complement structure analysis proposed by Law (1996). Law contends that topicalization and relativization operations are permissible on the object of V1 in the example provided in (109), reproduced here as (116a). Within this construction, the object of V1, *xiangzi* 'suitcase', can undergo topicalization as demonstrated in (116b) or relativization as shown in (116c). These syntactic operations are grammatically licensed in both instances due to the configurational properties of the construction type.

(116)a Ta song-le yi-ge xiangzi lai.
He send-PERF one-CL suitcase come
'He sent over a suitcase.'

b Zhe-ge xiangzi ta song-le lai.
This-CL suitcase he send-PERF come
'This suitcase, he sent over.'

c Ta song-le lai de xiangzi.
He send-PERF come REL suitcase
'The suitcase that he sent over.'

(Law, 1996, p. 217)

In contrast, topicalization and relativization operations are prohibited in Mandarin SVCs that exhibit an adjunct structure. As illustrated in the examples provided in (117), given that VP1 is adjoined to VP2, such syntactic operations are predicted to produce ungrammatical outputs (Huang, 1982). The extraction of the object of V1 constitutes movement out of a phrasal constituent occupying an adjunct position, thereby violating the Condition on Extraction Domain (CED). According to the CED, extraction from adjuncts is systematically blocked due to their status as non-complement positions. For the second type of SVC in Mandarin, where both verbs have their own object, according to Law, the object of V1 cannot undergo relativization and topicalization as in (113d) and (117e) because the V1 is adjoined to V2 as presented in section 4.2.1. However, the object of V2 can be topicalized or relativized, as seen in (117b) and (117c).

(117)a Ta na dao qie-le rou.
He hold knife cut-PERF meat
'He cut the meat with a knife.'

b [[ta na dao qie-le t_i] de $rou_{i\ NP}$].
He hold knife cut-PERF t_i REL meat
'The meat that he cut with a knife'

c Rou, ta na dao qie-le.
Meat he hold knife cut-PERF
'Meat, he cut with a knife.'

d *[[ta na t_i qie-le rou] de $dao_{i\ NP}$].
He hold t_i cut-PERF meat REL knife
'The knife that he cut the meat with.'

e *Zhe-ba dao ta na qie-le rou.
this-CL knife he hold cut-PERF meat
'This knife, he cut the meat with.'

(Law, 1996, pp. 219-220)

Law argued that the ungrammaticality of the sentences in (117d) and (117e) is because the extraction of the objects is out of an adjunct, while the grammatical sentences in (117b) and (117c) is because the objects are not extracted from an adjunct. Hence, there is no form of adjunct violation in the grammatical constructions, but CED blocks the displacement of the object of the verb in the ungrammatical constructions.

These constraints thus provide a diagnostic test for distinguishing complement structures, which permit extraction, from adjunct structures, which do not. The contrast between the grammaticality of extraction in complement SVCs and its prohibition in adjunct SVCs, therefore, offers crucial empirical evidence for determining the underlying structural configuration of serial verb constructions cross-linguistically.

Another analysis for an the adjunction structure for SVCs is from Lawal's (1993) analysis of Yorùbá. Lawal argues that the SVC in Yorùbá is an instance of adjunction.[9] She observes that the extraction of an adjunct in Yorùbá requires the particle *ti* or *se*, depending

[9] Lawal's article addressed the extraction of adjuncts in Yorùbá, as opposed to the extraction out of adjunction, the focus here.

on the wh-type, as in examples (118). The examples in (118a) and (118b) are basic sentences in Yorùbá with the particles present, while the ungrammatical counterpart in (118c) and (118d) shows the absence of the particles. This explanation goes for the SVCs in (119), where (119a) and (119b) are grammatical because of the presence of the particles, while (119c) and (119d) are not grammatical because the particles are not included in the construction.

(118)a Ibo-ni$_j$ Bọ́lá ti ra mọ́tò t_j
where Bọ́lá PRT bought car
'Where did Bọ́lá buy the car?'

b Báwo-ni$_j$ Bọ́lá ti ra mọ́tò t_j
how Bọ́lá PRT bought car
'How did Bọ́lá buy the car?'

(Lawal, 1993, p. 189)

c *Ibo-ni$_j$ Bọ́lá ra mọ́tò t_j
where Bọ́lá bought car
'Where did Bọ́lá buy the car?'

d *Báwo-ni$_j$ Bọ́lá ra mọ́tò t_j
how Bọ́lá bought car
'How did Bọ́lá buy the car?'

(119)a Báwo ni Bọ́lá se ra aṣọ fún Olú
How Bọ́lá PRT buy cloth give Olú
'How did Bọ́lá buy a cloth for Olu?'

b Báwo ni Bọ́lá se ra búrẹ́dì je
How Bọ́lá PRT buy bread eat
'How did Bọ́lá buy bread to eat?'

(Lawal, 1993, p. 192)

c * Báwo ni Bọ́lá ra aṣọ fún Olú
How Bọ́lá buy cloth give Olú
'How did Bọ́lá buy a cloth for Olu?'

d *Báwo ni Bọ́lá ra búrẹ́dì je
How Bọ́lá buy bread eat
'How did Bọ́lá buy bread to eat?'

According to Lawal, these sentences in (119b) are examples of adjunct extractions in an SVC that required the particle *se* for proper government. Lawal explained that the adjunct phrase is attached to the first verb because the answer to that question will address the first verb and not the second verb. The correct answer to (119b) could be (120a) or (120b), but not (120c) or (120d).

(120)a Ó gba àwìn re ni
'He bought it on credit'.

b Ayo lo fun ni owo
'It was Ayo who gave him money'

c *o je e ni ijoko.
'He ate it sitting.'

d *o je e kiakia.
'He ate it quickly.'

(Lawal, 1993, p. 193)

Lawal further posits that the extracted adjunct phrase exhibits structural ambiguity with respect to its extraction site, potentially originating from either VP1 or VP2. Nevertheless, as evidenced by the sole felicitous response in (120) above, the interrogative construction permits only a single interpretation, namely one associated with V1. Further examination of Lawal's observations lies beyond the scope of the present investigation, as the theoretical framework and analytical objectives pursued in that study diverge substantially from those adopted in this dissertation.

In the discussion so far, we have seen various types of structural relations based on what the language dictates in different languages. Reviewing the existing literature analysis helps build a case for the evidence presented in the next section, which examines whether Yorùbá SVCs involve a complementation or adjunction structure.

4.3 Complement vs. adjunct analysis for Yorùbá SVCs

Extraction has been employed as a diagnostic for distinguishing complements from adjuncts cross-linguistically, alongside other language-specific parameters. Chapter 3 of this dissertation provided an overview of this diagnostic as applied to non-SVC constructions in Yorùbá. Section 4.2 examined extraction patterns from SVCs in Mandarin. The present section focuses on extraction facts as they bear on the complement-adjunct distinction within Yorùbá SVCs. Extraction possibilities from each configuration yield significant insights into permissible versus prohibited movement operations. Beyond examining verbs and their direct object complements, I situate Yorùbá SVCs within the complement structures analyzed in chapter 3, including PP-complements as illustrated in examples (121a) and (121b), and finite CP complements as in example (121c) and the infinitive CP complements as in example (121d), before addressing adjunct constructions within Yorùbá SVCs. In the examples of (121a)-(121b), the V_1 and the V_2 in these serial verb constructions take a DP object that contains a PP. The example in (121c) shows that the V_1 takes a PP-complement and the V_2

takes a finite CP complement, while in example (121d), the VP_1 takes a non-finite CP complement while the VP_2 takes a PP-complement.

(121)a Olu [$_{VP1}$ ka ìwé lórí ajá] [$_{VP2}$ kọ́ àwon akeko nípa ẹranko]].
Olu read book on dog teach some students about animal
'Olu read a book on a dog and taught some students about animal.'

b Olu [$_{VP1}$ kọ ìròyìn nípa ilé-ìwé] [$_{VP2}$ gba oríyìn fún àtẹ̀jáde]].
Olu write news about school receive accolade for publication
'Olu wrote news about the school and received accolades for the publication.'

c Olu [$_{VP1}$ bèrè nipa ọmọ] [$_{VP2}$ gbàgbè [pé Bukola wà ní ilé]]].
Olu ask about child forget that Bukola be PRT home
'Olu asked about the child and forgot that Bukola is at home.'

d Olu [$_{VP1}$ gbàyànjú [láti kó aso] [$_{VP2}$ wọ inú ilé]]
Olu attempt to pack cloth enter inside house
'Olu attempted to pack clothes into the house'

Beyond the direct object complements of verbs, which have been extensively described and analyzed in the literature, the full range of complement types that can co-occur with each verb phrase in SVC languages warrants systematic investigation. Previous analyses of extraction in SVCs have focused primarily on extracting direct verb objects. However, the extraction of direct objects may be insufficiently informative given the Condition on Extraction Domain (CED). If adjunct extraction is permissible under movement operations, then direct object extraction should be similarly unproblematic, rendering it a less revealing diagnostic. This dissertation extends the extraction discussion beyond direct object arguments; it examines the extraction out of the complement and adjunct domains. I expand

the structural analysis of SVCs to incorporate additional complement and adjunct types selected by the verbs and examine the extraction operations associated with each. This approach provides deeper insight into both the syntactic structure and potentially the semantic properties of serial verb constructions cross-linguistically.

4.3.1 Object extraction

DP extraction from complement constructions is permitted in Yorùbá simplex clauses. However, when such constructions appear in the VP_2 position of SVCs, DP displacement becomes impossible even when these DPs retain their complement status. Before examining the more complex SVC constructions, examples (122)-(125) illustrate DP extraction from various verb complement structures in simplex clauses. In example (122a), the verb *kọ́* 'teach' takes both an object DP *àwon akeko* 'some students' and a PP-complement *nípa ẹranko* 'about animal'. The object DP can be extracted, as in (122b); similarly, the object DP of the preposition can be extracted as in (122c).

(122)a Olú [$_{VP}$ kọ́ àwon akeko nípa ẹranko].
Olú teach some students about animal
'Olú taught some students about animal.'

b Àwon akeko$_i$ ni Olú [$_{VP}$ kọ́ t_i nípa ẹranko].
Some students$_i$ Foc Olú teach t_i about animal
'Some students were whom Olú taught about animal.'

c ẹranko$_i$ ni Olú [$_{VP}$ kọ́ àwon akeko nípa t_i].
animal$_i$ Foc Olú teach some students about t_i
'Animal was what Olú read a book on a dog to teach some students about.'

In example (123a), the verb *gba* 'receive' takes both an object DP *oríyìn* 'accolade' and a PP-complement *fún àtẹ̀jáde* 'for publication'. The object DP can be extracted, as in (123b); similarly, the object DP *àtẹ̀jáde* 'publication' of the preposition can be extracted as in (123c).

(123)a Olú [$_{VP}$ gba oríyìn fún àtẹ̀jáde].
Olú receive accolade for publication
'Olú received accolades for the publication.'

b oríyìn$_i$ ni Olú [$_{VP}$ gba t_i fún àtẹ̀jáde].
Accolade$_i$ Foc Olú receive t_i for publication
'Accolade was what Olú received for the publication.'

c àtẹ̀jáde$_i$ ni Olú [$_{VP}$ gba oríyìn fún t_i]
Publication$_i$ Foc Olú receive accolade for t_i
'Publication was what Olú received accolade for'

In example (124a), the verb mọ̀ 'know' takes a PP-complement, and the object DP *òfin* 'law' of the preposition *nípa* 'about' can be extracted as in (124b).

(124)a Olú [$_{VP}$ mọ̀ nípa òfin].
Olú know about law
'Olú knows about the law.'

b òfin$_i$ ni Olú [$_{VP}$ mọ̀ nípa t_i].
law$_i$ Foc Olú know about t_i
'Law is what Olú knows about'

In example (125a), the verb *gbàgbè* 'forget' takes a finite CP, and the object DP *ilé* 'home' of the verb *wá* 'come' inside the CP can be extracted as in (121b).

(125)a Olú [$_{VP}$ gbàgbè [pé Bùkọ́lá wá ilé]].
Olú forget that Bùkọ́lá come home
'Olú forgot that Bùkọ́lá came home.'

b ilé$_i$ ni Olú [$_{VP}$ gbàgbè [pé Bùkọ́lá wá t$_i$]].
home$_i$ Foc Olú forget that Bùkọ́lá come t$_i$
'Home is where Olú forgot that Bùkọ́lá is'

If the constructions in (122) – (125) are grammatical in these simple sentences, it is expected that they should retain the same structure when they are used in any other construction. The differences we observe in SVCs are particularly evident in the extraction of similar constructions from the V_2 position, where they are utilized.

Complements have been described as transparent for DP displacement unlike adjunction. If a complement structure relation is assumed for the Yorùbá serial verb constructions, then we should expect objects/DPs displacement from VP_1 and VP_2 to be done freely. In SVCs, the result is quite different, where both verbs have PP-complements, Finite-CP, and Infinite-CP as complements; at least the V_1 allows the displacement of DPs out of these complements, but the V_2 behaves differently. When DPs get extracted out of complements of the V_2 in Yorùbá SVCs, it yields an ungrammatical construction.

The constructions in (122)-(125) are an example of SVCs with complements other than a direct object DP for both verbs in Yorùbá. In example (126), the V_1 *ka* 'read' takes the object DP *ìwé* 'book' and PP-complement *lórí ajá* 'on dog', while the V_2 *kọ́* 'teach' takes the object DP *àwon akeko* 'some students' and PP-complement *nípa ẹranko* 'about animal'. Examples (126b) and (126c) present the extraction of either the object DP or the object of the preposition contained in V_1 as grammatical constructions. This is not the case with the V_2, which has a similar configuration. The extraction of the DP object and the object DP of the preposition from VP_2 yields the ungrammatical construction we see in (126d) and (126e). In

example (122), we observe that the extraction of these DPs is permissible in simple sentences with the same verb; however, this is not the case in SVCs. Extraction from the VP_2 is blocked.

(126)a Olú [$_{VP1}$ ka ìwé lórí ajá] [$_{VP2}$ kọ́ àwon akeko nípa ẹranko]].
Olú read book on dog teach some students about animal
'Olú read a book on a dog and taught some students about animal.'

b ìwé$_i$ ni Olú [$_{VP1}$ ka t_i lórí ajá] [$_{VP2}$ kọ́ àwon akeko nípa ẹranko]].
Book$_i$ Foc Olú read t_i on dog teach some students about animal
'A book on dogs is what Olu read to teach some students about animal.'

c Ajá$_i$ ni Olú [$_{VP1}$ ka ìwé lé-lórí t_i] [$_{VP2}$ kọ́ àwon akeko nípa ẹranko]].
Dog$_i$ Foc Olú read book on t_i teach some students about animal
'Dog is what Olu read a book on to teach some students about animal.'

d * Àwon akeko$_i$ ni Olú [$_{VP1}$ ka ìwé lórí ajá] [$_{VP2}$ kọ́ t_i nípa ẹranko]].
Some students$_i$ Foc Olú read book on dog teach t_i about animal
'Some student was what Olú read a book on dog to teach about animal.'

e *ẹranko$_i$ ni Olú [$_{VP1}$ ka ìwé lórí ajá] [$_{VP2}$ kọ́ àwon akeko nípa t_i]].
Animal$_i$ Foc Olú read book on dog teach some students about t_i
'Animal was what Olú read a book on a dog to teach some students about.'

In example (127), the V_1 *kọ* 'write' takes the object DP *ìròyìn* 'news' and PP-complement *nípa ilé-ìwé* 'about school', while the V_2 *gba* 'receive' takes the object DP *oríyìn* 'accolade' and PP-complement *fún àtẹ̀jáde* 'for publication'. Examples (127b) and (127c) present the extraction of either the object DP or the object of the preposition contained in V_1 as grammatical constructions. This is not the case with the V_2, which has a similar

configuration. The extraction of the DP object and the object DP of the preposition from VP_2 yields the ungrammatical construction we see in (127d) and (127e). In example (123), we observe that the extraction of these DPs is permissible in simple sentences with the same verb; however, this is not the case in SVCs. Extraction from the VP_2 is blocked.

(127)a Olú [$_{VP1}$ kọ ìròyìn nípa ilé-ìwé] [$_{VP2}$ gba oríyìn fún àtẹ̀jáde]].
Olú write news about school receive accolade for publication
'Olú wrote news about the school and received accolades for the publication.'

b ìròyìn$_i$ ni Olú [$_{VP1}$ kọ t_i nípa ilé-ìwé] [$_{VP2}$ gba oríyìn fún àtẹ̀jáde]].
news$_i$ Foc Olú write t_i about school receive accolade for publication
'News is what Olú wrote about the school and received accolades for the publication.'

c ilé-ìwé$_i$ ni Olú [$_{VP1}$ kọ ìròyìn nípa t_i] [$_{VP2}$ gba oríyìn fún àtẹ̀jáde]].
school$_i$ Foc Olu write news about t_i receive accolade for publication
'School is what Olu wrote the news about and received accolades for the publication.'

d *oríyìn$_i$ ni Olú [$_{VP1}$ kọ ìròyìn nípa ilé-ìwé] [$_{VP2}$ gba t_i fún àtẹ̀jáde]].
accolade$_i$ Foc Olú write news about school receive t_i for publication
'Accolade is what Olú wrote the news about the school to receive for the publication.'

e *àtẹ̀jáde$_i$ ni Olú [$_{VP1}$ kọ ìròyìn nípa ilé-ìwé] [$_{VP2}$ gba oríyìn fún t_i]].
publication$_i$ Foc Olú write news about school receive accolade for t_i
'Publication is what Olú wrote the news about the school to receive accolade for.'

In example (128), the verb of the infinite CP *ka* 'read' takes the object DP *ìwé* 'book', while the V_2 *mọ̀* 'know' takes PP-complement *nipa òfin* 'about law'. Examples (128b) present the extraction of either the object DP from the infinite CP. This is not the case with the V_2 in (128c), with the PP-complement, which blocks extraction out of the PP-complement. I observe that infinite CP can function as complements to V_1 but not to V_2 in Yorùbá SVCs.

This asymmetry falls outside the scope of the present study and remains a topic for future research.

(128)a Olú [$_{VP1}$ fẹ́ràn [láti ka ìwé] [$_{VP2}$ mọ̀ nípa òfin]].
Olú love to read book know about law
'Olú loves to read books and know about the law.'

b ìwé$_i$ ni Olú [$_{VP1}$ feran [láti ka t_i] [$_{VP2}$ mọ̀ nípa òfin]].
book$_i$ Foc Olú love to read t_i know about law
'Book is what Olú loves to read and know about the law.'

c *òfin$_i$ ni Olú [$_{VP1}$ feran [láti ka ìwé] [$_{VP2}$ mọ̀ nípa t_i]].
Law$_i$ Foc Olú love to read book know about t_i
'Law is what Olú loves to read books and know about.'

In example (129), the extraction of the object DP *ọmọ* 'child' from the PP-complement of V_1 is acceptable as in (129b). In contrast, the extraction of the object DP of the internal verb *wá* 'come' contained in the finite CP is ungrammatical as in example (129c). We observe that the extraction of the DP from finite CP is permissible in simple sentences with the same verb; however, this is not the case in SVCs. Extraction from the VP_2 is blocked.

(129)a Olú [$_{VP1}$ bèrè nipa ọmọ] [$_{VP2}$ gbàgbè [pé Bùkọ́lá wá ilé]]].
Olú ask about child forget that Bùkọ́lá come home
'Olú asked about the child and forgot that Bukola is at home.'

b ọmọ ni Olú [$_{VP1}$ bèrè nipa t_i] [$_{VP2}$ gbàgbè [pé Bùkọ́lá wá ilé]]].
child Foc Olú ask about t_i forget that Bùkọ́lá come home
'The child is what Olú asked about and forgot that Bukola came home.'

c *ilé$_i$ ni Olú [$_{VP1}$ bèrè nipa ọmọ] [$_{VP2}$ gbàgbè [pé Bùkọ́lá wá t_i]]].
home$_i$ Foc Olú ask about child forget that Bùkọ́lá come t_i
'Home is what Olú asked about the child and forgot that Bùkọ́lá came.'

As I will discuss in the following section, the late adjunction approach proposed for SVCs in Yorùbá shows that the two VPs are not merged within the same phrase marker, which leads to the mismatch in the movement chain we see in these complement constructions. Hence, the position of the VP2 in SVCs behaves like an adjunct that blocks the displacement of any element from it. As I will argue below, the facts in this section show that complement structure does not capture the structural relation between the verbs in Yorùbá SVCs. In the next section, I discuss how adjuncts interact with SVCs and provide an analysis of the structural relation of VP2 to VP1 in Yorùbá.

4.3.2 Adjunct extraction

Based on the empirical evidence concerning object extraction from the complement position of VP_2, I conclude that VP_2 is as an adjunct to VP_1 rather than as a complement. This analytical determination follows directly from the application of the CED (Huang, 1982; Stepanov, 2002, 2007)[10], which argues that extraction out of an adjunct island is impossible because of the Condition on Extraction Domains (CED). According to Stepanov (2007, p. 109), the adjunction condition effect is a universal phenomenon, and he identified three possible ways to analyze it. i) Constraints on the Phonetic Form (linearizing a chain that has one part inside an adjunct is impossible. ii) Constraints on Logical Form (interpreting constructions in which the wh-phrase overtly moves out of adjunct is impossible). iii) The ungrammaticality of extraction out of adjunct is tied to the core phrase structural property determining nature and syntactic behaviour of adjuncts. The CED posits an asymmetry between complement and adjunct structures with respect to extraction possibilities. Specifically, this constraint predicts that movement operations originating from within an adjunct structure should be severely restricted or altogether prohibited. In contrast, extraction

[10] Another views on adjunction, (Truswell, 2007) belong to the school of thought where adjuncts are defined in terms of their semantic properties.

from complement positions remains grammatically licit and does not constitute a violation of this constraint. This fundamental distinction between complements and adjuncts serves as a critical diagnostic tool for determining the syntactic status of constituents within complex predicate structures. It is this condition that is violated when a syntactic object is extracted from VP_2 in Yorùbá SVCs, I argue in the object extraction from complement discussed in section 4.3.1, as in (130), what can be deduced from the impossible extraction out of the VP_2 is that the position of the V_2 is not in complement relation to the V_1, hence it is impossible to extract any object out of the complement that modifies the V_2 as shown in ungrammatical constructions in (130b) and (130c).

(130)a Olú [$_{VP1}$ ka ìwé lórí ajá] [$_{VP2}$ kọ́ àwon akeko nípa ẹranko]].
Olú read book on dog teach some students about animal
'Olú read a book on a dog and taught some students about animal.'

b *Àwon akeko$_i$ ni Olú [$_{VP1}$ ka ìwé lórí ajá] [$_{VP2}$ kọ́ t$_i$ nípa ẹranko]].
Some students$_i$ Foc Olú read book on dog teach t$_i$ about animal
'Some student was what Olú read a book on dog to teach about animal.'

c *ẹranko$_i$ ni Olú [$_{VP1}$ ka ìwé lórí ajá] [$_{VP2}$ kọ́ àwon akeko nípa t$_i$]].
Animal$_i$ Foc Olú read book on dog teach some students about t$_i$
'Animal was what Olú read a book on a dog to teach some students about.'

To substantiate the claim that VP_2 patterns as an adjunct, I present data from examples (131)-(132), which illustrate SVCs containing adjunct phrases that are adjoined to V_1 and VP_1, respectively. In these constructions, I systematically test the grammaticality of extracting object arguments from within these adjunct structures. The application of this adjunct extraction test provides a methodologically sound basis for comparative analysis. By examining extraction patterns from adjunct configurations, we establish a baseline against

which to evaluate the extraction facts previously observed in complement constructions within SVCs. Example (131a) illustrates a serial verb construction in which V_1 contains a temporal adjunct clause *ṣáájú Ayọ̀* 'before Ayo' adjoined to the V_1 *gun* ‘climb’ which also takes a direct object *igi* ‘tree’. Simultaneously, V_2 *ká* 'pluck' takes the direct object *àgbọn* 'coconut', which is itself modified by the PP adjunct *nínú oko* 'inside farm'. The syntactic behavior of these constituents under extraction reveals systematic constraints: while the direct object of V_1 *igi* ‘tree’ is extractable, as demonstrated in (131b), extraction of the DP embedded within the CP adjunct clause attached to V_1 results in ungrammaticality (131c). Similarly, both the extraction of V_2's direct object (131d) and the extraction of the nominal complement within the PP adjunct (131e) produce illicit structures.

(131)a Olú [$_{VP1}$ [$_{VP1}$ gun igi [$_{pp}$ ṣáájú Ayọ̀]] [$_{VP2}$ ka agbon [$_{pp}$ ninu oko]]].
Olú climb tree before Ayọ pluck coconut inside farm
‘Olú climbed the tree before Ayọ to pluck coconut inside the farm.’

b Igi$_i$ ni Olú [$_{VP1}$ [$_{VP1}$ gun t_i [$_{pp}$ ṣáájú Ayọ̀]] [$_{VP2}$ ka agbon [$_{pp}$ ninu oko]]].
tree Foc Olú climb t_i before Ayọ pluck coconut inside farm
‘It is a tree that Olú climbed before Ayọ to pluck coconut inside the farm.’

c *Ayọ̀$_i$ ni Olú [$_{VP1}$ [$_{VP1}$ gun igi [$_{pp}$ ṣáájú t_i]] [$_{VP2}$ ká àgbọn [$_{pp}$ nínú oko]]].
Ayo$_i$ Foc Olú climb tree before t_i pluck coconut inside farm
‘It is Ayo that Olú climbed the tree before to pluck coconut inside the farm.’

d *Agbon$_i$ ni Olú [$_{VP1}$ [$_{VP1}$ gun igi [$_{pp}$ ṣáájú Ayọ̀]] [$_{VP2}$ ka t_i [$_{pp}$ ninu oko]]].
coconut$_i$ Foc Olú climb tree before Ayọ pluck t_i inside farm
‘It is Coconut that Olú climbed the tree before Ayọ to pluck inside the farm.’

e *Oko$_i$ ni Olú [$_{VP1}$ [$_{VP1}$ gun igi [pp ṣáájú Ayọ̀]] [$_{VP2}$ ka agbon [pp ninu t_i]]].
farm$_i$ Foc Olú climb tree before Ayọ̀ pluck coconut inside t_i
*'It is farm that Olú climbed the tree before Ayọ̀ to pluck coconut inside.'

Example (132a) illustrates a serial verb construction in which V_1 contains an adjunct clause nítorí ó rí owó 'because he saw money' adjoined to the V_1 ra 'buy' which also takes a direct object *ilẹ̀* 'land'. Simultaneously, V_2 kọ́ 'build' takes the direct object *ilé* 'house', which is itself modified by the PP adjunct *sí ìgboro* 'in town'. The syntactic behavior of these constituents under extraction reveals systematic constraints: while the direct object of V_1 *ilẹ̀* 'land' is extractable, as demonstrated in (132b), extraction of the DP embedded within the CP adjunct clause attached to V_1 results in ungrammaticality (132c). Similarly, both the extraction of V_2's direct object (132d) and the extraction of the nominal complement within the PP adjunct (132e) produce illicit structures.

(132)a Olú [$_{VP1}$ [$_{VP1}$ ra ilẹ̀ [$_{cp}$ nítorí ó rí owó]] [$_{VP2}$ kọ́ ilé [$_{pp}$ sí ìgboro]]].
Olú buy land because 3sg see money build house in town
'Olú bought a land because he saw money to build a house in the town.'

b ilẹ̀$_i$ ni Olú [$_{VP1}$ [$_{VP1}$ ra t_i [$_{cp}$ nítorí ó rí owó]] [$_{VP2}$ kọ́ ilé [$_{pp}$ sí ìgboro]]].
land$_i$ Foc Olú buy t_i because 3sg see money build house in town
'It is a land that Olú bought because he saw money to build a house in the town.'

c *Owó$_i$ ni Olú [$_{VP1}$ [$_{VP1}$ ra ilẹ̀ [$_{cp}$ nítorí ó rí t_i]] [$_{VP2}$ kọ́ ilé [$_{pp}$ sí ìgboro]]].
money$_i$ Foc Olú buy land because 3sg see t_i build house in town
'It is money that Olú bought a land because he saw to build a house in the town.'

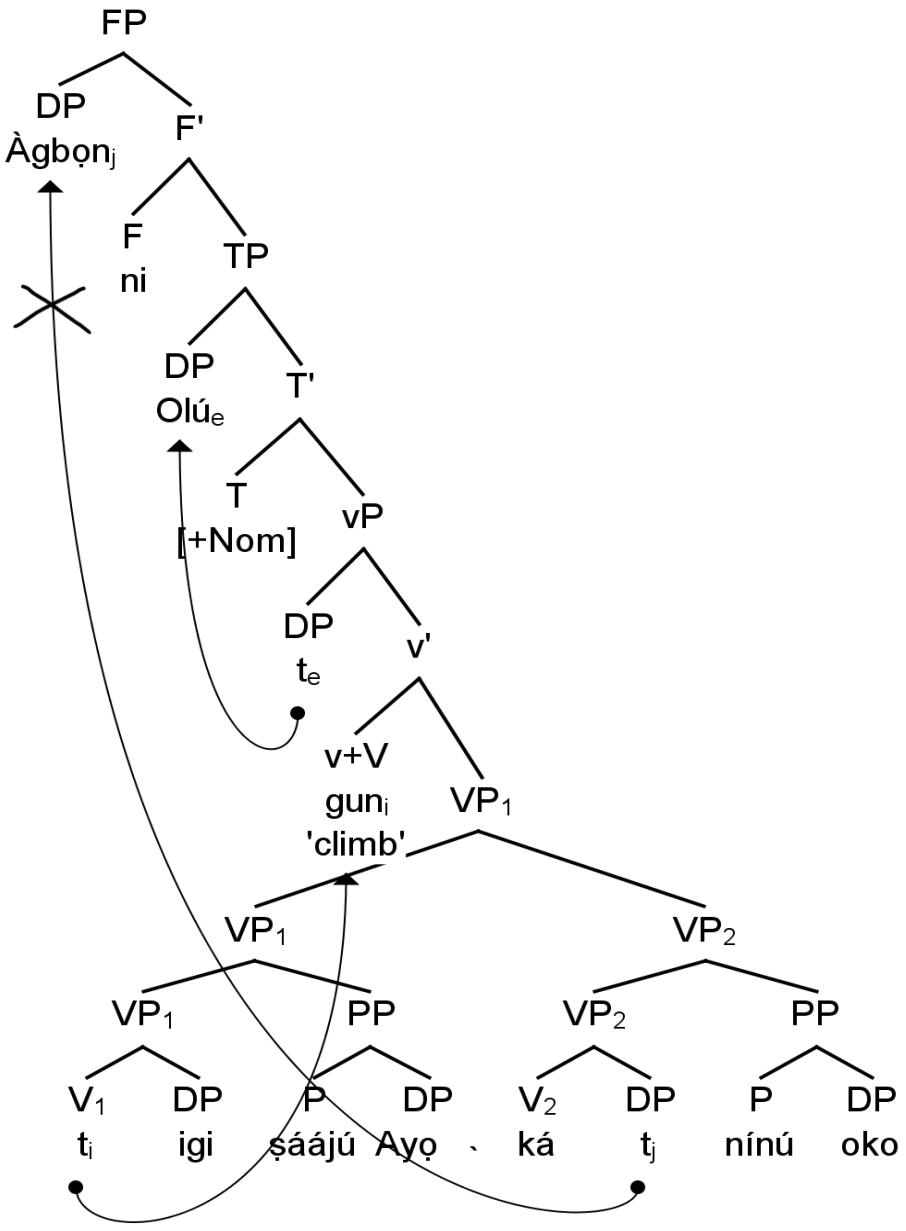
d *ilé$_i$ ni Olú [$_{VP1}$ [$_{VP1}$ ra ilẹ̀ [$_{cp}$ nítorí ó rí owó]] [$_{VP2}$ kọ́ t_i [$_{pp}$ sí ìgboro]]].
house$_i$ Foc Olú buy land because 3sg see money build t_i in town
'It is a house that Olú bought land because he saw money to build in the town.'

e *ìgboro ni Olú [$_{VP1}$ [$_{VP1}$ ra ilẹ̀ [cp nítorí ó rí owó]] [$_{VP2}$ kọ́ ilé [pp sí t_i]]]].
town Foc Olú buy land because 3sg see money build house in t_i
'It is town that Olú bought a land because he saw money to build a house in.'

The comparative framework employed here is crucial for the syntactic analysis. If VP_2 were truly a complement to VP_1, we would expect extraction from VP_2 to happen freely without violating CED; that is, such movement should be grammatical. Conversely, if VP_2 exhibits the same extraction profile as the uncontroversial adjuncts tested in examples (131)-(132), this parallel behavior provides compelling evidence for treating VP_2 as an adjunct. Thus, the extraction facts serve as a revealing syntactic diagnostic that illuminates the underlying structural relations between VP_1 and VP_2 in these Yorùbá SVCs.

Building on Stepanov's late adjunction hypothesis, I propose that VP_2 in Yorùbá SVCs merges with VP_1, after all Merge by ssubstitution extraction operations are done. This accounts for the systematic unavailability of extraction from VP_2 under any circumstances. VP_2 undergoes postcyclic Merge after the completion of all syntactic operations. Consequently, the adjunction of VP_2 partitions the SVC into distinct phrase markers, such that the Merge of VP_2 does not alter the c-command relations established within VP_1. The tree structure in (133) represents VP_2 as adjoined to VP_1. The tree also shows the position of the internal temporal adjunct adjoined to the VP_1. This configuration demonstrates that extracting the object DP *àgbon* 'coconut' of V_2 *ká* 'pluck' constitutes a violation of the adjunct island constraint, resulting in an illicit movement operation across the verb phrase boundaries.

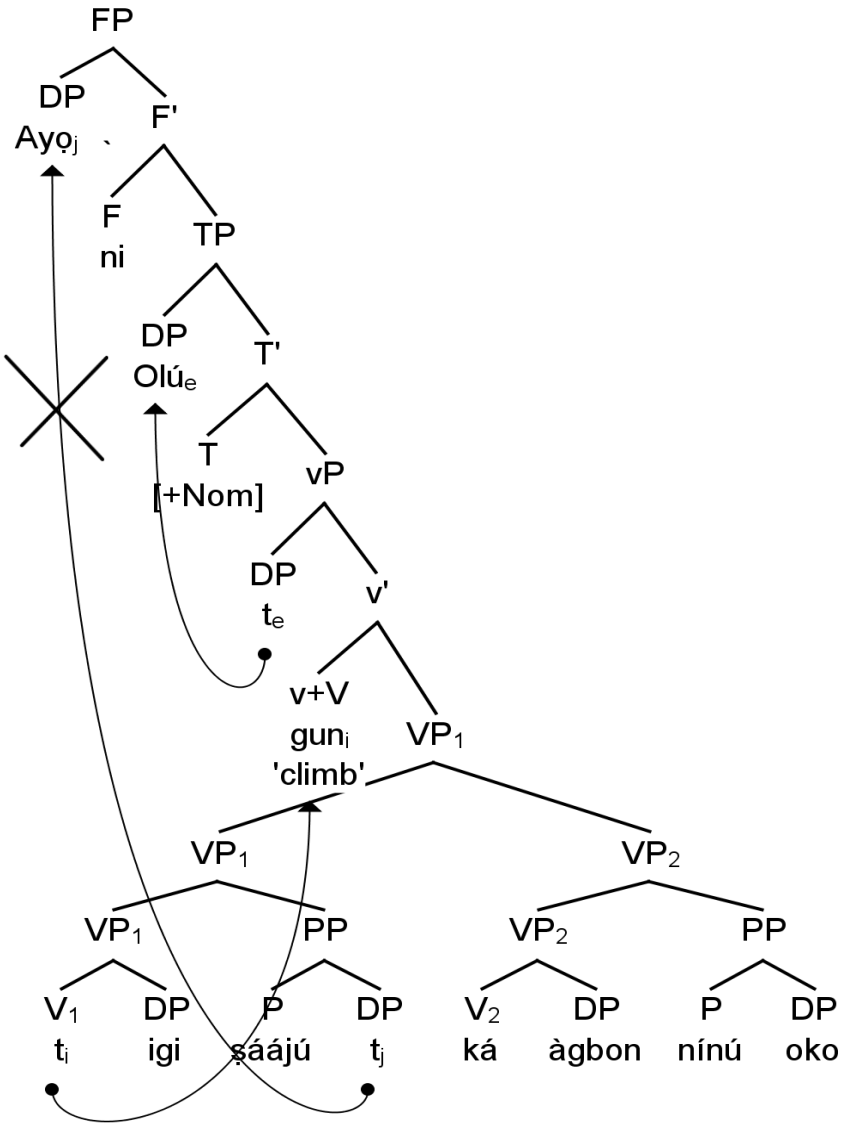
(133) *Àgbọn$_i$ ni Olú [$_{VP1}$ [$_{VP1}$ gun igi [$_{pp}$ ṣáájú Ayọ̀]] [$_{VP2}$ ká t_i [pp nínú oko]]].
coconut$_i$ Foc Olú climb tree before Ayọ pluck t_i inside farm
'It is Coconut that Olú climbed the tree before Ayọ to pluck inside the farm.'



The tree structure in (134) shows the position of the internal temporal adjunct adjoined to the lower VP_1. This configuration demonstrates that extracting the object DP *Ayọ̀* of the

preposition head *ṣáájú* 'before' violates the adjunct island constraint, resulting in an illicit movement operation across the VP1 boundary.

(134) *Ayọ̀$_i$ ni Olú [$_{VP}$ [$_{VP1}$ gun igi [$_{pp}$ ṣáájú t_i]] [$_{VP2}$ ká àgbon [pp nínú oko]]]
Ayọ̀$_i$ Foc Olú climb tree before t_i pluck coconut inside farm
'It is Ayo that Olú climbed the tree before to pluck coconut inside the farm'

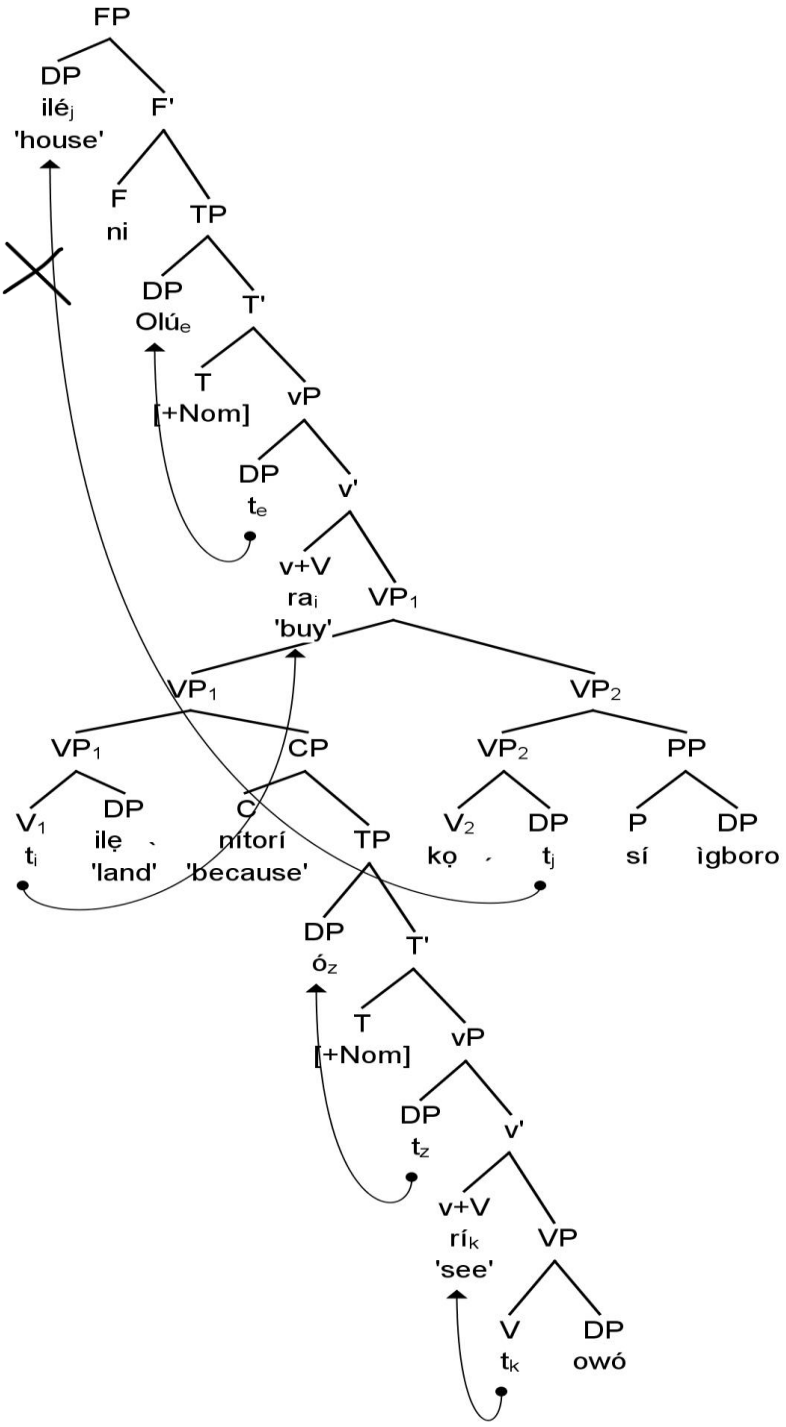


The tree in (135) shows how the extraction of the object DP *ilé* 'house' of the V_2 *kọ́* 'build' violates the CED across the CP clause adjoined to the VP_1.

(135) *ilé$_i$ ni Olú [$_{VP}$ [$_{VP1}$ ra ilẹ̀ [$_{cp}$ nítorí ó rí owó]] [$_{VP2}$ kọ́ t$_i$ [$_{pp}$ sí ìgboro]]].

house$_i$ Foc Olú buy land because 3Sg see money build t$_i$ in town

'It is a house that Olú bought land because he saw money to build in the town.'



As shown in these tree structures, V_1 is the head of the extended projection which projects the functional category little v phrase, and VP_2 adjoins to the higher VP_1. The VP_2 position

makes it opaque to any form of movement/displacement. This analysis by extension applies to wh-phrase displacement in these SVCs. This is addressed in the next section.

4.3.2.1 Wh-movement in SVCs

Extending the analysis of extraction from VP_2 in SVCs, wh-phrases pattern with focused constituents in exhibiting systematic constraints on their syntactic mobility. The DP complement of VP_1 can be a wh-phrase and be displaced, unlike any DP in VP_2. This parallelism between wh-phrases and focus-marked elements suggests that both categories are subject to identical structural restrictions within the SVC domain. Crucially, while the internal complement of V_1 permits wh-extraction and subsequent displacement to clause-peripheral positions, the internal complement of V_2 does not exhibit this property.

As established in preceding sections, the opacity of the V_2 object to extraction follows directly from the postcyclic Merge of VP_2 with VP_1. This derivational timing effect has significant consequences for the syntactic accessibility of constituents. Specifically, because VP_2 is integrated into the structure after the cyclic phase of VP_1 has been completed and its complement domain has been transferred to the interfaces, material within VP_2 is rendered inaccessible to syntactic operations targeting wh-phrases. This postcyclic timing prevents the probe-goal relations necessary for successive-cyclic movement from being established with elements contained within the V_2 projection, effectively creating an extraction island.

In the interrogative constructions in (136)-(137) below, the constructions in (132) present the displacement of the wh-object of the V_1, which is grammatical. In contrast, the constructions in (137) are ungrammatical because they show the displacement of the wh-object of the V_2. Following Stepanov (2007), I propose that the grammaticality of (136) derives from the wh-phrase originating within VP_1 successfully valuing the uninterpretable wh-feature on the matrix C head. This derivational pathway is available because V_1 functions as the head of the SVC that projects the extended functional architecture, including the CP

layer. The wh-phrase within VP_1's complement domain is therefore accessible to the C probe during the relevant phase of the derivation, permitting feature checking and subsequent A-bar movement to the specifier of CP.

(136)a Kí$_i$ ni Olú [$_{VP}$ [$_{VP1}$ gun t_i [$_{pp}$ saaju Ayọ̀]] [$_{VP2}$ ká àgbon [$_{pp}$ nínú oko]]].
what$_i$ Foc Olú climb t_i before Ayọ̀ pluck coconut inside farm
'What did Olú climb before Ayọ̀ to pluck coconut inside the farm.?'

b Kí$_i$ ni Olú [$_{VP}$ [$_{VP1}$ ra t_i [$_{cp}$ nítorí ó rí owó]] [$_{VP2}$ kọ́ ilé [$_{pp}$ sí ìgboro]]].
what$_i$ Foc Olú buy t_i because 3Sg see money build house in town
'What did Olú buy because he saw money to build a house in the town.?'

The ungrammaticality observed in (137) results from a fundamental timing asymmetry in the derivational sequence. Since VP_2 undergoes Merge at a later stage in the computational cycle, specifically, after the wh-feature on the matrix C has already been valued and deleted, no probe-goal relationship can be established between C and potential wh-elements contained within VP_2.

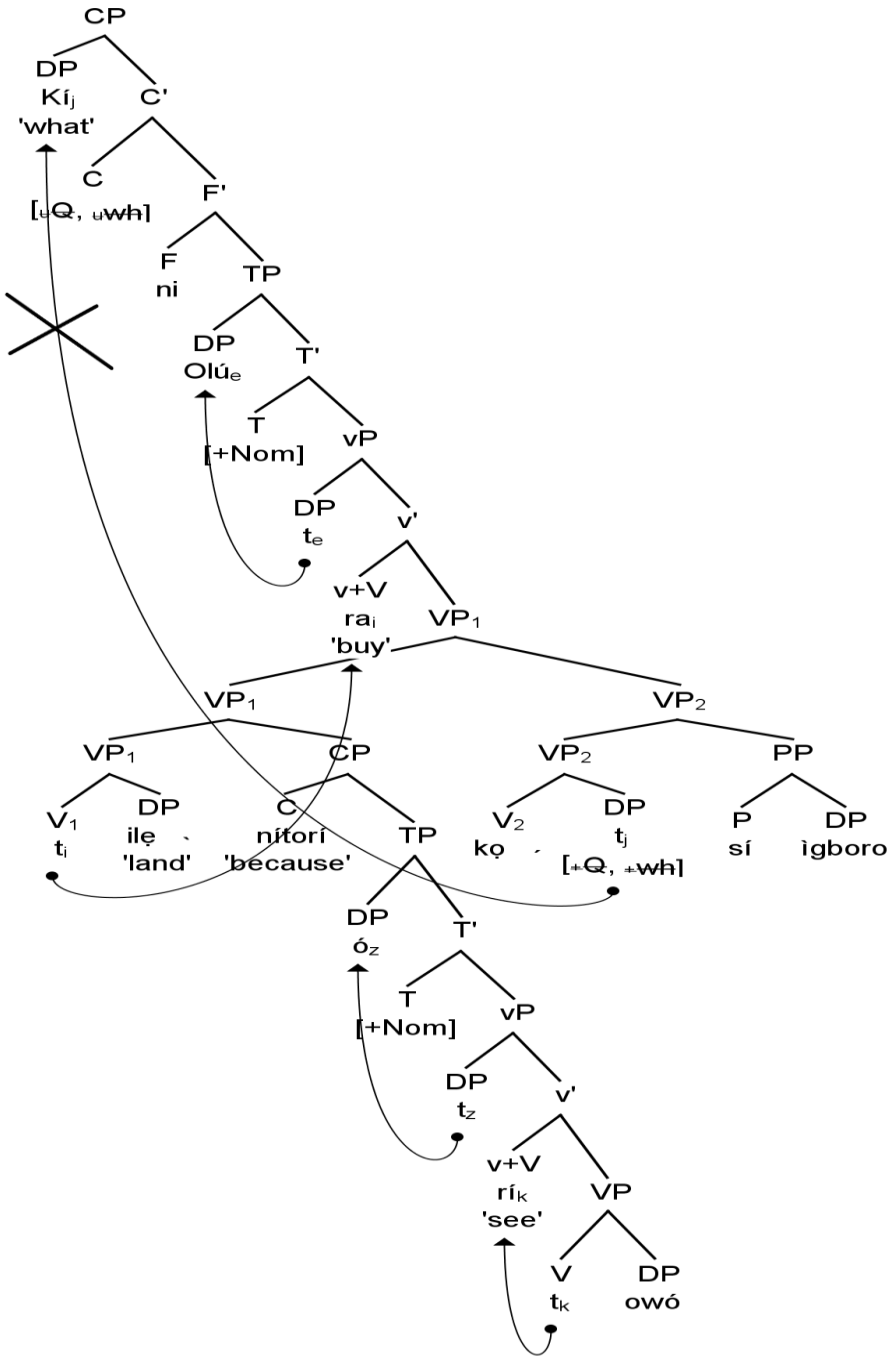
(137)a *Kí$_i$ ni Olú [$_{VP}$ [$_{VP1}$ gun igi [$_{pp}$ saaju Ayọ̀]] [$_{VP2}$ ká t_i [$_{pp}$ nínú oko]]].
what$_i$ Foc Olú climb tree before Ayọ̀ pluck t_i inside farm
'What did Olú climb the tree before Ayọ̀ to pluck inside the farm.?'

b *Kí$_i$ ni Olú [$_{VP}$ [$_{VP1}$ ra ilẹ̀ [$_{cp}$ nítorí ó rí owó]] [$_{VP2}$ kọ́ t_i [$_{pp}$ sí ìgboro]]]
what$_i$ Foc Olú buy land because 3sg see money build t_i in town
'What did Olu buy land because he saw money to build in the town?'

The tree structure of (137b) is given here as (138). The postcyclic integration of VP_2 into the structure occurs after the completion of the phase containing the CP domain. Consequently,

wh-phrases originating as the internal argument of V_2 remain unable to participate in the feature-checking configuration required for legitimate wh-movement to the matrix clause periphery.

(138)



4.3.2.2 Evidence from adjunct placements

One of the central arguments advanced by Baker & Stewart (2002) for analyzing VP_2 as adjoined to VP_1 in Edo and Nupe SVCs concerns the distributional possibilities of VP-final adverbial and PP-adjuncts within these structures. Specifically, Baker & Stewart observe that such adjuncts can appear in positions that would be unexpected under a complement analysis of VP_2, thereby supporting an adjunction structure. As demonstrated in the preceding analysis, adjuncts of various syntactic categories can be systematically integrated into the phrase structure of Yorùbá SVCs as well, exhibiting parallel behavior to what has been documented for related languages.

The empirical landscape in Yorùbá reveals that both phrasal adjuncts, such as PP-adjuncts, and clausal adjuncts, can productively modify the verbal projections within serial verb constructions. Crucially, these adjunct expressions can intervene between V_1 and V_2, occupying structural positions that shed light on the underlying syntactic architecture of the construction.

One of the principal theoretical justifications for analyzing V_2 in these SVCs as an adjunct to VP_1, rather than as a complement of V_1, derives from linear ordering considerations in conjunction with standard assumptions about phrase structure geometry. Under a complement analysis, V_2 would be expected to maintain structural proximity to V_1 as its selected complement, appearing in the complement position immediately adjacent to the selecting head. However, the empirical reality in Yorùbá SVCs demonstrates that V_2 can surface at considerable linear distance from V_1, with various adjunct phrases and clauses intervening between the two verbal elements. This distributional pattern is inconsistent with the complement hypothesis, since canonical phrase structure constraints dictate that adjunct material should not intervene between a lexical head and its complement. The complement of a head occupies a structurally local position, specifically, the sister node to that head, and adjuncts, which are themselves adjoined to maximal projections, should appear in positions

external to the head-complement configuration. The fact that adjuncts can systematically appear between V_1 and V_2 therefore constitutes compelling evidence that V_2 does not occupy the complement position of V_1, but rather is itself adjoined to the VP_1. The ability of postverbal adjuncts to intervene between a verb and its complements in simplex clauses constitutes a counterexample to generalizations positing strict ordering restrictions on adjunct placement.[11]

4.3.2.3 Evidence from reflexives in Yorùbá SVCs

The grammaticality of reflexive binding across V_1 and V_2 in Yorùbá SVCs indicates that both verbs must be contained within a single phase domain. Specifically, if a reflexive pronoun appearing as the object of V_2 can be bound by the shared external argument of the SVC. This binding relation must occur within a unified vP domain. As we will see in this section, the subject of the SVCs can either be an antecedent to a reflexive in VP_1 or VP_2, but the object DP of V_1 cannot be an antecedent to the object DP of V_2. This is expected because the SCVs investigated in this work are the co-occurrence of verbs with a separate internal argument. The discussion on reflexives provides a compelling premise for understanding the level at which the VP_2 adjoins to VP_1.

Lawal (2006, p. 247) argues that Yorùbá reflexive pronouns exhibit binding properties parallel to those of English reflexives, specifically with respect to the requirement of local binding. Within the Minimalist framework, reflexive elements are analyzed as nominal phrases bearing unvalued φ-features, including person, number, and gender specifications. Following Chomsky (2008), these uninterpretable features on the reflexive anaphor must be valued through an Agree relation with an appropriate antecedent located

[11] We do see cases like this in English, with a non-DP complement (e.g. she set (*quickly) the table, but she jumped quickly onto the table).

within a local phase domain, typically delimited by either the vP or TP phase boundary. This phase-based approach to anaphoric binding captures the locality requirement by restricting the domain within which feature valuation can occur, ensuring that reflexives establish their referential dependency with a structurally accessible antecedent before the relevant phase undergoes Transfer to the interfaces. Atoyebi and Anyanwu (2020) identified six forms of reflexive pronouns in Yorùbá as presented in Table 6.

Table 6 Reflexive pronouns in Yorùbá

1st person singular	araà mi	1st person plural	araawa
2nd person singular	araà re	2nd person singular	araayín
3rd person singular	araarẹ̀	3rd person plural	araawọn

(Atoyebi & Anyanwu, 2020, p. 6)

The examples presented in (139) illustrate the distribution of reflexive pronouns in Yorùbá simplex clauses. These data demonstrate that reflexive anaphors and their antecedents are contained within the same clausal domain, thereby satisfying the locality requirement imposed by binding principle A (an anaphor must be bound within its binding domain). This configuration confirms that the reflexive enters a local binding relation with its antecedent, consistent with the theoretical expectations outlined above.

(139)a Àwon akeko$_i$ nàà yin araawọn$_i$.
Pl students$_i$ Def praise themselves$_i$
'The students praised themselves.'

(Atoyebi & Anyanwu, 2020, p. 6)

b Táíwòi ti ilẹ̀kùn mọ́ araàrei.
. Táíwòi locked door against himself$_i$
‘Táíwò locked himself out.’

(Lawal, 2006, p. 247)

c Moi feran araàmi$_i$.
1Sg love myself$_i$
‘I love myself.’

In contrast, when the antecedent of a reflexive pronoun is positioned outside the minimal clause containing the anaphor, the resulting structure is ungrammatical, as demonstrated in (140). In this example, the antecedent *Ayọ̀* is located in the matrix clause, while the reflexive pronoun *araàre* 'himself' appears within an embedded finite clause. This configuration violates the locality constraint on reflexive binding, as the antecedent fails to c-command the reflexive within the requisite local domain.

(140) *Ayọ̀i leri pe araàrei le na Bọ́lá.
Ayọ̀i boasted that himself$_i$ can beat Bọ́lá
‘Ayọ̀ boasted that he can beat Bọ́lá.’

Consequently, the reflexive's unvalued φ-features cannot be legitimately valued by the matrix subject, resulting in a derivational failure and yielding an illicit construction. This discussion can be extended to SVCs in Yorùbá, where the object of V_1 cannot be an antecedent of the object of V_2 in the types of SVCs under study in this. The examples in (141)-(142) present the use of reflexives in Yorùbá SVCs. In example (141), Adé, which is the external argument, binds the reflexive pronoun of the V_2.

(141) Adé$_i$ wo ìwé kọ́ araàre$_i$.
Adé$_i$ look book teach himself$_i$
'Adé looked at the book to teach himself.'

The contextual scenario for the sentence in (142) involves *Adé* having fallen asleep on a chair outside the house. Subsequently, while still in a drowsy state, he dragged himself into the house without receiving assistance from anyone else. This context establishes that *Adé* functions as both the agent (eternal argument) of the V_1 *gbé* 'carry' and the theme *araàre* 'himself' of the verb as well, thereby licensing the reflexive interpretation of the construction.

(142) Adé$_i$ gbé araàre$_i$ wọ ilé.
Adé$_i$ take himself$_i$ enter house
'Adé carried himself into the house.'

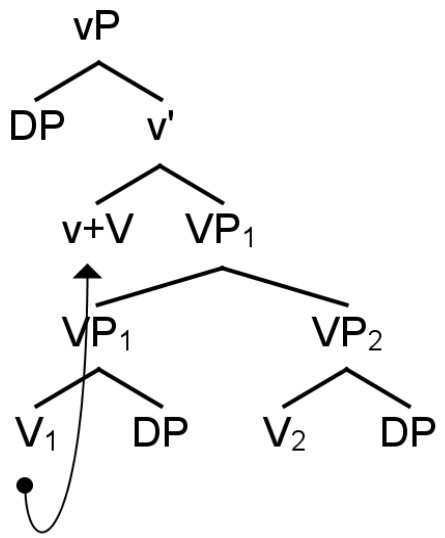
The ungrammaticality of the construction in (143) results from the illicit binding configuration in which the internal argument *Olú* of V_1 *rí* 'see' attempts to serve as the antecedent for the reflexive pronoun *araàre* 'himself', which occupies the object position of V_2.

(143) *Adé rí Olú$_i$ kọ́ araàre$_i$.
Adé see Olú$_i$ teach himself$_i$
'Adé saw Olú teach himself.'

The tree structure in (144) illustrates the adjunction configuration of VP_2 to VP_1 under the analysis advanced in this chapter. I assume here that the two VPs form a complex head, but only one head projects, which is the V_1. This preserves the single-head projection requirement while allowing semantic tightness of the VPs. The V_2 and its DP form a constituent that lacks the functional architecture for case, hence the V_2 do not project its own vP. This links the two events expressed by the verbs and their complements under one agent.

Following this adjunction operation, the full array of higher functional projections, including tense, aspect, and complementizer heads are subsequently merged above the vP layer extended from VP_1, projecting the extended functional architecture of the clause. This structural arrangement ensures that both VP_1 and VP_2 are contained within a single vP phase domain, accounting for the binding asymmetries discussed above while maintaining the shared external argument in a position that c-commands both verbal projections.

(144)



This structural arrangement explains why the example in (143) violates the binding requirements, as the object of V_1 fails to c-command the reflexive within V_2 under the proposed adjunction structure, thereby rendering the coreference relation illegitimate. This unified phase structure ensures that the shared subject in Spec,vP can serve as the antecedent for reflexive pronouns appearing in either VP_1's or VP_2's complement domain, as all these elements remain within the same local binding domain delimited by the single vP phase boundary.

4.4 Conclusion

This chapter has demonstrated that the structural relation between verb phrases in Yorùbá SVCs is best analyzed as adjunction rather than complementation. Drawing on Stepanov's (2001, 2007) late adjunction hypothesis within the Minimalist framework, I have argued that VP_2 adjoins to VP_1 postcyclically, after all cyclic syntactic operations have been completed. Three lines of evidence converge to support this analysis. First, extraction data reveal a systematic asymmetry: while DP displacement from VP_1 and its complements proceeds without restriction, extraction from VP_2 is categorically blocked, regardless of whether the extracted element originates from the direct object position or from within embedded complements such as PPs, finite CPs, or infinitival CPs. This extraction profile parallels the behavior of uncontroversial adjunct structures, where the Condition on Extraction Domain prohibits movement operations. The late adjunction analysis accounts for these facts through timing: VP_2 merges after the completion of all operations within VP_1, including feature valuation and extraction. This postcyclic integration renders VP_2 opaque to syntactic displacement operations while maintaining the unified event structure characteristic of Yorùbá SVCs. Second, the placement of adverbial and phrasal adjuncts between V_1 and V_2 demonstrates that VP_2 cannot occupy the complement position of V_1, as adjunct material systematically intervenes between the two verbal elements. Third, reflexive binding patterns confirm that both VP_1 and VP_2 are contained within a single vP phase domain, with the shared external argument in Spec,vP capable of binding reflexives in either verbal projection, while the internal argument of V_1 cannot serve as antecedent for reflexives within VP_2. The structural representation proposed here not only captures the extraction asymmetries and binding facts but also aligns with cross-linguistic evidence from other SVC languages, providing a theoretically principled account of the complement-adjunct distinction in serial verb constructions.

Chapter 5: Summary and findings

5.0 Overview

This dissertation presents an investigation of SVCs in Yorùbá, addressing two fundamental theoretical questions: (1) which verb serves as the head of the extended projection corresponding to Yorùbá SVCs, and (2) what hierarchical and derivational relationship exists between the verb phrases in these constructions. This dissertation has explicitly focused on SVCs in which both V_1 and V_2 are transitive verbs taking distinct object complements. Operating within the Minimalist framework, particularly drawing on Chomsky's bare phrase structure theory (1995, 2000) and Stepanov's late adjunction hypothesis (2001, 2007), the study provides novel empirical evidence and theoretical insights that advance our understanding of multi-verb constructions in both Yorùbá specifically and cross-linguistically.

The investigation has demonstrated that Yorùbá SVCs exhibit distinctive properties that distinguish them from superficially similar constructions, such as coordinate structures, and from SVCs in other languages that have been previously analyzed in the literature. By employing a range of syntactic diagnostics including verb nominalization and clefting, adverbial modification, extraction patterns, and binding phenomena, this dissertation has established that V_1 serve as the head of the extended projection in Yorùbá SVCs, and that VP_2 bears an adjunction rather than complementation relationship to VP_1. These findings contribute not only to our understanding of Yorùbá syntax specifically but also to broader theoretical discussions concerning the nature of headedness, the complement-adjunct distinction, and the syntactic mechanisms underlying complex predicate formation across languages.

5.1 Summary of major findings

5.1.1 Establishing V_1 as the syntactic head

Chapter 2 addressed the first research question by systematically examining which verb in Yorùbá SVCs functions as the syntactic head. The analysis revealed that existing cross-linguistic criteria for head identification, while informative, proved insufficient for determining headedness in Yorùbá SVCs. Specifically, the distribution of functional categories such as aspectual markers, negation, and modals, while constrained to appear before V_1, could not conclusively establish V_1 as the head because these markers take scope over the entire SVC complex rather than selecting one verb over the other.

The distribution and semantic scope of manner adverbs provided additional support for identifying V_1 as the head. Following Ernst's (2002, 2004) semantic-based theory of adverbial modification, the analysis demonstrated that low-range manner adverbs in Yorùbá, such as *kánjú* 'hastily', *tètè/yára* 'quickly', and *rọra* 'carefully', can only appear before V_1 and scope exclusively over VP_1, never extending their modification to V_2. This restriction holds even though these same adverbs can freely modify any verb in simplex clauses. The fact that manner adverbs systematically target V_1 for modification suggests that V_1 projects the functional vP shell to which these adverbs adjoin, while V_2 occupies a position structurally inaccessible to such modification.

5.1.2 The complement-adjunct distinction in Yorùbá

Chapter 3 provided essential groundwork for understanding the structural relationship between verbs in SVCs by establishing clear diagnostic criteria for distinguishing complements from adjuncts in Yorùbá. The analysis demonstrated that extraction possibilities serve as a reliable test for this distinction: while wh-movement and focus movement proceed freely from complement positions (DP complements, PP complements, infinitival CP complements, and finite CP complements), such operations are systematically blocked when applied to elements within adjunct structures, including causal clauses, conditional clauses,

and temporal clauses. This comprehensive analysis of complement and adjunct constructions in non-serial contexts established the theoretical and empirical foundation necessary for investigating the structural relations within SVCs. By demonstrating that Yorùbá exhibits the same fundamental asymmetries between complements and adjuncts that have been documented cross-linguistically, the study validated the application of extraction-based diagnostics to the analysis of serial verb constructions.

5.1.3 VP_2 as an adjunct to VP_1

Chapter 4 applied the insights from the complement-adjunct distinction to address the second research question: what is the structural relationship between VP_1 and VP_2 in Yorùbá SVCs? The analysis conclusively demonstrated that VP_2 bears an adjunction rather than complementation relation to VP_1. This conclusion rests on multiple converging lines of evidence. The extraction asymmetries observed in Yorùbá SVCs constitute the most compelling evidence for the adjunction analysis. While DP displacement from VP_1 and its various complements (including direct objects, objects of prepositions, and objects within embedded CPs) proceeds without restriction, extraction from VP_2 is categorically blocked regardless of the syntactic category or structural position of the extracted element. This pattern holds across all complement types: when verbs in the V_2 position select PP complements, finite CP complements, or infinitival CP complements, extraction from these selected constituents yields ungrammatical results. Crucially, the same verbs permit extraction when they appear in simplex clauses or in the V_1 position of SVCs, demonstrating that the extraction prohibition stems from VP_2's structural position rather than from lexical properties of individual verbs.

Additional evidence from adverbial placement corroborated the adjunction analysis. The fact that various adjunct phrases and clauses can intervene between V_1 and V_2 demonstrates that VP_2 cannot occupy the complement position of V_1, since standard phrase

structure constraints prohibit adjunct material from appearing between a head and its complement. The systematic possibility of such intervention provides independent confirmation that VP_2 occupies an adjoined position structurally external to the head-complement configuration.

Finally, reflexive binding patterns offered further support for the proposed structure while simultaneously constraining the level at which adjunction occurs. The analysis demonstrated that the shared external argument of Yorùbá SVCs can bind reflexive pronouns appearing as objects of either V_1 or V_2. In contrast, the internal argument of V_1 cannot serve as antecedent for reflexives within VP_2. This binding asymmetry indicates that both VP_1 and VP_2 are contained within a single vP phase domain, with the external argument merged in Spec,vP in a position that c-commands both verbal projections. The adjunction of VP_2 to VP_1 (rather than to a higher functional projection) ensures that the unified agent structure characteristic of Yorùbá SVCs is maintained while simultaneously accounting for the extraction restrictions and binding facts.

5.2 Research contributions

The finding that V_1 functions as the head of the extended projection in Yorùbá SVCs contributes to ongoing cross-linguistic debates about headedness in serial constructions. While some languages (such as Cantonese, according to Matthews, 2006) identify V2 as the head, and others (such as Edo, according to Baker & Stewart, 2002) have been analyzed as having dual heads, Yorùbá patterns consistently with V_1 as head. This diversity of headedness patterns across SVC languages suggests that the syntactic architecture of serial constructions may vary parametrically, with different languages selecting different structural configurations even when the surface properties (shared subject, unified TAM marking, absence of overt connectors) appear similar. The Yorùbá data thus underscore the importance

of language-specific investigation and caution against overgeneralization from analyses based on limited typological samples.

The demonstration that VP_2 occupies an adjunct position in Yorùbá SVCs has implications for theories of complex predicate formation. Unlike approaches that analyze all instances of verb serialization as involving complement structures or VP-shell configurations with uniform head-complement relations, the Yorùbá data reveal that adjunction structures can give rise to the semantic and syntactic integration characteristic of SVCs. This finding suggests that the mono-clausal properties of SVCs (unified event structure, shared arguments, single TAM specification) can be derived from different underlying syntactic configurations, and that adjunction, rather than being incompatible with tight syntactic and semantic integration, can in fact support such integration under appropriate conditions.

The adoption of Stepanov's late adjunction hypothesis represents a significant contribution, as it demonstrates how timing differences in syntactic operations can account for surface asymmetries in extraction and binding. The proposal that adjuncts undergo postcyclic Merge after the completion of cyclic operations provides a principled explanation for why VP_2 in Yorùbá SVCs exhibits island effects despite being structurally integrated within a single clause. This analysis extends the application of late adjunction beyond the domain of canonical adjunct phrases to the realm of complex predicate structures, suggesting that the hypothesis has broader empirical coverage than previously recognized.

Beyond theoretical contributions, this dissertation significantly advances our descriptive understanding of Yorùbá grammar. While SVCs have been recognized as a prominent feature of Yorùbá syntax since early descriptive work (Bamgbose, 1973, 1974), previous analyses have not systematically investigated the questions of headedness and structural relations that are central to generative syntactic theory. This study fills that gap by

providing detailed documentation of how Yorùbá SVCs interact with various syntactic operations and functional categories.

The comprehensive examination of extraction patterns in Yorùbá, encompassing not only simple DP objects but also objects within PP complements, finite CP complements, and infinitival CP complements, provides a much fuller picture of locality constraints in the language than has been available in previous literature. This detailed empirical work establishes Yorùbá as a valuable testing ground for theories of extraction and island effects, contributing data that can inform cross-linguistic generalizations about syntactic dependencies.

5.3 Future research directions

Several avenues for future investigations emerge from this work:

1. Extension to other SVC subtypes: While this dissertation focused on SVCs with separate internal arguments, Yorùbá also exhibits shared-object SVCs, instrumental SVCs, and other configurations. Determining whether these instantiate the same adjunction structure or require alternative analyses would complete the picture of SVC variation within a single language.
2. Semantic composition: Although this dissertation established the syntactic structure of Yorùbá SVCs, detailed semantic analysis of how two predicates compose into unified event representations remains a topic for future work. The interface between the syntactic adjunction structure and semantic event composition (particularly regarding aspect and telicity) warrants systematic investigation.

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