THE GRAMMAR OF REPETITION:

NUPE GRAMMAR AT THE SYNTAX-PHONOLOGY INTERFACE

by

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For Ahmadu Ndanusa Kawu.
None of this would have been possible without him.

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PREFACE

I completed my UCLA dissertation in 2006. This book is a thoroughly revised version of that work. Although I have retained the overall structure and analytical spirit of my thesis, I have refined virtually every aspect of its original presentation. These revisions are equally empirical and analytical in nature. The syntactic account of Nupe grammar in chapter two has been considerably tightened by holding the various analyses to strict Minimalist guidelines and devoting more careful attention to the fine details of the data. Chapter three has been completely rewritten. I no longer appeal to Fusion or propose architectural revisions to Distributed Morphology, as in the original manuscript. The analysis of multiple copy spell-out in this chapter is more phonologically informed than its previous incarnation and a number of syntactic details regarding the structural analysis of Nupe verbal repetition have been improved. My revision of chapter four is less radical, though considerable. The driving force behind PF repetition in predicate cleft constructions, I claim, is not morphological as I proposed in my thesis, but rather purely syntactic. The syntactic mechanism at play in this case is parallel chain formation, an analytical possibility I exploited in my thesis without defining or referring to as such. Chapter five remains largely intact, though a number of analytical improvements have been made. The book's final chapter is entirely new. There I consider bigger picture issues and speculate on alternative resources made available by grammar that could conceivably drive multiple copy spell-out in other languages/constructions.

   Many individuals have shaped this research in some way or another. First and foremost, I owe a debt of gratitude to my Nupe consultants for the boundless hospitality and tireless assistance they provided me in Nigeria. Okú bè etun yin sáráyín: Abdul Kadir Kawu, Ahmadu Ndanusa Kawu, Alhaji Usman Kawu, Hadizat Nnăkó Kawu, Sulaiman Ilorin Kawu, Elizabeth Kolo and Abubakar Bello Mohammed. Mi dzin yèbo!

   I thank Hilda Koopman, Mark Baker, Ed Keenan, Tim Stowell, Neil Smith and Annabel Cormack for their pivotal contributions to my Nupe research over the years. Thanks to Werner Abraham, Kees Vaes and Elly van Gelderen at John Benjamins for being so patient, helpful and remarkably uncomplicated to work with. I am especially grateful to an anonymous reviewer for stimulating the new directions taken in this manuscript alluded to above. I would also like to thank my colleagues Ted Fernald, David Harrison, Shizhe Huang, Vera Lee-Schoenfeld and Donna Jo Napoli for providing the stimulating and nurturing environment in which this book was written.

   Discussions with the following individuals have considerably improved this book: Adam Albright, Daniel Büring, Seth Cable, Ivano Caponigro, Noam Chomsky, Brent de Chene, Chris Collins, Dave Embick, Danny Fox, Bruce Hayes, Sun-Ah Jun, Michael Kenstowicz, Greg Kobele, Tony Kroch, Howard Lasnik, Chungmin Lee, Anoop Mahajan, Alec Marantz, Jason Merchant, Andrew Nevins, Jairo Nunes, David Pesetsky, Norvin Richards, Carson Schütze, Donca Steriade, Harold Torrence, Colin Wilson and Jan-Wouter Zwart. I would also like to thank the participants of the Copy Theory of Movement on the PF Side workshop, the 29th and 30th Penn Linguistics Colloquia, CLS 42, WCCFL 25 and audiences at CUNY Graduate Center, Georgetown, MIT, University of Chicago, University of Florida and UCLA, where parts of this material were presented.

LIST OF ABBREVIATIONS

√	Root morpheme
1ST	First person
2ND	Second person
3RD	Third person
ABS	Absolutive
ACC	Accusative
ADJ	Adjective
ADV	Adverb
AGRO	Object agreement
CL	Classifier
COMP	Complementizer
COND	Conditional
COP	Copula
D	Determiner
DECL	Declarative
DEF	Definite
FACT	Factive
FEM	Feminine
FOC	Focus
FT	Floating tone
FUT	Future
H	High tone
IMPRF	Imperfect
INF	Infinitive
L	Low tone
LOC	Locative
N	Noun
NEG	Negative
NOM	Nominative
NOML	Nominal
OBJ	Object
P	Preposition
PL	Plural
POSS	Possessive
PREV	Preverbal particle
PRF	Perfect
PRS	Present
PRT	Particle
PST	Past
RED	Reduplicant
SG	Singular
SUBJ	Subject
T	Tense
TOP	Topic
V	Verb

CHAPTER 1

OVERVIEW AND ORIENTATION

Displacement is a fundamental property of grammar. Expressions move and when they do, they are typically pronounced in only one environment. This regularity was previously regarded as a primitive or irreducible property of grammar. Recent work, however, suggests that it follows from principled interactions between the syntactic and phonological components of grammar. As such, the phonetic character of movement chains can be seen as both a reflection of and probe into the nature of the syntax-phonology interface. This book deals with a relatively atypical outcome of movement operations, in which a displaced element is pronounced multiple times. I refer to the repetition that ensues as Multiple Copy Spell-out. Although typologically rare, the phenomenon obtains robustly in Nupe, a Benue-Congo language of central Nigeria. A sufficiently rigorous theory of grammar should be able to offer an explanation of this dichotomy. In actuality, the existence of movement-driven multiplicity raises a tension of the descriptive-explanatory variety because it is both predicted by the theory of movement and yet rarely attested cross-linguistically. In order to achieve both measures of adequacy, movement theory must be supplemented with an account of the conditions that drive and constrain multiple pronunciation. In this book, I take up this project, identifying and cataloging the conditions that yield multiplicity at the syntax-phonology interface in Nupe. In the process, a number of undocumented aspects of Nupe grammar are brought to light and several broad theoretical contributions are made.

To the best of my knowledge, this work is the first to systematically explore the grammar of repetition at the syntax-phonology interface. Although a handful of analyses of multiple copy spell-out can be found in the literature, none approach the topic as the central object of inquiry. Consequently, existing treatments provide us with only a limited understanding of the circumstances under which PF multiplicity arises and the implications it has for the theory of grammar. As such, I believe the motivation for a research project of this kind is strong.

1.1. MOVEMENT OPERATIONS IN GENERATIVE GRAMMAR

Given the relatively under-researched character of multiple copy spell-out, the best way to situate our discussion within the current theoretical arena and at the same time introduce the focus, aims, and conclusions of the present research is to begin with a brief historical overview.

A non-trivial fact about natural language is that disassociations exist between the syntactic positions in which constituents are pronounced and the positions in which they are interpreted. English passive sentences illustrate this point clearly. In passives, the

constituent that is phonetically realized in the subject position is actually interpreted as the logical object of the verb (i.e. as the patient/theme) and not as its subject (i.e. agent).

(1)   The nucleus was discovered (by Rutherford).

Within the framework of Generative Grammar, this property is accounted for by means of displacement transformations that alter the output of initial phrase markers by moving or repositioning syntactic constituents.   Abstracting over the history of Generative Grammar, we can identify three basic traditions regarding the formalization of the movement operation: substitution transformations, the trace theory of movement, and the copy theory of movement, the subject of the present study.

1.1.1. Substitution

The ancestor of the movement operation in generative theory is the substitution transformation, as introduced by Zellig Harris and formalized by Noam Chomsky (1955, 1956, 1957). A fairly simple operation, it allowed one syntactic position to be freely substituted for another in a derivation. Substitutions were often informally understood as relations between copies of constituents and positions. As such, substitutions involved copying and relocatation of syntactic material.   For example, on this approach, passivization was seen as an instance of substitution involving the wholesale interchanging of subject and object positions.

(2)   Rutherford discovered the nucleus. $\Rightarrow$ The nucleus was discovered (by Rutherford).
         1   2   **3**   **3**   *be* + 2   *by* + **1**

1.1.2. Trace Theory

The trace theory of movement departs from substitution theory in that it claims that moved elements are first-generation syntactic occurrences rather than copies of constituents. Movement operations displace constituents, leaving behind phonetically null elements known as traces in the extraction site. The referential properties of traces are essentially those of the moved constituent. This was represented by means of a coindexation relation holding between the displaced constituent and the trace.

(3)   The nucleus$_i$ was discovered t$_i$.

The introduction of traces into the theory of movement was an innovation of the "Extended Standard Theory" of the 1970s (Chomsky 1971, 1973, Jackendoff 1972, among others), which acknowledged that certain aspects of semantic interpretation (i.e. quantifier scope, anaphoric construal relations, etc.) are determined not by deep or underlying structures as in the *Aspects* framework of Chomsky 1965, but rather by

surface structures (i.e. by the output of the transformational component). Given that thematic relations were held to be established/assigned at deep structure, trace theory provided a way of connecting the semantic properties of both levels. If surface structures were enriched with traces, then all semantic interpretation could take place at this level, given that deep grammatical relations could now be easily recovered. Trace theory became a hallmark of the Government-Binding framework (Chomsky 1981) and persisted well into the early 1990s, ultimately meeting its demise with the onset of the Minimalist Program.

1.1.3. Copy Theory

One of Chomsky's first steps in the development of the Minimalist Program was to repudiate the trace theory of movement and revive the conception of displacement as substitution/copying. This was achieved by way of the copy theory of movement (Chomsky 1993). Under this conception, traces are analyzed as copies of displaced constituents that are deleted in the phonological component (i.e. at PF), but are available for interpretation at the semantic interface. The original motivation for this revival was largely conceptual. Under the copy theory of movement, binding theory can be stated exclusively in LF terms and the reconstruction operation can be entirely dispensed with, given the fact that all copies are potentially interpretable at LF. This is illustrated below.

(4)   RECONSTRUCTION UNDER THE COPY THEORY OF MOVEMENT

a. Bill$_j$ wondered which picture of himself$_{j/k}$ Ted$_k$ bought.
b. Bill$_j$ wondered [$_{CP}$[which picture of himself$_j$]^1[$_{TP}$ Ted$_k$ bought [~~which picture of himself~~]^1]]
c. Bill$_j$ wondered [$_{CP}$[~~which picture of himself~~]^1[$_{TP}$ Ted$_k$ bought [which picture of himself$_k$]^1]]

In this way, the copy theory facilitates the elimination of non-interface levels of representation such as S-structure, thereby streamlining the architecture of grammar. Additional conceptual support for this view of movement comes from Chomsky's proposal that syntax is limited solely to arranging and re-arranging lexical items/features of lexical items from the array that feeds a derivation (cf. the Inclusiveness condition – Chomsky 1995a). In other words, syntax has the ability to build/reconfigure, but not to create. Traces and their indices blatantly violate the Inclusiveness condition, given that they are absent from the lexical array (Numeration), yet are present at the end of the derivation. Traces, therefore, have a unique theoretical status and are thus conceptually suspect: they are the sole grammatical constructs that are introduced in the course of the derivation to LF. By eliminating traces, a reduction in the number of theoretical primitives is achieved, something that is clearly conceptually appealing given the modus operandi of the Minimalist Program.

The copy theory of movement receives strong empirical support from instances of displacement that leave behind phonetically detectable copies. In recent years, a number of authors have argued for the conclusion that "traces" (i.e. lower copies) may be phonetically realized and that their realization is conditioned by properties of the morphological and phonological components, rather than by purely syntactic factors (Nunes 1995, 1999, 2004, Bobaljik 1995, 2002, Brody 1995, Wilder 1995, Groat & O'Neil 1996, Pesetsky 1997, 1998, Richards 1997, Franks 1998, Runner 1998, Lidz & Idsardi 1998, Abels 2001, Bošković 2001, Hornstein 2001, Grohmann 2003, Stjepanovic 2003, Hiraiwa 2005, Landau 2006, Kandybowicz 2007a,b, among others).

1.1.3.1. Multiple Copy Spell-Out

Perhaps the strongest empirical support for the copy theory of movement comes from the existence of movement chains in which multiple copies of a single expression are phonetically realized. Although cross-linguistically rare, instances of multiple copy spell-out have been fairly well documented in the recent literature (Nunes 1999, 2003, 2004, Fanselow & Mahajan 2000, Abels 2001, Grohmann 2003, Grohmann & Nevins 2004, Grohmann & Panagiotidis 2004, Hiraiwa 2005, Landau 2006, Nunes & Quadros 2006, in press, Martins 2007, Bošković & Nunes 2007, and Kandybowicz 2007a,b, to name a few) and attempts have been made to model the phenomenon formally (Kobele 2006). Below, I provide some familiar and less well-known examples of multiple copy spell-out drawn from the literature.

(5)   a.   MULTIPLE COPY SPELL-OUT OF *WH*- EXPRESSIONS

Frisian (Hiemstra 1986)

Wêr   tinke jo   **wêr-**'t   Jan wennet?
where think you where-that Jan resides
'Where do you think that John lives?'

German (Fanselow & Mahajan 1995)

Wovon glaubst du **wovon** sie   träumt?
What-of   believe you what-of she dreams
'What do you believe that she dreams of?'

b. MULTIPLE COPY SPELL-OUT OF VERBS

Mandarin Chinese (Huang 1991)

Ta	**xihuan**	bu	**xihuan**	zhe	ben	shu?
he	like	NEG	like	this	CL	book

'Does he like this book (or not)?'

Vata (Koopman 1984)

Li	à	**li**-da	zué	saká.
eat	1ST.PL	eat-PST	yesterday	rice

'We ATE rice yesterday.'

c. MULTIPLE COPY SPELL-OUT OF CLITICS

Argentinean Spanish (Nunes 1999)

Vámo-**nos**	a	divorciar-**nos**.
go-1ST.PL	to	divorce-1ST.PL

'We are going to divorce.'

Panará (Dourado 2002)

Kamɛra	yɨ-ra-**hɔw**-tẽ	ĩkyẽ	**how**	kri	tã.
you.PL.ABS	REAL.TR-1st.SG.ABS-with-go	1st.SG	with	tribe	to

'You will go with me to the tribe.'

    A limited number of analyses have been put forth. Nunes (1995, 1999, 2004) derives multiple copy spell-out from independently motivated principles of morphology and linearization. In a nutshell, certain morphological operations have the effect of rendering copies invisible to the linearization algorithm. In this state, multiple pronunciation is tolerated because the resulting output is fully linearizeable. A drawback of the proposal, however, is that no significant empirical evidence (apart from linearizeability/multiple pronunciation) or conceptual justification is provided for the application of the operations that trigger repetition. In chapter three, I appeal to both morphological and phonological factors that condition the emergence of PF repetition, motivating their existence on independently motivated empirical grounds. Abels (2001), Hiraiwa (2005) and Landau (2006) also view multiple copy spell-out as essentially morphologically driven. For them, multiple pronunciation is forced by principles of morphological well-formedness, namely the requirement that affixes be supported at PF. If the realization of a lower copy is the only way to support a bound morpheme, then spelling out the head of a chain in addition to a lower copy will be tolerated, despite being uneconomical with regard to articulatory effort. The findings presented in chapter three provide further support for

this view of repetition. Grohmann (2000, 2003) takes a different approach. For him, multiple copy spell-out (perhaps more accurately, lower copy spell-out) is a last resort repair strategy for movements that violate the principle of anti-locality. Grohmann conceives of clausal architecture/syntactic derivation as being partitioned into three distinct contextually defined "prolific" domains: the θ-domain, which covers the articulated vP projection where theta relations are created; the φ-domain, which spans the stretch of structure between vP and TP where phi-features and agreement properties are licensed; and the ω-domain, which consists of the exploded left periphery above TP where discourse information is established. In addition to being subject to locality constraints of the familiar variety, Grohmann proposes an anti-locality constraint on movement operations, namely, that movements may not span too short a distance. Grohmann defines anti-local chain formation as movement within a prolific domain. In general, anti-local movements are ruled out by the grammar on grounds of Bare Output conditions imposed by the interfaces (see Grohmann 2000, 2003 for details), but can be rescued if one of the offending copies is phonetically realized with a PF-matrix "distinct" from that of the higher pronounced copy. This entails the insertion of a default/lexically distinct vocabulary item in the lower copy site, typically a resumptive expression. Grohmann's analysis of multiple copy spell-out makes a number of predictions that fail to be borne out in Nupe, as demonstrated in chapters three and five. In chapter three, I show that anti-local movement within the θ-domain fails to yield lexically distinct copies at PF. In chapter five, I deal with Grohmann's prediction that multiple pronunciation fails to arise when movement operations uphold the anti-locality constraint. There I show that precisely the opposite obtains.

With the exception of Nunes' research, the work reported above deals with multiple copy spell-out as only a secondary aspect of the analysis. Outside of this literature, coverage is sparse. Overall, then, it is fair to say that relatively little attention has been paid to the grammar of repetition as an avenue of theoretical inquiry.

As previously mentioned, the existence of chains with multiple phonetically realized links is both predicted and expected under the copy theory of movement. However, multiple pronunciation raises a tension of the familiar descriptive-explanatory sort once the copy theory is assumed. Although it allows for principled explanations of phenomena such as those presented in (5), on a descriptive level it fails to account for the low frequency of multiple copy spell-out cross-linguistically. In order to achieve descriptive and explanatory adequacy, the copy theory must be supplemented with an account of the conditions that drive and constrain multiple copy spell-out. Given that the decision to pronounce or fail to pronounce a copy is a PF-oriented task, it follows that the conditions that drive and constrain multiple copy spell-out will have to be stated largely in terms of the PF interface, taking into account the interaction of the output of the syntactic computation with the morphological and phonological systems. This task, therefore, requires a certain degree of language-specific expertise. My research strategy will thus be to restrict our attention to one particular language that manifests multiple copy pronunciation and experiment on the circumstances that give rise to repetition. In this way, we can control the experiment by exacting a certain degree of precision in the analysis of the data, something that would not be possible in a broad survey of multiple

languages. Furthermore, by focusing attention on a single language, one can control for interfering factors and allow the analysis to be shaped by carefully selected details culled from all corners of the grammar. Because major proposals like the copy theory of movement must adhere to rigid standards of descriptive adequacy, it is important that they be evaluated on a language-by-language basis. It is in this context, that I restrict attention to one language.

1.1.3.2. The Focus and Contribution of this Book

The language investigated in this book is Nupe, a Benue-Congo language of the Niger-Congo family spoken in central Nigeria. Nupe exhibits three instances of multiple copy spell-out, each of which has important theoretical ramifications and sheds light on the analysis of similar phenomena in other languages. The data below illustrate the three attestations of multiple copy spell-out in the language; bare root verbal repetition, predicate clefting, and lower copy pronominal resumption of long-distance displaced lexical subjects.

(6) a. BARE ROOT VERBAL REPETITION

Musa à   **gi** bise **gi**.
Musa FUT eat hen eat
'Musa WILL IN FACT eat a hen.'

b. PREDICATE CLEFTING

Gi-**gi** Musa à   **gi** bise o.
RED-eat Musa FUT eat hen FOC
'It is EATING that Musa will do to a hen (as opposed to say, *cooking*).'

c. LOWER COPY PRONOMINAL RESUMPTION

Musa$_i$ Gana kpe   gànán **u:**$_i$ gi bise o.
Musa Gana know COMP 3rd.SG eat hen FOC
'Gana knows that MUSA ate a hen.'

In this book, I argue that Nupe reveals a number of pathways into PF repetition, spanning both the PF and narrow syntactic sides of grammar. PF sources of repetition can be subcategorized according to whether the conditioning factor is morphological, phonological or prosodic. In general, multiple copies generated by movement operations in the narrow syntax can be phonetically realized just in case the violation of an identifiable PF well-formedness condition is avoided and the resulting output can be linearized. In addition, the creation of parallel chains in the narrow syntax can yield a form of multiple copy spell-out in which copies of a single occurrence spread over two or

more independent non-interacting chains are phonetically realized. Consequently, no additional machinery regulating the distribution of syntactic copies need be introduced into the theory and cross-linguistic variation concerning the availability of multiple copy spell-out can be anchored to language-specific differences with regard to the suite of PF well-formedness conditions that influence linearization patterns. To reach these conclusions, a number of previously undocumented observations about Nupe grammar are presented. These findings (along with all Nupe data) are based entirely on fieldwork with a number of consultants in Nigeria and the United States. A variety of broad theoretical contributions are also made along the way, the particulars of which will be fleshed out momentarily.

1.2. THEORETICAL BACKGROUND AND ASSUMPTIONS

This book assumes the general framework of the Minimalist Program, supplemented with aspects of Distributed Morphology. I do not intend to provide the reader with a comprehensive overview of either framework. Readers are referred to a number of sources cited below for a proper introduction. My goal here is to outline the salient characteristics of the two programs that bear considerably on the work that follows and to highlight those areas in which I depart slightly from certain trends in the literature. An additional goal of this section is to provide an overview of the various theories of chain resolution/linearization necessitated by the adoption of the copy theory of movement and to acquaint the reader with Nunes' (1995, 1999, 2004) account, which figures prominently in this book.

1.2.1. The Minimalist Program

This study is guided by the issues and inquiries raised by the phase-based version of the Minimalist Program (Chomsky 2000, 2001, 2004, 2007, 2008a). A crucial assumption in the work that follows is the Minimalist hypothesis that the structures generated by syntactic computations do not contain information about linear order (Chomsky 1995a). Linearization of syntactic structure is thus one of the labors of the PF component, necessitated by the external requirement (Bare Output condition) that grammar be instantiated in real time. I assume furthermore that linearization is achieved by means of Kayne's (1994) Linear Correspondence Axiom (LCA). The linearization algorithm considers the set of pairs of asymmetrically c-commanding nodes drawn from the structure generated by the syntax and from this set, generates a list of instructions for linearization. Under the LCA, if a node α asymmetrically c-commands a node β, then α linearly precedes β and the image of α (i.e. the set of terminal nodes dominated by α) precedes the image of β (i.e. the set of terminals dominated by β). On this model, linearization is one of the consequences of spell-out or Transfer, an operation that exports the output of the narrow syntactic computation to the interface levels (PF and LF) for interpretation before the Sensorimotor and Conceptual-Intentional performance systems that interact with language are engaged.

Another assumption I make is that the spell-out operation can occur several times in the course of a derivation (Uriagereka 1999, Chomsky 2000, 2001). According to phase theory, the computational system builds syntactic objects in stages. A subset of the numeration (a phase) is fashioned into a hierarchical object and then transferred to the interfacing subsystems for interpretation. On the PF side of grammar, spelled-out phases are linearized and placed in working memory. Part of the motivation for this conception of the derivation is that it promotes efficient computation. Once a construction is transferred to the interfaces, the computational system can "forget" its internal content, minimizing the burden on working memory. This, however, is an oversimplification. To account for recursion and long-distance dependency formation, some subset of the phase must remain accessible for further computation. At the very least, phase heads must be accessible for selection to facilitate structure building beyond the phase level. This residue (the edge) is thus temporarily exempt from spell-out, as is any c-commanding material (i.e. the head's specifier(s) and adjunct(s)). This conclusion, which comes "for free" given the assumptions above, is framed in terms of the Phase Impenetrability condition (PIC). Chomsky's (2000) formulation appears below.

(7)   PHASE IMPENETRABILITY CONDITION (Chomsky 2000)

In phase α with head H, the domain of H is inaccessible to operations outside α, only H and its edge are accessible to such operations.

Empirical considerations concerning (but not limited to) quirky subjects and nominative objects (cf. Taraldsen 1995, Sigurðsson 1996) prompted a revision to the PIC in (7). If vP counts as a phase, as is typically assumed, then in order for T^0 to probe inside VP for purposes of agreement and case assignment, transfer of the vP phase must be delayed at least until completion of the TP projection. Chomsky (2001) revises the mechanics of cyclic spell-out, proposing that phasal transfer is delayed until a second higher phase head is merged. Assuming CP also counts as a phase, as is standard, if vP transfer is delayed until merger of the C^0 phase head, for example, T^0 can successfully probe into VP, as desired. This is captured below in Chomsky's (2001) revision of the PIC.

(8)   PHASE IMPENETRABILITY CONDITION [Revised] (Chomsky 2001)

Given phases ZP and HP, the domain of H is inaccessible to operations at ZP, only H and its edge are accessible to such operations.

The formulation in (8) makes it possible for non-trivial chains to cross phase boundaries without first moving to an edge position/escape hatch. In what follows, I assume Chomsky's (2001) formulation of the PIC (cf. (8)). It has been proposed that this notion of syntactic freezing can be derived if the linear relations established for a given phase are seen as relations that must remain invariant over the entire course of the cyclic derivation (cf. Fox & Pesetsky 2005). The issue of whether DP counts as a phase/spell-out domain will not be crucial for my purposes.

This discussion by no means exhausts the set of Minimalist assumptions that underlie the present work, but it does bring two of the most salient assumptions to the fore. In the chapters that follow, some of these additional assumptions are highlighted and situated within the context of the discussion, while others are left implicit. The analytical component of this book thus presupposes a basic grasp of recent Minimalist theory. The descriptive component, on the other hand, remains largely theory-neutral.

1.2.2. Distributed Morphology

This book adopts several key positions championed by the anti-lexicalist framework of Distributed Morphology (DM hereafter - Halle & Marantz 1993, 1994, Marantz 1997, Noyer 1997, among others), without necessarily endorsing all of its attendant proposals. In particular, I assume the Late Insertion hypothesis that syntactic terminals (i.e. morphemes) are purely abstract feature bundles that lack phonological content. The phonological expression of a given syntactic node (a Vocabulary Item) is provided in the mapping from syntax to PF by an operation known as Vocabulary Insertion, a derivationally late process in which Vocabulary Items compete for insertion into a particular node. I assume that there are essentially two types of morphemes, Abstract morphemes such as [PAST] or [FOCUS] for example, and root morphemes such as √DESTROY, *both of which* are subject to Vocabulary Insertion late in the derivation (cf. Halle & Marantz 1993, 1994, Marantz 1994, 1996, but contra recent proposals by Harley & Noyer (1998), Embick (2000) and Embick & Noyer (2007)). Root morphemes are taken to be category neutral, their categorical properties being a function of the syntactic environment in which they are merged (Marantz 1997). For example, when under the scope of the verbalizing morpheme (v^0), the root √DESTROY is realized as the verb *destroy*, but when under the scope of a nominalizing morpheme (n^0/D^0), the result is the nominalization *destruction*. Because I adopt an articulated vP shell structure (see chapter two), I depart slightly from the standard DM convention that v^0, i.e. the head that introduces the external argument, is the verbalizing morpheme. In place, I assume that the verbalizing morpheme and the external argument-introducing morpheme are distinct (cf. Collins 2005); v^0 introduces the external argument, while V^0 provides the root with verbal features. This difference is illustrated below.

(9)   a. BASIC VERB PHRASE STRUCTURE IN DM
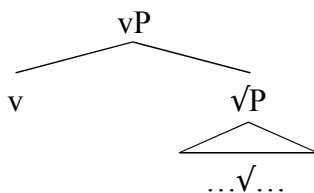
b. BASIC VERB PHRASE STRUCTURE ASSUMED IN THIS BOOK

```
            vP
       _____
      v           .
                  .
                 .
              VP
          _____
         V          √P
                  _____
                 …√…
```
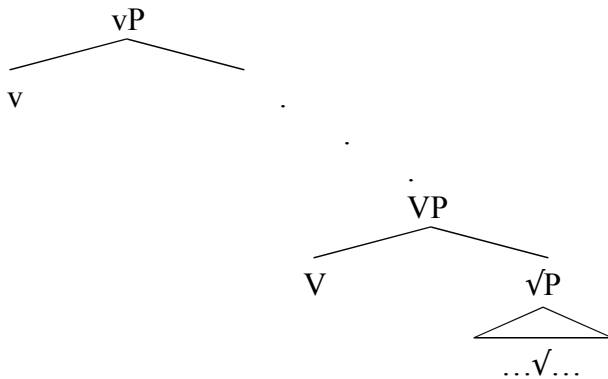
Although nothing crucial hinges on this assumption (indeed, it would be entirely possible though less syntactically plausible given the particulars of Nupe syntax (cf. chapter two) to redraw the structures so as to conform to the standard in (9a)), I call attention to this move as a point of departure between my approach and that of textbook Distributed Morphology.

Under the DM perspective, the PF wing of grammar has a fairly articulated architecture. Of central importance to this book is the linearization function, which is carried out along the PF branch of a derivation. I assume the DM hypothesis that linearization is imposed by and concurrent with Vocabulary Insertion. The framework postulates a number of morphological operations that operate on transferred syntactic structures prior to the Vocabulary Insertion/linearization stage of the PF derivation. These operations are responsible for altering the morphosyntactic shape/content and hierarchical relations of the transferred structures. They include Fusion (Halle & Marantz 1993, 1994, Halle 1997), Morphological Merger/Lowering/Local Dislocation (Marantz 1984, 1988, Bobaljik 1995, Embick & Noyer 2001), Fission (Noyer 1997, Halle 1997), and Impoverishment (Bonet 1991, Halle & Marantz 1993, 1994). Following Vocabulary Insertion/linearization, the linguistic object is prepared for interpretation by the Sensorimotor performance system by way of additional operations. These include Prosodic Mapping and Phonological Readjustment. The architecture of the PF wing of grammar as conceived in DM is presented below.

(10)   THE DM CONCEPTION OF GRAMMAR AND PF ARCHITECTURE

Syntactic Computation

| **Morphology** |
| (Fusion, Fission, Merger, Impoverishment, etc.) |

LF

Vocabulary Insertion/Linearization

| **Phonology** |
| (Prosodic Mapping, Readjustment rules, etc.) |

Articulatory-Perceptual Performance System
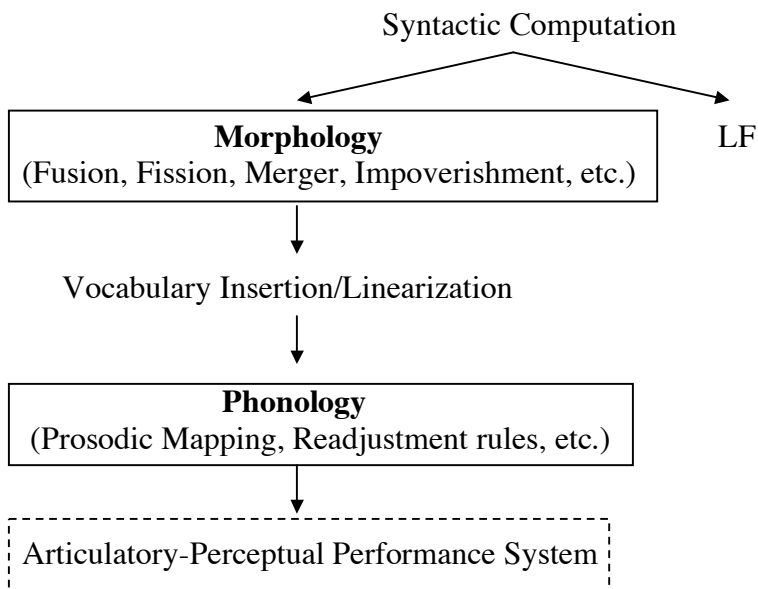
Many of these assumptions about DM will be recapitulated during the course of the book where appropriate. Therefore, a high level of familiarization with the framework is not essential.

1.2.3. Theories of Chain Resolution/Linearization

As previously mentioned, a conceptual selling point for the copy theory of movement is that reconstruction phenomena can be greatly simplified if in addition to chain heads, traces are available for semantic interpretation in virtue of their copy status. It is generally assumed that the interpretive component has a genuine choice regarding which copy of a non-trivial chain to favor at the semantic interface (cf. (4)), with certain preferences favoring certain patterns of deletion + interpretation. For example, it has been proposed that there is a preference for deleting the head of an operator-variable chain at the C-I interface (Chomsky 1995a). At the dawn of the Minimalist Program, by contrast, it was assumed that no such choice is available with regard to chain resolution at PF (Chomsky 1995a). Quite simply, it was stipulated that lower copies could not be phonetically realized, a return to the sort of proposal commonly advanced in the GB era (cf. Chomsky 1981, Sportiche 1983, etc.). The drawback of this proposal was clear: if, unlike heads of chains, lower copies are doomed to PF deletion, then it is not the case that all copies are treated equally at the interface levels, despite their purported equality at LF. In essence, the distinction between traces and copies becomes blurred once the impossibility of lower copy pronunciation is stipulated. This ontology provoked a certain degree of skepticism. Brody (1995), Bobaljik (1995), Groat & O'Neil (1996), and

Pesetsky (1998), among others, suggested that just as the interpretive component could privilege either higher or lower copies, so too could the phonological component favor any visible copy. The advantage of assuming that in principle all copies of a chain are pronounceable is that the difference between overt and covert movement reduces to a simple difference between favoring either the head or a lower copy of a chain at PF, rather than to differences in the timing of movement with respect to spell-out. In this way, movement operations could be localized exclusively to the narrow syntax cycle, with language-specific differences arising from variation in the linearization and interpretation of copies at the interfaces. In addition, the status of copies at the interfaces becomes uniform as positional distinctions among copies disappear.

Regardless of this insight, it was difficult to ignore the fact that in most cases of PF chain resolution, chain heads are pronounced and lower copies are deleted. A variety of proposals of an ad-hoc nature were put forth in the mid-to-late 90s in an attempt to derive this patterned regularity. Although descriptively successful, most of these theories of chain resolution lacked conceptual/explanatory rigor. Several of these proposals are listed below.

(11)   a.   SPEAK UP (Bobaljik 1995)

   Pronounce the topmost/leftmost copy of each chain.

   b.   TRANSPARENCY (Brody 1995: 106)

   If all chain links c-commanded by the contentive element are copies of the contentive, then only the highest member of the set of copies is visible for spell-out.

   c.   FORM CHAIN (Groat & O'Neil 1996: 135)

   Chain formation results in the copying of all syntactic features of the moved element, but does not copy the moved element's phonological matrix.

   d.   SILENT TRACE (Pesetsky 1998: 361)

   Do not pronounce the traces of a moved constituent.

   e.   PF-SENSITIVE CHAIN RESOLUTION (Franks 1998)

   The head of a chain is pronounced, unless pronunciation of the head position leads to a PF violation. Lower copy spell-out is possible only when issues of PF well formedness are at stake.

Nunes' (1995, 1999, 2004) theory of chain linearization, in contrast, provides rigorous and conceptually satisfying answers to two deep questions raised by the copy theory of

movement: 1) Why are copies deleted at PF? (i.e. Why are traces phonetically null?) and 2) Why is it that the head of a chain is the link that typically resists PF deletion?

Nunes argues that without Chain Reduction, that is, the erasure/deletion of copies/chain links at PF, chains would be unlinearizeable syntactic outputs. Consequently, chain formation would lead to a failure of PF convergence and subsequently cause the derivation to crash. Consider the derivation of an unaccusative sentence at the point of PF transfer.

(12)   [An onion]^i fell [an onion]^i in the ointment.

The derivation of (12) involves an instance of chain formation resulting from the EPP-driven movement of the DP [*an onion*]. Both occurrences of [*an onion*] are copies (graphically notated by coindexed superscripts), which is just to say that both expressions are derivationally related to a single element of the lexical array that fed the derivation (Chomsky 1995a). As a result, they are computationally non-distinct. Consider the consequences of pronouncing multiple non-distinct constituents at PF. In (12), the occurrence of [*an onion*] in subject position asymmetrically c-commands the verb *fell*. At the same time, however, *fell* asymmetrically c-commands the lower copy of the raised DP. The LCA thus yields the following precedence relations.

(13)   a. an onion^i » fell
        b. fell » an onion^i

This result is problematic given the non-distinctness of both occurrences of [*an onion*]. Consequently, a symmetric (i.e. non-linear) ordering is derived: [*an onion*] must both precede and be preceded by *fell*. Additionally, because the DP in subject position asymmetrically c-commands its non-distinct copy in object position, the LCA derives another non-linear (in this case, reflexive) ordering in which [*an onion*] precedes itself. Because neither is a possible linear ordering, the chain with both copies phonetically realized will fail to be linearized at PF and the derivation will crash. In this way, Nunes derives the necessity of PF copy deletion. The null status of traces (i.e. lower copies) is therefore not a grammatical primitive as in Chomsky 1981, but rather follows as a consequence of a Bare Output condition, that is, the need for chains to be properly linearized at PF. This explains the descriptive observation that in typical cases of chain formation all but one link escapes Chain Reduction. What it doesn't explain, however, is why the chain head is privileged at PF. That is, if PF convergence depends on the deletion of all but a single chain link, why is the derivation in (14b) below ruled out?

(14)   a. [An onion] fell [~~an onion~~] in the ointment.
        b. *[~~An onion~~] fell [an onion] in the ointment.

Nunes derives the preference for spelling-out chain heads from considerations of economy. Given that the highest copy of a chain will have checked more uninterpretable features (uFs) than all other copies, it would be uneconomical to pronounce anything but

the head of the chain. The reason is because doing so would require additional operations (i.e. Formal Feature Elimination) to erase the unchecked uninterpretable features of the lower copies necessary for the output to satisfy the principle of Full Interpretation (Chomsky 1993) and converge at PF. Take the derivation in (14b) for example. The lower copy of the DP reaches the PF interface with unchecked uninterpretable features. If the head of the chain is deleted, the structure can be linearized, but the derivation will fail to meet Full Interpretation unless an additional deletion operation removes the uninterpretable feature(s) of the lower copy (cf. (15b) below). The derivations represented in (14a/15a) are therefore more economical because only one instance of erasure takes place, namely the deletion of the lower copy for reasons of linearization. (In what follows, checked features appear in embossed typeface and PF deleted material is marked by a strike-through line.)

(15) ☞ a. [An onion$_{[uF]}$]^i fell [~~an onion$_{[uF]}$~~]^i in the ointment.
   b. [~~An onion$_{[uF]}$~~]^i fell [an onion$_{[\mathbf{uF}]}$]^i in the ointment.

Thus, because heads of chains enter into more checking relations than any other chain link, they are the least costly copies to pronounce at PF. In this way, Nunes derives the privileged status of chain heads under the copy theory of movement.

1.3. ORGANIZATION OF THE BOOK

The following serves as a basic road map of the book. Each chapter, apart from the two initial preliminary chapters and the conclusion, explores a different aspect of the grammar of repetition in Nupe. The substantive chapters (chapters three, four, and five) provide both extensive theory-neutral descriptive coverage and formal analysis. In what follows, I provide the reader with an overview of the issues discussed and the conclusions reached in each of the remaining chapters.

1.3.1. Chapter 2: Prefatory Remarks on Nupe Grammar

Chapter two provides the reader with the backdrop against which the book's syntactic analyses are situated. After a brief background of the language is presented, I acquaint the reader with various aspects of Nupe grammar central to later analysis. Among the topics surveyed are: word order and directionality, verb phrase structure and the middle field of the clause, the Nupe left periphery, CP syntax, and a variety of additional ancillary properties and observations that will become relevant over the course of the book. A fair amount of the discussion in this chapter is lifted from Kandybowicz & Baker 2003, however, a number of new observations and insights are also presented.

1.3.2. Chapter 3: Repetition via Morphophonological Conditioning

Chapter three discusses bare root verbal repetition (cf. (6a)), one of three instances of multiple copy spell-out in Nupe. I argue that the phonetic realization of multiple verb roots in this construction is conditioned by morphological and phonological factors. A multi-linked chain is formed by head movement of the verb root, which passes through a low factive projection unique to the construction. This projection is headed by a morpheme whose exponent is a floating low tone. The phonology of Nupe, however, does not tolerate prosodically unsupported tonal content, forcing spell-out of the lower copy of the verb root adjoined to this head. The higher copy of the verb is pronounced in order to support the affixal requirements of the hosting head (v^0), in line with Lasnik's (1981, 1995) Stray Affix filter, a GB-era device fully compatible with the architectures and assumptions of Minimalism and DM (see Chomsky 2008a, among others, for discussion on this latter point). The linguistic object resulting from the phonetic realization of both verbal copies is shown to be fully linearizeable, a state of affairs owing to the distinctness of the spelled-out copies, which is both a consequence of and recoverable from the narrow syntactic derivational history of the construction.

    The theoretical contribution of the Nupe bare root verbal repetition construction is that it provides strong empirical support for the copy theory of movement and sheds light on the mechanics of PF chain resolution. Of further theoretical interest is that the phenomenon offers a clear empirical argument against relegating head movement in its entirety to the PF wing of grammar.

1.3.3. Chapter 4: Repetition via Parallel Chain Formation

Predicate cleft, a second instance of multiple copy spell-out in the Nupe verbal domain (cf. (6b)), is the focus of chapter four. Here I argue that multiple copy pronunciation arises primarily as a consequence of parallel chain formation (cf. Aboh 2006, Aboh & Dyakonova 2006, Collins & Essizewa 2007, Chomsky 2008a), a kind of dependency involving overlapping tails and disjoint heads, formed when the featural requirements of separate lexical items converge on a single target. As such, the source of repetition in this case is syntactic rather than morphological. I show that the left peripheral Root copy and the lower TP-internal copy of the predicate head separate chains; the former, an A-bar chain headed by the bare verb root (i.e. head movement into a specifier position (cf. Koopman 1984, Vicente 2005, 2006)) and the latter, a head movement chain also headed by the verb. The PF status of both chains is unremarkable – in both cases, the chain head is phonetically realized and its lower copies are erased.

    The theoretical punch line in this case is that morphological and phonological conditioning are not the only pathways into multiple copy spell-out. The mechanism of parallel chain formation in the narrow syntax can yield a form of PF repetition because several copies of a single occurrence can be spread over a number of distinct non-interacting (i.e. independent) chains. As long as one copy per chain is phonetically realized, as is typical in cases of chain resolution, repetition will ensue. This conclusion

raises the possibility that other pathways into multiple copy spell-out may exist, perhaps independent of morphological or prosodic conditioning.

1.3.4. Chapter 5: Repetition via Prosodic Conditioning

In chapter five, I discuss *Comp-trace* effects and their relation to lower copy resumption, the final and only non-verbal instance of multiple copy spell-out in the language (cf. (6c)). Here, I motivate a purely prosodic characterization of multiple copy pronunciation. Pronominal resumption in Nupe is limited entirely to subject positions and occurs exclusively when subjects of embedded clauses are long-extracted across overt complementizers, i.e. the canonical *Comp-trace* configuration. I claim that this fact reflects the influence of a general and independently motivated prosodic well-formedness condition that the edge of an obligatorily parsed prosodic phrase be phonetically marked. Resumption or lower copy spell-out of a default pronominal expression is one way of meeting the requirement imposed by this constraint in Nupe. In this way, I argue that Nupe *Comp-trace* effects are purely prosodic and therefore represent a genuine syntax-phonology interaction. Thus, the view that *Comp-trace* effects are purely syntactic, as standardly diagnosed in the literature, cannot be maintained.

1.3.5. Chapter 6: Repetition and Beyond

Chapter six closes the book with a summarization of findings, situating them in the broader context of the architecture of the language faculty. In addition, I speculate on some issues left unaddressed in previous chapters, including other possible sources of multiple copy spell-out.

CHAPTER 2

PREFATORY REMARKS ON NUPE GRAMMAR

This chapter lays the foundation for the analytical chapters ahead by bringing together various salient strands of Nupe grammar. My objective is to provide the reader with the background needed to follow the discussion in the upcoming chapters, rather than sketching a comprehensive descriptive outline of the language. A number of existing works have accomplished this latter task, in particular, Banfield & Macintyre 1915 and Smith 1967a (see also George 1975). I thus restrict my attention to those aspects of the grammar that directly factor in the discussion that follows in upcoming chapters. Consequently, a number of interesting facets of the language will not be discussed at this time so that the transition from overview to analysis can be made more direct. Over the course of the book, however, a number of important but less crucial grammatical points not discussed in this chapter will be introduced where relevant. For now, though, I'd like to begin by providing a brief introduction to the Nupe language.

2.1. LANGUAGE BACKGROUND AND PRELIMINARIES

Nupe is a regionally important language spoken by approximately one million speakers (Gordon 2005) on both sides of the Niger River in the Middle-Belt region of Nigeria. It is the principal Nupoid language of the Benue-Congo branch of the Niger-Congo language family (Blench 1989). Closely related Nupoid languages include Ebira, Gade, and Gwari. Nupe is also related to Yoruba, both areally and genetically. However, the two languages differ in a number of notable ways. With respect to multiple copy spell-out, for instance, although predicate clefting and pronominal resumption are attested in both languages (with subtle, yet important differences), bare root verbal repetition is uniquely Nupe.[1]

In this book, I will be concerned with the variety of Nupe spoken in and around the town of Lafiagi (Edu local government area, Kwara state). Although a regional variant of the Central or literary dialect spoken in Bida, current Lafiagi Nupe is grammatically indistinguishable from standard Nupe, though some subtle phonological differences exist. The Nupe data presented in this study are drawn exclusively from fieldwork with seven native speakers elicited over a period of eight years. Six of these speakers were consulted in Nigeria and one was consulted in the United States. With one exception, all speakers interviewed spoke the Lafiagi dialect natively.

There is a small but healthy body of descriptive literature on Nupe. In addition to an excellent Nupe-English dictionary (Banfield 1914), several comprehensive reference grammars and general descriptions of the language have been produced. These include Crowther 1860, 1864, Banfield & Macintyre 1915, Smith 1964, 1967a, 1969b, and Nadel

nd. Other notable publications include Smith's (1967b) description of Nupe phonology, Smith's (1969a) all-encompassing treatment of the Nupe verb, Madugu's (1980) account of Nupe orthography, and Blench's (1989) genetic classification of the language. Within the tradition of generative grammar, a likewise healthy body of literature exists. In fact, this book represents the fourth generative monograph on the Nupe language, with Smith 1964, George 1975, and Kawu 2002 comprising the other three (the latter two were written by native speakers). Notable contributions in Nupe phonology include George 1970, Hyman 1970, 1973, Harms 1973, Krohn 1975, Roberts 1976, Kawu 2000a,b, 2002, and Kandybowicz 2004a. In syntax, previous research includes Smith 1970, 1971, George 1975, Madugu 1979, 1981, 1982, 1983, 1985, 1986, 1987, Tswanya 1989, Kawu 1990, 1999, Cormack & Smith 1994, Kandybowicz 2000a,b, 2002a,b, 2004b, 2005, 2006, 2007a,b, 2008, to appear, Baker & Kandybowicz 2003, and Kandybowicz and Baker 2003.

The orthographic representation of Nupe employed in this book conforms to the modern spelling system (cf. Madugu 1980) and thus differs slightly from the classic orthographies of Banfield (1914) and Banfield & Macintyre (1915). In what follows, high tone is marked with an acute accent over the vowel and low tone is marked with a grave accent. Mid tones are unmarked. Nasalized vowels are represented by the sequence V + *n* (e.g. <an> is the notation for the nasalized vowel [ã]). Labiovelar phonemes are also transcribed as sequences of graphemes (e.g. <kp> and <gb>). Vowel length is indicated by means of a colon following the vowel and contour tones are transcribed as sequences of level tones (e.g. a rising tone on the vowel [a] is transcribed <ǎ>).

I turn next to grammatical considerations.

2.2. DIRECTIONALITY AND THE MIDDLE FIELD OF THE CLAUSE

2.2.1. Nupe Phrase Structure: Head-Initial, Head-Final, or Both?

On a superficial level, Nupe appears to be a mixed word order language. This is clearly the impression one is left with upon casual consideration of the verb phrase domain. Similar to West African languages like Gungbe (Aboh 2005), Vata and Gbadi (Koopman 1984), among others, both verb-object and object-verb orders are attested. As in these languages, the surface order of the verb phrase seems to correlate with the tense/aspect of the clause and whether certain elements that have modal or aspectual meanings are present. As shown in the data below, simple transitive sentences in a variety of tenses manifest the SVO word order (1a-c), however, when the perfect marker *á* is present (1d) or when modal-auxiliary verbs surface (1e), one finds OV orders instead.[2] (Note that the simple past tense is not marked by any overt morpheme in the language.)

(1)   a. Musa **si dùkùn**.   (VO)
         Musa buy pot
         'Musa bought a pot.'

    b. Musa è   **si**   **dùkùn**.   (VO)
        Musa PRS buy pot
        'Musa is buying a pot.'

    c. Musa à   **si**   **dùkùn**.   (VO)
        Musa FUT buy pot
        'Musa will buy a pot.'

    d. Musa á   **dùkùn** **si**.   (OV)
        Musa PRF pot   buy
        'Musa has bought a pot.'

    e. Musa yá   **dùkùn** yin **si**.   (OV)
        Musa begin pot   PRT buy
        'Musa began to buy a pot.'

Both head-initial and head-final orders obtain elsewhere in the grammar. For instance, DPs (2a) and locative expressions headed by the particle *o* (2b) seem to be head-final, whereas TPs and CPs seem to be head-initial (2c).

(2)   a. Egi   **nana zì**   (Phrase-final D^0)
         child   this   PL
         'These children'

        b. Lítáfi ta   èsákó **o**.   (Phrase-final Loc^0)
         book   be.on table LOC
         'The book is on the table.'

        c. Musa gàn **gànán** etsu **à** bé.   (Phrase-initial C^0/T^0)
         Musa say COMP chief FUT come
         'Musa said that the chief will come.'

2.2.2. *Against a Head-Final Approach to Nupe Directionality*

Inspired by Koopman's (1984) analysis of Vata and Gbadi, Cormack & Smith (1994) argue that apart from a head-initial TP projection, Nupe is ultimately a head-final language. They assume that perfect *á* is a lexical item residing in T^0 and that verbs move to this position if and only if T^0 does not contain an independent lexical item. This analysis is summarized in (3) below, which is their representation of (1).

(3)

```
                        TP
             ┌──────────┴──────────┐
            DP                     T′
           ╱‾‾╲            ┌────────┴────────┐
          Musa            T                 VP
                          │          ┌───────┴───────┐
                         (á)        DP               V′
                                           ┌──────────┴──────────┐
                                          DP                     V
                                        ╱‾‾‾╲                    │
                                        dùkùn                   si
```

iff T^0 is non-lexical
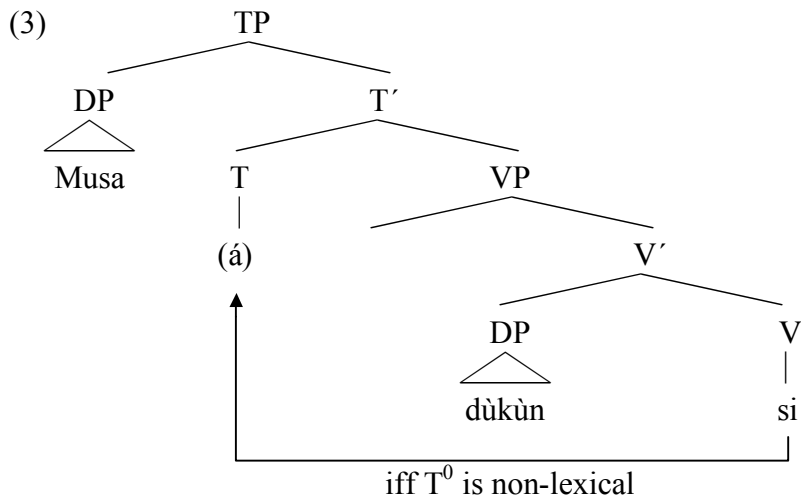
Some rather straightforward considerations show that the simple analysis of Nupe sketched in (3) cannot be the whole story. The first involves the nature of the tense markers. Cormack & Smith assume that Nupe tense markers are prefixes on the verb. As such, they would be compatible with V-to-T movement; indeed, they could be considered the triggers for such an operation. Basic adverb placement facts, however, suggest that this is incorrect. Low VP-initial adverbs come between the tense marker and the verb in Nupe (as in English), not after the tense + verb combination (as in French), nor before the tense marker.[3] (4) shows this pattern for the future marker *à* and present morpheme *è*; the same pattern holds for other choices of low VP-initial adverbs (not shown).

(4)　　Musa (*dàdà)　à/è　**dàdà**　si (*dàdà)　dùkùn.
　　　　Musa　quickly FUT/PRS quickly buy quickly pot
　　　　'Musa will quickly buy/is quickly buying a pot.'

Adverb placement facts such as those illustrated in (4) suggest that tense markers like *à/è* are not verbal prefixes, but rather independent particles. If so, then, the verb clearly does not move to T^0, even though it comes before the object. The same adverb necessarily precedes the perfect particle *á*, as shown below.

(5)　　Musa **dàdà**　á (*dàdà)　dùkùn si.
　　　　Musa　quickly PRF quickly pot　　buy
　　　　'Musa has quickly bought a pot.'

The contrast between (4) and (5) shows that the perfect marker does not occupy the same T^0 position that tense markers in the language do; rather, it must occupy some lower head. Thus, the structure of the Nupe middle field must be more elaborate than (3).

　　What position does perfect *á* occupy in sentences like (5)? I claim that it is generated in the v^0 position proposed by Larson (1988), Hale & Keyser (1993), and Chomsky

(1995a), among others.[4] This head is present in all transitive and unergative clauses, where it plays a role in assigning the external θ-role to the underlying subject, forming structures like [T [DP$_{agent}$ v [$_{VP}$ … V …]]]. Whether it is also present in unaccusative clauses is more controversial; I assume that it is, but does not assign a θ-role in that context, following Bowers (1993), Chomsky (2001, 2008a), and Baker (2003), among others. In addition to putting *á* in the right hierarchical position, this view fits well with the fact that *á* seems to be a reduced form of the verb *lá* 'take'. Verbs meaning 'take' are among the most common "light verbs" (cf. *Van Winkle took a nap* vs. *Van Winkle napped*), and the natural home for light verbs is the v^0 node. It is a good guess that Nupe's perfect tense evolved from a serial verb construction source[5], such as "Musa take pot buy", as in a number of West African languages (Stahlke 1970). On this view, Nupe verbs raise to v^0 (if v^0 is empty), but no higher (cf. (4)). We can understand this in one of two ways. Either verb roots raise in order to check an uninterpretable root/verbal feature against v^0 or they are attracted by an uninterpretable feature/property of v^0. Both analyses account for the basic fact that verbs raise in the language and provide an explanation for the observation that verbs are restricted from head moving into positions higher than v^0. Moreover, on the standard assumption that v^0 is affixal, the exception-less phonetic realization of the head follows on morphological grounds. On this approach, an example like (5) has a structure roughly like (6), which is an expansion of (3).

(6)

$$V^0 \rightarrow v^0 \text{ iff } v^0 \text{ is non-lexical}$$
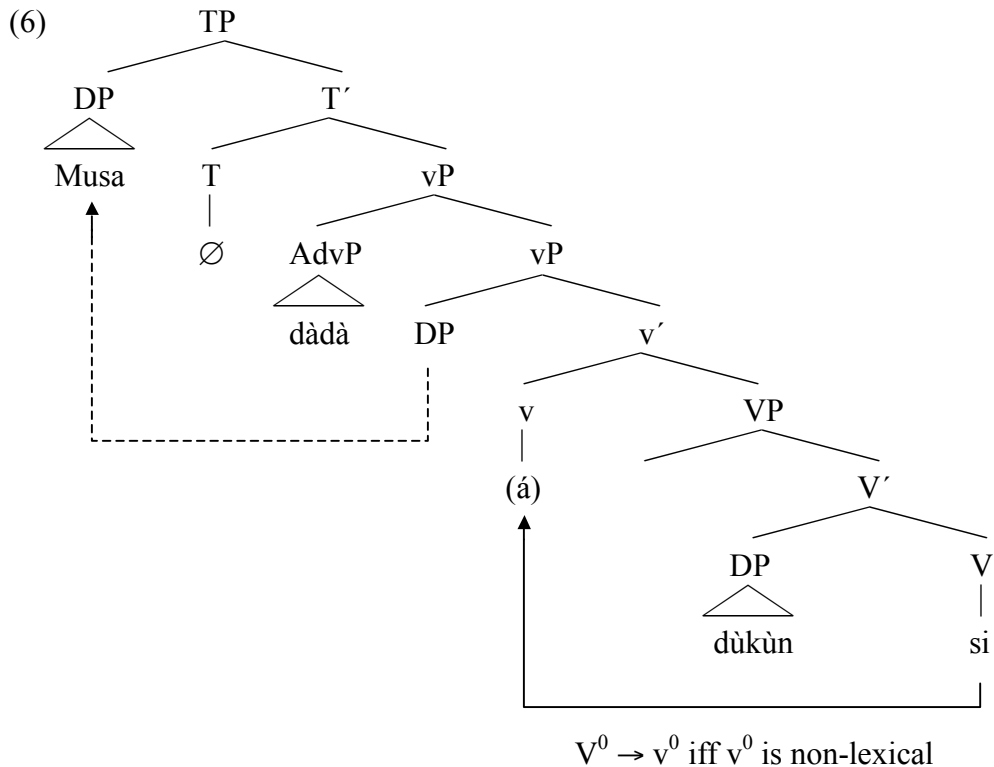
This revision is, of course, still compatible with the essence of the Koopman-Cormack-Smith idea that VP is head-final apart from head movement. The crucial

question to clarify this, then, is what is the internal structure of the node labeled VP in (6)? To get evidence that bears on this, we must consider a wider range of verb phrase structures. When we do this, we quickly see that the VP does not appear very head-final at all.

2.2.3. *Head-Initial Nupe Verb Phrases and their Structure*

While it is true that the direct object of a monotransitive verb comes before the verb in perfect clauses (1d), virtually every other constituent comes after the verb in perfect sentences, just as in simple sentences. This is illustrated in (7). (7a) shows that with ditransitive verbs like *yá* 'give', the indirect object precedes the verb, but the direct object follows it. (7b) shows that oblique locative complements directly follow the verb in the perfect as well. (7c) and (7d) illustrate that unselected locative adjuncts and adverbs respectively, come after the verb. (7e) highlights the fact that the second verb of a resultative serial verb construction (i.e. the resultative complement of V1) also immediately follows the first verb. Finally, (7f) shows that in perfect constructions, complement PPs and selected embedded clauses come after the verb and are ordered in precisely the manner expected of a head-initial language.

(7) a. Musa á etsu yà **èwò**.   (V » Direct Object)
         Musa PRF chief give garment
         'Musa has given the chief a garment.'

    b. Musa á le **kata o**.   (V » Locative Object)
         Musa PRF sleep room LOC
         'Musa has slept in the room.'

    c. Musa á nakàn du **efo cigbàn o**.   (V » PP Adjunct)
         Musa PRF meat cook hole tree LOC
         'Musa has cooked meat under the tree.'

    d. Musa á nakàn ba **sanyín**.   (V » Adverbial Adjunct)
         Musa PRF meat cut quietly
         'Musa has cut the meat quietly.'

    e. Musa á èwò fo **li**.   (V » Resultative V2)
         Musa PRF garment wash be.clean
         'Musa has washed the garment clean.'

    f. Musa á gàn **yà Gana gànán wu:n si dukùn**.   (V » PP » CP)
         Musa PRF say to Gana COMP 3rd.SG buy pot
         'Musa said to Gana that he bought a pot.'

Overall, a greater variety of phrase types come after the main verb than before it, even in perfect sentences. This gives the impression that the Nupe VP is head-initial, not head-final. Additionally, no more than a single DP ever precedes the main verb in the perfect construction and this DP must bear accusative/dative case. Locative objects of posture and motion verbs follow the predicate (7b), as do adjuncts (7c,d), other VPs (7e), and CPs (7f), all of which either resist case or else fail to be assigned accusative/dative (Stowell 1981). These facts are nicely accounted for if we say that the phrase that contains the verb at Spell-Out is head-initial, and that the pre-verbal constituent in perfect constructions occupies the specifier position of a functional projection within the vP shell structure. Following Koizumi (1995), I call this verb phrase internal functional category AgroP[6] and in keeping with the Minimalist perspective alluded to in chapter one, claim that object DPs raise to its specifier position after a) having valued probe $Agro^0$'s uninterpretable φ-features and b) having received case from $Agro^0$ via the operation Agree, despite the fact that no overt case marking is visible at PF (cf. (8) below). This movement, I assume, is driven by an EPP/occurrence feature (Chomsky 2000) borne by the vP-internal φ-probe ($Agro^0$).

(8) a. Mi:/wo:/wu:n/yi:/ye:/a: à   le Musa yé.
         1st.SG /2nd.SG /3rd.SG/1st.PL/2nd.PL /3rd.PL FUT see Musa eye
         'I, you, s/he, we, you, they will see Musa.'

     b. Musa à   le   mi:/wo:/wu:n/yi:/ye:/a: yé.
         Musa FUT see 1st.SG /2nd.SG /3rd.SG/1st.PL/2nd.PL /3rd.PL eye
         'Musa will see me, you, s/he, us, you, them.'

The data previously discussed motivate a structural analysis in which Nupe AgroP is generated in all transitive structures and located between v^0 (the position of the verb in non-perfect sentences) and VP (the projection in which the internal argument originates). In non-perfect sentences, the verb raises into v^0 past the case marked object in Spec, Agro, yielding VO word orders. When perfect *á* is generated in v^0, however, verb raising to v^0 is blocked, forcing the verb to surface lower than the raised object, that is, in $Agro^0$. See Kandybowicz & Baker 2003 for a more elaborate justification of this proposal, in particular, for reasons why approaches that dispense with AgroP and EPP movement fail to account for the full range of verb phrase structures in the language, specifically, double object constructions. I illustrate this analysis below with a sketch of the derivation of the vP phase. (In the representations that follow in this book, formal features appear in subscripted braces and valued/assigned/satisfied features are indicated by way of embossed font.)
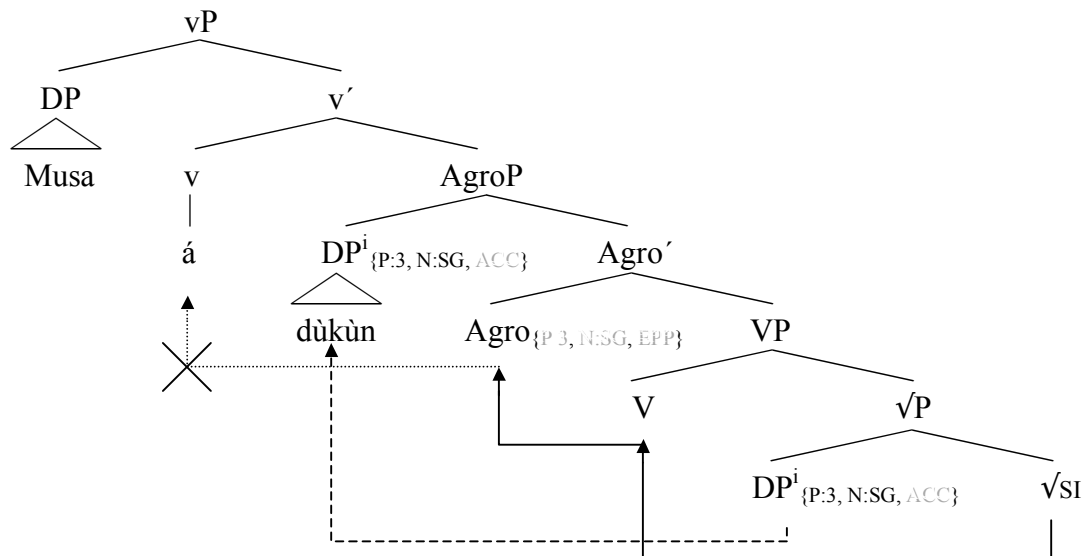
(9)   a. VO_{ACC} = AGREE ($AGRO^0$, DP) + EPP MOVEMENT + √ RAISING TO V^0

   Musa si   dùkùn.
   Musa buy pot
   'Musa bought a pot.'

   b. $O_{ACC}V$ = AGREE ($AGRO^0$, DP) + EPP MOVEMENT + √ RAISING TO $AGRO^0$
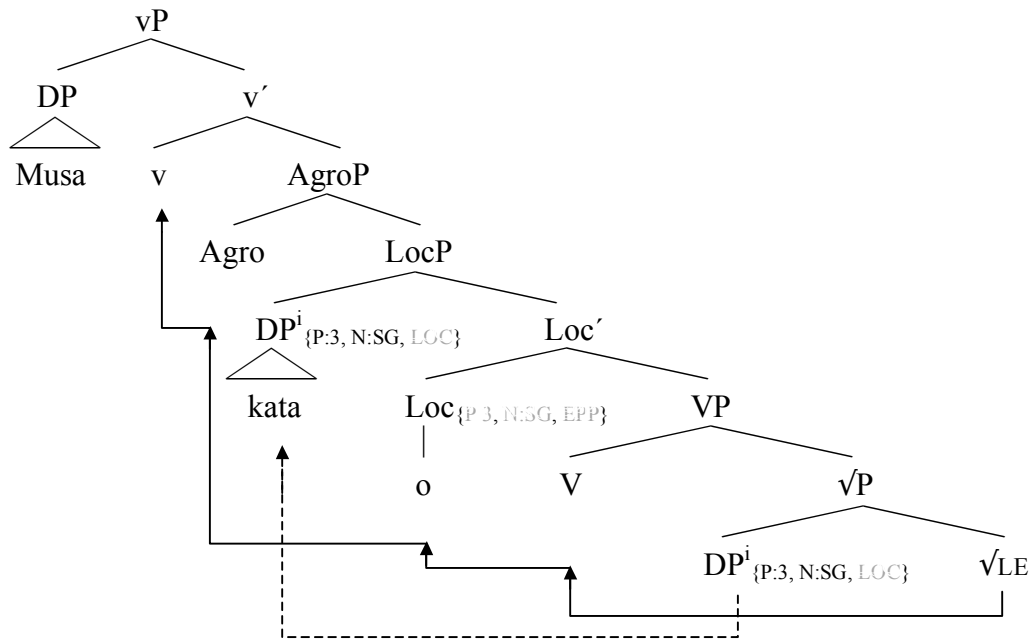
   Musa á   dùkùn si.
   Musa PRF pot   buy
   'Musa has bought a pot.'

25

The analysis can be extended to account for the fact that locative objects follow the verb in both perfect and non-perfect constructions by assuming a separate functional projection for locative case within the articulated vP structure. Call it, LocP. If LocP is immediately dominated by AgroP and its formal feature profile is akin to $Agro^0$ as in (9) (i.e. it is an EPP-bearing φ-probe), then VO orders result in both constructions because regardless of whether the verb raises to v^0 or $Agro^0$, it moves to a position higher than the raised locative expression. It is an open question as to why AgroP would be projected in the absence of an $Agro^0$ probe in locative constructions (as in the analysis below), but to the extent that the projection hosts a verbal landing site higher than the locative object in perfect constructions, its existence is motivated.[7] Further evidence for the existence of both projections and the hierarchy proposed above comes from word order facts in locative object-taking bare root verbal repetition constructions, as discussed in chapter three and exemplified by (20c) in that chapter. The structures below illustrate the analysis of Nupe locative constructions that I assume.

(10)　a.　NON-PERFECT VO_{LOC} = AGREE (LOC^0, DP) + EPP MOVEMENT + √ RAISING TO v^0

Musa　le　　kata　o.
Musa　sleep　room　LOC
'Musa slept in the room.'

b.   PERFECT VO_{LOC} = AGREE (LOC^0, DP) + EPP MOVEMENT + √ RAISING TO $AGRO^0$

Musa á   le   kata   o.
Musa PRF sleep room LOC
'Musa has slept in the room.'

I thus adopt the following Nupe-specific syntactic assumptions.

(11)   a.   The Nupe verb raises to the highest head position within vP that is not lexically filled, but raises no higher.

b.   Nupe verb phrase structures are head-initial syntactic objects, however, a variety of movements obscure this head-initial base order.

Assumption (11b) receives independent support from a number of converging analyses in the West African literature. See Aboh 2005, for example, for similar conclusions regarding word order alternations in the nearby Kwa languages. See Kandybowicz 2002a and Kandybowicz & Baker 2003 for further evidence as well as additional instances and analyses of verb phrase-internal movement in the language (i.e. as manifest in modal-auxiliary constructions like (1e)).

2.2.4. *From Verb Phrase Directionality to Nupe Word Order*

If true, (11b) is a significant finding because it means that there is no need to single out VP as having a special word order different from that of the head-initial functional

projections that dominate it (e.g. TP, CP). The natural conclusion to draw, then, is that Nupe is a head-initial language. A number of functional projections in the language still look head-final, however (cf. (2a-b)). My analysis of these structures is essentially the one given in Kandybowicz 2002a.

(12)   With remarkably few exceptions, the heads of functional categories in Nupe bear features with the EPP property.

As such, the specifiers of functional heads are typically filled in Nupe, following EPP-driven movements as motivated above for AgroP (cf. (9)) and LocP (cf. (10)). This gives the appearance that functional heads are final in their phrases. Although it is beyond the scope of this chapter to enumerate a complete list of examples and motivate the analysis further, the interested reader is referred to Kandybowicz 2002a, Kandybowicz & Baker 2003, and Kandybowicz 2005, where extensive evidence is provided.

2.3. THE C LAYER

Our introductory foray into the Nupe C layer will be limited to three topics: a) hierarchical relations of certain key left peripheral elements, b) peripheral adverbs, and c) the syntax of embedded clauses. This section is not meant to provide a comprehensive treatment of the Nupe left periphery, but rather to introduce aspects of the C domain that will factor into the discussion and analysis in upcoming chapters.

2.3.1. Rudiments of the Nupe Left Periphery

Many instances of A-bar extraction in the language involve movement to a clause-peripheral position. The following data show that both *wh*- expressions and focused constituents occupy positions to the left of the subject in both matrix and embedded clauses.

(13)   a. **Kíci eci** Musa à pa __ o?
            which yam Musa FUT pound   FOC
            'Which yam will Musa pound?'

        b. **Eci** Musa à pa __ o.
            yam Musa FUT pound   FOC
            'Musa will pound A YAM.'

        c. Gana gàn gànán **eci** Musa à pa __ o.
            Gana say COMP yam Musa FUT pound   FOC
            'Gana said that Musa will pound A YAM.'

In line with recent analyses of the left periphery (cf. Rizzi 1997, 2004), I assume that both *wh*- DPs and focused constituents move to the specifier of a peripheral Focus Phrase (FocP). Note that each focus construction in (13) involves the clause-final particle *o* glossed "Foc", which is homophonous with the locative particle (cf. (2b) and (7b,c)). In Nupe, all focus constructions are accompanied by clause-final *o*.[8] Despite its position at the right edge, the particle occupies a structurally high position, as evidenced by the fact that it follows other particles that characteristically inhabit the higher regions of clausal architecture (e.g. modals and negation).[9]

(14) Eci Musa pa __ **wô à** yin o.
      yam Musa pound can NEG PRT FOC
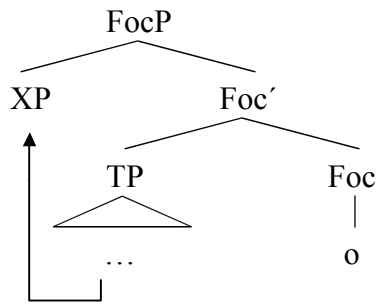   'Musa cannot pound A YAM.'

Many researchers have analyzed the *o* particle as heading Focus Phrase (Madugu 1981, 1982, 1985, 1986, Tswanya 1989, Kawu 1990, 1999, Cormack & Smith 1994, Kandybowicz 2002a, 2004b, and Kandybowicz & Baker 2003). Although certain considerations complicate the picture slightly, I believe this position can be maintained. One such consideration is the observation that *o* is not exclusive to focus constructions. As shown below in (15), the particle surfaces at the right edge in topicalization constructions as well.

(15) Eci Musa à pa wu:n o.
      yam Musa FUT pound 3RD.SG FOC
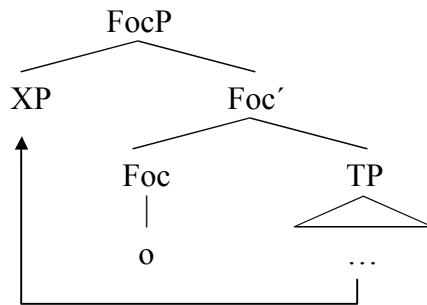   'A yam, Musa will pound it.'

Evidence that sentences like (15) are cases of topicalization rather than focus comes from the fact that they cannot be used to felicitously answer questions like "What will Musa pound?". Note the presence of the third person object pronoun *wu:n*. Crucially, when the pronoun is realized, a topic interpretation is available, but when omitted, a focus reading arises. Put another way, with the object pronoun omitted, (15) can serve as an answer to the question "What will Musa pound?". It is necessary for examples like (15) to be interpreted contrastively, that is, to admit of contrastive topic readings. These considerations are consistent with an analysis of Nupe topicalization in which *o* contributes focus, as before, and the pronominal argument clitic adds the topic reading as in clitic left dislocation constructions.

Word order considerations present a second complication to treating *o* as the head of Focus Phrase. Given that the focused constituent does not immediately precede *o*, it might seem as though one would have to invoke a head-final analysis of FocP. This, however, would fly in the face of the evidence presented earlier that Nupe is head-initial in the base. Consider the following analyses.

(16) a. HEAD-FINAL FOCP DERIVES THE CORRECT SURFACE DISTRIBUTION OF *O*

```
              FocP
             /    \
           XP      Foc´
           ↑      /    \
           |    TP      Foc
           |   /\        |
           |  /  \       |
           | …           o
           |_____|
```

   b. HEAD-INITIAL FOCP YIELDS INCORRECT PLACEMENT OF *O*

```
              FocP
             /    \
           XP      Foc´
           ↑      /    \
           |    Foc      TP
           |    |       /\
           |    |      /  \
           |    o         …
           |_____|
```

The analysis represented in (16b), however, is but one possible head-initial approach. Assuming we are committed to a head-initial Nupe ground plan, we can seek more fulfilling alternatives. One such proposal would be to deny that the *o* particle heads the Focus Phrase. Rather, we could view the focus projection as being headed by a phonetically null morpheme, which is itself dominated by a functional category headed by *o*. The *o* particle, we might claim, bears an EPP feature, which is typical of functional projections in the language. If this EPP feature were to trigger the movement of *o*'s complement into its specifier position, the clause-final status of the particle could be derived. This proposal is sketched below.

(17)

XP

X′

X$_{\{EPP\}}$

o

FocP

YP   Foc′

Foc$_{\{EPP\}}$ TP

∅   …
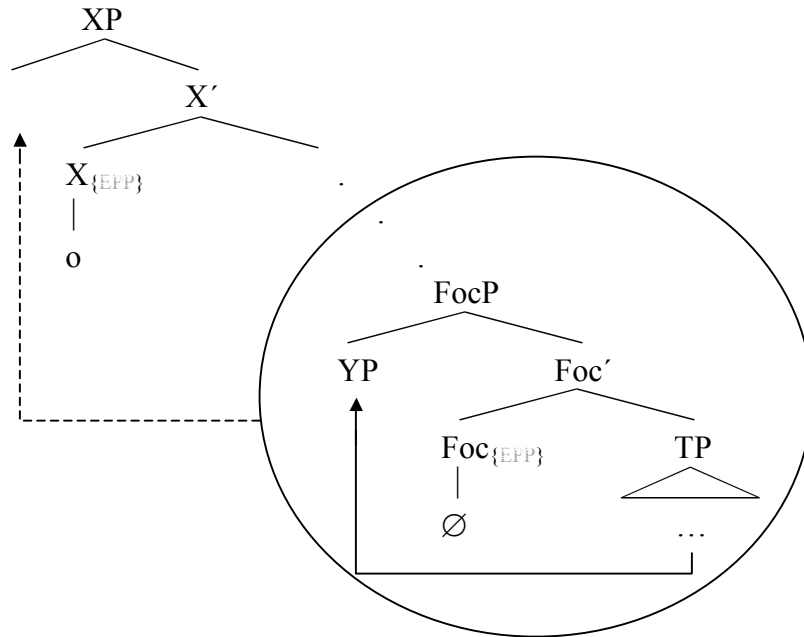
As analyses go, however, (17) leaves something to be desired. Its principle drawback is that it treats *o* as heading a semantically vacuous projection (XP). On this approach, *o* is merely an EPP marker, making it difficult to motivate its inclusion in the derivation, given basic Minimalist considerations regarding the syntax-semantics interface. On the assumption that every syntactic piece makes a meaningful contribution in the mapping to LF, we have strong motivation to analyze *o* as a focus particle. Thus, if we wish to maintain the following three well motivated positions: a) *o* is a focus particle, b) *o* heads a left peripheral projection, and c) Nupe phrases are head-initial in the base, we are lead to a single analysis of Nupe FocP. On this analysis, Foc^0 probes into TP, attracting the focused constituent to its specifier by way of an EPP feature and the remnant TP complement of Foc^0 tucks in to an inner specifier of *o* (cf. Richards 1997). Presumably, this instance of tucking in is triggered by multiple EPP features on Foc^0. The first of Foc^0's EPP features to be satisfied is directly linked to the head's Agree/Edge feature. It simply targets the focused expression, attracting it to Spec,Foc. The other EPP feature is more general, simply requiring specified content. As such, it blindly attracts the remnant clausal complement of Foc^0, yielding the characteristic clause-final placement of *o* if the movement targets an inner specifier. Following Richards (1997), I assume that this latter movement targets an inner specifier for reasons relating to Shortest Move/the Minimal Link condition. (For further justification that movement paths to multiple specifiers of a single head are fundamentally different than paths to specifiers of multiple heads, see Richards 1997.) This analysis is mapped out below.

(18)
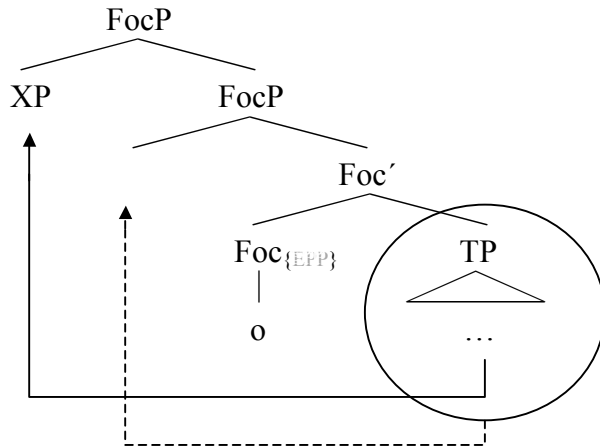
Before moving on, we can consider the hierarchical relationship of left peripheral Foc^0 to an uncontroversial element of the Nupe left periphery, namely, C^0. To do this, we observe restrictions on constituent ordering in the case of focus within embedded clauses. A representative example is provided below.

(19) Musa kpe   [(*nakàn) gànán **nakàn** Gana ba __ o].
      Musa know   meat   COMP   meat   Gana cut   o
   'Musa knows that Gana cut THE MEAT.'

Note that focused constituents must follow the complementizer, indicating that C^0 is structurally higher than FocP, an unsurprising fact given recent research on the cartography of the left periphery. Given the previous analysis, if FocP dominated CP, the focused constituent would appear leftmost in the embedded clause, followed immediately by the remnant CP in an inner specifier of Foc^0. To the extent that Nupe complementizers always precede foci, we have strong evidence for the hierarchical relation: CP » FocP.

One final issue that deserves attention in this discussion of the Nupe CP layer is the expression of polarity. Nupe negation has been described as involving two distinct morphemes: a preverbal floating high tone and a sentence-final particle *à* (Banfield & Macintyre 1915, Madugu 1983:33). A typical negative sentence is shown below.

(20) Musa è   (´) ba nakàn à.
      Musa PRS FT   cut meat   NEG
      'Musa is not cutting the meat.'

In the Nupe literature, the sentence-final particle *à* is often analyzed as the negative morpheme (Madugu 1983, Cormack & Smith 1994, among others). Here, a parallel to *ne…pas* negation in French is possible. Just as *pas* can be analyzed as the true negative head, given the developing optionality/weakening of *ne* synchronically, we might treat

the sentence-final element *à* as a negative morpheme that is supported/reinforced by a pre-verbal high tone-bearing null morpheme. To further the analogy with French negation, we can say that the negation-reinforcing morpheme that hosts the floating high tone occupies an adjoined position. Given the linear position of this floating element (i.e. between T^0 and v^0), it makes sense to treat the morpheme as a vP adjunct. In order to square this analysis with the word order facts, it is necessary to assume that negative morphemes bear EPP features, triggering movement of TP-sized constituents into their specifiers. Fortunately, this assumption fits comfortably with the previous analysis of *o* as well as the claim in (12). An analysis along these lines requires positioning the negative morpheme above the TP projection. I'll adopt the position that negative morphemes are one of the possible realizations of Σ^0, a polarity-related head, and thus that negative morphemes project ΣP projections (Laka 1990). These considerations lead to an analysis in which TP projections are merged as $\Sigma_{\{EPP\}}$ complements.

(21)
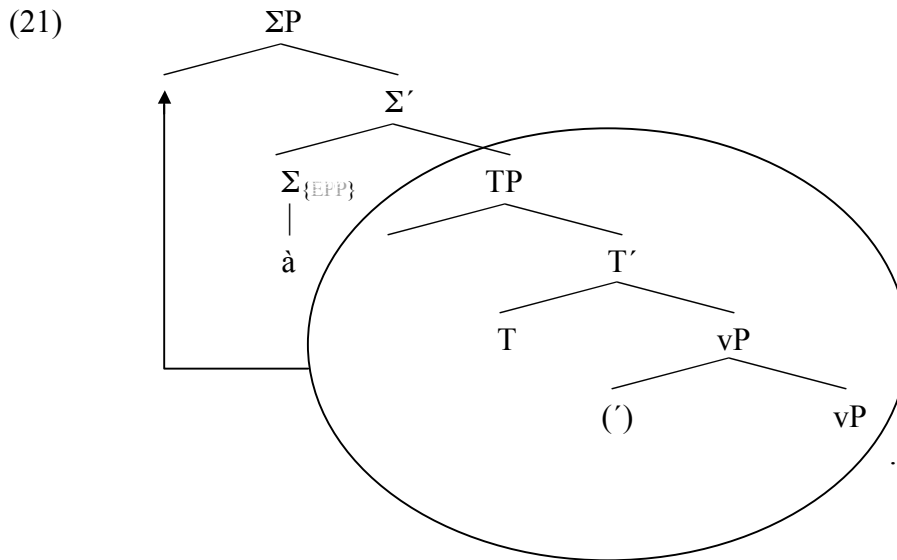
This TP-external analysis of ΣP is far from novel. Laka (1990) claims that ΣP placement is crosslinguistically variable, motivating an analysis in which ΣP dominates TP in Basque, but is dominated by TP in English. For the purposes of this book, I will assume the analysis of negation in (21).

Are there any other realizations of Σ^0 in the language? One possible contender is the morpheme *ni:*, whose semantic contribution is to reinforce the polarity of the clause/add emphasis to the asserted truth or falsity of the sentence. The distribution of *ni:* is similar to the distribution of negation; both appear clause-finally.

(22) Musa ba nakàn ni:.
      Musa cut meat ni
      'Musa actually cut the meat.'

Some rather straightforward evidence tells against this analysis. First, *ni:* and negation are able to co-occur, suggesting that they do not compete for the same syntactic position. That is, the two morphemes are not in complementary distribution, as shown below.

(23) Musa ba nakàn à ni:.
      Musa cut meat NEG ni
      'Musa did not actually cut the meat.'

Second, *ni:* clearly occupies a higher structural position than negation. Reversing the order of the particles *à* and *ni:* in (23) has ungrammatical consequences. Third, *ni:* patterns like the focus marker *o*; it occupies a high position in the left periphery, appears clause-finally, and follows negation (cf. (25) below with respect to NEG >> *o* linear orders). Additionally, *ni:* sentences have polarity focus interpretations, making them amenable to analysis in terms of Foc^0. Furthermore, the morphemes *ni:* and *o* stand in complementary distribution[10], as seen below.

(24) a. *Musa ba nakàn ni: o.
          Musa cut meat FOC FOC
          'MUSA actually cut the meat.'

      b. *Musa ba nakàn o ni:.
          Musa cut meat FOC FOC

      c. *Nakàn Musa ba ni: o.
          meat Musa cut FOC FOC
          'Musa actually cut THE MEAT.'

      d. *Nakàn Musa ba o ni:.
          meat Musa cut FOC FOC

I thus conclude that unlike negation, *ni:* is not an exponent of Σ^0, but rather the expression of the left peripheral head Foc^0. (As an interesting side note, the focus marker in closely-related Yoruba is also *ni* (cf. note 8).) This analysis of *ni:* as a focus particle will resurface in chapter three, when bare root verbal repetition is analyzed.

    How does negative *à* interact with other left peripheral elements? Consider first the relationship of ΣP to Focus Phrase. In negative focus constructions, the negative morpheme always precedes the focus head, indicating that FocP is structurally superior to ΣP, another unsurprising conclusion.[11]

(25) a. Nakàn Musa è (´) ba __ à yin o.
          meat Musa PRS FT cut NEG PRT FOC
          'It's MEAT that Musa is not cutting.'

b. *Nakàn Musa è (´) ba __ o yin à.
　 meat Musa PRS FT cut 　FOC PRT NEG

Given this conclusion (e.g. FocP » ΣP) and the finding in (19) (e.g. CP » FocP), we deduce that CP » ΣP. As shown below, *à* follows overtly headed complement clauses, though this word order would also be consistent with the hierarchy ΣP » CP.

(26)　a. Musa gàn gànán Gana (´) ba nakàn à.
　　　　 Musa say COMP Gana FT cut meat NEG
　　　　 'Musa said that Gana did not cut the meat.'

　　　b. U: bè ke Gana ba nakàn à na.
　　　　 3rd.SG seem COMP Gana cut meat NEG PRT
　　　　 'It seems that Gana did not cut the meat.'

　　We thus arrive at the following partial map of the Nupe left periphery.

(27)　CP » FocP » ΣP » TP

Although this survey only begins to scratch the surface of the structure of Nupe's left edge, it will prove adequate for the purposes of this book.

2.3.2. Left Peripheral Adverbs

Comparatively speaking, Nupe has a small and unproductive adverb inventory. The majority of adverbs in the language operate at the level of the verb phrase and are generally free to attach either to the left or right edge of the phrase they modify. I do not discuss low adverbials in any great length in this book simply because their placement does not play a crucial role in any analysis. In addition to the class of low adverbs, a limited number of structurally high adverbials are attested. Evidence that these modifiers attach to left peripheral projections comes from the fact that they obligatorily precede focused constituents, as shown in the following data. I take it that these adverbs adjoin to FocP.

(28)　a. **Ebógáo**,[12] ké lá (*ebógáo) Musa ci dzò eyì o?
　　　　 therefore what take therefore Musa PRT plant corn FOC
　　　　 'Therefore, why did Musa plant the corn?'

　　　b. **Gbǎní** zě (*gbǎní) è dzò eyì o?
　　　　 now who now PRS plant corn FOC
　　　　 'Right now, who is planting the corn?'

c. ?**Tòsí**   eyì (*tòsí)   Musa dzò   o.
   recently corn   recently Musa plant FOC
  'Recently, Musa planted THE CORN.'

This class of high adverbs, whose relative internal ordering I set aside, can be shown to inhabit the region of the left periphery between CP and FocP. As the following data demonstrate, the adverbs are restricted from preceding complementizers.

(29) a. Gana gàn (*ebógáo) gànán **ebógáo**   Musa dzò eyì.
      Gana say   therefore COMP therefore Musa plant corn
      'Gana said that therefore, Musa planted the corn.'

     b. Gana kpe (*gbǎní) gànán **gbǎní** Musa è   dzò   eyì.
       Gana know now   COMP now   Musa PRS plant corn
       'Gana knows that right now, Musa is planting the corn.'

     c. ?Gana gbín-gàn (*tòsí)   kó: **tòsí**   Musa dzò eyì.
       Gana lose-say   recently COMP recently Musa plant corn
   'Gana asked whether Musa planted the corn recently.'

The utility of this class of adverbs lies in its ability to differentiate among left peripheral positions between CP and FocP, an important, but ultimately limited function given the range of phenomena I will investigate in this book. Given that on an analytical level it is sometimes hard to determine where the middle field of the clause ends and the left periphery begins, a more useful class of adverbs to have in one's toolkit is the class that demarcates the right edge of the left periphery. One such adverbial expression can be found in Nupe, *pányí lě*, a temporal modifier meaning 'a long time ago' (i.e. in a time before the recent past). As the following data[13] show, this adverbial is able to follow focused constituents (unlike the adverbs in (28)) and precede, but not follow subjects, indicating that it straddles the border between the C and T layers. I claim that *pányí lě* adjoins to TP.[14]

(30) a. Ebógáo, **pányí lě** Musa (*pányí lě) dzò   eyì.
      therefore before PST Musa   before PST plant corn
      'Therefore, a long time ago, Musa planted corn.'

     b. Ké   **pányí lě** Musa (*pányí lě) dzò   o?
      what before PST Musa   before PST plant FOC
      'What did Musa plant a long time ago?'

     c. Zě   **pányí lě** dzò   eyì o?
      who before PST plant corn FOC
      'Who planted corn a long time ago?'

In chapter five, *pányí lě* plays an important role in the analysis of Nupe *Comp-trace* effects precisely because it resides in the region between the right edge of the C layer and the left edge of the T layer. Unfortunately, the adverb stands in a distributional class all to itself. I have been unable to identify other expressions with similar distributional profiles in the language.

Given that *pányí lě* occupies the region between FocP and TP, as does ΣP, it is worth considering the hierarchical relationship between it and negation. Unfortunately, word order considerations will prove insufficient here because the EPP features of Σ^0 will ensure that negation follows *pányí lě* regardless of whether ΣP dominates *pányí lě* (cf. (31b) below) or *pányí lě* adjoins to ΣP (cf. (31c)).

(31)   a. Pányí lě   Musa dzò   eyì   à.
             before PST Musa plant corn NEG
             'A long time ago, Musa did not plant corn.'

b.

c.
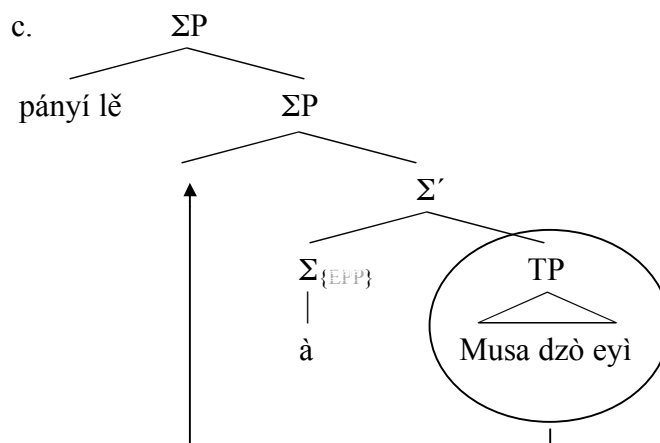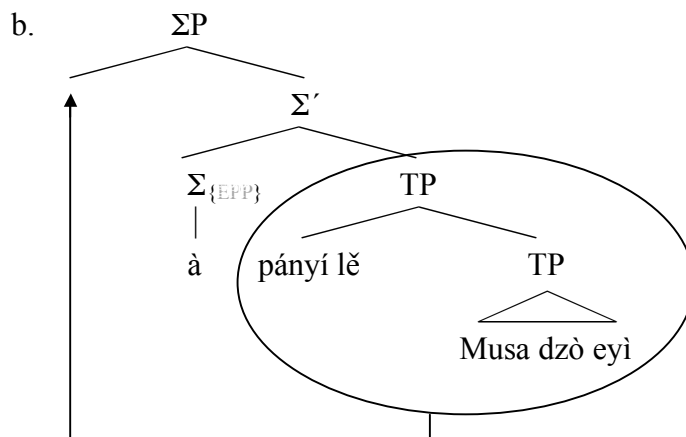
The issue, then, is one of scope. Does negation take scope over *pányí lě* or does the adverb outscope negation? If the former, (31a) would have the following interpretation: 'It is not the case that long ago Musa planted corn'. If, however, the adverb takes wide scope, (31a) would have the interpretation: 'Long ago, in some contextually salient interval, it was not the case that Musa planted corn (in that interval).' The scopal relations in (31b), thus preclude any distant past event of corn-planting by Musa, but those in (31c) allow for the possibility that Musa planted corn in the not-so-recent past, as long as the planting did not take place in the contextually delimited window of time. Ahmadu Ndanusa Kawu (personal communication) judges the negation wide scope interpretation to be the only available reading of (31a). Therefore, I conclude that Σ^0 c-commands *pányí lě*.

Given these and the findings of the previous subsection, a more fine-grained map of the Nupe left periphery emerges.

(32)   CP » {*ebogáo*, gbǎní, *tòsí*} » FocP » ΣP » *pányí lě* » TP

2.3.3. Embedded Clauses

A number of different complementizers introduce a number of different embedded clauses in the language. While determining the exact peripheral position occupied by each C head and accounting for their word order properties are ultimately important tasks, they will not play a crucial role in the discussion that follows in later chapters. For this reason, I will not discuss these aspects of Nupe CP syntax.

Informally speaking, four exponents of C^0 comprise the Nupe complementizer system, each of which introduces a semantically distinct clause type. With few exceptions (cf. Kawu 1990), complementizer-less embedded clauses are not tolerated in the language. Sentential complements whose propositional content is asserted/presupposed are headed by *gànán*, a morpheme historically related to the verb *gàn* 'say', as in many west African languages and translated as 'that' in English (cf. (33a)). (Synchronically, we might analyze *gànán* as a portmanteau morpheme composed of the verb *gàn* and the complementizer *án*.) Clauses whose propositional content is not asserted/presupposed in this way involve the two-part particle *ke…na* (also glossed as 'that'). *Ke* precedes the embedded clause and *na* follows it (cf. (33b)). Relative clauses also employ a two-part particle: *na* follows the head and precedes the clause, while a second homophonous particle follows (cf. (33c)). The fourth Nupe complementizer *kó:* (translated as 'whether') introduces indirect questions. See Kawu 1990, 1999 for further discussion of the Nupe complementizer system.

(33)   a. Musa kpe **gànán** etsu   du   nakàn.
        Musa know COMP   chief cook meat
        'Musa knows that the chief cooked the meat.'

b. U: bè   **ke**   etsu   má   nakàn du   **na**.
    3RD.SG seem COMP chief know meat   cook PRT
    'It seems that the chief knows how to cook meat.'

c. Nakàn **na**   etsu   du   **na**
    meat   COMP chief cook PRT
    'The meat that the chief cooked'

d. Musa gbín-gàn **kó:**   etsu   du   nakàn.
    Musa lose-say COMP chief   cook   meat
    'Musa asked whether the chief cooked the meat.'

Evidence that each complementizer in (33) (including *kó*: 'whether') occupies an X^{MIN} position rather than a CP-level specifier position comes from the fact that A-bar extraction out of all embedded clauses is possible, as shown below. (Nb. I adopt a promotion analysis of relative clauses (Vergnaud 1974, Kayne 1994), in which the head of the relative clause undergoes extraction. Hence, (33c) is itself evidence for this claim.)

(34) a. Ké   Musa kpe   gànán etsu   du   __   o?
          what Musa know COMP   chief   cook   FOC
          'What does Musa know that the chief cooked?'

      b. Ké   u: bè   ke   etsu   má   du   __   na o?
          what 3RD.SG seem COMP chief know cook   PRT FOC
          'What does it seem that the chief knows how to cook?'

      c. Ké   Musa gbín-gàn kó: etsu   du   __   o?
          what Musa lose-say COMP chief cook   FOC
          'What did Musa ask whether the chief cooked?'

The data in (34) show that objects in a variety of embedded clauses can be freely extracted across clause boundaries, as is the case in many languages. Not all embedded constituents, however, share this ability. The data in (35) below illustrate that there is an object/non-object asymmetry concerning long extraction from embedded clauses in the language. Objects can undergo long extraction. Subjects and adjuncts cannot, regardless of the complementizer that heads the embedded clause.

(35) a. *Karayín Musa gàn gànán etsu   __   du   nakàn o.   (*Adjunct)
          carefully Musa say COMP   chief   cook meat   FOC

      b. *Zě   Musa gàn gànán __   du   nakàn o?   (*Subject)
          who   Musa say COMP   cook meat   FOC

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c. *Sanyín u: bè   ke   etsu du nakàn __ na o.   (*Adjunct)
   quietly 3RD.SG seem COMP chief cook meat   PRT FOC

d. *Zě u: bè   ke __ du nakàn na o?   (*Subject)
   who 3RD.SG seem COMP   cook meat PRT FOC

e. *Karayín Musa gbín-gàn kó: etsu __ du nakàn o. (*Adjunct)
   carefully Musa lose-say COMP chief   cook meat FOC

f. *Zě Musa gbín-gàn kó: __ du nakàn o?   (*Subject)
   who Musa lose-say COMP   cook meat FOC

In this way, Nupe exhibits a kind of *Comp-trace* effect (Perlmutter 1971), which is the topic of chapter five. The specific focus of that chapter concerns the fact that instances of illicit subject extraction out of CP can be salvaged if a resumptive pronoun is pronounced in the extraction site, as shown below.

(36) a. Zě Musa gàn gánán **u:**   du nakàn o?   (Compare with (35b))
      who Musa say COMP 3RD.SG cook meat FOC
      'Who did Musa say cooked the meat?'

     b. Zě u: bè   ke **u:**   du nakàn na o? (Compare with (35d))
      who 3RD.SG seem COMP 3RD.SG cook meat PRT FOC
      'Who does it seem cooked the meat?'

     c. Zě Musa gbín-gàn kó: **u:**   du nakàn o? (Compare with (35f))
      who Musa lose-say COMP 3RD.SG cook meat FOC
      'Who did Musa ask whether (they) cooked the meat?'

A relevant fact that will play an important role in chapter five is that resumptive elements in Nupe have a highly limited distribution. The following data show that resumptive pronouns in the language only surface in subject positions. Although in many languages resumptive expressions may occur in a number of environments, such as in object (goal) position, as the objects of otherwise stranded prepositions, and in genitive constructions, they are limited exclusively to subject position in Nupe.

(37) a. Ké Musa kpe gànán etsu nì   (***u:**)   o?
      what Musa know COMP chief beat 3RD.SG FOC
      'What does Musa know that the chief beat?'

     b. Nnǎ   na mi nya-ènya bè (***u:**) yin na
      woman na 1ST.SG dance   with 3RD.SG PRT PRT
      'The woman I danced with'

    c. Wo: na mi le doko wo:/*u:[15]   ye lati o na bé   tsuwo.
       2ND.SG na 1ST.SG see- horse 2ND.SG/3RD.SG -see farm LOC PRT come yesterday
       'You, whose horse I saw on the farm, came yesterday.'

This concludes the introductory discussion of Nupe syntax. Although a host of issues remain for further discussion, they can easily be integrated into the analysis when needed, now that certain key rudimentary bases have been covered.

NOTES TO CHAPTER 2

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[1] Yoruba does, however, appear to have similar constructions whose analogs are ungrammatical in Nupe. One is a form of repetition in which the entire VP is repeated.

(i)   Yoruba VP Repetition (Oluseye Adesola, personal communication) [Tone marking omitted]

    a. Bola se eran.
       Bola cut meat
       'Bola cut the meat.'

    b. Bola se eran se eran.
       Bola cut meat cut meat
       'Bola kept on cutting the meat.'

In addition to the difference in the size of the repeated constituent, there is a difference in the semantic effect of doubling in both languages. While bare root verbal repetition in Nupe conveys emphasis/polarity focus, the effect of VP repetition in Yoruba is aspectual, raising the question of whether this instance of VP doubling is simply a metalinguistic or literary device. Given the lack of discussion on this construction in the Yoruba literature, it is not clear whether the phenomenon in (ib) is metalinguistic, a case of verb serialization, or a case of VP multiple copy spell-out.

    The other analog of verbal repetition in Yoruba is a construction involving the realization of both the verb and a low/non-left peripheral nominalized copy of the predicate.

(ii)   Yoruba Low Predicate Nominalization (Awobuluyi 1978) [Tone marking omitted]

    a. Ko lo.
       NEG go
       'S/he didn't go.'

    b. Ko lo li-lo.
       NEG go RED-go
       'S/he didn't go at all.'

Semantically, this construction seems to be on a par with the Nupe bare root verbal repetition construction in that it expresses polarity focus/emphasis. There is also a syntactic parallelism between the two, namely, that neither construction employs the use of a focus particle. Morphologically, however, the two constructions clearly differ in that the realized lower copy does not surface in bare root form.

    Given these considerations, it is clear that on a number of levels Nupe bare root verbal repetition is grammatically distinct from predicate repetition in Yoruba.

[2] An interesting observation that I will not pursue here is that tense/aspect/auxiliary morphemes bearing low tones correlate with VO order (cf. (1b-c)), whereas comparable morphemes bearing high tones correlate with OV order (cf. (1d-e)). See Kandybowicz & Baker 2003 for additional data supporting this correlation. I leave it as an open question as to whether this prosodic correlation is accidental, noting in passing one potential complicating factor. Past tense is expressed by a phonetically null (toneless) morpheme, yet it patterns like low tone-bearing tense/aspect morphemes in accompanying VO orders.

[3] Since Nupe (like Yoruba and other related languages) lacks an open class of morphosyntactic adverbs, it is possible to regard the expression *dàdà* in (4) as a serialized activity predicate meaning 'hurry' (cf. along the lines of a "preverb" (Smith 1967a, 1970)). This would clearly undermine the proposed analysis. Two facts, however, argue against this position. One, Nupe, like many West African languages, imposes prosodic minimal word requirements on its nominal and verbal categories. Nominal expressions are minimally bimoraic, while verbal ones are maximally monomoraic (Kawu 2002). (See the discussion surrounding (43) in chapter four). The prosodic properties of the expression *dàdà* clearly do not pattern with those of the verbal category, making it more likely that *dàdà* is adverbial rather than verbal. Second, evidence against an analysis of *dàdà* in terms of a serialized activity predicate comes from the fact that it can freely co-occur with inanimate subjects. A representative example is provided below.

(iii)   Tákùn dàdà   cín   ya.
         rock   quickly drop cast-off
         'The rock quickly dropped.'

[4] An alternative to this analysis would be to locate *á* in the head of an AspectP projection in a more fully articulated T layer (cf. Aboh 2005). I do not develop this option, however, partly because *á* seems to express the *perfect* in Nupe, not the clearly aspectual category of *perfective* (see Comrie 1976 on the distinction). Also, I know of no independent evidence that an Aspect node is syntactically present in Nupe. The view expressed here is thus slightly more economical, given that v is needed anyway within the framework (e.g. to introduce the external argument).

[5] See Kandybowicz & Baker 2003 for evidence that perfect constructions are not synchronically serial verb constructions in Nupe.

[6] Nothing crucial hinges on the label of this category. Similar heads have been called "inner aspect" by Travis (1991), "linker" by Baker & Collins (2006), etc. This Agro projection is far from novel. Other researchers have been led to posit such a head for reasons that have nothing to do with alternations in verb-object order. See Baker and Collins 2006, for example.

[7] One way around having to generate an AgroP projection in the absence of an $Agro^0$ probe and still derive the VO_{LOC} order in both perfect and non-perfect sentences would be to maintain that Loc^0 lacks the EPP feature. In that case, verbs would raise to v^0 in non-perfect clauses, thus preceding unmoved locative objects. In perfect constructions, the verb would raise as high as either V^0 or Loc^0, still reaching a position higher than the locative expression. However, as alluded to in the text, this analysis can be discounted on the grounds that it fails to account for word orders in bare root verbal repetition constructions with $VO_{LOC}V$ word orders. See chapter three for details.

[8] An anonymous reviewer points out that similar word orders obtain in the eastern Yoruba Ondo dialect, which is notable because in standard Yoruba the focus particle/copula systematically occupies a second position in the clause, immediately following the peripheral focused constituent. Examples are given below (tone marking omitted).

(iv)   a. Standard Yoruba

       Ade **ni**   mo   ri   ni Aye.
       Ade FOC 1st.SG see at Aye
       'It is ADE that I saw in Aye.'

     b. Ondo Yoruba

       Ade mo   ri   ni Aye **ni**.
       Ade 1st.SG see at Aye FOC
       'It is ADE that I saw in Aye.'

Whatever analysis best accounts for the word order facts in Nupe likely applies to Ondo Yoruba as well.

[9] As is evident in example (14), the particle does, however, follow *yin*, which has been analyzed as a fairly low infinitival element (Kandybowicz & Baker 2003). If the *yin* in (14) is in fact an infinitival particle, then the above argument for analyzing *o* as an element of the left periphery can be called into question. However, this conclusion is not forced in the case at hand because a number of different homophonous *yin* particles exist in the language, just as a number of distinct *o* morphemes do. An example drawn from the domain of prepositional phrases is given below.

(v)   Musa ba nakàn bè   èbi   **yin**.
     Musa cut meat   with knife PRT
     'Musa cut the meat with a knife.'

Although the *yin* particle is not well understood at present, it is more likely that the occurrence in example (14) is not the infinitival particle. Thus, the datum in (14) provides support for positioning *o* in the left periphery.

[10] The paradigm in (24) was presented to only three of my consultants. Two of them rejected all sentences with co-occurring *ni:* and *o*, suggesting that the particles truly stand in complementary distribution. One consultant, however, rejected the ordering *ni: >> o*, but accepted the ordering *o >> ni:*, judging the sentences in (24b) and (24d) to be grammatical. For this latter speaker alone, a more plausible analysis would be to say that *ni:* heads a peripheral projection higher than FocP.

[11] Given the mechanics of FocP and ΣP derivations previously laid out, the conclusion that FocP $>> \Sigma$P entails that focused constituents in negative constructions will be attracted from Spec, Σ, in apparent violation of the Left Branch condition/Subject condition/CED/Freezing principle, etc (cf. Huang 1982, Koopman & Szabolcsi, etc.). To the extent that CED effects are derivable from phase theoretic considerations (Chomsky 2004, 2008a), blanket constraints like the Subject condition/CED have no real theoretical status. (See also Stepanov 2007.) Thus, focus extraction from Spec, Σ does not necessarily pose a technical or insurmountable obstacle to the analysis on offer.

[12] *Ebógáo* is an adverb of reason, rather than a logical connective. Although glossed 'therefore', a slightly more accurate translation is 'for that reason'.

[13] Native speaker judgments of (30b-c) are not uniform. A number of my consultants consistently accepted the data, while others reported variable reactions ranging from marginal on certain occasions to ungrammatical on others.

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[14] The distribution of *pányí lě* is slightly more complicated than the reader has been led to believe. While it is true that the adverb can follow focused constituents for a number of speakers (cf. note 13), the more preferred placement is before the focused expression. *Pányí lě* can also surface at the right edge of the clause, which again, is typical of Nupe adverbials. When it appears in a focus construction, the most widely preferred placement of the adverb is at the clause's right edge, just before the focus marker *o*. These possibilities are illustrated below.

(vi)   a. Ké pányí lě Musa dzò o?   (Possible, but slightly dispreferred)
           what before PST Musa plant FOC
           'What did Musa plant a long time ago?'

        b. Pányí lě ké   Musa dzò o?   (Acceptable)
           before PST what Musa plant FOC
           'A long time ago, what did Musa plant?'

        c. Ké Musa dzò pányí lě o?   (Preferred)
           what Musa plant before PST FOC
           'What did Musa plant a long time ago?'

Although the distribution of *pányí lě* is flexible, sometimes adjoining to FocP (cf. (vib) above), sometimes adjoining to TP (cf. (30)) and other times right-adjoining to the verb phrase (cf. (vic) above), what matters most in the context of this book is that it *can* occupy a low position at the C-T layer divide. As previously mentioned, no other expression in the language is useful for probing the C-T boundary. Thus, because neither the pre-FocP nor post-vP attachment possibility offers a resource for TP edge identification, I concern myself primarily with *pányí lě*'s existence as a TP modifier in this book.

[15] Evidence that *wo:* is a possessive pronoun and not a resumptive occurrence comes from the fact that resumptive elements in Nupe are restricted to default third person forms (cf. (23) in chapter five). The fact that *u:*, the default third person form, is impossible in this context suggests that the form of the pronoun that surfaces in the genitive expression is non-resumptive.

CHAPTER 3

BARE ROOT VERBAL REPETITION:
REPETITION VIA MORPHOPHONOLOGICAL CONDITIONING

3.1. SETTING THE STAGE

In this chapter, I examine the first of three cases of multiple copy spell-out in Nupe. I launch the investigation by probing the verbal domain, where the most clear-cut cases of PF repetition in the language can be detected. The empirical focus of this chapter is a phenomenon I'll refer to as Verbal Repetition, one of two instances of multiple copy spell-out in Nupe's verbal system first discussed by Neil Smith (1970). Nupe verbal repetition is characterized by the phonetic realization of two segmentally non-distinct bare verb roots within a single finite clause. The bare roots that surface in these configurations are realized without the mediation of coordination or subordination. Although twice as many verbs surface, the number of overt verbal arguments does not double. I'll refer to this construction as the Bare Root Verbal Repetition construction (BRVRC hereafter).

Verbal repetition (not always of the bare root variety) is attested in a number of languages and encodes a variety of meanings typically associated with functional projections above the v layer (e.g. polarity/emphasis, topic and focus). Despite its prevalence, the verbal repetition construction is often overlooked in both the descriptive and theoretical literature. The data below represent a small cross-linguistic sampling of the phenomenon.

(1)   POLARITY-CENTRIC/EMPHATIC VERBAL REPETITION

a. Nupe

Musa è **gí** bise **gí**.
Musa PRS eat hen   eat
'Musa IS IN FACT eating a hen.' (NOT: 'Musa is EATING a hen.')

b. European Portuguese (Martins 2007)

O João **comprou** o   carro, **comprou**.
the John bought   the car   bought
'John DID buy the car.'

c. Mandarin Chinese (Huang 1991)

Ta **xihuan** bu **xihuan** zhe ben shu?
he like   NEG like   this CL   book
'Does he like this book (or not)?'

d. Haitian (Harbour 2008)

Lame a **kraze** **kraze** vil la.
army the destroy destroy town the
'The army REALLY destroyed the town.'

e. English (Ghomeshi, Jackendoff, Rosen, & Russell 2004[1])

I don't just like her. I **LIKE like** her.
cf. 'I REALLY like her.'

CONTRASTIVE TOPIC/FOCUS VERBAL REPETITION

f. Kabiye (Collins & Essizewa 2007)

Ma-**ní**-ʊ   Kabiye kí **ní**-ʊ.
1st.SG-understand-IMPRF Kabiye ki understand-INF
'I only UNDERSTAND Kabiye. (I do not speak it.)'

g. Russian (Lee 2002)

Maria **pri**-dti-to   **pri**-shl-a…
Maria approach-dti-TOP approach-PST-FEM
'Maria CAME (but…)'

h. Hungarian (Lee 2002)

Meg-**erkez**-ni   meg-**erkez**-ett...
PREV-arrive-INF PREV-arrive-PST
'S/he ARRIVED (but…)'

i. Korean (Choi 2003)

Cheolswu-ka   Younghui-lul **manna**-ki-nun **manna**-ss-ta.
Cheolswu-NOM Younghui-ACC meet-ki-TOP   meet-PST-DECL
'Cheolswu MET Youngui. (but…)'

    j.   Brazilian Sign Language (Nunes & Quadros (In press))

    I **LOSE** BOOK **LOSE**
    'I LOST the book (as opposed to say, *sold* it).'

Focusing on the case of Nupe, I'll argue that BRVRCs are mono-clausal syntactic objects in which the participating verbs are neither independently base-merged, as in the case of verb serialization for instance, nor are they derived by means of reduplicative copying (i.e. PF readjustment of a single vocabulary item). Rather, I'll conclude that BRVRCs involve chain formation (head movement of the verb root to v^0) and the phonetic realization of multiple chain links at PF. Additionally, I'll show that repetition in this case is conditioned by both morphological and phonological factors.

The key insight into this particular instance of multiple copy spell-out, I'll argue, is an independently motivated PF constraint barring prosodically unsupported tonal content (i.e. floating tones). I show that the derivation of Nupe BRVRCs includes a special morpheme not found in simple declaratives, which is realized as a floating low tone. Spelling-out this morpheme forces the phonetic realization of the lower copy of the verb root adjoined to this head for prosodic support. Without lower copy pronunciation, the derivation would crash due to the presence of an unsupported floating tone, an uninterpretable PF structure in the language. Independent evidence for the existence of this PF condition in the language comes from the systematic absence of both downstep and upstep in the phonology. Floating tones in the language always associate with syntactically adjacent prosodic content, triggering contour tone formation. The realization of the higher copy heading the root movement chain, on the other hand, is driven by a morphological condition. In this case, the morpheme supported by the raised root (v^0) is affixal and thus failure to realize the link would result in the violation of the Stray Affix filter (Lasnik 1981, 1995), another independently motivated PF output condition.

In the case at hand, the units targeted for pronunciation appear to be non-distinct. Both items are directly related to a single element of the lexical array via copying and neither occurrence has had its internal structure modified by an operation of the morphological component (i.e. Fission, Fusion, Impoverishment, etc.). Thus, the analysis I propose raises the question of how BRVRC outputs are linearized. I argue that the spelled-out units in BRVRCs are, in fact, interpreted as distinct by the linearization algorithm. In this case, distinctness is guaranteed by and recoverable from the copies' narrow syntactic derivational history. Once all is said and done, we arrive at a principled analysis of Nupe BRVRCs, something that is entirely anomalous under a Government-Binding style trace-theoretic approach to movement.

This chapter thus provides strong empirical motivation for the copy theory of movement, sheds light on the mechanics of PF chain resolution, and identifies both morphological and phonological conditioning factors in the grammar of repetition. In addition, the chapter offers a clear empirical argument against the proposal that head movement operates solely at PF (Grodzinsky & Finkel 1998, Boeckx & Stjepanovic 2001, Chomsky 2001, Erteschik-Shir & Strahov 2004).

The remainder of the chapter unfolds as follows. In section 3.2, I provide a brief descriptive overview of the Nupe BRVRC and adduce evidence that it is a derived mono-clausal construction owing to non-reduplicative (i.e. syntactic) copying. Section 3.3 advances an analysis of the phenomenon in terms of both the narrow syntactic derivation and the syntax-phonology interface. The chapter concludes in section 3.4 with a brief summary and some final remarks.

3.2. INITIAL CONSIDERATIONS

This section is divided in two. In the first part, I provide a brief semantic overview of the phenomenon and furnish evidence that V1 and its copy are clause mates. Following this, I consider the derivational status of the construction. These considerations will drive the analysis in section 3.3.

3.2.1. Descriptive Preliminaries

One potentially formidable challenge facing the BRVRC analyst is that in order to provide a rigorous account of the construction, a number of syntactic, semantic, and phonological facts must be confronted. For now, I begin by enumerating some of the key semantic characteristics of verbal repetition. As the chapter progresses, a variety of syntactic and phonological properties will be considered as well.

Nupe BRVRCs are emphatic declaratives that assert the truth-value of a proposition or presupposition that contrasts with the hypothesized truth-value of a discourse-salient assertion. (Although *hypothesized*, the truth-value of this contextually salient assertion is not in doubt to the speaker.) Thus, uttered out of context, BRVRCs can be glaringly infelicitous. Because the truth-value of a contextually salient utterance is promoted in the discourse, I characterize Nupe BRVRCs as polarity focus constructions in the sense of Hyman and Watters 1984. As such, BRVRCs in the language are focus constructions that operate at the level of the proposition, rather than at the level of the predicate as in predicate cleft constructions (cf. chapter four and the data in (1a)). One additional (yet crucial) semantic detail still remains to be discussed. I return to this issue in section 3.3.1.1, when all of the other relevant analytical ingredients have been assembled. The discourses in (2) below highlight the semantic properties just discussed. It is worth pointing out that unlike certain languages (for instance, European Portuguese (Martins 2007), cf. (1b)), Nupe BRVRCs are not limited to negative contexts.

(2)   a.   A: Musa (´) pa   eci à.
              Musa   FT   pound yam NEG
              'Musa didn't pound a yam.'

            B: Ebà, Musa pa   eci pa.
              yes   Musa   pound yam pound
              'Yes, Musa DID IN FACT pound a yam.'

   b. A: Musa pa   eci.
              Musa pound yam
              'Musa pounded a yam.'

        B: Hahà, Musa (´) pa   eci pa   à.
             no   Musa FT pound yam pound NEG
             'No, Musa DID NOT IN FACT pound a yam.'

A number of facts suggest that these constructions are mono-clausal syntactic objects. That is to say, BRVRCs do not involve bi-clausal structures that are derived by eliding material from the second clause. For one thing, subject/topic drop is unavailable in Nupe (as in a number of West African languages[2]), rendering it unlikely that V2 inhabits a (subject-less) clause distinct from that of V1 (e.g. 'Musa pound yam. ~~Musa/he~~ pound.'). Prosodically, there is no break separating V2 from the rest of the clause, nor is there evidence suggesting that V2 inhabits a major prosodic domain (i.e. an intonation phrase) that is distinct from that of V1 (see Kandybowicz 2004a for details).[3] Additionally, neither tense markers nor the perfect morpheme may precede V2 (3a). And lastly, although verbal repetition constructions can be negated as a whole (2b), the verbs themselves cannot be individually negated (3b).

(3)   a.   *Musa à   yà   etsu èwò   **à/á**   yà.
             Musa FUT give chief garment FUT/PRF give
             'Musa WILL IN FACT give the chief a garment.'

     b.   Elúgi (´) fu (*à) (*´) fu **à**.
             bird FT fly   NEG FT fly NEG
             'The bird DID NOT IN FACT fly.'

These facts strongly suggest that the verb and its duplicate stand in a fairly local relationship. In other words, V1 and V2 are clause bound.

3.2.2. Derivational Status

We can ask whether the verbal occurrences in BRVRCs are derivationally related or independent terms. In the context of a copy-theoretic framework, the burden of proof is to show that verbal repetition in a language with rich verb phrase structures like Nupe is a derived construction and not a variety of some existing verb phrase construction type in which the verbs are independently base-merged. One such construction that immediately comes to mind is the serial verb construction (SVC), examples of which are provided below. In what follows, I assume Stewart's (2001) typology of serial verb constructions.

(4)   CONSEQUENTIAL SVCs (CSVCs)

    a. Musa à   **wan** bise **zún**   **gí**.
        Musa FUT catch hen   slaughter eat
        'Musa will catch a hen, slaughter it and (then) eat it.'

    b. Musa à   **du**   eci **kún**.
        Musa FUT cook yam sell
        'Musa will cook a yam and (then) sell it.'

RESULTATIVE SVCs (RSVCs)

    c. Musa è   **fo**   èwò   **li**.
        Musa PRS wash garment   be clean
        'Musa is washing the garment clean.'

    d. Elúgi **nikin** **tsu**.
        bird   fall   die
        'The bird fell to its death.'

PURPOSIVE SVCs (PSVCs)

    e. Musa à   **si** eyì **dzò**.
        Musa FUT buy corn plant
        'Musa will buy corn in order to plant it.'

    f. Musa à   **lá**   ebi **ba**   nakàn.
        Musa FUT take knife cut   meat
        'Musa will take the knife in order to cut the meat.'

BRVRCs and SVCs have a number of syntactic properties in common. In both constructions, the verbal elements appear without marking of coordination or subordination, some of the arguments of the serialized/repeated verbs are overtly missing, and there is a single tense/aspect specification for all verbs[4]. There is evidence, however, that the constructions are distinct, that is, that BRVRCs are not merely SVCs that happen to have the same V1 and V2.

    The first piece of evidence is semantic. Nupe SVCs come in three semantic varieties; those that have temporal sequencing interpretations (cf. CSVCs (4a,b)), those with causal interpretations (cf. RSVCs (4c,d)), and those with purposive meanings (cf. PSVCs (4e,f)) (see Stewart 2001 for detailed discussion of these types). BRVRCs, on the other hand, can only be construed as polarity focus constructions.

    A number of syntactic arguments can also be amassed illustrating the same point. First, a well-known fact about RSVCs is that V2 cannot be unergative in the construction

(Stewart 2001), as shown below in (5a). However, in a BRVRC, V2 can in fact be unergative (5b).

(5)   a.   V2 CANNOT BE UNERGATIVE IN A NUPE RSVC

        *Elúgi nikìn fu.
         bird   fall   fly
         'The bird fell, thereby causing it to fly.'

        b.   V2 MAY BE UNERGATIVE IN A NUPE BRVRC

        Elúgi fu   fu.
        bird   fly fly
        'The bird DID IN FACT fly.'

A second syntactic argument concerns the fact that in all Nupe SVCs, only the initial verbal occurrence may be repeated (contra Smith's (1970:327,330) claims[5]). Consider the following.

(6)   ONLY V1 MAY REPEAT IN A NUPE CSVC

        a.   Musa **du**   eci **du**   kún.
             Musa cook yam cook sell
             'Musa DID cook a yam and (then) sell it.'

        b.   *Musa du   eci **kún kún**.
              Musa cook yam sell sell

        ONLY V1 MAY REPEAT IN A NUPE RSVC

        c.   Musa è   **fo**   èwò   **fo**   li.
             Musa PRS wash garment wash be clean
             'Musa IS washing the garment clean.'

        d.   *Musa è   fo   èwò   **li**   **li**.
              Musa PRS wash garment be clean be clean

        ONLY V1 MAY REPEAT IN A NUPE PSVC

        e.   Musa à   **si**   eyì   **si**   dzò.
             Musa FUT buy corn buy plant
             'Musa WILL buy corn in order to plant it.'

    f. *Musa à   si   eyì **dzò** **dzò**.
       Musa FUT buy corn plant plant

With respect to BRVRCs, however, *neither* verb can undergo (further) repetition, as shown below. (Note that in the following examples it is unclear whether it is V1 or V2 that is being repeated. This, however, is irrelevant for the purpose at hand because if BRVRCs were actually SVCs with identical verbal occurrences, at least one of the two serialized occurrences should be capable of repetition.)

(7)   NEITHER VERB IN A BRVRC MAY UNDERGO (FURTHER) REPETITION

    a. *Musa è   gí bise gí **gí**.   (Compare with (1a))
       Musa PRS eat hen eat eat

    b. *Elúgi fu fu **fu**.   (Compare with (5b))
       bird fly fly fly

The data in (7) illustrate another interesting point, namely, that there is an upper bound on the number of overt verbal occurrences that may surface in a BRVRC. In particular, given that a maximum of two verbal copies may surface[6], we can think of the grammatical mechanism responsible for yielding BRVRCs (i.e. PF spell-out) as being bounded. The number of verbs that can occur serialized, however, is syntactically unbounded. The datum below shows that it is possible for more than two verbs to surface in an SVC, unlike in BRVRCs.

(8)   Musa à **wan** bise **zún**   **du** **gí**.   (CSVC)
       Musa FUT catch hen   slaughter cook eat
       'Musa will catch a hen, slaughter it, cook it and (then) eat it.'

Worth noting here is an additional syntactic difference between the two constructions concerning extraction. BRVRCs, unlike SVCs, are islands. Subject and object extraction from SVCs, for example, is permissible, as shown in (9a-f). However, both extraction possibilities are blocked in BRVRCs (9g-h). This is an important property that must also be accounted for.

(9)   EXTRACTION FROM SVCS IS PERMITTED

    a. Musa __ du   eci kún o.   (CSVC)
       Musa   cook yam sell FOC
       'MUSA cooked a yam and (then) sold it.'

    b. Eci Musa du __ kún o.   (CSVC)
       yam Musa cook   sell FOC
       'Musa cooked A YAM and (then) sold it.'

c. Musa __ è fo èwò li o. (RSVC)
Musa PRS wash garment be clean FOC
'MUSA is washing the garment clean.'

d. Èwò Musa è fo __ li o. (RSVC)
garment Musa PRS wash be clean FOC
'Musa is washing THE GARMENT clean.'

e. Musa __ à si eyì dzò o. (PSVC)
Musa FUT buy corn plant FOC
'MUSA will buy corn in order to plant it.'

f. Eyì Musa à si __ dzò o. (PSVC)
corn Musa FUT buy plant FOC
'Musa will buy CORN in order to plant it.'

EXTRACTION FROM BRVRCS IS BLOCKED

g. *Musa __ du eci du o.
Musa cook yam cook FOC
'MUSA DID IN FACT cook a yam.'

h. *Eci Musa du __ du o.
yam Musa cook cook FOC
'Musa DID IN FACT cook A YAM.'

One last asymmetry concerns the fact that SVCs are possible in the perfect (10a-c), unlike BRVRCs (10d).

(10) a. Musa á eci du kún. (CSVC)
Musa PRF yam cook sell
'Musa has cooked and sold a yam.'

b. Musa á èwò fo li. (RSVC)
Musa PRF garment wash be clean
'Musa has washed the garment clean.'

c. Musa á eyì si dzò. (PSVC)
Musa PRF corn buy plant
'Musa has bought corn in order to plant it.'

d. *Musa á eci du du.
Musa PRF yam cook cook
'Musa HAS IN FACT cooked a yam.'

The evidence thus points to the conclusion that BRVRCs are not a sub-species of verb serialization. In that case, the doubled verbs are not generated independently of each other.

There are reasons to believe that the relationship between the verbal occurrences is not a product of reduplication either. Native speaker judgments (Smith 1970) and experimental results (Kandybowicz 2004a) confirm that despite perceptible differences in the fundamental frequencies of the verb and its copy (see section 3.3.2.1), the tones on V1 and V2 belong to the same phonological tone category. More specifically, the tonal realization of V2 is a function of the categorical tonal identity of V1. This is striking because tone is not perfectly copied in the case of verb reduplication in the language. The data in (11) illustrate that the reduplicant prefix always bears a mid tone (the unmarked tone in the language) regardless of the tonal specification of the base.

(11)   gé   'be good'   **gi**-gé   'being good'
        du   'cook'   **du**-du   'cooking'
        yà   'give'   **yi**-yà   'giving'

Notice also that in Nupe verb reduplication there is a base-reduplicant vowel height alternation in forms whose base vowel is non-high (e.g. 'being good', 'giving'). As is evident upon inspection of the BRVRC data presented thus far, there are no such tonal/vowel alternations between the verb and its duplicate.

I thus conclude that Nupe verbal repetition is a phenomenon distinct from both verb serialization and verb reduplication. That is to say, BRVRCs are distinct *derived* constructions in the language. Additional justification for this conclusion comes from the fact that one of the verbal occurrences does not project − although there are twice as many segmentally non-distinct verbal elements in a BRVRC, it is not the case that there are twice as many surface thematic arguments. This is shown below.

(12)   a. *Musa à   yà   etsu   èwò   yà   **etsu   èwò**.
               Musa FUT   give chief garment give chief garment

       b. *Musa è   gí   bise   gí   **bise**.
               Musa PRS   eat   hen   eat   hen

This is precisely what we would expect if one of the verbal occurrences were a phonetically realized copy of a single element drawn from the initial numeration; in other words, if the repeated verbal occurrence was moved rather than base-merged.

With these preliminaries out of the way, I turn next to the derivational analysis of the construction.

3.3. ANALYSIS

The ultimate goal of this section is to determine how and why multiple copies of the verb root are phonetically realized in BRVRCs. The *how* question concerns the consequences

of multiple copy spell-out for linearization. How is it that seemingly non-distinct elements entering into an asymmetric c-command relation come to be linearized in accord with the Linear Correspondence Axiom? The *why* question, however, is perhaps deeper. Given that economy principles disfavor pronouncing elements that are unnecessary at the PF interface (e.g. Avoid Phonetics (Koopman 1984:175, Landau 2006, among others)), why is it the case that a second lower copy of the verb is pronounced at all? That is to say, what grammatical principles license and ultimately force the spell-out of V2?

I begin by considering the narrow syntactic derivation of the BRVRC, concentrating on the structural and derivational qualities that distinguish them from simple declaratives. I then follow the derivation from the output of narrow syntax to the PF component, where the issues of multiple copy spell-out and chain linearization arise. In this stretch, I propose answers to the how's and why's mentioned above.

3.3.1. BRVRCs in the Narrow Syntax

3.3.1.1. Assembling the Ingredients

A good starting point for the syntactic analysis of any novel or under-investigated construction type is to identify the dimensions of variation that distinguish the structure from simpler and better understood constructions in the language. With the exception of an additional verbal occurrence, BRVRCs do not appear considerably different than simple declaratives on the surface. That is, BRVRCs do not invoke special overt functional particles or cause drastic shifts in word order with respect to V1 and its dependents.

(13) a. Musa du   eci.
          Musa cook yam
          'Musa cooked a yam.'

      b. Musa du   eci   du.
          Musa cook yam   cook
          'Musa DID IN FACT cook a yam.' (NOT: 'Musa COOKED a yam.')

Along the semantic dimension, however, BRVRCs and simple declaratives are clearly distinct. As previously discussed, the polarity of a proposition is focused in a BRVRC (the lexical predicate itself is out of focus (cf. (1a), (13b))). In this respect, the basic semantic difference between BRVRCs and simple declaratives is one of focus: BRVRCs are focus constructions and simple declaratives are not. This semantic difference can be cashed out in syntactic terms.

Given the analysis of focus presented in chapter two, namely, that focused constituents occupy left peripheral positions in Spec, Foc, the simplest syntactic analysis of the construction would be to claim that BRVRCs involve ΣP focus. In the case of affirmative BRVRCs, for example, this would mean that a null-headed affirmative ΣP is

attracted to Spec, Foc, thereby placing it in focus. Unlike other instances of focus in the language, the exponent of Foc^0 in this case is $\varnothing$. We know independently that there are a number of distinct realizations of the Nupe focus head. In chapter two, I presented evidence that *o* is the exponent of normal constituent focus, while *ni:* is the form Foc^0 takes when the polarity of a proposition that does not include verbal repetition is focused.

(14)   a. Musa du   eci o.
            Musa cook yam FOC
        'MUSA cooked a yam.'

        b. Musa du   eci ni:.
            Musa cook yam FOC
        'Musa actually cooked a yam.'

Additionally, we know that other abstract morphemes in the language exist, namely, T^0_{PAST} and $Agro^0$ (cf. chapter two), to name a few. Thus, there is no conceptual barrier to analyzing the head of FocP in BRVRCs as being headed by a null morpheme.

    This analysis affords us a way of deriving the previously discussed extraction restriction in BRVRCs. Recall that no constituent can undergo focus movement in a BRVRC. Supporting data are provided below.

(15)   a. *Musa __ du   eci du   o.
           Musa   cook yam cook FOC
         'MUSA DID IN FACT cook a yam.'

        b. *Zě __ du   eci du   o?
          who   cook yam cook FOC
         'Who DID IN FACT cook a yam?'

        c. *Eci Musa du __ du   o.
          yam Musa cook   cook FOC
         'Musa DID IN FACT cook A YAM.'

        d. *Ké   Musa du __ du   o?
          what Musa cook   cook FOC
         'What DID IN FACT Musa cook?'

        e. *Kánci Musa du   eci du   __ o?
          when Musa cook yam cook   FOC
         'When DID IN FACT Musa cook a yam?'

To this, we can add the following paradigm, which provides further support for the conclusion reached in chapter two that *ni:* patterns like a focus morpheme. The data below show that extraction from *ni:* clauses is also systematically blocked.

(16) a. *Musa __ du   eci du   ni:.
          Musa   cook yam cook FOC
          'MUSA actually cooked a yam.'

   b. *Zě __ du   eci du   ni:?
          who   cook yam cook FOC
          'Who actually cooked a yam?'

   c. *Eci Musa du __ du   ni:.
          yam Musa cook   cook FOC
          'Musa actually cooked A YAM.'

   d. *Ké   Musa du __ du   ni:?
          what Musa cook   cook FOC
          'What did Musa actually cook?'

   e. *Kánci Musa du   eci du   __ ni:?
          when Musa cook yam cook   FOC
          'When did Musa actually cook a yam?'

Taken together, (15) and (16) illustrate that constituent focus and polarity focus are incompatible in the language. Given the well-known semantic/processing constraint against multiple non pair-list foci in single assertion domains, the data in (15) and (16) constitute evidence in favor of a focus analysis of BRVRCs.

   The question that naturally arises at this point is this. If polarity focus can be achieved by way of the *ni:* morpheme, why does the BRVRC exist as a separate construction type in the language? A clue to answering this question lies in the different translations native speakers provide for *ni:* focus and verbal repetition (compare the glosses in (13b) and (14b), for example). The semantic and pragmatic differences between the two constructions are subtle, to be sure, but they are discernable. Native speakers describe BRVRCs as more forceful or emphatic than *ni:* constructions. Ultimately, the difference comes down to the relation between the speaker and the objective truth of the asserted/denied proposition. When a speaker uses *ni*: to assert the truth of a proposition, for example, the speaker asserts her conviction that the statement is true, but leaves room for the possibility that the statement may in fact be objectively false. A sentence like (14b) is thus more accurately translated: '(For all I know), Musa actually cooked a yam'. When a speaker employs verbal repetition, on the other hand, the truth-value of the proposition is asserted as an objective fact that exists independent of the speaker. A more accurate translation for the BRVRC in (13b), for example, is: '(For all anyone knows), Musa DID IN FACT cook a yam'. The syntactic derivation of a BRVRC must therefore contain an additional ingredient that encodes this basic difference. Unfortunately, this ingredient is difficult to detect given the initial observation that began this subsection: BRVRCs do not invoke special overt functional particles or cause drastic shifts in word order with respect to V1 and its dependents. Fortunately, however, there is a way to detect the presence of this head.

Although on paper the verbs that surface in BRVRCs appear identical, observable differences can be detected. These differences, it turns out, are neither segmental nor morphological. In fact, they are prosodic, suggesting that purely phonological considerations may be responsible for driving multiple copy spell-out in this instance. The fundamental frequencies (F_0) of tones on V1 (in particular, high and mid tones) are statistically significantly greater than those borne by V2, even when confounding factors such as pitch declination, downdrift, and tonal coarticulation are factored away (Kandybowicz 2004a:48). That is to say, tones on V2 appear to be somewhat depressed in the construction, surfacing in many cases as falling contour tones. Because this lowering is independent of other phonetic factors that tend to lower the fundamental frequencies of tones (e.g. declination, downdrift, and tonal coarticulation of neighboring tones, as mentioned above), this effect is largely unexpected from a purely phonetic/phonological perspective. These tonological facts are illustrated in the following data.[7] (17a-b) illustrate that repeated verbs lexically specified to bear high tones surface with F_0 patterns characteristic of low falling contour tones. (17c), when combined with the data in (17a-b), provides a minimal pair showcasing the fact that the fundamental frequencies of sentence-final high tone-bearing serialized verbs are not depressed as in BRVRCs. The datum also illustrates that although sentence-final positions typically undergo a suite of idiosyncratic prosodic compression and reduction effects not found string-internally in many languages, they do not play a potential confounding role in detecting tonal depression in string-final BRVRC environments. (17d) shows that doubled mid tone-bearing verbs also surface with a characteristic falling contour. Lastly, (17e) shows that F_0 depression on V2 is much less pronounced when the repeated verb is underlyingly specified to bear a low tone.

(17)   a.   PITCH TRACK FOR THE FOLLOWING NUPE BRVRC:

Wu:n **nú**   **nú**.
3rd.SG   be sharp   be sharp
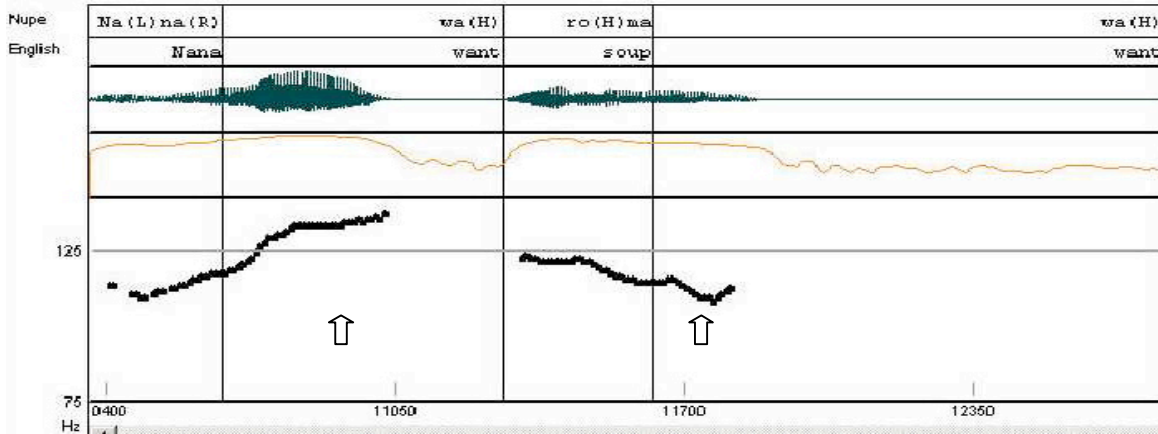'It IS IN FACT sharp.'

(V2 surfaces with a low falling contour)
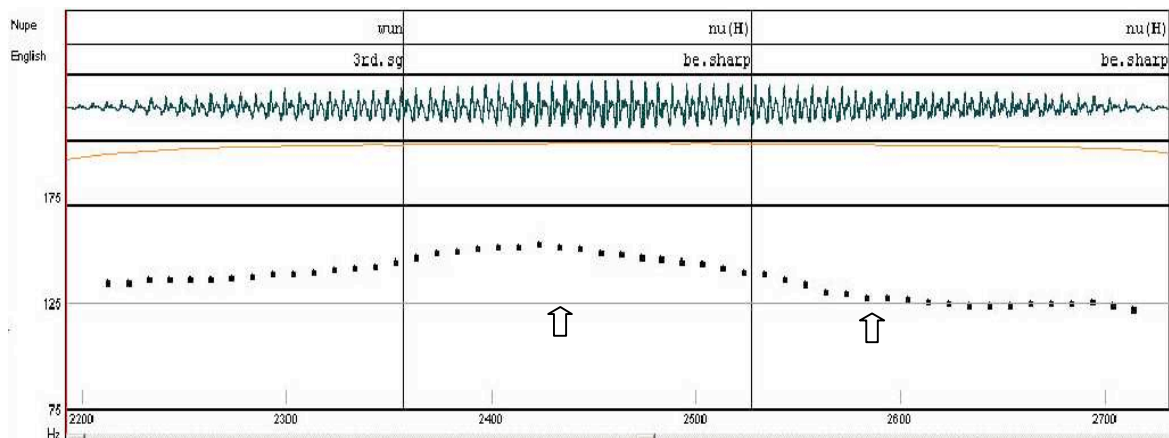
b.   PITCH TRACK FOR THE FOLLOWING NUPE BRVRC:

   Nànǎ **wá**   róma **wá**.
   Nana want   soup   want
   'Nana DOES IN FACT want soup.'
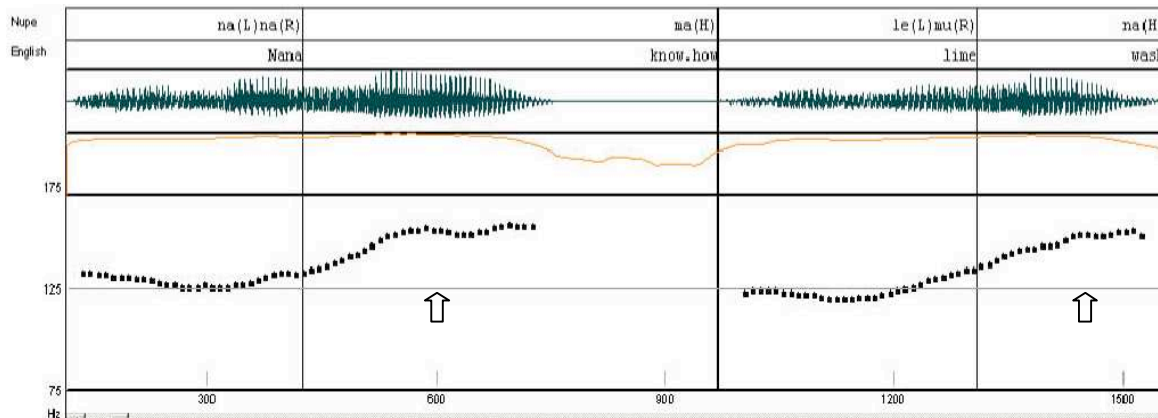
   (V2 surfaces with a low falling contour)

c.   PITCH TRACK FOR THE FOLLOWING NUPE SV_1OV_2 CONSTRUCTION:

   Nànǎ **má**   lèmǔ **ná**.
   Nana know   lime wash
   'Nana knows how to wash a lime.'

   (V2 surfaces with a high tone)

d.   PITCH TRACK FOR THE FOLLOWING NUPE BRVRC:

Nànǎ **li**   lèmǔ **li**   na.
Nana   pick lime   pick wash
'Nana DID IN FACT pick a lime and (then) wash it.'

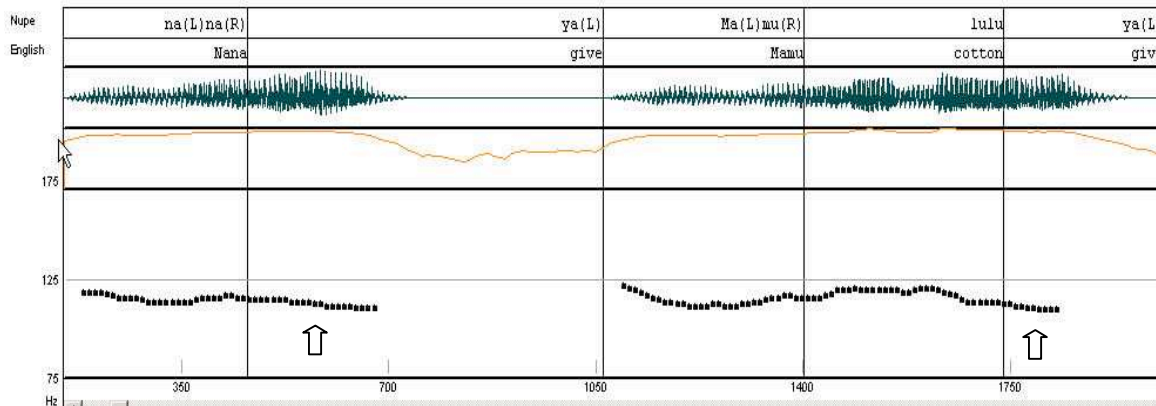(V2 surfaces with a low falling contour)
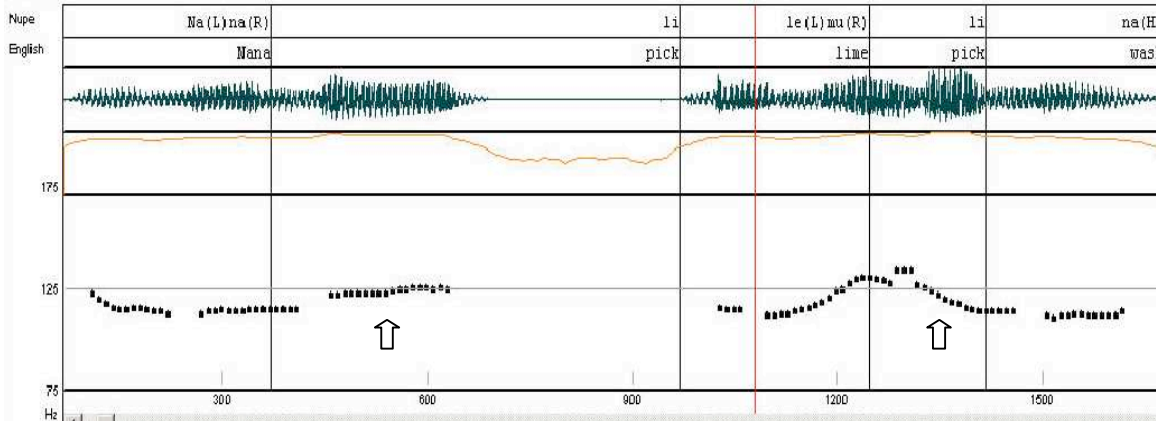
e.   PITCH TRACK FOR THE FOLLOWING NUPE BRVRC:

Nànǎ **yà**   Màmǔ lulu   **yà**.
Nana   give Mamu cotton give
'Nana DID IN FACT give Mamu cotton.'

(V2 surfaces with a low tone)

To the extent that F_0 depression and contour formation on V2 is not a consequence of typical prosodic factors at play in tonal lowering, as previously mentioned, we have

reason to suspect the existence of an independent floating low tone-bearing morpheme. By "floating tone", I simply mean a suprasegmental property/instruction regarding tone not lexically linked to an overt timing unit. If realized on V2, but not V1, we have a way of accounting for the unexpected tonal differences observed between underlying high/mid tone-bearing verbal occurrences in BRVRCs. In the absence of more direct evidence, this morpheme thus seems to be the logical choice for the missing ingredient we have been searching for. To the extent that it surfaces on V2, but not V1, it makes sense to locate the morpheme in a vP-internal position somewhere below v^0, the position occupied by V1 following head movement of the verb root. But what is the semantic contribution of this head and what sort of functional projection should it head? Given the considerations above concerning speakers' intuitions of objective truth/factivity in BRVRCs, I propose that the ingredient in question is the factive morpheme. As such, Nupe BRVRCs are factive polarity focus constructions.

We thus have a way of teasing apart the different realizations of Foc^0 now. The *o* particle is used to focus sub-sentential constituents. To focus larger structures, namely ΣPs, either *ni:* or ∅ is employed; non-factive ΣP focus is achieved by way of *ni:*, while factive ΣP focus (BRVRC formation) proceeds via ∅. The following Vocabulary Insertion rules encode the salient points of this analysis.

(18) a. $[Foc^0_{\Sigma P(FACTIVE)}]$ ↔ ∅
      b. $[Foc^0_{\Sigma P}]$ ↔ *ni:*
      c. $[Foc^0]$ ↔ *o*
      d. $[Fact^0]$ ↔ (`)

3.3.1.2. Putting the Ingredients Together

Assuming we can locate $Fact^0$ by way of the tonally depressed V2 that surfaces in a verbal repetition construction, we need to decide where the morpheme is merged in the vP shell structure. Given the vP architecture motivated in chapter two, there are basically three live options. Either the factive morpheme is generated between v^0 and $Agro^0$ (19a), or it sits between $Agro^0$ and Loc^0 (19b), or it is situated slightly lower, in a position intermediate to Loc^0 and V^0 (19c). Because V^0 assigns the root its verbal feature and given that the lower spelled-out copy in BRVRCs is verbal, we can exclude the possibility that $Fact^0$ occupies the structural space between V^0 and √.

(19) a. v >> **Fact** >> Agro >> Loc >> V >> √
      b. v >> Agro >> **Fact** >> Loc >> V >> √
      c. v >> Agro >> Loc >> **Fact** >> V >> √

Word order facts suggest option (19c). The lower copy of the verb follows all case-valued/raised objects, including locative DPs, but precedes non-case valued complements (i.e. CPs) and low adverbials (i.e. adverbs of manner and motion). This suggests that $Fact^0$ is merged relatively low in the structure. Consider the following data.

61

(20) a. Musa **pa** (*pa)   eci **pa**   hàràfíya (*pa).
          Musa pound pound yam pound well   pound
          'Musa DID IN FACT pound a yam well.'

      b. Musa à **yà** (*yà) etsu (*yà) èwò   **yà**   sanyín (*yà)
          Musa FUT give give chief give garment give quietly give
          efo cigbàn o   (*yà).
          hole tree   LOC give
          'Musa WILL IN FACT give the chief a garment quietly under the tree.'

      c. Musa **le** (*le)   kata o   **le**.
          Musa sleep sleep room LOC sleep
          'Musa DID IN FACT sleep in the room.'

      d. Musa **gàn gàn** gànán Gana ba   nakàn (*gàn).
          Musa say say COMP Gana cut meat   say
          'Musa DID IN FACT say that Gana cut the meat.'

     The derivation of a BRVRC thus minimally involves head movement through three functional heads: $Fact^0$, $Agro^0$ and v^0. When the root is locative, it will pass through a fourth head, namely, Loc^0. As such, the narrow syntactic derivation of a monotransitive non-locative BRVRC in Nupe can be schematized as follows. (For ease of presentation, certain functional vocabulary items have been added to the structural representation and the featural content of probes and goals has been omitted. Copies are indicated by way of matching subscripts.)

(21)

[Syntactic tree diagram]

FocP
- ΣP^m
  - Σ | ∅
  - TP
    - DP$_{SUBJ}$
    - T′
      - T
      - vP
        - DP$_{SUBJ}$
        - v′
          - v
            - Agro^l △ …√^{i}…
            - v
          - AgroP
            - DP$_{OBJ}$
            - Agro′
              - Agro^l
                - Fact^k △ …√^{i}…
                - Agro
              - FactP
                - Fact^k
                  - V^j △ …√^{i}…
                  - Fact | (ˋ) √^{i}
                - VP
                  - V^j
                    - V
                    - DP$_{OBJ}$ √^{i}
- Foc′
  - Foc$_{ΣP(FACTIVE)}$ | ∅
  - ΣP^m
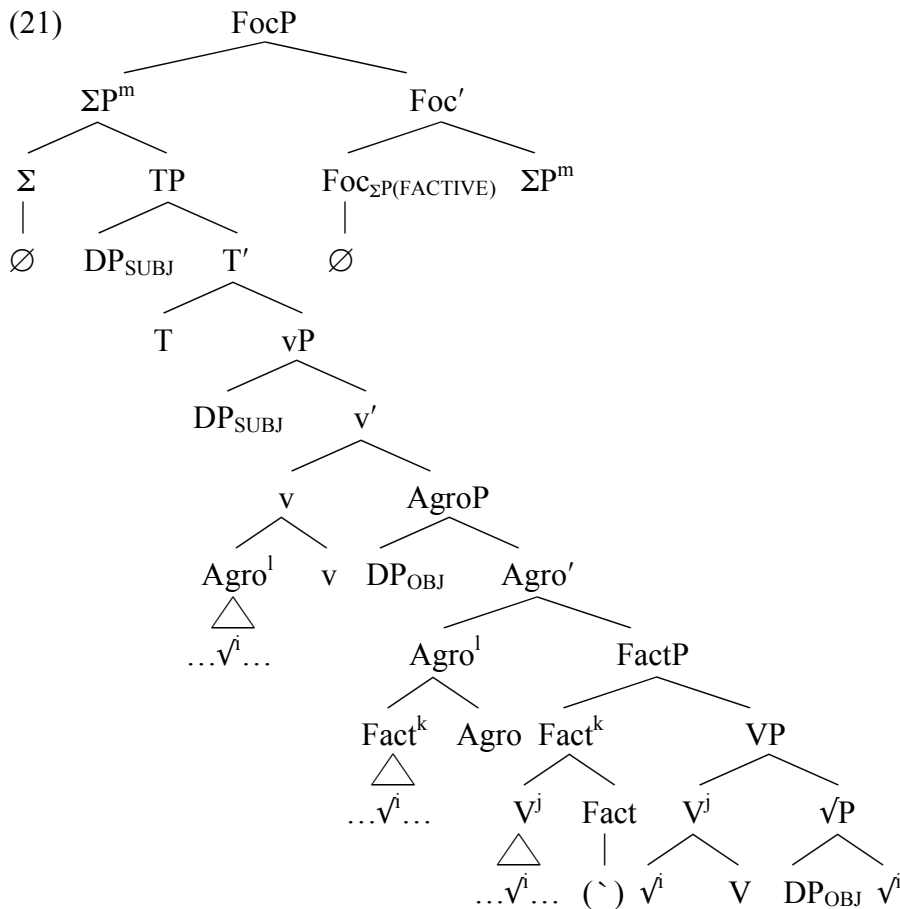
## 3.3.2. BRVRCs at the Syntax-Phonology Interface

Now that we have explored the narrow syntactic component of the BRVRC derivation, we can approach the derivation from the PF side. It is at this point in the computation that many of the defining properties of BRVRCs take shape. At PF, a decision is made regarding which copies of the verb root are to be realized phonetically, which copies are to be erased, and whether the resulting output can be linearized. More crucially for this book, however, the conditions that drive multiple copy spell-out are also to be found here. In this section, I focus on these aspects of the BRVRC derivation.

3.3.2.1. Spell-Out of the Lower Copy

Let's begin by exploring the forces at work driving the phonetic realization of the lower verbal copy. Given independent phonetic observations, I have motivated the existence of a vP-internal syntactic head whose phonetic realization is a floating low tone. Similar heads can be found in the language. I have already discussed one, namely, the pre-verbal floating high tone that surfaces in negation constructions (Banfield & Macintyre 1915,

Madugu 1982:33). Recall that in chapter two, this element was analyzed as a vP adjoined reinforcing particle. Its existence is phonetically detectable in the tonal influence it imparts on the realization of T^0. (I'll return to discuss this momentarily.)

(22) a. Musa è (´) ba nakàn à.
         Musa PRS FT cut meat NEG
         'Musa isn't cutting the meat.'

   b.
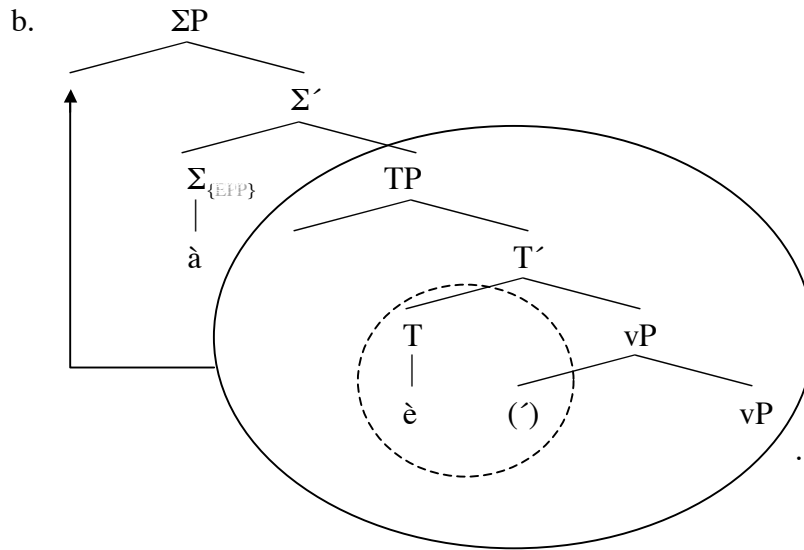
Another head whose exponent is a floating tone can be found in possessive constructions. As illustrated below, the realization of $Poss^0$ is variable. If it doesn't surface as *nyá*, it is realized as a floating high tone. Here too, the existence of the floating tone is transparent given its tonal effects on neighboring material, in this case, the possessed constituent.

(23) a. ráyi nyá egi
         soul POSS child
         'The child's soul'

   b. ráyi (´) egi
         soul FT child
         'The child's soul'

   c.
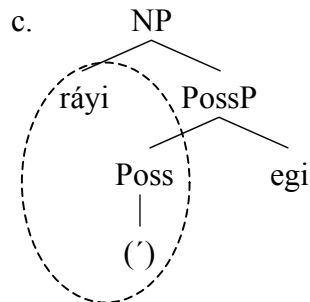
The assumption of an abstract morpheme hosting a floating tone is thus non-problematic. When we consider the phonetic effects of these floating tones on neighboring material, however, it becomes clear that the language does not tolerate prosodically unsupported tonal content. Consider first the examples in (22a) and (23b) above. The floating tone affects preceding phonological material, that is, content to its left syntactically. The tone on the present tense marker in (22a) is not realized as a simple low register tone as it is in affirmative sentences. Rather, in negative clauses, the floating high tones fuses with the tense marker's lexical low tone and surfaces as a rising contour tone. Likewise for the tonal realization of the future morpheme *à*. Crucially, the tense markers in these cases fail to be realized as upstepped low tones (i.e. as mid tones). (In what follows, tonal upstep is indicated by means of a superscripted upwards-pointing arrow preceding the vowel and downstep is represented by way of a pre-vocalic subscripted exclamation mark, both the standard IPA diacritics.)

(24)   TONAL REALIZATION OF TENSE MARKERS UNDER NEGATION

    a. √[Musa ě/ ǎ   ba nakàn à]   (Compare with (22a))
        Musa PRS/FUT cut meat NEG

    b. *[Musa � ͏ᵗè/ᵗà   ba nakàn à]

A similar situation obtains in the non lexically headed possessive construction (cf. (23b)). Here too, the floating high tone merges with a left adjacent tone-bearing unit and surfaces as a contour tone. In the case of (23b), the floating high tone combines with the mid tone of the second syllable of 'soul' to derive a mid rising tone. Once again, upstepped tonal outputs are illicit, as shown below.

(25)   TONAL REALIZATION OF THE POSSESSUM IN ASSOCIATIVE CONSTRUCTIONS

    a. √[ráyǐ egi]   (Compare with (23b))
        soul child

    b. *[ráyᵗi egi]

The outputs in (24b) and (25b) would be difficult to rule out if floating (i.e. prosodically unassociated) tones were possible in Nupe phonology. The mechanics of tonal association with respect to floating tones are well known (Goldsmith 1976, Clements 1979). Contour tones result from the association of tonemes with tone-bearing units, while upstepped/downstepped tones result from the presence of unassociated or floating tones in the phonological representation.

(26) a. CONTOUR TONE FORMATION IN AUTOSEGMENTAL PHONOLOGY

$$
\begin{array}{ccc}
\text{H} & \text{L} & \text{H} \\
| & \neq\!\!\diagdown & | \\
\sigma & \sigma & \sigma
\end{array}
\quad\Rightarrow\quad
\begin{array}{ccc}
\text{H} & \text{L} & \text{H} \\
| & & \diagdown\!\diagup \\
\sigma & & \sigma
\end{array}
$$
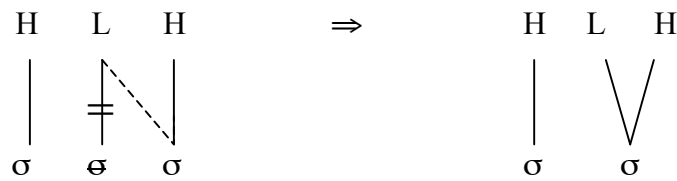
b. TONAL DOWNSTEP IN AUTOSEGMENTAL PHONOLOGY

$$
\begin{array}{ccc}
\text{H} & \text{L} & \text{H} \\
| & \neq & | \\
\sigma & \sigma & \sigma
\end{array}
\quad\Rightarrow\quad
\begin{array}{cc}
\text{H} & \text{!H} \\
| & | \\
\sigma & \sigma
\end{array}
$$
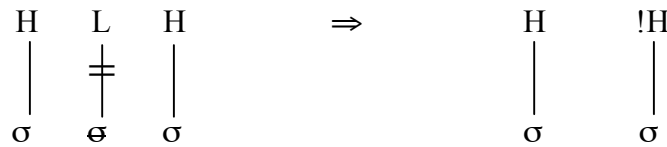
To the extent that upstep is inadmissible in Nupe negative and possessive constructions, we have our first piece of evidence that prosodically unsupported tonal content is disallowed in the phonology.

Further evidence for this position comes from the domain of hiatus resolution. The term hiatus refers to outputs consisting of heterosyllabic vowel sequences (e.g. V_1V_2 configurations). In Nupe, hiatal outputs are highly marked structures and three general strategies are employed to resolve it: glide formation, assimilation, and elision (see Kawu 2000a, 2002 for details). Of these resolution strategies, glide formation and elision are directly relevant to the discussion at hand because the outcome of these repair strategies is to remove a tone-bearing unit from the phonological structure, leaving behind a temporarily unassociated (floating) tone. With respect to glide formation, the tone on the underlying vowel is no longer supported when the vowel's phonetic matrix is shifted to that of a consonant. As shown below, the resulting contour tone suggests that the stranded tones reassociate, rather than float.

(27) EMERGENCE OF CONTOUR TONES UNDER GLIDE FORMATION FOR HIATUS RESOLUTION

a. Egi è tí-gí.   →   √[eg**jê** tí-gí]
    child PRS put-cry   *[eg**jᵗè** tí-gí]
    'The child is crying.'

b. Efín è tso.   →   √[ef**ɟên** tso]
    watch PRS be fast   *[ef**ɟᵗèn** tso]
    'The watch is fast.'

c. Ègo è sò.   →   √[èg**wê** sò]
    worm PRS crawl   *[eg**wᵗè** sò]
    'The worm is crawling.'

We find a similar situation when we consider vowel elision. As shown below, when a tone-bearing unit is deleted in the phonology, its underlying toneme is deleted as well. The lack of attendant downstep or upstep provides clinching support for the conclusion that Nupe does not tolerate floating tones at the level of phonology.

(28)   TONAL CONSEQUENCES OF ELISION FOR HIATUS RESOLUTION

    a.   lá   èfá   →   √[láfá]
        take holiday   *[láf ꜜá]

    b.   lá   ekún   →   √[lákún]
        carry corpse   *[lák ꜜún]

    c.   lá   árata   →   √[lárata]
        take fifty   *[lár꜑ata]

I'll refer to the constraint forbidding prosodically unsupported tonal content as the Tonal Reinforcement condition (ToRC).

(29)   TONAL REINFORCEMENT CONDITION (ToRC)

    Prosodically unsupported tonal content is uninterpretable.

ToRC is clearly a parametrizable PF condition. Although floating tones are disallowed in Nupe, they are clearly tolerated in languages like Mende (Leben 1978) and Akan (Schachter & Fromkin 1968) among others, where downstep is robustly attested.

    Given the existence of ToRC in Nupe, it is clear that Vocabulary Insertion into Fact^0 introduces a problem that must be resolved before the Sensorimotor performance system is engaged or else the ensuing PF derivation, unable to meet Full Interpretation, will crash. We thus have a way of explaining lower copy spell-out in Nupe BRVRCs. In a nutshell, it is a PF repair strategy. Following Vocabulary Insertion, those derivations that fail to spell-out a copy of the verb root adjoined to Fact^0 will eventually crash at the point of final transfer to the external Articulatory-Perceptual system, while those parallel derivations in which the lower copy of the verb is realized eventually converge in virtue of satisfying ToRC. This proposal is illustrated graphically below.

(30)   a. LOWER COPY DELETION → *ToRC   b. LOWER COPY SPELL-OUT → CONVERGENCE
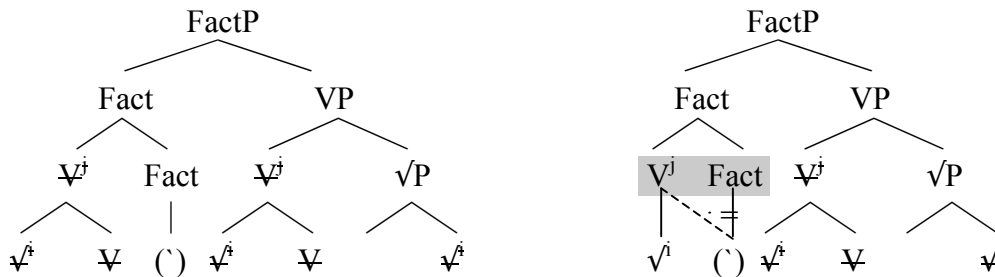
Given that the lower root copy follows case-valued material as shown in (20), we know that its spell-out site must be lower than v^0. Logically, this leaves three possibilities: spelling-out Agro^0; spelling-out Fact^0, and spelling-out V^0. These choices are evident given the BRVRC structure I have argued for, which is repeated below. In what follows, I have numbered each of these possible spell-out sites below the root copy in their domain.

(31)
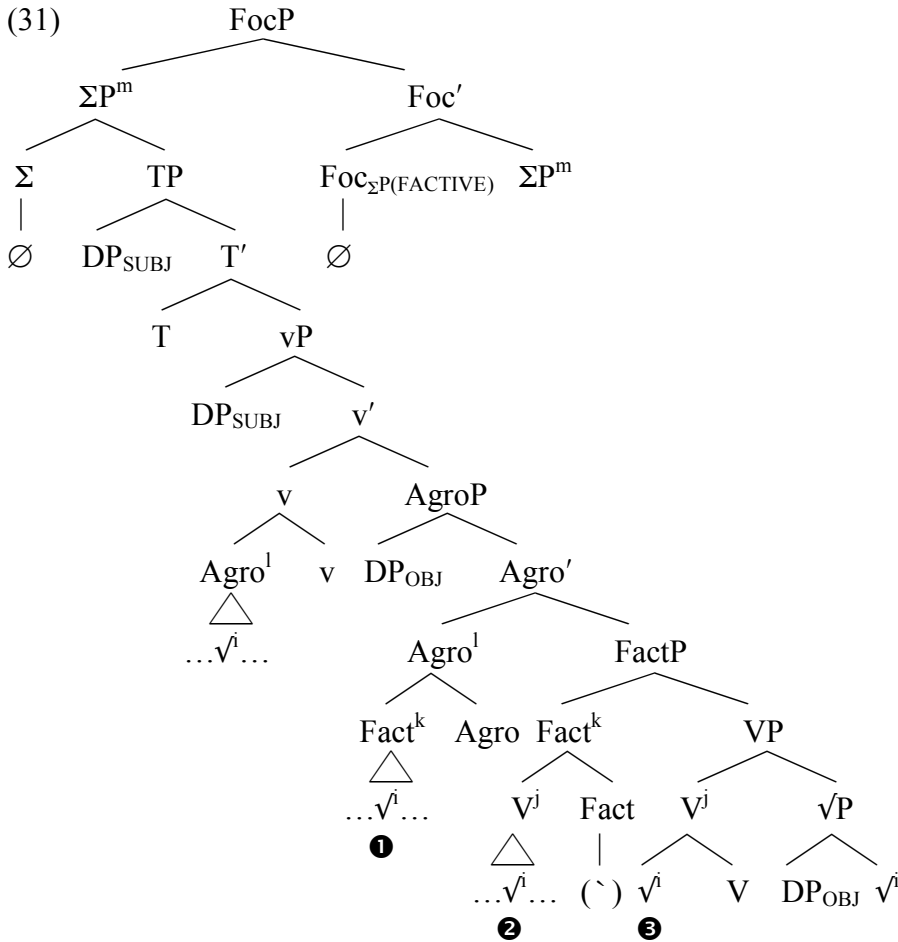
I would like to argue that the lower copy is either realized in site 1 or 2, that is, adjoined to either Agro^0 or Fact^0. What motivation is there for claiming that the copy adjoined to V^0 (i.e. site 3 in (31)) is not the site of lower copy-spell-out? My response to this question is guided primarily by the syntactic-phonological interactions that obtain in the other constructions that manifest floating tones in the language, namely, negation and possession. Consider the analysis of negation presented in (22b). Recall that the floating high tone affects material to its left, not its right. The material it affects is syntactically left-adjacent. This is why tense markers, which are left-adjacent to the floating tone, are tonally affected, but verbs and subjects are not.[8] The same can be said for the floating tones in possessive constructions. Here too, the floating tone influences the tonal

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realization of the possessum, not the possessor. A casual glance at (23c) reveals that just as in negation constructions, the floating tone associates with a left adjacent syntactic constituent. Given these considerations, I propose that adjacency is a syntactic condition on tonal association in Nupe. Because the directionality of this adjacency condition is left-oriented, we can eliminate the possibility that V^0 (i.e. position 3 above) is the site of lower copy spell-out in BRVRCs. Given that $Agro^0$ has no phonetic content, there is no direct empirical evidence bearing on which of the remaining root positions hosts the lower copy. With respect to site 1, the structure adjoined to $Agro^0$ is identical to the one in site 2, thus, the floating tone is supported regardless of which site hosts the lower copy.

3.3.2.2. *Spell-Out of the Higher Copy*

I'd like to propose a simple explanation behind the phonetic realization of the higher verbal copy. In doing so, we can address an issue that has yet to be seriously considered, namely, what is the spell-out site of V1? It may help to refer back to (31) at this point. Given that V1 precedes case-valued objects in Spec, Agro, the only possibility for locating V1 in non-locative BRVRCs is v^0. However, there is a real issue when doubling occurs in locative constructions. Recall that in these constructions V1 precedes the object in Spec, Loc and V2 follows it (cf. (20c)). In chapter two, I motivated an analysis of locative constructions in which the case-valued locative DP occupies a vP-internal specifier position below v^0 and $Agro^0$. The relevant structure is repeated below without FactP.

(32)
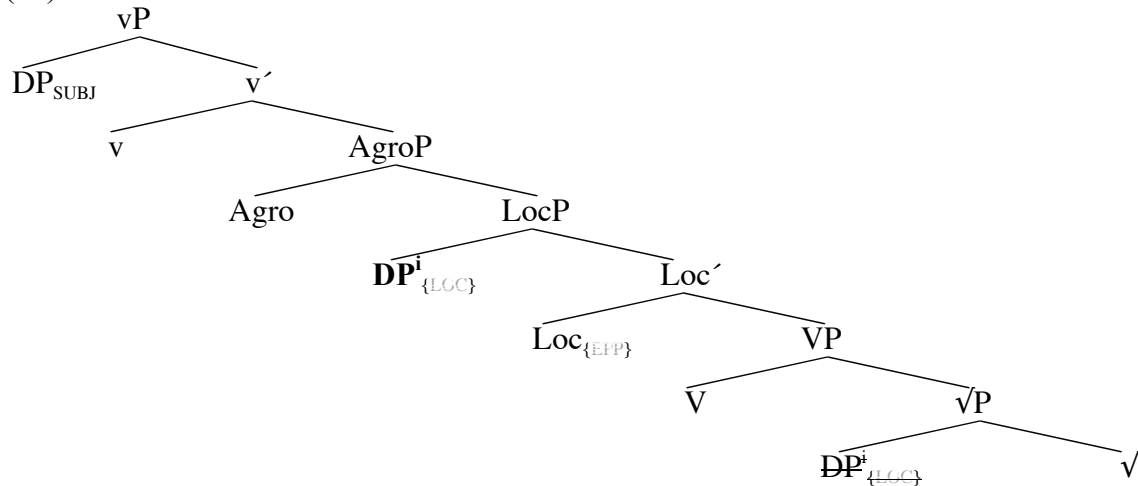
This means that it is equally possible (pre-theoretically) that the site of the higher spelled-out copy in locatives is either v^0 or $Agro^0$. How can we decide between these two options? In answering this question, I'd like to stick to a fairly common hypothesis in generative grammar, namely, that v^0 is a bound morpheme/affixal head. Heads like v^0 are thus subject to the Stray Affix filter (Lasnik 1981, 1995), a morphological condition that is violated at PF when a bound/affixal head fails to be prosodically supported. Thus, the higher pronounced copy in Nupe BRVRCs occupies v^0.

A number of empirical facts support this conclusion. The most direct argument comes from the unavailability of verbal repetition in perfect constructions.

(33)   BRVRCs ARE ILLICIT IN THE PERFECT

    a.   *Musa á   nakàn ba   ba.
        Musa PRF meat   cut cut
      Also BAD: *Musa á ba nakàn ba.

    b.   *Musa á   le   kata o   le.
        Musa PRF sleep room LOC sleep
      Also BAD: *Musa á le le kata o.

This fact is actually predicted by my analysis given the conclusion that perfect markers occupy v^0 in the language (cf. chapter two). If the conditions that drive multiple copy spell-out in BRVRCs are the Stray Affix filter (for the higher copy) and ToRC (for the lower copy), then perfect constructions effectively remove one of those sources because the realization of the perfect morpheme in v^0 serves to satisfy the Stray Affix filter. Lower copy spell-out would still proceed for the reasons laid out above, but without the Stray Affix filter to force higher copy spell-out in v^0, the phonetic realization of an additional higher copy in Agro^0 would be uneconomical. Derivations of this variety would thus be cancelled, explaining the incompatibility of verbal repetition and the perfect.

A similar piece of supporting evidence comes from verbal repetition in cases of verbal serialization. Here, I'll restrict myself to two constructions in which two or more lexically distinct verbs surface within a single matrix vP independently of coordination or subordination, namely, SVCs (cf. (4a-b)) and modal auxiliary constructions (cf. (1e) in chapter two). (See Kandybowicz & Baker 2003 for evidence that both constructions consist minimally of a single vP projection.) The facts are striking. Although V1 can double in both SVCs and modal-auxiliary constructions, V2 is incapable of repeating in both structures. This asymmetry is presented below.

(34)   INITIAL VERBS IN SVCS MAY REPEAT

    a.   Musa du   eci du   kún.
        Musa cook yam cook sell
      'Musa DID IN FACT cook a yam and (then) sell it.'

    INITIAL VERBS IN MODAL-AUXILIARY CONSTRUCTIONS MAY REPEAT

    b.   Musa yá   eci yin yá   si.
        Musa begin yam PRT begin buy
      'Musa DID IN FACT begin to buy a yam.'

NON-INITIAL VERBS IN SVCS MAY NOT REPEAT

c. *Musa du eci kún kún.
   Musa cook yam sell sell

VERBS EMBEDDED UNDER MODAL-AUXILIARIES MAY NOT REPEAT

d. *Musa yá eci yin si si.
   Musa begin yam PRT buy buy

Again, the facts are not surprising under the present analysis. In (34c-d) V2 is prevented from moving to v^0 due to the presence of a structurally higher verbal element. We can say that in all of the examples above, lower copy spell-out is conditioned by the need to support Fact^0 for phonological reasons. However, it is only in (34a-b) that the higher copy of the verb successfully reaches v^0. Thus, spelling-out $kún_1$ in (34c) and si_1 in (34d) is uneconomical and therefore inadmissible. If in general the spell-out of v^0 is tied to the Stray Affix filter, as I propose, the phonetic realization of the higher copy of the verb in BRVRCs is morphologically grounded.

3.3.2.3. Linearization

Because BRVRCs are well-formed PF outputs, we know they can be successfully mapped onto linear orders. Nonetheless, the phonetically realized verbal occurrences appear to be non-distinct, both syntactically and segmentally, raising the question of how linearization is even possible at all.

   In most instances of copy movement, failure to delete all but a single link at PF yields an unlinearizable syntactic object, causing the derivation to crash at PF (Nunes 1995, 2004) (cf. the discussion in chapter one). Consider, for instance, the narrow syntactic output of a BRVRC (31). Assuming a first-branching *category* definition of c-command (Kayne 1994), spelling-out v^0 gives rise to a configuration in which the higher copy of the verb asymmetrically c-commands the object in Spec, Agro[9]. Thus, the LCA would dictate that the higher copy of the verb be pronounced before the object. Because this same object asymmetrically c-commands Fact^0, spelling-out a lower copy of the verb root adjoined to this head would yield an instruction to pronounce the object before the lower verbal copy. If the two verbal occurrences were construed as non-distinct at the point of linearization, a contradiction would arise: the verb would have to both precede and follow the object. The linearization algorithm would thus fail to produce a well-formed linear structure and the derivation would subsequently crash at PF. Thus, because BRVRCs are successfully linearized, it must be the case that the surviving verbal copies are interpreted as distinct at the point of linearization.

   Nunes (1999, 2004) and Kandybowicz (2007a) offer a provision under which syntactically non-distinct chain links (i.e. copies) may be rendered distinct at the point of Spell-Out. The idea is that dedicated morphological operations like Fusion may change the internal structure of a chain link before Vocabulary Insertion/Linearization (cf. (10) in

chapter one), thus rendering the link morphosyntactically distinct and thus invisible/inert for purposes of linearization. This possibility, while fully compatible with both DM and Minimalist assumptions, does not seem very promising in the case of Nupe BRVRCs, because no overt morphological or otherwise structural evidence of such an operation is readily identifiable.[10] Thus, there must be another sense in which the surviving copies count as computationally distinct.

I'd like to propose that the surfacing copies are distinct in a derived morphosyntactic sense. At the point of linearization, when the transferred syntactic structure still remains available for reference, word-internal copies can be differentiated with respect to their degrees of embeddedness; the root copy in v^0 is more deeply embedded than the lower copy. The system need not count the number of nodes dominating each root copy to make this determination. Given syntactic conditions like the Head Movement constraint (Travis 1984), if a head X asymmetrically c-commands a head Y and the two heads are related by chain formation, it follows that X is more deeply embedded than Y, having raised through more projections. Thus, at the point of linearization, the algorithm need only be able to detect copies and compute asymmetric c-command relations, two properties independently ascribed to this arm of the grammar (cf. chapter one). As such, distinctness is guaranteed by and recoverable from the copies' narrow syntactic derivational history. In this way, the root copies adjoined to v^0 and $Fact^0$ can be interpreted as distinct at the point of Spell-Out and their linearization can proceed unproblematically.

Under this interpretation of PF chain resolution, the distinctness of multiple syntactic occurrences need not be determined solely by appealing to the initial numeration as in Chomsky 1995a and Nunes 1995, 2004. Rather, the difference between distinct and non-distinct terms is a derivational by-product, computed on-line and chain-internally in both the narrow syntax and at PF during linearization. This assessment is referenced throughout the entire linearization computation.

3.4. SUMMARY AND CONCLUDING REMARKS

In line with Minimalist considerations, I have argued that the Nupe verbal repetition construction does not represent a genuine construction type *per se*, but rather arises as a general consequence of independent grammatical considerations, most of them PF-centric. Verbs raise cyclically in the language, traversing a number of heads within the articulated vP structure, which in turn scatters a number of verbal copies that may or may not be interpreted at PF. The highest copy of the verb root is spelled-out in order to lend support to v^0, a bound morpheme. Unless independently supported by the perfect marker, failure to do so will result in a morphologically illicit structure. The pronunciation of the lower copy of the verb root in a BRVRC is a consequence of the phonetic realization of the factive morpheme, which in Nupe is spelled-out as a floating low tone. Because unsupported tonal content is uninterpretable in the language, lower copy spell-out applies to rescue the PF object that is jeopardized by the insertion of the floating tone. The resulting linguistic object is fully linearizeable because although lexically non-distinct, the phonetically realized root copies differ morphosyntactically with regard to their

degrees of embeddedness. The analysis of Nupe BRVRCs advanced in this chapter, thus reveals that both morphological and phonological conditions drive repetition. On the morphological side, I have identified the Stray Affix filter (Lasnik 1981, 1995). On the phonological side, I have identified the Tonal Reinforcement condition (ToRC).

The analysis also accords with Grohmann's (2000, 2003) account of lower copy spell-out as a PF repair strategy, although the details vary considerably. Nupe verb root raising takes place entirely within the vP domain (Grohmann's θ-domain); thus, each application of head movement constitutes an anti-local movement. For Grohmann, anti-local movement yields multiple copy spell-out in which the head of the chain and the lower copy are rendered phonetically and lexically distinct. Grohmann's theory predicts far more multiple copy spell-out than is observed. In fact, each of the four head movements involved in Nupe BRVRC formation should engender multiple copy spell-out according to Grohmann's framework. More damaging, however, the spelled-out lower copy of the verb root is not lexically distinct from the higher copy and it only differs phonetically with regard to tonal realization. Nupe verbal repetition thus fails to support Grohmann's predictions about multiple copy spell-out.

As mentioned in the introduction, verbal repetition is a fairly abundant phenomenon cross-linguistically, yet with a modest number of exceptions outside the predicate cleft/A-not-A literature (e.g. Cheng 2007, Cho & Kim 2002, Choi 2003, Collins & Essizewa 2007, Hutchison 1989, Kang 1988, Kim 2002, Lefebvre & Ritter 1993, Lidz 2001, Martins 2007, Nishiyama & Cho 1998, No 1988, Nunes 2003, Piou 1982, Smith 1970, Yim 2004) relatively little analytically rigorous work has been done examining the distributional properties of the verbal copies in these constructions. I have tried to show that verbal repetition sheds light on a number of important grammatical issues, namely, the copy theory of movement, the mechanics of PF chain resolution, multiple copy spell-out and the syntax-phonology interface. One can only hope that this will spark future interest and sustained research into the phenomenon.

NOTES TO CHAPTER 3

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[1] In English, it is possible to generate multiple copies of the verb along with the verb's arguments (see Ghomeshi et al. 2004).

(i)   I don't just like her. I LIKE HER like her.

Thus, the mechanism of verbal repetition in English is flexible with respect to the quantity of syntactic material it can copy and thus differs from the other languages presented in (1). Furthermore, in certain dialects it is possible to double the auxiliary provided that the initial auxiliary element is reduced and the two auxiliary copies are not string adjacent. The data below illustrates (data from David Adger, personal communication to Jairo Nunes cited in Nunes 2004:170).

(ii)   a. %They might**'ve** not **have** left.
         b. *They might have not have left.
         c. *They might've have left.
         d. *They might have have left.

I draw attention to verbal repetition in English merely to highlight the occurrence of the phenomenon close to home (and cross-linguistically), although it may turn out that verbal repetition in English does not involve the variety of syntactic copying proposed in this chapter (cf. Travis 2001).

[2] See example (ii) in note 1 of chapter two for an example of subject pro-drop in the related language Yoruba. Geographically, Yoruba is not unique in this regard. Eze (1995), for example, argues for null subjects in Igbo. Thus, although admittedly limited within the languages of West Africa, the phenomenon of subject drop is not altogether unavailable.

[3] See the pitch tracks in (17) for this prosodic evidence. Note the absence of a break separating SV_1O from V_2, although a break does separate V_1 from OV_2 in some cases (cf. (17b,d,e)). Evidence that this interval does not constitute an intonation phrase break comes from the fact that pitch is not reset following the pause.

[4] The serialized verbal occurrences in Nupe PSVCs (cf. (4e-f)) are not under the scope of matrix tense markers. Semantic evidence that V2 in these constructions is nonfinite comes from the fact that PSVCs can be continued by propositions that negate the eventualities denoted by V2 (Ahmadu Ndanusa Kawu, personal communication). For instance, (4e) can be continued: "…but he won't end up planting the corn; instead, he'll eat it." Likewise, (4f) can be continued: "…but instead, he ended up throwing the meat away". These facts suggest that V1 and V2 are separated by nonfinite clause boundaries in PSVCs. The same cannot be said for the serialized verbs in Nupe RSVCs and CSVCs. The sorts of negating continuations described above for PSVCs are not possible for these SVC varieties, suggesting that RSVCs and CSVCs, unlike PSVCs, are characterized by monoclausal structures in which the matrix tense morpheme ranges over all serialized occurrences.

[5] Smith (1970:327,330) presents data in which some serialized predicates are grammatically repeated. Curiously, however, he reports that doubling the final serialized occurrence is not possible (cf. (iiid)). His data are presented below. (Note that the semantic effect of doubling captured in Smith's translations differs considerably from the treatment presented in this chapter.)

(iii)	a.	Mi: de eyì ké só kún.	(Smith 1970:330)
		1st.SG have corn leave hide sell	
		'I have corn left hidden to sell.'	
	b.	Mi: de eyì ké ké só kún.	(Smith 1970:330)
		1st.SG have corn leave leave hide sell	
		'I have corn left over hidden to sell.'	
	c.	Mi: de eyì ké só só kún.	(Smith 1970:330)
		1st.SG have corn leave hide hide sell	
		'I have corn left hidden away to sell.'	
	d.	*Mi: de eyì ké só kún kún.	(Smith 1970:330)
		1st.SG have corn leave hide sell sell	

None of my consultants accept any of the sentences in (iii) above. Note, however, that the impossibility of repeating the final serialized predicate reported in (iiid) is consistent with the data in (6) and my claim that serialized predicates may not be copied. As regards Smith's data, it would be helpful to know something about the context in which they were elicited and whether that context contributed in any way to their being accepted by his consultants. Another possibility to keep in mind is that perhaps *ké* and *só* in the examples cited above are not actually serialized verbal occurrences, but rather adjectival modifiers as suggested by

the English translations. If so, the only true verbal occurrences in (iii) would be *de* 'have' and *kún* 'sell', the latter of which is unable to repeat. This state of affairs would then render Smith's findings congruent with the facts presented in (6).

[6] Smith (1970:330) reports that three copies of the verb may surface in the Nupe BRVRC, but that the categorical status of V3 differs from that of V1 and V2 in that it does not count as "verbal". (See Smith 1970 for justification of the latter claim in terms of pronominalization and tone facts.)

(iv)   a.   U: ba cigbàn.
              3RD.SG cut wood
              'S/he cut wood.'

        b.   U: ba cigbàn ba.   (Smith 1970:331)
              3RD.SG cut wood   cut
              'S/he did cut wood all day.'

        c.   U: ba cigbàn ba ba.   (Smith 1970:332)
              3RD.SG cut   wood   cut cut
              'All s/he did was cut wood.'

        d.   U: gbín mi: gàn.   (Smith 1970:333)
              3RD.SG ask   1st.SG say
              'S/he asked me.'

        e.   U: gbín mi: gàn gbín.   (Smith 1970:333)
              3RD.SG ask   1st.SG say ask
              'S/he DID ask me.'

        f.   U: gbín mi: gàn gbín gbín.   (Smith 1970:333)
              3RD.SG ask   1st.SG say ask ask
              'All s/he did was ask me.'

While this might have been a grammatical possibility in older stages of Nupe, it is clearly inadmissible in the present grammar in both the local dialect studied by Smith (Bida Nupe) as well as the dialect investigated in this book (Lafiagi Nupe). Speakers consulted from both dialects systematically rejected the triplication paradigms in (iv) above. It is unclear to me whether the data in (ivc) and (ivf) were ever truly grammatical or whether the context of elicitation may have played a role in facilitating their acceptance when Smith recorded them almost 40 years ago. It is clear, however, that in present day Nupe there is scant variation with respect to bare root verbal repetition. A maximum of two verbal occurrences may be realized.

[7] The dots on the lower half of the pitch track represent detected fundamental frequency values measured in hertz (increasing along the y-axis) over time (increasing along the x-axis). The vertical lines indicate boundaries between the production of adjacent words. Thus, to observe the tonological differences between the verbs in BRVRCs, visually compare the fundamental frequency values in the columns corresponding to the two verbal occurrences. See Kandybowicz 2004a for the corresponding quantitative data.

[8] In simple past negatives where T^0 is not phonetically realized, the floating tone associates with the underlying tone on the final syllable of the subject, once again yielding a rising contour tone. This complicates the analysis of tonal association under syntactic adjacency presented in this section because T^0

intervenes between the vP-adjoined floating tone and the subject in Spec, T, yet association proceeds as usual. Rather than abandon the adjacency hypothesis, I propose that a post-Insertion operation such as "Local Dislocation" (Embick & Noyer 2001, 2007) or Prosodic Inversion (Halpern 1992, Schütze 1994) applies as a last resort to move the floating tone into a subject-adjacent position, where it can successfully associate in order to avoid violating ToRC.

[9] Assuming a first-branching *category* definition of C-command (Kayne 1994), the first branching category dominating the adjoined complex verbal category V is v′, which also dominates AgroP. Although $Fact^0$, $Agro^0$ and v^0 also dominate the complex V head (cf. (v) below), they are *segments* rather than *categories* (May 1985), and thus do not count for purposes of C-command calculation on the above definition.

(v)
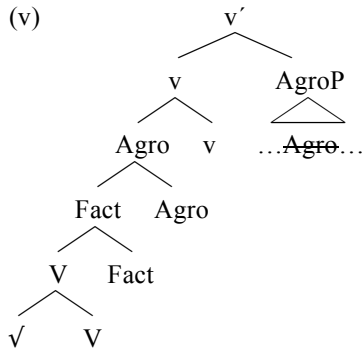
[10] Although see Kandybowicz 2007a for an earlier analysis of BRVRCs in terms of Fusion.

CHAPTER 4

PREDICATE CLEFT:
REPETITION VIA PARALLEL CHAIN FORMATION

4.1. **AN OVERVIEW OF SORTS**

In this chapter, I investigate the second instance of multiple copy spell-out in the Nupe verbal domain. The locus of inquiry is the predicate cleft construction (PCC hereafter), a cross-linguistically well documented phenomenon in which a predicate is promoted in discourse prominence and realized in a peripheral syntactic position. Similar to certain varieties of left dislocation, but unlike typical cases of topic or focus, PCCs in Nupe and many other languages exhibit long-distance chain-like dependencies in which multiple links are visible at PF. Although related, these pronounced occurrences typically differ morphologically. Much like the Nupe BRVRC discussed in chapter three, the phonetic realization of the predicate is obligatorily bi-locational in that mono or triple realization is not possible. Some examples of PCCs drawn from typologically unrelated languages are provided below. The data illustrate some of the gross characteristics of the phenomenon alluded to above.

(1)   a. Nupe

   Bi-ba   Musa à *(**ba**) nakàn (*ba/*bi-ba) o.
   RED-cut Musa FUT cut meat   cut/RED-cut FOC
   'It is CUTTING that Musa will do to the meat (as opposed to say, *cooking*).'

   b. Korean (Lee 1995)

   Ket-ki-nin Cheolswu-ka   **kel**-ess-ta.
   walk-ki-TOP Cheolswu-NOM walk-PST-DECL
   'It is WALK that Cheolswu did.'

   c. Russian (Abels 2001)

   Citat′ Ivan eë   **citaet**, no nicego ne ponimaet.
   read$_{INF}$ Ivan 3rd.FEM.ACC reads but nothing not understands
   'Ivan DOES read it, but he doesn't understand a thing.'

   Unlike the phenomenon of verbal repetition, PCCs have received a great deal of attention in both the descriptive and theoretical literature. In particular, the Niger-Congo languages of West Africa have figured prominently. Some of these languages include:

Akan (Boadi 1974, Ameka 1992); Bulı (Hiraiwa 2005); Dàgáárè (Hiraiwa & Bodomo 2008, to appear); Edo (Stewart 2001); Ewe (Ameka 1992, Collins 1994); Fongbe (Ndayiragije 1992, 1993, Lefebvre 1992a,b, 2002); Gungbe (Aboh 1998, 2004, 2006); Hausa (Tuller 1986, Lumsden & Lefebvre 1990a); Igbo (Manfredi 1993); Nupe (George 1975, Tswanya 1989, Kawu 1990, 1999, Kandybowicz 2002b, 2004b); Nweh (Nkemnji 1995, Koopman 1999); Tuki (Biloa 1997); Twi (Alleyne 1980, Seuren 1993); Vata (Koopman 1984, 1999); and Yoruba (Awóbùluyi 1971, Bamgbose 1972, Oyèláran 1982, Awoyale 1985, Manfredi & Laniran 1988, Baker 1989, Dekydtspotter 1992, Manfredi 1993, Gruber & Collins 1996, Cho & Nishiyama 2000).   Outside the Niger-Congo family, PCCs have been documented and analyzed in a number of unrelated languages: Brazilian Portuguese (Bastos 2001, 2002, Cable 2003, Nunes 2003, 2004); Brazilian Sign Langauge (Nunes & Quadros, in press); Capeverdean (Mufwene 1987); Caribbean English Creole (Winford 1993); Chinese (Lee 2002); Guadeloupe (Bernabé 1983); Gullah (Mufwene 1987); Haitian Creole (Piou 1982, Hutchinson 1989, 2000, Lumsden 1990, Lefebvre 1990, 1994, Lumsden & Lefebvre 1990a,b, Larson & Lefebvre 1991, Lefebvre & Ritter 1993, Manfredi 1993, DeGraff 1995, Harbour 2008); Hebrew (Ziv 1997, Doron 1999, Harbour 1999, Landau 2006); Hungarian (Lee 2002); Isla de France Creole − Mauritian Creole, Seselwa, and Rodriguez Island Creole (Baker & Corne 1982, Seuren 1993); Jamaican (Mufwene 1987); Japanese (Nishiyama & Cho 1998); Korean (Lee 1995, Nishiyama & Cho 1998, Cho 1997, Choi 2000, 2003, Kim 2002, Jo 2003); Krio (Williams 1977, Alleyne 1980, Nylander 1985); Martinique (Bernabé 1983); Negerhollands (Boretzsky 1983); Papiamentu (Boretzsky 1983); Russian (Abels 2001, Lee 2002, Dyakonova 2005); Saramaccan (Byrne 1987); Spanish (Vicente 2005, 2006); Sranan (Jansen, Koopman & Muysken 1978, Boretzsky 1983, Sebba 1987, Seuren 1993); Swedish (Kallgren & Prince 1989); Trinidad Dialectal English (Cozier 2006); Turkish (Lee 2002); and Yiddish (Davis & Prince 1986, Kallgren & Prince 1989, Hoge 1998, Cable 2003), among others.   Despite this coverage, at least two core properties of PCCs have resisted principled explanation by and large.   First, how and why is a morphologically related copy of the predicate (and not for instance, a bleached/dummy/auxiliary verb[1]) spelled-out lower in the clause in addition to the peripheral copy? Second, how and why do the peripheral and lower occurrences of the predicates come to differ morphologically? Additionally, there is a sharp division in the field as to the proper analysis of the construction. PCCs have been analyzed as base-generated bi-clausal structures (Lumsden & Lefebvre 1990a,b, Lumsden 1990, Larson & Lefebvre 1991, Dekydspotter 1992), as structures involving independent generation of both predicates with subsequent movement of one occurrence to a peripheral position (Bamgbose 1972, Nylander 1985, Manfredi & Laniran 1988, Hutchison 1989, 2000, Massam 1990, Manfredi 1993, Lefebvre 1994, Hoge 1998, Stewart 2001, Cable 2003, Kandybowicz 2004b, Harbour 2008), and as structures that arise as a result of either head movement (Piou 1982, Bernabé 1983, Koopman 1984, Ndayiragije 1992, 1993, Aboh 1998, 2006, Harbour 1999, 2008, Nunes 2004, Vicente 2005, 2006) or phrasal movement (Nishiyama & Cho 1998, Koopman 1999, Cho & Nishiyama 2000, Abels 2001, Nunes 2003, 2004, Landau 2006, Hiraiwa 2005) plus failure to delete a lower trace/verbal copy at PF. This rich theoretical tradition has its origins in Koopman's (1984) pioneering

work on Vata PCCs. Many of the issues taken up in this chapter were either previously addressed in her research or inspired by issues discussed therein.

In this chapter, I argue that the third analytical option (namely, head movement of the verb root) allows for a descriptively and explanatorily satisfying characterization of Nupe PCCs when supplemented with the tools made available by Minimalist/DM technology. The resulting analysis elegantly addresses the two previously mentioned perennial thorns facing PCC research. My proposal is that PCC derivations involve the creation of two parallel $\sqrt{}$ chains in the narrow syntax. The first chain formed is of the v^0-to-v^0 garden variety, an independently motivated derivational step assumed in all of the chapters thus far. The other chain is also formed by head movement of the category neutral predicate root morpheme, but in this case its target is a specifier position (Spec, Foc). The two chains are analyzed as having been created in parallel because they have overlapping tails and disjoint heads (i.e. targets). I claim that the left peripheral focus position lies under the scope of a clausal determiner, assigning nominal features to the category neutral predicate root, which results in the focused predicate's nominalization at spell-out. At PF, the resolution of neither chain is remarkable. In both cases, the chain head is pronounced and the lower copies are deleted. Pronunciation of the focused left peripheral predicate copy is driven by Foc^0's EPP feature, while the realization of the lower predicate copy in v^0 owes to the unavailability of *do*-support in the language and the need to satisfy the Stray Affix filter (cf. chapter three).

The Nupe predicate cleft construction thus provides further insight into the grammar of repetition. In this case, the source is ultimately syntactic. The possibility of parallel chain formation, itself a consequence of a strongly derivational language faculty in which numerous operations proceed in parallel (Chomsky 2001, 2004, 2007, 2008a,b), gives rise to multiple copy spell-out because the copies that emerge as a result do not interact with one another either within a single chain or phase. Thus, PF linearization proceeds as usual, ultimately outputting what appears to be a remarkable linguistic object in which multiple copies of a single chain seem to have been realized.

The results of this chapter serve to support/reinforce a number of similar theoretical conclusions recently reached in the literature. To the extent that it is on the right track, the analysis of PCC formation in terms of head movement to specifier positions supports the unification of head and phrasal movement made available by Bare Phrase Structure (Chomsky 1995b) as championed by Vicente (2005, 2006). The empirical and conceptual advantages afforded by parallel chain formation in the case of Nupe PCCs strengthens the case for the existence of the operation previously motivated by Chomsky (2008a) and employed by Aboh (2006), Aboh & Dyakonova (2006), and Collins & Essizewa (2007), among others. Lastly, the analysis of predicate root allomorphy in Nupe PCCs afforded by the Late Insertion hypothesis provides further justification for the view of grammar advanced in Distributed Morphology.

The remainder of this chapter is organized as follows. Section 4.2 discusses the core syntactic, morphological, and semantic properties of Nupe PCCs. In section 4.3, I consider the derivational status of the construction, arguing against base/independent generation analyses that for the most part do not invoke copy movement. I also argue against a phrasal movement approach to Nupe predicate clefts in this section. Adopting a

head movement-based analysis in response, I then provide a detailed account of the construction that addresses the basic properties introduced in section 4.2 as well as those aspects of the phenomenon that have presently resisted a principled explanation. In section 4.4, I discuss parallel chain formation and its consequences for the grammar of repetition. Section 4.5 concludes the chapter with a brief summary.

4.2. CORE PROPERTIES OF NUPE PCCS

I begin by outlining the basic syntactic, morphological, and semantic facts that any account will have to contend with. These considerations are meant to both situate our discussion in the rich theoretical context PCCs have given rise to, as well as establish a standard by which to evaluate alternative analyses of Nupe predicate cleft constructions.

4.2.1. Basic Observations

It will be instructive to first consider how predicate clefting differs from other instances of focus in the language. In addition to predicates, both DPs and modifiers may be focused in Nupe (2b-d). In all such cases, the focused element appears in a left-peripheral position, but unlike predicate focus (2e), its morphological form does not change and it clearly leaves a gap in its extraction site. These facts are presented below.

(2)   a.   NEUTRAL SENTENCE

Musa à   ba   nakàn sasi   èsun   làzì   yin[2].
Musa FUT cut meat   some tomorrow morning PRT
'Musa will cut some meat tomorrow morning.'

b.   SUBJECT FOCUS

Musa __   à   ba   nakàn sasi   èsun   làzì   yin o.
Musa   FUT cut meat   some tomorrow morning PRT FOC
'MUSA will cut some meat tomorrow morning.'

c.   OBJECT FOCUS

Nakàn sasi Musa à   ba   __   èsun   làzì   yin o.
meat   some Musa FUT cut   tomorrow morning PRT FOC
'Musa will cut SOME MEAT tomorrow morning.'

d.   MODIFIER FOCUS

Èsun   làzì   Musa à   ba   nakàn sasi   __   yin o.
tomorrow morningMusa FUT cut meat   some   PRT FOC
'Musa will cut some meat TOMORROW MORNING.'

e. PREDICATE FOCUS

Bi-ba   Musa à *(ba) nakàn sasi èsun   làzì   yin o.
RED-cut Musa FUT cut   meat some tomorrow morning PRT FOC
'It is CUTTING that Musa will do to some meat tomorrow morning.'

Non-predicate focus thus appears to involve A-bar chain formation, formed by extraction of the focused constituent and the PF deletion of its tail, as in typical instances of chain formation. This analysis, however, does not appear to straightforwardly extend to PCC formation in the language.

4.2.2. Duality of Movement

The theoretical allure of PCCs is that they appear to involve movement operations, whose properties are otherwise unobserved elsewhere in natural language. Piou (1982) and Koopman (1984) first observed that PCCs in unrelated languages (Haitian and Vata, respectively) are *wh*-like in that the distances they may traverse are constrained, yet at the same time, they are unlike *wh-* constructions in that they appear not to leave a gap or target a maximal projection. Thus, PCCs seem to necessitate the admission of a third displacement type into the movement typology, i.e., one that is intermediate between head movement and phrasal movement. Assuming this to be an undesirable course of action, the challenge posed by PCCs for generative syntax, then, is to explain why they behave like A-bar movement in some respects, but not in others.

Nupe PCCs seem to warrant the same conclusions that Piou and Koopman drew. We find that although the dependency between the focused left peripheral predicate and the lower occurrence is unbounded, crossing finite clause boundaries in the presence of bridge verbs (3b), it is also island sensitive (3d-k), both hallmarks of A-bar dependencies.

(3)   a. SENTENTIAL EMBEDDING UNDER BRIDGE VERBS

Musa gàn gànán Nànǎ kpe   gànán Gana si   eci.
Musa say COMP Nana know COMP Gana buy yam
'Musa said that Nana knows that Gana bought a yam.'

b. √ EXTRACTION ACROSS THE CLAUSAL COMPLEMENT OF BRIDGE VERBS

Si-si   Musa gàn gànán Nànǎ kpe   gànán Gana **si**   eci o.
RED-buy Musa say COMP Nana know COMP Gana buy yam FOC
'It was BUYING that Musa said that Nana knows that Gana did to a yam.'

c. SENTENTIAL EMBEDDING UNDER A NON-BRIDGE VERB

    U: tán Musa gànán mi: si   doko.
    3ᴿᴰ.SG pain Musa COMP   1ˢᵀ.SG buy horse
    'It pained Musa that I bought a horse.'

d. * EXTRACTION ACROSS CLAUSAL COMPLEMENT OF A NON-BRIDGE VERB

    *Si-si   u: tán Musa gànán mi: **si**   doko o.
    RED-buy 3ᴿᴰ.SG pain Musa COMP 1ˢᵀ.SG buy horse FOC
    'It pained Musa that I BOUGHT a horse.'

e. *WH*-ISLAND

    *Si-si   Musa gbíngàn [ké Gana **si** o] o.
    RED-buy Musa ask   what Gana buy FOC FOC
    'Musa asked what Gana BOUGHT.'

f. COMPLEX NP ISLAND

    *Gi-gi Musa si   [bise na   **gi** eyì na] o.
    RED-eat Musa buy hen COMP eat corn PRT FOC
    'Musa bought the hen that ATE the corn.'

g. SUBJECT ISLAND

    *Si-si   [gànán etsu **si**   doko] tán Musa o.
    RED-buy COMP chief buy horse pain Musa FOC
    'That the chief BOUGHT a horse pained Musa.'

h. ADJUNCT ISLAND[3]

    *Bi-ba [Musa gá   è **ba** nakàn] o, Gana à pa   eci.
    RED-cut Musa COND PRS cut meat FOC Gana FUT pound yam
    'If Musa is CUTTING the meat, then Gana will pound a yam.'

i. Musa gá   è ba nakàn, **pi-pa**   Gana à **pa**   eci o.
    Musa COND PRS cut meat, RED-pound Gana FUT pound yam FOC
    'If Musa is cutting the meat, then it is POUNDING that Gana will do to a yam.'

j. COORDINATE ISLANDS[4]

    *Bi-ba [Musaᵢ à **ba** nakàn] u:ᵢ   ma à   du   cènkafa o.
    RED-cut Musa FUT cut meat 3ᴿᴰ.SG and FUT cook rice   FOC
    'It is CUTTING that Musaᵢ will do to the meat and heᵢ will cook the rice.'

k. ***Du-du**   Musa_i à   ba   nakàn [u:_i   ma   à   **du**   cènkafa] o.
    RED-cook Musa FUT cut meat   3RD.SG and FUT cook rice   FOC
    'Musa_i will cut the meat and it is COOKING that he_i will do to the rice.'

In addition, PCCs and *wh*- questions are in complementary distribution, as shown below. This further suggests the A-bar status of both constructions – focused constituents and *wh*- DPs compete for the same left peripheral focus position.

(4)   a.   *Ké   bi-ba   Musa ba   o?
          what RED-cut Musa   cut   FOC
          'What did Musa CUT?'

        b.   *Bi-ba   ké   Musa ba   o?
          RED-cut what Musa   cut   FOC

Despite their affinity to *wh*- constructions, Nupe PCCs exhibit properties that distinguish themselves from *wh*-/phrasal movement constructions. Let's concentrate on how the two constructions differ.

    As previously mentioned, if PCCs involve predicate extraction, they are unlike typical instances of *wh*- movement in that multiple links of their chains are phonetically realized. That is, whereas standard *wh*- movement leaves a gap, predicate focus does not. In addition, although *wh*- elements can be focused *in situ* in many languages, predicate focus in Nupe can only be achieved when the predicate appears in the left periphery.

(5)   THE FOCUSED PREDICATE IS OBLIGATORILY REALIZED IN A LEFT PERIPHERAL POSITION

        a.   *Musa **bi-ba**   ba   nakàn   o.
           Musa   RED-cut cut   meat   FOC

        b.   *Musa ba   **bi-ba**   nakàn   o.
           Musa   cut   RED-cut   meat   FOC

        c.   *Musa ba   nakàn **bi-ba**   o.
           Musa   cut   meat   RED-cut FOC

        d.   *Musa ba   nakàn o   **bi-ba**.
           Musa   cut   meat   FOC RED-cut

    The most striking difference between Nupe PCCs and *wh*- questions, however, is the fact that the latter involve a left-peripheral *phrasal* constituent (cf. (13a) in chapter 2), while in the former, the peripheral element appears to be an X^{MIN} term. Similar to languages such as Vata and Haitian, but unlike Yoruba, Buli, Russian, and Hebrew, the verb's arguments cannot appear in the left periphery with the focused predicate (6a,b). In fact, Nupe is more conservative than Vata and Haitian because tense markers, aspectual

elements, and low adverbs, which can accompany the cleft element in both languages, are restricted from appearing at the left edge of the clause with the focused predicate (6c-e). And unlike the genetically-related Nigerian language Edo, the focused predicate cannot appear with nominal modifiers (6f-g). Thus, unlike *wh-* movement, predicate cleft in Nupe is unable to pied-pipe syntactic material.

(6)   ONLY THE FOCUSED PREDICATE IS REALIZED IN THE LEFT PERIPHERY

    a.   *[Du-du   cènkafa] Musa à   du   (cènkafa) o.
        RED-cook rice   Musa FUT cook rice   FOC
        'It is COOKING RICE that Musa will do.'

    b.   *[Cènkafa du-du]   Musa à   du   (cènkafa) o.
        rice   RED-cook Musa FUT cook rice   FOC
        'It is COOKING RICE that Musa will do.'

    c.   *[(à)   du-du   (à)] Musa à   du   cènkafa o.
        FUT RED-cook FUT Musa FUT cook rice   FOC
        'It is COOKING that Musa will do to the rice.'

    d.   *[(á)   du-du   (á)] Musa á   cènkafa du   o.
        PRF RED-cook PRF Musa PRF rice   cook FOC
        'It is COOKING that Musa has done to the rice.'

    e.   *[(Dàdà)   du-du   (sanyín)] Musa à   du   cènkafa o.
        quickly RED-cook quietly Musa FUT cook rice   FOC
        'It is QUICK/QUIET COOKING that Musa will do to the rice.'

    f.   *[Wu-wu gútá] Gana wu Musa o.
        RED-hit three Gana hit Musa FOC
        'It was HITTING THREE TIMES that Gana did to Musa.'

    g.   *[Wu-wu wangi] Gana wu Musa o.
        RED-hit good   Gana hit Musa FOC
        'It was A GOOD HITTING that Gana gave to Musa.'

It is tempting, therefore, to analyze the Nupe cleft predicate as a kind of deverbal head. Ultimately, this is the source of the duality of predicate focus movement in the language. With respect to locality and complementarity with *wh-* questions, Nupe predicate focus patterns with (phrasal) A-bar movement. Yet at the same time, the resulting chain appears neither to be reduced nor obviously headed by a maximal projection. Furthermore, if the dependency between the focused predicate and the matrix verb arises as a consequence of chain formation, it is not immediately apparent why there is a morphological difference between the two elements. The adequacy of any Nupe

PCC analysis can thus be judged by how well it resolves these descriptive and theoretical tensions.

4.2.3. *Nominalization and Category Conversion*

As previously observed (cf. (1a), (2e)), the verbal elements in Nupe PCCs differ morphologically. This difference, however, is principled. The peripheral copy of the verb must appear reduplicated and the lower occurrence must be in bare root form (i.e. as it would otherwise appear in tensed clauses). This is illustrated below.

(7)   a. Yi-yà   Musa yà   etsu   èwò   o.
            RED-give Musa give chief garment FOC
            'Musa GAVE the chief a garment.'

         b. ***Yà** Musa yà   etsu èwò   o.
             give Musa give chief garment FOC

         c. *Yi-yà   Musa **yi-yà**   etsu èwò   o.
            RED-give Musa RED-give chief garment FOC

         d. ***Yà** Musa **yi-yà**   etsu èwò   o.
            give Musa RED-give chief garment FOC

Recall from chapter three that Nupe verbs may be nominalized via reduplication. The reduplicant is a CV prefix consisting of a copy of the base consonant and a high vowel with a default mid tone that assimilates with the base vowel in roundness, backness and nasality (see Kawu 2000b). The data below illustrate the morphophonological (8a) and morphosyntactic (8b-c) properties of verb reduplication in the language.

(8)   a. MORPHOPHONOLOGICAL PROPERTIES OF NUPE VERB REDUPLICATION

yí	'be very small'	yi-yí	'shrinking'
yé	'respond'	yi-yé	'responding'
yà	'give'	yi-yà	'giving'
wo	'be dry'	wu-wo	'drying'
wú	'teach'	wu-wú	'teaching'
wún	'to own'	wũ-wún	'owning'

         REDUPLICATED VERBS OCCUR IN NOMINAL SYNTACTIC ENVIRONMENTS[5]

         b. Musa sundàn [bi-bé   nyá Gana].
            Musa fear   RED-come POSS Gana
            'Musa feared Gana's coming.'

c. [Bi-ba   na   u: ba nakàn na] tan   Musa.
   RED-cut COMP 3RD.SG cut meat PRT pain Musa
   'His cutting the meat pained Musa.'

A second way nominalization is achieved in the language is by object-verb inversion. This strategy is reserved exclusively for verb phrase-level nominalization (e.g. for object-taking predicates only). When the linear order of the verb and its object is not inverted, as in (9c), nominalization is not achieved.

(9)   NOMINALIZATION VIA INVERSION

    a. Musa kpe   gànán Gana **tú**   **kèké** tsúwó.
       Musa know COMP Gana ride bike   yesterday
       'Musa knows that Gana rode a bike yesterday.'

    b. Musa kpe   gànán [**kèké tú**] ge.
       Musa know COMP   bike ride be good
       'Musa knows that bike-riding is good.'

    c. *Musa kpe   gànán [**tú**   **kèké**] ge.
        Musa know COMP   ride bike   be good

Given that verbal dependents may not accompany the focused predicate (cf. (6a,b)), it isn't surprising that this nominalization strategy fails to be employed in Nupe PCCs.

(10)   a. *[Nakàn ba] Musa (nakàn) ba (nakàn) o.
        meat   cut Musa meat   cut meat   FOC
       'It is MEAT-CUTTING that Musa did.'

    b. *[Kèké tú] Musa kpe   gànán (kèké) tú   ge   o.
       bike   ride Musa know COMP bike ride be good FOC
       'It is BIKE-RIDING that Musa knows is good.'

A third type of nominalization in the language occurs via prefixation of the morpheme *è-* to the verb root. This variety of nominalization is largely irregular/unproductive in the language, applying only to a restricted subset of root morphemes. I provide some examples in (11) below. As is evident, *è-* nominalization applies primarily to stative predicates.

(11)   NOMINAL AFFIXATION (FROM KAWU 2002)

bo	'be tired'	è-bo	'tiredness, fatigue'
má	'be sweet'	è-má	'sweetness, pleasure'
sà	'be pretty'	è-sà	'beauty'
fá	'to rest'	è-fá	'rest, holiday'
ge	'be good/pretty'	è-ge	'goodness, prettiness'
tán	'to hurt/feel pain'	è-tán	'pain'

Focused predicates in Nupe do not surface in *è-* nominalized forms, but rather obligatorily take the shape of a reduplicated verb.

(12)   a. *È-bo   Musa bo   tsúwó   o.
            NOML-be tired Musa   be tired yesterday FOC

        b. Bu-bo   Musa   bo   tsúwó   o.
            RED-be tired Musa   be tired yesterday FOC
            'Musa was TIRED yesterday.'

        c. *È-fá   Musa fá   tsúwó   o.
            NOML-rest Musa   rest   yesterday FOC

        d. Fi-fá   Musa   fá   tsúwó   o.
            RED-rest Musa   rest   yesterday FOC
            'It was RESTING that Musa did yesterday.'

The focused predicate surfaces morphologically as a nominalization in many other (though not all) West African languages, for example, Yoruba, Buli, Edo, Hausa, and Ewegbe, to name a few. This, however, is not a necessary or universal morphological property of cleft predicates. In Russian, Yiddish, Brazilian Portuguese, Spanish, Hungarian, Hebrew, and Turkish for instance, the focused predicate surfaces uninflected (in many cases, in (default) infinitival form), while the lower occurrence surfaces with full inflection. Illustrative examples are provided below in (13). In these cases, the grammatical information encoded in the cleft predicate must be a proper subset of the information encoded in the lower verbal occurrence. Nupe PCCs thus clearly differ from PCCs in these languages, at least with respect to morphology.

(13)   a. Brazilian Portuguese (Bastos 2002)

            Temperar/*temperou o   cozinheiro temperou o   peixe.
            to-season/seasoned   the cook   seasoned the fish
            'As for seasoning, the cook seasoned the fish.'

    b. Hebrew (Landau 2006)

       Lirkod/*yirkod,   Gil lo yirkod   ba-xayim.
       to-dance/will-dance Gil not will-dance in-the-life
       'As for dancing, Gil will never dance.'

    c. Hungarian (Lee 2002)

       Meg-erkez-ni/*-ett   meg-erkez-ett...
       PREV-arrive-INF/-PST PREV-arrive-PST
       '(S/he) ARRIVED. (But…)'

    d. Russian (Abels 2001)

       Citat′/*citaet Ivan eë   citaet, no nicego ne ponimaet.
       read$_{INF}$/reads Ivan 3rd.FEM.ACC reads but nothing not understands
       'Ivan DOES read it, but he doesn't understand a thing.'

    e. Spanish (Vicente 2005)

       Comprar/*comprado Juan ha comprado un libro.
       to-buy/bought   Juan has bought   a   book
       'As for buying, Juan has bought a book.'

    f. Turkish (Lee 2002)

       Gel-mesine/*gel-di-mesine   gel-di...
       come-TOP/come-PST-TOP   come-PST
       '(S/he) CAME. (But…)'

    g. Yiddish (Davis & Prince 1986)

       Leyenen/*leynt leynt er dos bukh.
       to-read/reads   reads he the book
       'As for reading, he is reading the book.'

Thus, although the verbal-to-nominal category conversion of the cleft predicate is specific to Nupe and certain other West African languages, the morphological disparity between the peripheral focused element and the lower predicate remains a typological fixed point with which to describe and analyze the construction.

4.2.4. Semantic Properties

The translations provided thus far indicate that the semantic effect of predicate cleft in Nupe is one of focus. In this sub-section, I informally consider the semantic interpretation of predicate focus in the light of work by Dik et al. (1981) and Kiss (1998), among others. Consider the following pair of sentences.

(14) a. Musa à   pa   eci.
          Musa FUT pound yam
          'Musa will pound a yam.'

      b. Pi-pa   Musa à   pa   eci o.
          RED-pound Musa FUT pound yam FOC
          'It is POUNDING that Musa will do to a yam (as opposed to say, *boiling*).'

Truth conditionally, these sentences are identical. Both are true of a situation posterior to the utterance time, in which Musa is the agent of a yam-pounding event. Moreover, both can be uttered as an answer to the question 'What will Musa do?'. However, the predicate cleft sentence (14b) conveys additional information. This sentence makes the contrastive assertion that the event of yam-pounding, rather than some other contextually salient event, will obtain. In addition, the sentence carries the presupposition that Musa will in some way act upon the yam. Thus, Nupe PCCs semantically contribute contrastive/information focus (in the terminology of Kiss 1998) as well as the presupposition that the thematic object will be affected by the subject. In contrast to what is reported in other languages (Awóbùluyi 1978, Lefebvre 1990, Dekydspotter 1992, Ndayiragije 1992, 1993), Nupe PCCs do not admit additional clausal focus readings (i.e. Nupe PCCs cannot be used as answers to questions such as 'What happened?').

Comparing the interpretive properties of predicate cleft constructions in Nupe with those of the other languages mentioned thus far (cf. (13)), we see that PCCs receive one of two basic semantic interpretations: focus or topic, each of which admit further subcategorization (e.g. identificational focus (cf. *wh-* questions) vs. contrastive/information focus (14b) and emphatic topicalization (13a) vs. contrastive/concessive topicalization (13f) etc.).[6] Cleft predicates in non-African/Caribbean languages (for example, Hebrew and Yiddish) are typically construed as topics (cf. (13)), although this is not completely uniform within a given language (see note 6)), whereas focus seems to largely unify the semantics of West African PCCs.

Lefebvre (1990) and Larson & Lefebvre (1991) propose a semantic analysis of predicate focus involving quantification over events, an analysis that divides the truth-conditions of PCCs into presuppositions of events and mechanisms restricting the scope of events presupposed. Thus, a prediction of their analysis, which they claim is borne out in Haitian Creole, is that predicate clefting is constrained by Carlson (1977) and Kratzer's (1995) stage-level/individual-level distinction. In particular, they claim that roughly only event-denoting (i.e. stage-level) predicates may participate in PCCs. Like many predicate clefting languages (i.e. Vata, Trinidad Dialectal English, Yiddish, Russian, Hebrew, and

even certain dialects of Haitian (Lefebvre 1994:9)), the class of cleftable predicates in Nupe is not lexically restricted in this way. The data below show that individual-level predicates are subject to predicate focus in the language.

(15)   a. Bi-bè   Musa bè   Gana o.
            RED-resemble Musa resemble Gana FOC
            'Musa RESEMBLES Gana.'

        b. Kpi-kpe   Musa kpe   làbárì o.
            RED-know Musa know story   FOC
            'Musa KNOWS/IS AWARE OF the story.'

The proper descriptive semantic characterization of Nupe PCCs, then, is that they involve contrastive focus of a nominalized event or state-denoting predicate.

4.2.5. Interim Summary

To summarize, the core properties of Nupe PCCs are as follows. Predicate focus involves the formation of a long-distance dependency exhibiting chain-like properties that pattern in certain respects like A-bar/*wh-* movement (i.e. with respect to island sensitivity) and head movement (i.e. absence of dependents, modifiers, and functional material accompanying the focused predicate). By other standards, however, PCC chains do not behave in expected ways. Primarily, they fail to create a gap in the lower clause. Additionally, the peripheral predicate and the lower verb differ morphologically, with the former taking the shape of a nominal via reduplication. Semantically, Nupe PCCs are contrastive focus constructions that are unhindered by lexical restrictions. With these considerations in place, we are now equipped to entertain a more rigorous syntactic analysis of the Nupe PCC.

4.3. ANALYSIS AND DERIVATION

Our first task is to determine whether the Nupe data can be happily married to any of the existing analyses of PCCs in the literature. I will collapse the first two of the four basic analyses briefly outlined in section 4.1 (reprised below) and thus consider three principal approaches that have met with varying degrees of success. Settling on a head movement analysis, I then provide a DM-based account of the PCC derivation in Nupe that explains both the fact that multiple copies of the verb are phonetically realized and the fact that the focused predicate, but not the lower copy, appears as a nominal. This analysis sets the stage for the conceptual discussion of repetition that follows in section 4.4.

4.3.1. Against an Independent-Generation Analysis of Nupe PCCs

Analyses that assume the independent generation of each predicate come in two varieties; those that assume a base-generated bi-clausal structure independent of overt movement

(Chomsky 1977 (for English clefts), Lumsden & Lefebvre 1990a,b, Lumsden 1990, Larson & Lefebvre 1991, Dekydspotter 1992), and those that assume a combination of base-generation plus overt movement of one of the predicates (Manfredi & Laniran 1988, Massam 1990, Manfredi 1993, Hoge 1998, Stewart 2001, Cable 2003). Analyses of the first variety naturally apply to constructions in which the cleft predicate is accompanied by a copular or reduced verbal element (boldfaced in the examples below), for example, English, Haitian, and possibly Yoruba.

(16)   a. It **is** rigging that John does to elections.

      b. Haitian (Larson & Lefebvre 1991)

         Se   kouri Jan   kouri.
         it-is run   John   run
         'It is RUN that John did (not, for example, *walk*).'

      c. Yoruba (Dekydtspotter 1992)

         Fí-fún   **ni**   Tolú fún mi ní   ìgbá.
         RED-give FOC/COP Tolu give me CASE calabash
         'Tolu GAVE me the calabash.'

Given that focused predicates in Nupe do not involve peripheral copular elements, as we have seen, a bi-clausal approach does not appear to lend itself well to the analysis of the construction. Furthermore, given the fact that the dependencies between the predicates are island-sensitive (cf. (3e-k)), we have principled grounds for rejecting analyses that deny the existence of movement.[7] Let us concentrate, then, on the other possibility, namely, that Nupe PCCs involve the extraction of one of two base-generated verbal expressions.

4.3.1.1. *Against PCCs as Left Dislocation Constructions*

Certain varieties of left dislocation have recently been analyzed as instances of multiple copy spell-out (Grohmann 2003). It is therefore reasonable to consider whether Nupe PCCs and left dislocation constructions are amenable to comparable analyses.

    Similar to focused predicates in Nupe, left dislocated DPs are known to paradoxically exhibit properties characteristic of both moved and base-generated constituents (Cinque 1990). On the one hand, peripheral DPs in left dislocation constructions do not seem to license parasitic gaps or be subject to weak crossover effects, two pieces of evidence that argue against a movement analysis. On the other hand, the dependency between the left-peripheral DP and the lower co-indexed pronominal is island-sensitive, suggesting a movement relation between the two elements.

Several of the tensions previously mentioned in section 4.2.2 can be resolved if we adopt an analysis of Nupe PCCs as left dislocation structures. The analysis would run as follows. The peripheral predicate is base-generated in the left periphery of the minimal clause containing the lower predicate and moves to the matrix left periphery if embedded (cf. Iatridou 1995, Cable 2003). In this way, a movement dependency is established when the dislocated constituent originates in an embedded clause. When there is no embedding, however, movement does not obtain.

(17) a. CLEFTING A MATRIX PREDICATE INVOLVES NO MOVEMENT TO THE LEFT PERIPHERY

$$[_{\text{FocP}} [_{\text{XP}} \alpha'][_{\text{TP}} \ldots \alpha \ldots]]$$

b. CLEFTING AN EMBEDDED PREDICATE INVOLVES MOVEMENT FROM A BASE-GENERATED PERIPHERAL POSITION TO A MAIN CLAUSE PERIPHERAL POSITION

$$[_{\text{FocP}} [_{\text{TP}} \ldots [_{\text{FocP}} [_{\text{XP}} \alpha'] [_{\text{TP}} \ldots \alpha \ldots]]]]]$$

Under this analysis, the dilemmas of the missing gap (which suggests base-generation) and *wh-* head movement (which suggests chain formation) are circumvented, given that the grammar both base-generates and displaces independent expressions. Furthermore, the issue of the morphological mismatch between the peripheral predicate and the lower verb is sidestepped. Since each occurrence would have been independently selected from the numeration, one could locate the source of morphological variation in the lexical array itself. Additionally, and perhaps most importantly, the analysis would explain why all of the evidence supporting a movement dependency between the predicates comes solely from data involving embedding.[8] Unlike matrix predicate clefting, which does not involve movement under this analysis, clefting an embedded predicate involves chain formation, an island-sensitive operation.

Despite these initial gains, it does not seem feasible to analyze Nupe PCCs as left dislocation constructions. Here, I can offer two arguments. The first argument concerns the fact that semantically, left dislocation is associated with topicalization (left dislocation constructions cannot be used as responses to questions, for instance), whereas predicate cleft expresses contrastive focus in Nupe (cf. section 4.2.4). In this respect, we might locate left dislocated occurrences in the specifier of Topic Phrase and the peripheral constituent in PCCs in the specifier of Focus Phrase. The second argument against treating PCCs as instances of predicate left dislocation is syntactic. While left dislocation structures exist independently in the language, they are a strictly matrix phenomenon. As in Russian (Abels 2001), left dislocation is inadmissible in and across embedded contexts, as the following data show.

(18)   LEFT DISLOCATION

    a. **Kèké**$_i$, mi: tu   **wu:n**$_i$ o[9].
       bike   1ST.SG ride 3RD.SG FOC
       '(As for) the bike, I rode it.'

    b. [**Kèké tu**]$_i$, mi: woma **wu:n**$_i$ o.
       bike ride 1ST.SG enjoy 3RD.SG FOC
       '(As for) bike riding, I enjoy it.'

EMBEDDED OCCURRENCES MAY NOT BE LEFT DISLOCATED

    c. *Musa gàn [gànán **kèké**$_i$, mi: tu   **wu:n**$_i$ o].
       Musa say COMP bike   1ST.SG ride 3RD.SG FOC
       'Musa said that as for the bike, I rode it.'

    d. *Musa gàn **kèké**$_i$ [gànán mi: tu   **wu:n**$_i$ o].
       Musa say bike   COMP 1ST.SG ride 3RD.SG FOC

    e. ***Kèké**, Musa gàn [gànán mi: tu   **wu:n**$_i$] o.
       bike   Musa say COMP 1ST.SG ride 3RD.SG FOC
       'The bike, Musa said that I rode it.'

Nonetheless, predicate cleft is possible both in and across embedded clausal complement contexts in the language[10], further disrupting the analogy between Nupe PCCs and left dislocation constructions.

(19)   EMBEDDED OCCURRENCES MAY UNDERGO PREDICATE CLEFT

    a. Musa gàn [gànán **tu-tu**   mi: **tu**   kèké o].
       Musa say COMP RED-ride 1ST.SG ride bike FOC
       'Musa said that it was RIDING that I did to the bike.'

    b. **Tu-tu**   Musa gàn [gànán mi: **tu**   kèké] o.
       RED-ride Musa say COMP 1ST.SG ride bike FOC
       'It was RIDING that Musa said that I did to the bike.'

I thus conclude that Nupe PCCs and left dislocation structures are not derivationally related.

4.3.1.2. Against Independently Generated VP Structures as Inputs

Here my concern is to argue against the view that PCCs derive from independently assembled verb phrase constructions. Such an approach would eliminate the problem of

the missing gap and the dilemma of the morphological disparity between the overt verbal occurrences, as in the previously discussed analytical option. At face value, this approach seems very reasonable. At least with respect to West African languages and Atlantic creoles, PCCs are one of several multiple-verb constructions generated by the grammar. Take Nupe, for example. In addition to PCCs, bare root verbal repetition constructions (BRVRCs), serial verb constructions (SVCs), and modal-auxiliary constructions are attested. Given that such rich verb phrase structures exist in these types of languages, it would not seem outside the bounds of reason or plausibility for PCCs to derive from one of them. In fact, this way of treating PCCs was one of the leading analyses prior to the revitalization of the copy theory of movement (cf. Bamgbose 1972, Nylander 1985, Manfredi & Laniran 1988, Hutchison 1989, Massam 1990, Manfredi 1993, and Lefebvre 1994). Analyses in this spirit have persisted well in the wake of the copy theory's resurgence (cf. Hoge 1998, Hutchison 2000, Stewart 2001, Kandybowicz 2004b, and Harbour 2008). In this sub-section, I'll consider two general PCC source structures commonly suggested in the literature and discuss why each fails to offer a plausible account in the case of Nupe.

4.3.1.2.1. Movement of a Cognate Object

One of the most immediate observations we can make about the focused predicate in Nupe is that it is morphologically/semantically cognate to the lower verbal occurrence. In many West African languages in which the cleft predicate takes on nominal morphology, there is a related construction in which the same deverbal nominal that would appear in the left periphery in a PCC occurs as the nominal argument of a predicate in the verb phrase (Massam 1990). This construction is referred to as the cognate object construction. Examples from Edo are provided below.

(20) Edo (Stewart 2001)

    a. **Òkhián** òré Òzó khián.
       walk   FOC Ozo walk
       'It is walking that Ozo walked (not, say, got a ride).'

    b. Òzó khián **òkhián**.
       Ozo walk walking
       'Ozo walked.' (e.g. 'Ozo walked a walk.')

    c. **Òtué**   òré Òzó tué Úyì.
       greeting FOC Ozo greet Uyi
       'It is greeting that Ozo greeted Uyi.'

    d. Òzó tué Úyì **òtué**.
       Ozo greet Uyi greeting
       'Ozo greeted Uyi.' (e.g. 'Ozo greeted Uyi (with) a greeting.')

Suppose that PCCs in these languages are derived simply by focusing the cognate object, as proposed by Bamgbose 1972, Manfredi & Laniran 1988, Hutchison 1989, 2000, Massam 1990, Manfredi 1993, Lefebvre 1994, and Stewart 2001, among others. A number of otherwise mysterious properties would fall into place as a result. For one, there would be no missing movement gap. The moved element, a complement of the verb, would be a maximal category and thus the problem of *wh-* head movement would not arise either – the displaced constituent would behave like a normal object with respect to islands. Lastly, because the two verbal occurrences do not enter into a dependency relation, but are merged together in the verb phrase, the morphological mismatch between the focused element and the lower predicate would be expected, rather than mysterious. What's more, the analysis would correctly predict the complementary distribution of PCCs and matrix cognate object constructions, as shown below.

(21)   Edo (Stewart 2001)

    a. ***Òtué**   òré Òzó tué Úyì **òtué**.
        greeting FOC Ozo greet Uyi greeting

    b. ***Ù-tué-mwen**[11]   òré Òzó tué Úyì **òtué**.
        NOML-greet-NOML FOC Ozo greet Uyi greeting

    How well does this approach fare with respect to Nupe? Promisingly, a class of cognate object verbs is attested in the language. These verbs are unergative and combine with cognate nominals (cf. (11)), as shown below.

(22)   a. Musa à   nyà   **enyà**.
        Musa FUT dance dance (N)
        'Musa will dance.'

    b. Musa á   le   **ele**.
        Musa PRF sleep sleep (N)
        'Musa has slept.'

However, this class of verbs is extremely limited in the language and the process of cognate object formation (either via the nominal prefix *è-* (23a), cf. (11), via reduplication (23b), cf. (8a), or via position-switching (23c), cf. (9)) is notably unproductive.

(23)   a. *Musa ba nakàn **è-ba**.
        Musa cut meat NOML-cut

    b. *Musa ba nakàn **bi-ba**.
        Musa cut meat RED-cut

    c. *Musa ba nakàn **nakàn ba**.
          Musa cut meat   meat   cut

This sharply contrasts with PCC-formation, which is productive in the language. This state of affairs sets Nupe apart from languages in which cognate object constructions are said to feed PCCs. The discrepancy between the productivity of cognate object constructions and predicate cleft formation is thus one argument against deriving Nupe PCCs by movement of a cognate object.

    The second argument against this approach is semantic. Although it is possible to front the cognate object in sentences like those in (22), the resulting interpretation will not be one of contrastive focus, but rather something closer to topicalization. As shown below, the peripheral occurrence must retain its *è-* nominal prefix (i.e. it can't surface in a reduplicated form).

(24)   a. **È-nyà**   Musa   à   nyà (*enyà)   o.
            NOML-dance Musa   FUT dance dance (N) FOC
            'It is a dance that Musa will do.'
            NOT: 'It is DANCING that Musa will do (as opposed to say, *performing a ritual*).'

     b. ***Nyi-nyà** Musa à   nyà   (enyà)   o.
           RED-dance Musa FUT dance dance (N) FOC

Structures like those in (24a) are not true PCCs, given the morphological and semantic properties of predicate focus enumerated in sections 4.2.3 and 4.2.4. Thus, it does not seem promising to derive Nupe PCCs from cognate object constructions, although this may well be the proper analysis in other languages.

4.3.1.2.2. Movement of a Low Verbal Copy

In an echo of Nylander 1985, Harbour (2008) claims that the syntactic component can freely copy and merge root morphemes, yielding two low morphosyntactically identical occurrences of the root that stand in a sisterhood relation.

(25)   √
            √^{i} √^{i}
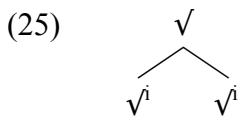
This operation is purportedly responsible for deriving the Haitian intensive emphatic verbal repetition construction shown below.
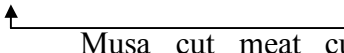
(26)   Haitian (Harbour 2008)

        Lame a **kraze kraze** vil   la.
        army the destroy destroy town the
        'The army really destroyed the town.'

Harbour claims that Haitian PCCs are derived by focusing the copied root morpheme.

(27)   Se kraze^i   lame   a   ~~kraze^i~~   kraze   vil   la.
        se destroy army the destroy destroy town the
        'The army DESTROYED the town.'

Because only one of the verbal terms in (26) was selected from the initial numeration, only one verbal element projects its argument structure. The copied occurrence is thus treated as a dummy verb thematically. Harbour argues that this explains the lack of doubling with respect to the verb's surface arguments. Furthermore, because the dummy occurrence does not project, it is considered maximal given considerations of Bare Phrase Structure (Chomsky 1995b). In this way, focus movement of the verbal copy can target maximal projections despite the fact that the moved element is syntactically an X^{MIN} term. Harbour's analysis thus overcomes some of the major theoretical hurdles raised by PCCs, namely, the problem of the missing gap and the problem of *wh-* head movement.

    Kandybowicz (2004b) independently argues that Nupe PCCs are also derived by focusing a low copy of the verb, in this case, V2 of the bare root verbal repetition construction.

(28)   a.   [$_{FOCP}$ [$_{TP}$ Musa ba nakàn [ba]]].

                  Musa   cut   meat   cut
             'Musa DID IN FACT cut the meat.'

        b.   Bi-ba   Musa ba nakàn __ o.
             RED-cut Musa cut meat   FOC
             'It was CUTTING that Musa did to the meat.'

Although the syntactic means responsible for generating the BRVRC input structures in Nupe and Haitian are analyzed differently, a common thread runs through both approaches: PCCs are derived from independently-derived outputs. The argument that PCCs are derived from BRVRCs in Nupe came primarily from their parallel distribution. More specifically, PCCs and BRVRCs are grammatical and ungrammatical in virtually identical syntactic environments. For instance, unlike other verb serializing languages such as Edo, the first verb of any serial verb construction can be repeated, but the remaining verbs cannot. Similarly, only the initial verb of a serial verb construction can undergo predicate cleft, as the following data illustrate.

(29)   V1 MAY BOTH REPEAT AND CLEFT

    a. Musa **du**   eci **du** kún.
       Musa cook yam cook sell
       'Musa DID IN FACT cook a yam and (then) sell it.'

    b. **Du-du**   Musa **du**   eci kún o.
       RED-cook Musa cook yam sell FOC
       'It was COOKING that Musa did to a yam before selling.'

    V2 MAY NEITHER REPEAT NOR CLEFT

    c. *Musa du   eci **kún kún**.
        Musa cook yam sell sell
        'Musa cooked a yam and (then) DID IN FACT sell it.'

    d. ***Ku-kún** Musa du   eci **kún** o.
        RED-sell Musa cook yam sell FOC
        'Musa cooked a yam and (then) SOLD it.'

Additionally, verbal repetition and predicate cleft are both impossible in *wh-* questions.

(30)   a. Ké Musa du   o?
        what Musa cook FOC
        'What did Musa cook?'

    b. *Ké Musa du   du   o?
        what Musa cook cook FOC
        'What DID IN FACT Musa cook?'

    c. *Ké du-du   Musa du   o?
        what RED-cook Musa cook FOC
        'What did Musa COOK?'
        (Also ungrammatical: *Du-du ké Musa du o?)

Both verbal repetition and predicate focus are possible within embedded complement clauses, as shown below.

(31)   a. Musa gàn gànán u: **du**   eci **du**.
        Musa say COMP 3rd.SG cook yam cook
        'Musa said that he DID IN FACT cook a yam.'

    b. Musa gàn gànán **du-du**   u: **du**   eci o.
        Musa say COMP RED-cook 3rd.SG cook yam FOC
        'Musa said that it was COOKING that he did to a yam.'

And lastly, Nupe BRVRCs and PCCs are in complementary distribution.

(32)   ***Du-du**   Musa   **du**   eci   **du**   o.
     RED-cook   Musa   cook   yam   cook   FOC
     'It was COOKING that Musa DID IN FACT do to a yam.'

Despite these distributional parallels, there are convincing reasons to treat the derivations of the two constructions as unrelated. The first reason is that the distributional parallels that obtain between the two constructions are entirely predictable. For example, the inability of V2 to double in serial verb constructions (29c) was shown to relate to matters of pronunciational economy in chapter three. Doing so would involve spelling-out the higher verbal copy, but given the independent realization of v^0 by V1, this move would not be forced by the Stray Affix filter as in typical BRVRCs, rendering it unnecessary. The impossibility of clefting V2 in the same construction (29d) is most likely a relativized minimality effect. It is plausible to say that V1 intervenes between FocP and V2 in these constructions, thus rendering the two verbal occurrences non-equidistant from their left peripheral targets. In that case, we'd predict the observed movement asymmetry. Likewise, the incompatibility of both predicate cleft and verbal repetition with *wh-* questions (30b-c) is also unsurprising given the fact that all three constructions target focus projections. For similar reasons, the complementarity of PCCs and BRVRCs (32) is also to be expected. Thus, a link between Nupe PCCs and BRVRCs cannot be established merely by appealing to the distributional parallels cited above. The second reason for rejecting a derivational link between Nupe PCCs and BRVRCs is that the correspondence between the well-formedness of a BRVRC and the grammaticality of a PCC is not as tight as originally believed. For instance, modal-auxiliary verbs may systematically undergo verbal repetition, but they can never predicate cleft (cf. (33a-b) – contra the description originally reported in Kandybowicz 2004b). Moreover, as mentioned in note 10, verbal repetition within a relative clause is permitted, but predicate focus is not (33c-d).

(33)   a.   REPETITION OF A MODAL-AUXILIARY VERB IS POSSIBLE

        Musa   **yá**   eci   yin   **yá**   du.
        Musa   begin   yam   PRT   begin   cook
        'Musa DID IN FACT start to cook a yam.'

     b.   CLEFTING A MODAL-AUXILIARY IS IMPOSSIBLE

        *Yi-yá   Musa   **yá**   eci   yin   du   o.
        RED-begin   Musa   begin   yam   PRT   cook   FOC
        'Musa STARTED to cook a yam.'

c. RELATIVE CLAUSE-INTERNAL PREDICATES MAY BE REPEATED

    Musa si bise na **gí** eyì **gí** na.
    Musa buy hen COMP eat corn eat PRT
    'Musa bought the hen that DID IN FACT eat the corn.'

d. RELATIVE CLAUSE-INTERNAL PREDICATES MAY NOT CLEFT

    *Musa si bise na **gi-gí** **gí** eyì o na.
     Musa buy hen COMP RED-eat eat corn FOC PRT
     'Musa bought the hen that ATE the corn.'

I thus conclude that Nupe PCCs are not derived via movement of an independently generated low verbal copy (such as in BRVRCs, for example).

4.3.2. *Against a Phrasal Movement Analysis*

The view that PCC derivations involve phrasal fronting is common to many analyses (Nishiyama & Cho 1998, Koopman 1999, Cho & Nishiyama 2000, Abels 2001, Nunes 2003, 2004, Hiraiwa 2005, Landau 2006, among others). In many languages that allow predicate clefting, the displaced predicate may be accompanied by verbal arguments (cf. Yoruba (Cho & Nishiyama 2000), Buli (Hiraiwa 2005), Russian (Abels 2001), Hebrew (Landau 2006)), tense/aspect markers (cf. Vata (Koopman 1984), Haitian (Piou 1982)), certain types of modifiers (cf. Edo (Stewart 2001), Vata (Koopman 1984), Haitian (Piou 1982)), and even serialized verbal occurrences (cf. Yoruba (Baker 1989, Gruber & Collins 1996, Manfredi 1993, Cho & Nishiyama 2000), Dagaare (Bodomo 2004), Buli (Hiraiwa 2005)). We have seen that the first three of these possibilities do not obtain in Nupe PCCs. The data in (6) are repeated below.

(34) a. *[Du-du cènkafa] Musa à du (cènkafa) o.
        RED-cook rice Musa FUT cook rice FOC
        'It is COOKING RICE that Musa will do.'

    b. *[Cènkafa du-du] Musa à du (cènkafa) o.
        rice RED-cook Musa FUT cook rice FOC
        'It is COOKING RICE that Musa will do.'

    c. *[(à) du-du (à)] Musa à du cènkafa o.
        FUT RED-cook FUT Musa FUT cook rice FOC
        'It is COOKING that Musa will do to the rice.'

    d. *[(á) du-du (á)] Musa á cènkafa du o.[12]
        PRF RED-cook PRF Musa PRF rice cook FOC
        'It is COOKING that Musa has done to the rice.'

e. *[(Dàdà)   du-du   (sanyín)] Musa à   du   cènkafa o.
    quickly RED-cook quietly   Musa FUT cook rice   FOC
  'It is QUICK/QUIET COOKING that Musa will do to the rice.'

f. *[Wu-wu gútá] Gana wu Musa o.
    RED-hit three   Gana hit Musa FOC
  'It was HITTING THREE TIMES that Gana did to Musa.'

g. *[Wu-wu wangi] Gana wu Musa o.
    RED-hit good   Gana hit Musa FOC
  'It was A GOOD HITTING that Gana gave to Musa.'

The other possible extraction pattern, namely, the pied piping of serialized predicates, is also unavailable in the language. The data below illustrate that although V1 may cleft, V2 pied piping in PCCs is ungrammatical across all SVC types.

(35) RSVC CLEFT PATTERNS

a. Musa fo   èwò   li.
    Musa wash garment be clean
  'Musa washed the garment clean.'

b. Fu-fo   Musa fo   èwò   li   o.
    RED-wash Musa wash garment be clean FOC
  'It was WASHING that Musa washed the garment clean.'

c. *[Fu-fo   **li-li**]   Musa fo   èwò   (li)   o.
    RED-wash RED-be clean Musa wash garment be clean FOC
  'It was WASHING CLEAN that Musa did to the garment.'
  Also ungrammatical: *[Fu-fo li] Musa fo èwò (li) o.

CSVC CLEFT PATTERNS

d. Musa pa   eci gí.
    Musa pound yam eat
  'Musa pounded a yam and (then) ate it.'

e. Pi-pa   Musa pa   eci gí o.
    RED-pound Musa pound yam eat FOC
  'It was POUNDING that Musa did to a yam.'

f. *[Pi-pa   **gi-gí**] Musa pa   eci (gí) o.
    RED-pound RED-eat Musa pound yam eat FOC
  'It was POUNDING and then EATING that Musa did to a yam.'
  Also ungrammatical: *[Pi-pa gí] Musa pa eci (gí) o.

PSVC CLEFT PATTERNS

g. Musa si   eyì dzò.
   Musa buy corn plant
   'Musa bought corn in order to plant it.'

h. Si-si   Musa si   eyì   dzò o.
   RED-buy Musa buy corn plant FOC
   'It was BUYING that Musa did to the corn in order to plant it.'

i. *[Si-si   **dzu-dzò**] Musa si   eyì   (dzò) o.
    RED-buy eat RED-plant Musa buy corn plant FOC
   'It was BUYING to PLANT that Musa did to the corn.'
   Also ungrammatical: *[Si-si dzò] Musa si eyì (dzò) o.

The generalization is clear. In Nupe PCCs, only the focused predicate is realized in the left periphery. Anything phrasal is excluded. The logical conclusion is thus that Nupe PCC derivations involve the extraction of heads, not phrases. Of course, it is still analytically possible to maintain that the focused constituent is a remnant phrasal category containing both the predicate and the copies of the scrambled verbal arguments (Koopman 1999, Abels 2001, Nunes 2003). The burden of proof, however, would be to explain why these arguments are systematically unable to be phonetically realized alongside the focused predicate, a possibility that arises once the copy theory of movement is assumed. Given these considerations, a phrasal movement analysis does not seem well motivated in the case of Nupe PCCs. We are left with the conclusion that PCC formation in the language is driven by head movement.

4.3.3. The Derivation of Nupe PCCs

I have argued that the movement operation responsible for Nupe predicate focus is of the head movement variety. Given the syntax of focus in the language (cf. chapter two), this entails the movement of an X^0 category into the specifier position of Focus Phrase (cf. Koopman's (1984) conception of A-bar head movement and Collins & Essizewa's (2007) analysis of verb focus in Kabiye). This conclusion, however, flies in the face of a standard assumption in generative grammar, namely, that movement operations affect heads and phrases differently. Ultimately, this idea is a relic of Emonds' (1970) Structure Preservation hypothesis, which was carried over into X-bar theory. With the elimination of the X-bar theoretic conception of structure building in Chomsky's (1995b) Bare Phrase Structure theory, the distinction between head and phrasal movement was revived by means of Chomsky & Lasnik's (1993) Chain Uniformity condition, which prohibits chain links from having differing X^{min}/X^{max} statuses. To the extent that the Chain Uniformity condition is real, the analysis of Nupe PCCs I am proposing is conceptually problematic. Vicente (2006), however, argues convincingly that the Chain Uniformity condition is untenable on the grounds that a) it is conceptually suspect under Minimalist desiderata, b)

it has a limited/inconsistent domain of application, and c) its effects can be independently derived. If true, the elimination of both X-bar theory and the Chain Uniformity condition removes any conceptual barrier barring head movement into specifier positions. My head movement analysis of Nupe PCCs is guided by these considerations.
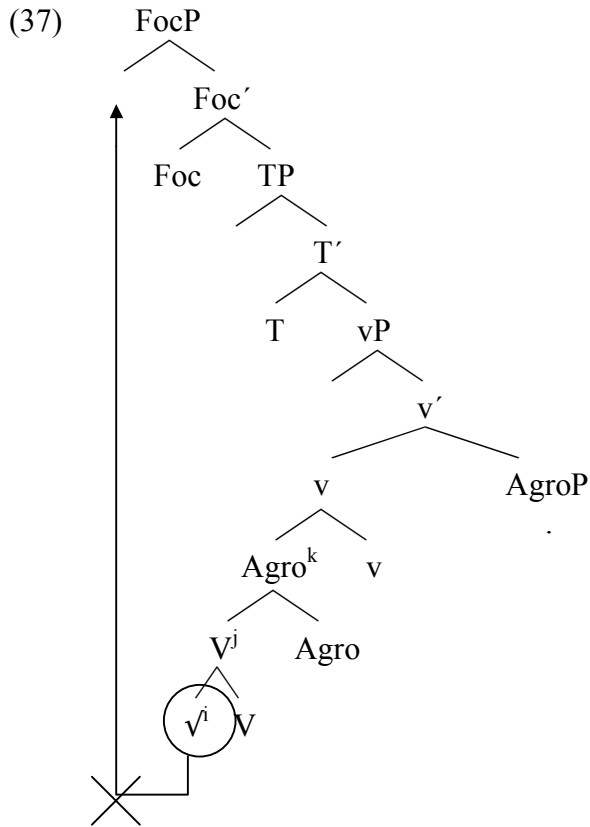
In this section, I break up the syntactic analysis of Nupe PCCs into two separate issues: the bi-locational realization of the predicate root and the source of the peripheral root's nominal features.

4.3.3.1. The Bi-locational Realization of √

Independent of PCC formation, Nupe verb roots raise to v^0 (see chapter 2). By assumption, this head movement sequence is successive cyclic and *en route* to v^0 the verb root incorporates into V^0 where it is assigned its verbal features.

(36)
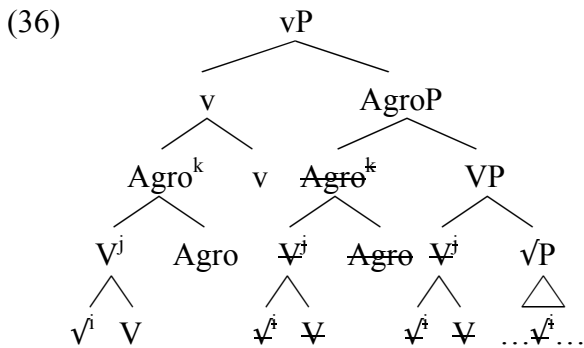
Given that the focused predicate surfaces with nominal features (instantiated by its (reduplicative) morphology), it follows that the cleft constituent excludes the verbalizing morpheme (V^0). This means that the displaced left peripheral root cannot be a link in a chain that also includes the positions related by v^0-to-v^0 head movement. In other words, the predicate does not raise to Spec, Foc after first raising to v^0. This is a welcome conclusion considering that such a movement would involve sub-extraction out of a complex head (i.e. excorporation). This is illustrated graphically below.

(37)   FocP

          Foc′

     Foc   TP

            T′

        T   vP

              v′

         v   AgroP

      $Agro^{k}$ v

     V^{j} Agro

     v^{i} V

Consequently, Nupe PCC derivations must involve the formation of two distinct (i.e. parallel) root chains; one chain formed by head raising to v^{0} and a separate chain formed by moving $\sqrt{}^{0}$ directly into Spec, Foc. Aboh (2006) and Aboh & Dyakonova (2006) propose analyses in this spirit for predicate cleft constructions in Gungbe and Russian respectively. Given that cyclic phase transfer is delayed until the merger of a higher phase head (Chomsky 2001), the transphasal movement of the root morpheme does not violate Chomsky's revised version of the Phase Impenetrability condition on the assumption that Foc^{0} is not a phase head in Nupe (cf. the discussion of the PIC in chapter one). In keeping with standard assumptions, I assume that vP is transferred upon merger of C^{0}, which as argued in chapter two, resides above Foc^{0} in the left periphery. Thus, $\sqrt{}^{0}$ is accessible for chain formation with respect to both v^{0} and Foc^{0}. My proposal is laid out schematically below. (The movement of TP to an inner specifer of Foc^{0} (cf. chapter two) is omitted for presentational clarity. I will have more to say about parallel chain formation in the next section.)

(38)   THE DISTRIBUTION OF √ IS A CONSEQUENCE OF PARALLEL CHAIN FORMATION

```
        FocP
       /    \
           Foc´
          /    \
       Foc      TP
               /   \
                    T´
                   /  \
                  T    vP
                      /   \
                       v´
                      /   \
CHAIN 2              v     AgroP
                          /    \
         CHAIN 1              Agro´
                            /    \
                         Agro     VP
                                 /   \
                                V     √P
                                     /△\
                                  …  √  …
```
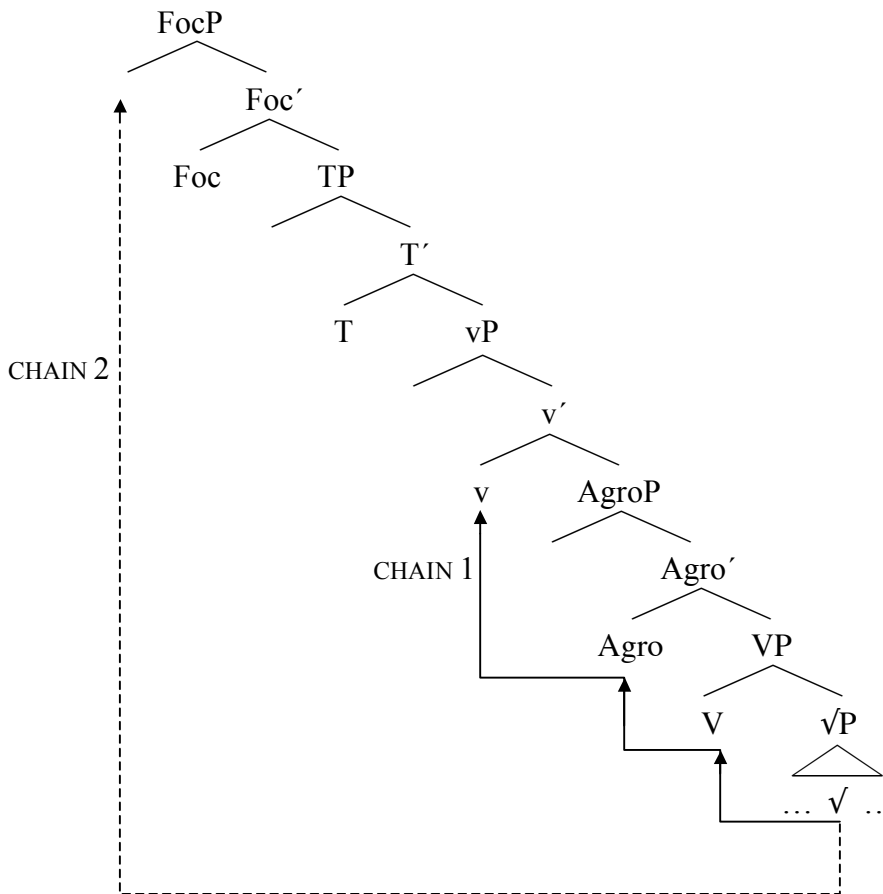
This analysis provides an account of the two PCC puzzles we have been discussing all along. The problem of the missing gap does not arise given that predicate cleft constructions in the language involve the formation of dual verb root chains. The so-called missing gaps in these constructions turn out to be illusions, that is, artifacts of parallel overlapping chains whose tails are identical, yet whose heads are disjoint. The issue of the duality of movement derives from the fact that a head is moving like a phrase with respect to the target of movement. In short, the movement does in fact have a dual nature. However, if one is persuaded by Vicente's (2006) elimination of the Chain Uniformity condition, the "problem" of *wh-* head movement can ultimately be regarded as a non-issue.

The PF status of chains 1 and 2 above is unremarkable. In both cases, chain resolution proceeds by deleting all links except for the chain heads, which, as discussed in chapter one, is the most economical way to linearize a chain (Nunes 1995, 2004). Spelling-out the root morpheme in Spec, Foc satisfies Foc^0's EPP feature, while pronouncing the root in v^0 is conditioned by the Stray Affix filter, as discussed in chapter three, given the unavailability of *do*-support in the language[12] (as shown below).

(39) a. Bi-ba   Musa ba nakàn o.
          RED-cut Musa cut meat   FOC
          'It was CUTTING that Musa did to the meat.'

      b. *Bi-ba   Musa **dzin** nakàn o.
          RED-cut Musa do   meat   FOC

Because a maximum of two root chains are formed and no additional independently motivated morphological or phonological requirement exists to force the spell-out of a lower chain link in this construction, the number of phonetically realized predicates in a Nupe PCC is capped at two (cf. (1a), (32)). The bi-locational realization of the root morpheme thus follows.[13]

4.3.3.2. The Source of the Peripheral Root's Nominal Features

In DM, the morphological construction of words is constrained by the hierarchical structures assembled in the narrow syntax. Thus, words do not enter derivations pre-formed. Under the DM approach, abstract morphemes (terminals) manipulated in the syntax are underspecified for a number of grammatical properties. Root morphemes, in particular, are underspecified for syntactic category. That is, roots are category-neutral morphemes that are assigned categorial features in virtue of occupying positions that lie under the scope of category-assigning functional morphemes at the point of Vocabulary Insertion (Marantz 1997). Recall from chapter one that Vocabulary Insertion is a late operation that occurs after the syntactic computation. To concretize this description a bit, a root morpheme under the scope of a head bearing verbal features (e.g. V^0) will surface with the category feature [+V] and will subsequently be spelled out with verbal morphology. Under the scope of a head with nominal features (e.g. D^0/n^0), on the other hand, the same root will inherit the feature [+N] and will surface with nominal morphology (i.e. as a nominalization). This particular conception of the syntax-morphology interface allows for an elegant and theoretically principled analysis of the morphological mismatch between the peripheral (focused) predicate and the lower verbal occurrence in PCCs.

Given that V^0 is not pied-piped with the focused $\sqrt{}$ morpheme, as argued earlier, the displaced term in a Nupe PCC is not one whose category status is established. Rather, what has moved is an element that awaits categorial determination. I'd like to claim that the focus particle *o* is ultimately responsible for the nominal features borne by the focused predicate root. In other words, in virtue of its movement to the local domain of *o* (i.e. Spec, Foc), the predicate root is assigned nominal features and comes to be spelled out in a reduplicated (nominalized) form following Vocabulary Insertion. (In this respect, my proposal shares a common thread with Hiraiwa's (2005) DM analysis of predicate cleft morphology in Buli.) We might ask, why would the focus morpheme trigger the nominalization of a cleft root morpheme? My response is that the peripheral particle *o*, in addition to being the marker of sub-clausal focus in the language, is also a clausal determiner. In this light, it is worth pointing out that *o* surfaces elsewhere in the

grammar in a determiner-like capacity. The data in (40) illustrate that non-peripheral (i.e. non-Focus) *o*, which was glossed as the locative marker in chapter two, patterns with true determiners in the language with respect to syntactic distribution. Both appear final in their phrases, immediately following nominal material.

(40)   NON-PERIPHERAL *O* IS A DETERMINER-LIKE ELEMENT

 a. Musa le kata o.
   Musa sleep room LOC
   'Musa slept in the room.'

 b. Musa dan kata o.
   Musa be in room LOC
   'Musa is in the room.'

 c. Musa si eci ndondò.
   Musa buy yam every
   'Musa bought every yam.'

 d. Musa kún nakàn sasi.
   Musa sell meat some
   'Musa sold some meat.'

 e. Musa kún eci nana zì.
   Musa sell yam this PL
   'Musa sold these yams.'

Interestingly, the availability of a clausal determiner has been correlated with the existence of predicate cleft in a variety of languages (Lefebvre 1992a).[14] I'll refer to this correlation as Lefebvre's Generalization, following Hiraiwa (2005).

(41)   LEFEBVRE'S GENERALIZATION (LEFEBVRE 1992a)

 The availability of predicate cleft within a particular grammar correlates with the existence of a syntactic position for clausal determiners.

It is not clear that Lefebvre's Generalization alone accounts for the distribution of PCCs cross-linguistically. After all, several Indo-European and Semitic languages, which otherwise have not been documented as having clausal determiners, manifest PCCs (i.e. Hebrew, Yiddish, and Russian, - see Landau 2006 for discussion). Whether or not Lefevbre's Generalization is tapping into a real implicational language universal, it does capture a striking connection between languages like Nupe, Ewegbe, Haitian, Vata, and Buli, that is, languages that have clausal determiners and obligatorily nominalized

focused predicates, and languages like Hebrew, Yiddish, and Russian, which neither have clausal determiners nor obligatory nominalization of the focused √ morpheme.

Assuming that o is in fact a clausal determiner in Nupe, we must determine how the focused √ morpheme is assigned nominal features and comes to be realized in a reduplicated form. Given the DM hypothesis that words do not enter a derivation pre-formed, there are two analytical options for deriving the reduplicated form of a morpheme from a simple underspecified root. The first strategy is the approach to reduplication developed by Raimy (2000), Frampton (2004), Harris & Halle (2005), and Halle (2008), in which reduplication is analyzed as the phonological readjustment of a root (via segmental copying) triggered by the merger of a particular morpheme. In the case at hand, we could say that the nominal features of √ are inherited from the clausal determiner o_{FOC}, whose merger triggers a post-insertion readjustment rule of root reduplication. A second way of analyzing the reduplication of the focused predicate would be to claim that the reduplicant prefix is actually the exponent of an independently generated node merged in the course of the narrow syntactic computation. This is ultimately Marantz' (1982) conception. Accordingly, reduplication would reduce to an instance of affixation, in which a hierarchically present reduplicant morpheme gets phonologically mapped to a base form (i.e. the predicate root) at PF. This analysis would require additional structure above the FocP projection in order to house the reduplicant prefix and derive the correct linear ordering of the morphological pieces. Given that this additional projection would be semantically vacuous, the proposal does not seem appealing. For this reason, I adopt the former approach to reduplication in DM. On this analysis, the focused Root morpheme is nominalized in virtue of occupying Spec, o_{Foc}, Nupe's nominal feature-bearing clausal determiner. Predicate root allomorphy is triggered by the following post-Vocabulary Insertion readjustment rule:

(42)   #CV# → #RED-CV#/ # __ o_{FOC}

(42) accounts for the fact that only predicate roots reduplicate when moved into a peripheral position preceding the o particle (cf. (2)). Because categories and category status are not theoretical primitives in DM, but are rather epiphenomena of hierarchical syntactic relations among terminals, the allomorphy/readjustment rule cannot make reference to categorial notions like "verb". However, the rule as it is stated in (42) uniquely applies to those configurations in which o_{FOC} is preceded by a peripheral clause-initial predicate. The reason for this is that predicates are the only referential category in the language whose exponents bear the structure #CV#. That is, there are no predicate forms that do not have the shape #CV# (excluding compound verbs that are composed of either multiple verb roots or verbal + nominal morphemes) and the exponents of all other sub-clausal referential expressions that could appear peripherally in Spec, Foc (e.g. DPs, AdvPs, PPs, etc.) fail to be phonetically realized with the structure #CV# in all cases.[15]

We might understand the application of the reduplication readjustment rule as stemming from a minimal word prosodic constraint requiring nominal expressions in the language to be larger than a single mora. Similar constraints seem to underlie the prosodic structure of nominals in many other languages, for instance, Choctaw

(Lombardi & McCarthy 1991), Tamil (Saravanan 2003), and Yidin[y] (Dixon 1977), among others. See also Kenstowicz 1994.

(43)   Nominal expressions in Nupe are minimally bi-moraic.

Because monomoraic #CV# roots under the scope of o_{FOC} come to bear nominal features (i.e. are realized as nominal expressions), this minimal word requirement would be violated if no phonological readjustment were to take place. Although prefixation of *è-* (Nupe's nominalizing affix cf. (11)), would allow the focused root to satisfy (43) without compromising its nominal status, its unproductive nature ultimately ensures its blocking. Reduplication, however, affords the prosodically deficient nominal root with the extra metrical material needed to satisfy the Nupe minimal word requirement.

4.4. PARALLEL CHAIN FORMATION AND REPETITION

Chomsky (2008a) motivates the existence of parallel chain formation. For him, parallel chains emerge as a consequence of the existence of phase heads endowed with two types of uninterpretable movement-triggering features, namely, Agree-features and Edge-features. If one of these features (the Agree-feature) is inherited by the lexical item selected by a phase head and both features seek a common goal, then parallel chains will be formed. Chain$_1$ would relate the goal to the Edge-feature of the phase head, while chain$_2$ would relate the goal to the inherited Agree-feature borne by the lexical item selected by the phase head. Among other reasons, Chomsky's parallel chains analysis is designed to eliminate string-vacuous movements such as the triple linked successive cyclic A´-A-A chains typically assumed in cases of subject *wh-* movement. On this approach, *wh-* copies in Spec, C and Spec, T are unrelated; they are links of separate chains. Similar reasoning underlies Aboh (2006) and Aboh & Dyakonova's (2006) parallel chains analysis of PCCs in Gungbe and Russian. For concreteness, I illustrate Chomsky's parallel chains analysis of English subject *wh-* derivations below.

(44)   who^i [C$_{\{EDGE\}}$ [who^i [T$_{[AGREE\ EPP]}$ who^i [v [see John]]]]]

CHAIN$_2$

CHAIN$_1$

Chains 1 and 2 above are not necessarily created at the same time. The chain formed by C^0's Edge-feature (chain$_1$) likely occurs first, given that the feature driving the formation of the T^0-*wh* chain is inherited after C^0's merger. Thus, parallel chains are not necessarily chains that are created simultaneously. Rather, they are chains that are formed independently of one another.

    The condition that triggers parallel chain formation is quite simple and does not necessarily require feature inheritance, as in Chomsky 2008a. The minimal factor conditioning the formation of parallel chains is that separate Agree operations target one and the same goal. Given the phase transfer delay imposed by the Phase Impenetrability

condition (Chomsky 2001), it is possible that distinct heads from separate (but adjacent) phases may converge on a common goal, triggering parallel chain formation. This is precisely the situation that obtains in Nupe PCC derivations. The v head probes for $\sqrt{}^0$, as does Foc^0. Because transfer of the v phase is delayed until the merger of C^0, $\sqrt{}^0$ is accessible to both v^0 and Foc^0. Parallel chain formation ensues.

Given these considerations, we can formalize the characterization of parallel chain formation in the following way. The statement below captures the fact that the formation of parallel chains involves distinct Agree operations with overlapping targets, as in Chomsky 2008a, Aboh 2006, Aboh & Dyakonova 2006, and Collins & Essizewa 2007.

(45)   PARALLEL CHAIN FORMATION

Two chains α and β are related by parallel chain formation if and only if:

(i)   Tail (α) = Tail (β), and
(ii)   Head (α) ≠ Head (β)

As formalized above, conditions (i) and (ii) may be regarded as sufficient conditions for multiple copy spell-out. Because copies of the same lexical item will be spread over independent/non-interacting chains, repetition will result under ordinary circumstances of chain resolution if the parallel chains span separate (adjacent) phases. Again, this is precisely what we observe in the derivation of Nupe PCCs. The lower $\sqrt{}$ chain, internal to the v phase, is reduced in the normal way at PF − the chain head is spelled-out and the lower copies are deleted. The higher $\sqrt{}$ chain, part of the C phase, is linearized in the same way. Because the surviving $\sqrt{}$ copies occupy different phases, multiple copy realization does not pose a threat to linearization. In the case of Nupe predicate cleft constructions, however, appealing to phase-hood is not necessary because the distinctness of the surviving copies is ensured by their divergent derivational histories (cf. chapter three). The peripheral root copy, unlike the spelled-out copy in v^0, is a non-embedded minimal-maximal projection. Crucially, the lower root copy at the edge of the v phase is an embedded minimal-maximal projection. Because their distinctness is recoverable at the point of linearization, multiple copy pronunciation fails to create a PF conflict.

The Nupe predicate cleft construction thus reveals that in addition to phonological and morphological factors, narrow syntactic forces may also play a prominent role in the grammar of repetition. The most obvious source of repetition indigenous to the computational system is the copying operation, which when implemented via Merge, provides the raw material for multiple PF interpretation. The other syntactic condition uncovered in this chapter, parallel chain formation, plays an equally important role. It remains to be seen, however, whether other instances of narrow syntactic conditioning contribute in any way to the grammar of repetition.

4.5. SUMMARY AND CONCLUDING REMARKS

In this chapter, I provided a thorough investigation of the predicate cleft construction in Nupe, another case of multiple copy spell-out in the language's verbal system. I argued for a copy-theoretic analysis of PCCs involving head movement of the $\sqrt{}$ category to a position where it falls under the scope of a clausal determiner and is consequently realized in nominalized (reduplicated) form. The bi-locational realization of the predicate root owes to parallel chain formation. In addition to the chain that relates $\sqrt{}^0$ and Foc^0, a parallel chain relates $\sqrt{}^0$ and v^0. Because the chains share a common tail, but have different heads, ordinary chain resolution will give way to the illusion that multiple chain-internal copies are being pronounced. In fact, the pronounced copies span different chains and phases. As such, their phonetic realization poses no complication to linearization and PF multiplicity ensues.

If the conclusions reached in this chapter are on target, the Nupe predicate cleft construction provides further insight into the grammar of repetition. Unlike the previous chapter, where the sources of multiple copy pronunciation were found to be both morphological and phonological, the catalyst driving multiple copy spell-out in Nupe PCCs is entirely syntactic in nature. This raises the possibility that other narrow syntactic sources of repetition may exist, something I consider in chapter six.

NOTES TO CHAPTER 4

[1] As in Hausa, for example (cf. Lumsden & Lefebvre 1990a).

[2] The *yin* particle that surfaces in these examples is a temporal adverbial particle, not the infinitival marker that it is homophonous with.

[3] As in English, the CP containing the conditional marker *gá* is an adjunct, while the following CP is the host. This is confirmed by the PCC extraction asymmetry in (3h-i).

[4] ATB movement of both predicates is ungrammatical in coordinate structures as well.

(i)   a.   *Bi-ba   du-du   Musa$_i$ à   ba nakàn u:$_i$ ma à   du   cènkafa o.
            RED-cut RED-cook Musa FUT cut meat 3RD.SG and FUT cook rice   FOC
            'Musa$_i$ will CUT the meat and he$_i$ will COOK the rice.'

         b.   *Du-du   bi-ba   Musa$_i$ à   ba nakàn u:$_i$ ma à   du   cènkafa o.
               RED-cook RED-cut Musa FUT cut meat 3RD.SG and FUT cook rice   FOC

[5] Although reduplicated verb forms appear in gerunds (cf. (8b-c)), they do not appear in simple DP constructions in the language.

(ii)   a.   *Bi-ba   zì
            RED-cut PL
            'cuttings'

b.   *Bi-ba   nana
      RED-cut this
      'this (instance of) cutting'

c.   *Bi-ba   ndondò
      RED-cut every
      'every (instance of) cutting'

An additional argument for the nominal status of reduplicated verb forms comes from the fact that reduplicated cleft predicates are obligatorily attracted by coordinating morphemes that are independently known to attract nominal expressions to their specifiers. That is to say, sentential coordinators in Nupe bear uninterpretable D-features with the EPP property (Kandybowicz 2005).

[6] PCCs have also been described as emphatic/factive constructions in the literature (Collins 1994, Lefebvre 1994). In certain languages, the division between topic and focus in not always neatly drawn. See, for example, Landau 2006 on Hebrew and Cable 2003 on Yiddish.

[7] The data in (3d-k), while incompatible with a movement-free analysis, can still be squared with an approach that invokes covert movement (e.g. null operator movement (cf. Dekydspotter 1992)). An approach of this sort would have to appeal to the availability of movement operations in which the formal features of a lexical item are internally merged independent of the item's phonological features (e.g. FEATURE MOVEMENT as in Chomsky 1995a). I reject this proposal on theoretical grounds, but for reasons of space do not discuss the matter further.

[8] Parasitic gaps are unattested in Nupe and thus cannot be used as a diagnostic for movement in this case. Furthermore, even if parasitic gaps were admissible their usefulness would be undermined by the fact that objects cannot be pied-piped by the focused predicate in Nupe PCCs (cf. (6a,b)).

[9] On the surfacing of the focus marker in topicalization structures like these, see the discussion surrounding example (15) in chapter two.

[10] Although possible in embedded complement clauses, predicate cleft is impossible in both subject and object relative clauses.

(iv)   a.   Bagi na   ba   nakàn na   (Subject relative clause)
             man   COMP   cut meat   PRT
             'The man that cut the meat'

       b.   *Bagi na   bi-ba   ba   nakàn o   na
              man   COMP   RED-cut cut meat   FOC   PRT

       c.   Nakàn na   bagi ba   na   (Object relative clause)
             meat   COMP   man   cut na
             'The meat that the man cut'

       d.   *Nakàn na   bi-ba   bagi ba o   na
              meat   COMP   RED-cut man   cut FOC PRT

This contrasts with the fact that BRVRCs are possible in both subject and object relative clauses.

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(v)   a.   Bagi na   ba nakàn ba   na
           man   COMP cut meat   cut PRT
           'The man that DID IN FACT cut the meat'

      b.   Nakàn na   bagi ba ba   na
           meat   COMP man   cut cut PRT
           'The meat that the man DID IN FACT cut'

[11] The circumfix *ùmwèn* is a nominalizing affix that typically appears on focused predicates in Edo (Stewart 2001).

[12] It is fair to ask why Nupe doesn't allow *do*-support even though a) the 'do' form *dzin* independently exists in the language and b) insertion of other seemingly last resort/default lexical items (e.g. the weak third person pronoun in cases of *Comp-trace* violation avoidance (cf. chapters two and five)) occurs as well. I speculate that *dzin* is the default (underspecified) verbal vocabulary item in Nupe.

(vi) $\sqrt{\text{DZIN}} \leftrightarrow [+V]$

Furthermore, I claim that *dzin* fails to be inserted in environments typically associated with *do*-support because there is always a more specific form available for insertion in those cases, namely, a specific verb root drawn from the lexical array.

[13] The attentive reader may wonder whether multiple copy spell-out of a predicate root is attested in perfect PCCs. Given the Stray Affix filter, one might predict that lower copy spell-out in these cases is blocked by the sorts of economy considerations appealed to in chapter three due to the fact that v^0 would be supported by the pronunciation of the perfect morpheme. This is analogous to the case of PCC formation in overtly tensed clauses in Russian. As such, one might expect the realization of a focused peripheral predicate nominal without the pronunciation of a lower clause-internal occurrence. This possibility, however, is excluded from the grammar (viia), as is the multiple realization of the focused predicate (viib).

(vii)   a.   *Bi-ba   Musa á   nakàn __ o.
             RED-cut Musa PRF meat   FOC

        b.   *Bi-ba   Musa á   nakàn ba o.
             RED-cut Musa PRF meat   cut FOC

More generally, predicate focus is altogether excluded in the perfect. Thus, no special PF chain resolution issues are at stake in these constructions. See Kandybowicz 2008, (to appear) for an account of the restriction on predicate focus in the perfect, which is part of a larger systematic restriction on perfect extraction in the language.

[14] As originally formulated in Lefebvre 1992a, the availability of predicate cleft correlates with the availability of a position for clausal determiners *within the TP projection*. I take it that clausal determiners in Nupe are licensed higher than TP (cf. chapter two) and thus that no position within the TP space is available for such determiners in the language. Whether Lefebvre's examples of clausal determiners can be reanalyzed as elements operating at the CP-level remains to be seen. However, this is entirely expected, given that these clausal determiners are thought to nominalize focused predicate roots (cf. Hiraiwa 2005 on this point) - constituents that arguably occupy a position within the exploded C layer in languages that encode focus by means of word order.

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[15] There is only one exception to this generalization that I know of, namely, the object *wh-* DP *ké* 'what', which is of the form #CV#. However, given that all other *wh-* forms in the language are bimoraic, the synchronic form of 'what' may in fact either be a recent innovation or more plausibly, may actually turn out to be a fieldwork mistranscription/misperception that is actually pronounced [*ké*:] synchronically.

CHAPTER 5

LOWER COPY RESUMPTION:
REPETITION VIA PROSODIC CONDITIONING

5.1. A CHANGE OF SCENERY

This chapter explores the final instance of multiple copy spell-out in Nupe. Unlike the previous chapters that dealt with the realization of multiple copies in the verbal domain, this chapter focuses on the multiple pronunciation of nominal copies. We observe the concurrent phonetic realization of nominal copies in a highly restricted range of constructions in the language. Most instances of subject extraction that cross overtly headed clause boundaries are ungrammatical if a lower copy of the chain fails to be interpreted at PF, as in typical instances of movement (1b). If the lower copy of the subject is spelled-out as a resumptive pronoun in these cases, however, the output is well formed (1c). At the same time, embedded object extraction is unconstrained in this way (1d). When embedded objects move beyond clause boundaries, however, lower copy resumption is unavailable (1e). As such, extraction in Nupe appears sensitive to the so-called *Comp-trace* effect: sequences involving overt complementizers and adjacent subject gaps are prohibited by the grammar.

(1) a. Musa gàn [gànán etsu gí eci].
         Musa say COMP chief eat yam
         'Musa said that the chief ate a yam.'

     b. *Etsu Musa gàn [gànán __ gí eci] o.
          chief Musa say COMP   eat yam FOC
          'Musa said that THE CHIEF ate a yam.'

     c. Etsu$_i$ Musa gàn [gànán **u:$_i$** gí eci] o.
         chief Musa say COMP 3RD.SG eat yam FOC
         'Musa said that THE CHIEF ate a yam.'

     d. Eci Musa gàn [gànán etsu gí __] o.
         yam Musa say COMP chief eat   FOC
         'Musa said that the chief ate A YAM.'

     e. *Eci$_i$ Musa gàn [gànán etsu gí **u:$_i$**] o.
          yam Musa say COMP chief eat 3RD.SG FOC
          'Musa said that the chief ate A YAM.'

Since the 1970s, the *Comp-trace* effect has occupied a prominent position in syntactic theory as one of the prototypical subject-object asymmetries. Although the effect spans a variety of constructions, as shown below in (2) for English, there is a common denominator: unlike object movement, subject extraction cannot proceed across overt embedded complementizers.

(2)   *WH*- QUESTIONS

        a.   Who do you think [(*that) __ wrote the book]?
        b.   What do you think [(that) Mary wrote __]?

        EMBEDDED RELATIVE CLAUSES

        c.   The author [that the publisher predicts [(*that) __ will be criticized]]
        d.   The book [that the publisher predicts [(that) the public will criticize __]]

        CLEFT CONSTRUCTIONS

        e.   It was Mary [that the author told us [(*that) __ had plagiarized his book]].
        f.   It was his book [that the author told us [(that) Mary had plagiarized __]].

        COMPARATIVE CONSTRUCTIONS

        g.   I bought more books than I estimated [(*that) __ would be sold].
        h.   I bought more books than I estimated [(that) the store would sell __]].

The *Comp-trace* effect has spawned a vast literature in generative syntax. The earliest approaches (Perlmutter 1971, Chomsky & Lasnik 1977) accounted for the effect in representational terms, culminating in the ECP-driven analyses of the GB program (notably, Chomsky 1981, 1986, Kayne 1981, Lasnik & Saito 1984, Rizzi 1990, Browning 1996, among others). The gist of the proposal was simple by and large, although the technical apparatus it wielded was cumbersome: subject extraction across C^0 is illicit because the trace in subject position cannot be properly governed (C^0 blocks antecedent government of the trace and/or is not a lexical governor). Culicover (1993b), on the other hand, argued that the mitigation of *Comp-trace* effects by intervening sentential adverbs positioned between C^0 and the gap (discovered by Bresnan (1977:194) and first discussed by Barss & Deprez (1986), cf. (3) below) weakens the case for an ECP-based solution and motivates instead the filter-based approach of Chomsky & Lasnik (1977) (e.g. *[COMP *t*]).

(3)   Who do you think [that **for all intents and purposes** __ wrote the book]?

Although a number of attempts were made to account for the phenomenon without appealing to the ECP (e.g. by appealing instead to avenues such as Binding theory, S-

structure filters, and economy principles, among others; cf. Perlmutter 1971, Chomsky & Lasnik 1977, Pesetsky 1982, Jaeggli 1984, Deprez 1991, 1994, Culicover 1993b, etc.), the consensus during the GB era was that the ECP was a good first step in achieving a unified theory of *Comp-trace* phenomena and its attendant subject-object extraction asymmetry. However, as GB theory grew in sophistication, it became evident that the ECP had grown far too complex and stipulative to warrant inclusion in UG. In response to similar considerations spanning a number of other modules of the GB framework, the Minimalist Program was born.

The central theme underlying the Minimalist Program was reducing the theory to those and only those entities drawn from the domain of virtual conceptual necessity and thus whose inclusion should be deemed indispensable for any theory of language. As a result, the ECP was one of the first relics of the GB framework to be jettisoned. This move was motivated by the fact that the government relation, phonetically null traces, and syntactically introduced indices were all needless complications of the theory, given that their effects could be derived from more primitive and independently essential concepts and relations. Moreover, their existence could not be motivated by appealing exclusively to considerations of virtual conceptual necessity. The characterization of the *Comp-trace* effect would have to be reformulated and in this case, Chomsky was first to lead the way. He proposed that *Comp-trace* violations were instances of illicit movement operations, that is, movements that violated the economy principle of Shortest Move (i.e. Relativized Minimality/the Minimal Link condition – Chomsky 1995a:181). Chomsky's account was rather skeletal, the intention being to provide the rough outline within which an analysis could be fleshed out. However, unlike the development of analyses within the GB program, relatively little work thereafter attempted to characterize the *Comp-trace* effect in terms of the concepts and tools made available by the Minimalist paradigm shift.[1]

In response to the data presented in (1), this chapter develops a PF-based analysis of the Nupe *Comp-trace* effect. My account explains why subject extraction across overt complementizers (unlike object extraction) is generally prohibited in the language and why in addition to the chain head, a lower copy of the extracted subject is sometimes spelled-out. I'll argue that Nupe *Comp-trace* effects are purely prosodic phenomena that arise late in the derivation as the syntactic output is prepared for prosodic mapping. In this way, my proposal can be described as a PF reductionist account of the *Comp-trace* effect and as such can be grouped together with similar existing proposals in the literature (e.g. Culicover 1993a, de Chene 1995, 2000, 2001, Richards 1999, Merchant 2001, 2008, and Kandybowicz 2006). The account provides a new window through which to understand *Comp-trace* phenomena: *Comp-trace* effects have less to do with the narrow syntactic computation than with the way in which the syntax and phonology interface. I'll show that lower copy spell-out in Nupe *Comp-trace* structures is a last resort repair strategy aimed at satisfying a stringent prosodic mapping constraint requiring the edge of an obligatorily parsed intonation phrase to be marked at PF. Viewed as such, the pronunciation of low nominal copies in Nupe reveals another dimension in the grammar of repetition, namely, prosodic conditioning.

The empirical and analytical focus of this chapter is Nupe and thus *Comp-trace* effects in English and other languages will not be considered to any great extent.[2]   I believe this is as it should be, given that the objective of the chapter is not to advance a comprehensive theory of *Comp-trace* effects, but rather to examine the phenomenon of lower copy resumption and multiple copy spell-out of Nupe nominals. For an extension of the current proposal to English and a more comprehensive account of the *Comp-trace* effect, the interested reader is referred to Kandybowicz 2006, to appear.

The chapter is organized as follows. In section 5.2, I provide a descriptive overview and analysis of the *Comp-trace* effect in Nupe. Section 5.3 deals with some of the fine details concerning my lower copy resumption analysis. The chapter concludes in section 5.4 with a summary and some brief closing remarks.

5.2. THE NUPE *COMP-TRACE* EFFECT

What is the proper characterization of the Nupe *Comp-trace* effect and how can it shed light into the grammar of repetition? Are *Comp-trace* effects a reflection of syntactic impropriety or are they rather cases of ill-formedness at the interfaces? In this section, I argue for the latter characterization. More precisely, I argue that *Comp-trace* effects are conditioned by illicit outputs on the PF side of grammar, rather than at LF or in the narrow syntax. This characterization leads to a deeper understanding of the forces at work conditioning multiple copy spell-out in the Nupe nominal domain. Toward this end, I begin by presenting a description of the facts, followed by an analysis.

5.2.1. Descriptive Overview

Although extraction out of embedded clauses in Nupe exhibits a subject-object asymmetry similar to the one found in English, some of the details vary. In Nupe as in English, objects can be freely extracted across complementizers in a number of different construction types, unlike subjects. This asymmetry is shown below for *wh-* movement, DP focus, and relativization. (See also chapter two, example sets (34) and (35), for evidence that this extraction asymmetry obtains regardless of the choice of complementizer.)

(4)   a.   √ EXTRACTION OF AN EMBEDDED OBJECT *WH*-

Ké   u: bè   [ke   Musa   má[3]   du   __]   na   o?
what   3ᴿᴰ.SG   seem   COMP   Musa   know   cook   PRT   FOC
'What does it seem that Musa knows how to cook?'

b.   √ FOCUS OF AN EMBEDDED OBJECT

Enyà-zì   Musa   gàn   [gànán   etsu   nì   __]   o.
drum-PL   Musa   say   COMP   chief   beat   FOC
'Musa said that the chief beat DRUMS.'

c. √ RELATIVIZATION OF AN EMBEDDED OBJECT[4]

Nakàn [na   Musa kpe [gànán bagi-zì ba __]] na
meat   COMP Musa know COMP man-PL cut   PRT
'The meat that Musa knows that the men cut'

d. * EXTRACTION OF AN EMBEDDED SUBJECT *WH-*

*Zě u: bè [ke __ má   du] na o?
 who 3RD.SG seem COMP   know cook PRT FOC
 'Who does it seem knows how to cook?'

e. * FOCUS OF AN EMBEDDED SUBJECT

*Bagi-zì Musa gàn [gànán __ nì   enyà] o.
 man-PL Musa say COMP   beat drum FOC
 'Musa said that THE MEN beat a drum.'

f. * RELATIVIZATION OF AN EMBEDDED SUBJECT

*Bagi-zì [na   Musa kpe [gànán __ ba nakàn]] na
 man-PL COMP Musa know COMP   cut meat   PRT
 'The men Musa knew that cut the meat'

Omitting the complementizer does not salvage a *Comp-trace* violation in Nupe as it does in English. For the most part, complementizer drop is disallowed in the language as in French (Deprez 1991, 1994), Dutch, and Icelandic (Pesetsky 1982), among other languages.[5]

(5) a. *Zě u: bè [__ má   du] na o?
          who 3RD.SG seem   know cook PRT FOC
          'Who does it seem knows how to cook?'

     b. *Bagi-zì Musa gàn [__ nì   enyà] o.
          man-PL Musa say   beat drum FOC
          'Musa said that THE MEN beat a drum.'

     c. *Bagi-zì [na   Musa kpe [__ ba nakàn]] na
          man-PL COMP Musa know   cut meat   PRT
          'The men Musa knows that cut the meat'

However, a range of seemingly unrelated options exists in the language for salvaging derivations involving long subject extraction across embedded complementizers. For

one, extraction of an embedded subject across the complementizer *gànán* is possible when the complementizer surfaces in its reduced form *'án*. As mentioned previously in chapter two, *gànán* is historically related to the verb *gàn* 'say', as in many West African languages. The form *gànán*, then, can be analyzed as a portmanteau morpheme comprised of the verb 'say' together with a C element (e.g. *gàn*$_V$ + *án*$_C$). When reduced, then, only the C element surfaces.

(6)   REDUCTION OF A MULTISYLLABIC C^0 MITIGATES *COMP-TRACE* EFFECT

    a. *Zě   Musa gàn [gànán __   nì   enyà] o?
        who Musa say   COMP   beat drum   FOC
        'Who did Musa say beat a drum?'

    b. √Zě   Musa gàn ['**án** __   nì   enyà] o?
        who Musa say   COMP   beat drum   FOC
        'Who did Musa say beat a drum?'

This repair strategy does not improve *Comp-trace* violations involving complementizers other than *gànán* in the language because all other complementizers in Nupe are monosyllabic and phonologically irreducible (e.g. *ke, kó:,* and *na*). The effect is similar to cases of *Comp-trace* repair in English involving reduced or unstressed complementizers (cf. Kandybowicz 2006).

(7)   a. *Who do you think that __ wrote *Barriers*?
        b. √/?Who do you think th't __ wrote *Barriers*?
        c. *Who do you hope for __ to win?
        d. √/?Who do you hope fer __ to win?

A second way *Comp-trace* effects can be mitigated in Nupe is by way of TP-adjoined adverbials. Similar to the English adverb effect (cf. (3)), embedded subject extraction becomes possible when an adverbial expression intervenes between the complementizer and the trace (i.e. when the adverb attaches to TP (8b)), but not when the adverb follows both the complementizer and the gap (i.e. when it attaches below TP (8c)). This situation is contrasted below for the adverbial *pányi lèé*, which was argued to be a TP adjunct in chapter two, and *dàdà*, which was shown in the same chapter to attach below TP to the vP projection.

(8)   TP-ADJOINED ADVERBIAL MITIGATES *COMP-TRACE* EFFECT

    a. *Zě   Musa gàn [gànán __   nì   enyà] o?
        who Musa say   COMP   beat drum   FOC
        'Who did Musa say beat a drum?'

b. √Zě   Musa   gàn   [gànán **pányi lě** __   nì   enyà] o?
   who Musa say   COMP before PST   beat drum FOC
   'Who did Musa say that a long time ago beat a drum?'

c. *Zě   Musa   gàn   [gànán __   **dàdà**   nì   enyà] o?
   who Musa say   COMP   quickly beat drum FOC
   'Who did Musa say beat a drum quickly?'

As previously mentioned, subject extraction across a complementizer becomes possible if the displaced element (i.e. the lower copy of the subject in Spec, T) is spelled-out as a resumptive pronoun, provided that it agrees in number with the head of the chain. If it is spelled out as a perfect copy of the leftmost moved element, however, the derivation cannot be salvaged (9a-c). In contrast, spelling-out the lower copy of a displaced embedded object as a resumptive pronoun crashes the derivation (9d-f).

(9)   LOWER COPY RESUMPTION OF THE SUBJECT MITIGATES *COMP-TRACE* EFFECT

a. $Zě_i$ u: bè   [ke   **$u:_i$**/*$a:_i$/*$zě_i$ má   du]   na o?
   who 3RD.SG seem COMP 3RD.SG/3RD.PL/who know cook PRT FOC
   'Who does it seem knows how to cook?'

b. $Bagi$-$zì_i$ Musa   gàn   [gànán **$a:_i$**/*$u:_i$/*$bagi$-$zì_i$ nì   enyà] o.
   man-PL Musa say   COMP 3RD.PL/3RD.SG/ man-PL beat drum FOC
   'Musa said that THE MEN beat a drum.'

c. $Bagi$-$zì_i$ [na   Musa kpe   [gànán **$a:_i$**/*$u:_i$/ *$bagi$-$zì_i$ ba nakàn]] na
   man-PL COMP Musa know COMP 3RD.PL/3RD.SG/man-PL cut meat   PRT
   'The men Musa knows that cut the meat'

RESUMPTION OF THE EMBEDDED OBJECT CRASHES THE DERIVATION

d. *$Ké_i$ u: bè   [ke   Musa má   du   **$u:_i$**]   na   o?
    what 3RD.SG seem COMP Musa   know cook 3RD.SG PRT FOC
    'What does it seem Musa knows how to cook?'

e. *$Enyà$-$zì_i$ Musa   gàn   [gànán etsu   nì   **$a:_i$**] o.
    drum-PL Musa say   COMP chief beat 3rd.PL FOC
    'Musa said the chief beat DRUMS.'

f. *$Nakàn_i$ [na   Musa kpe   [gànán bagi ba   **$u:_i$**]]   na
    meat   COMP Musa know COMP man cut 3RD.SG PRT
    'The meat that Musa knows that the man cut'

Evidence that the resumptive element is spelled-out in Spec, T and not in its base-merged vP-internal position comes from the fact that it surfaces with a distinctive mid-falling tone in the presence of clause-mate negation (cf. note 8 in chapter three). As discussed in chapter three, the reinforcing pre-verbal floating tone adjoined to vP in negation constructions associates leftward in the language, meaning that if the resumptive occurrence were realized in Spec, v, its tonal realization would be unaffected by the floating tone. To the extent that a perceivable tonal effect can be detected on the resumptive occurrence in negation constructions, there is evidence that the lower clause position occupied by the resumptive pronoun is Spec, T. This Spec, T resumptive pronunciation site, however, is highly limited. The opposite spell-out relation, in which the leftmost copy is realized as a pro-form and the lower occurrence surfaces as a full DP copy, is ungrammatical. Compare the data in (10a-c) below with the data in (9a-c) respectively.

(10) a. ***U:$_i$** u: bè [ke **zě$_i$** má du] na o?
        3RD.SG 3RD.SG seem COMP who know cook PRT FOC
        'Who does it seem knows how to cook?'

    b. ***A:$_i$** Musa gàn [gànán **bagi-zì$_i$** nì enyà] o.
        3RD.PL Musa say COMP man-PL beat drum FOC
        'Musa said that THE MEN beat a drum.'

    c. ***A:$_i$** [na Musa kpe [gànán **bagi-zì$_i$** ba nakàn]] na
        3RD.PL COMP Musa know COMP man-PL cut meat PRT
        'The men that Musa knows cut the meat'

Subject extraction in matrix clauses and unembedded relative clauses neither requires nor allows pronominal resumption in this way. In other words, subject extractions that do not cross clause boundaries do not trigger lower copy resumption in the language. Consider the following data.

(11) a. MATRIX SUBJECT *WH*- QUESTION – RESUMPTION IMPOSSIBLE

        Zě$_i$ [(*u:$_i$) gí eci] o?
        who 3RD.SG eat yam FOC
        'Who ate a yam?'

    b. MATRIX SUBJECT FOCUS – RESUMPTION IMPOSSIBLE

        Bagi-zì$_i$ [(*a:$_i$) gí eci] o.
        man-PL 3RD.PL eat yam FOC
        'THE MEN ate a yam.'

c.   UNEMBEDDED SUBJECT RELATIVIZATION – RESUMPTION IMPOSSIBLE

Bagi$_i$ [na (*u:$_i$)   gí   eci]   na
man   COMP 3RD.SG eat yam PRT
'The man that ate a yam'

What's more, the phenomenon of pronominal resumption in Nupe is limited entirely to subject positions[6], as we've seen in chapter two (cf. (37) from that chapter) and in this chapter (cf. (1e), (9d-f) and (ii) in note 6). Thus, the locus of the grammatical ill-formedness addressed by lower copy spell-out in cases like these is the region of the embedded clause that lies between the middle TP field and the left periphery (i.e. between C^0 and T^0). Similar cases abound in Swedish, Dutch, and Danish. In Swedish, embedded subject extraction is possible only when the lower copy is phonetically realized as a resumptive pronoun (Engdahl 1985). In Danish (Jacobsen & Jensen 1982) and certain dialects of Dutch (Maling & Zaenen 1978), structures involving embedded subject extraction that would otherwise be degraded are ameliorated when expletives are realized below C^0, instead of the trace/null copy. See Boeckx 2003 for other cases and discussion.

(12)   Swedish (Engdahl 1985:8)

a.   *Villet   ord   visste ingen   [hur __   staves]?
      which word knew no one COMP   is-spelled
      'Which word did no one know how it is spelled?'

b.   Villet   ord$_i$ visste ingen   [hur **det$_i$**   staves]?
      which word knew no one COMP 3RD.SG is-spelled
      'Which word$_i$ did no one know how it$_i$ is spelled?'

Danish (Jacobsen & Jensen 1982)

c.   *Vennen   [(som) han pastod [at __   havde lant
      friend-DEF COMP he   claimed COMP   had   borrowed
      bogen]]   var forsvundet.
      book-DEF was disappeared
      'The friend that he claimed had borrowed the book had disappeared.'

d.   Vennen   [(som) han pastod   [at   **der**   havde lant
      friend-DEF COMP he   claimed COMP there had   borrowed
      bogen]]   var forsvundet.
      book-DEF was disappeared
      'The friend that he claimed had borrowed the book had disappeared.'

Dutch[7] (Bennis 1986:243)

e. ?Wie denk je [dat __ komt]?
   who think 2ND.SG COMP come
   'Who do you think came?'

f. Wie denk je [dat **er** komt]?
   who think 2ND.SG COMP there come
   'Who do you think came?'

Lastly, *Comp-trace* effects in Nupe fail to arise whenever embedded clause T^0 is phonetically realized. In all the examples examined thus far in this chapter, embedded T^0 has been phonetically null. Recall that the exponent of T^0_{PAST} is a phonetically null morpheme (cf. chapter two). As illustrated below, long extraction of an embedded subject across overt C^0 becomes acceptable when T^0 is spelled-out (even without lower subject resumption or TP-adverbial adjunction).

(13)   SPELLING-OUT EMBEDDED CLAUSE T^0 MITIGATES *COMP-TRACE* EFFECT

a. *Zě Musa gàn [gànán __ nì enyà] o?
   who Musa say COMP beat drum FOC
   'Who did Musa say beat a drum?'

b. √Zě Musa gàn [gànán __ **è/à** nì enyà] o?
   who Musa say COMP PRS/FUT beat drum FOC
   'Who did Musa say is beating/will beat a drum?'

c. Bagi-zì Musa gàn [gànán __ *∅/√**è/à** nì enyà] o.
   man-PL Musa say COMP PST/PRS/FUT beat drum FOC
   'Musa said that THE MEN are beating/will beat a drum.'

d. Bagi-zì [na Musa kpe [gànán __ *∅/√**è/à** ba nakàn]] na
   man-PL COMP Musa know COMP PST/PRS/FUT beat meat PRT
   'The men Musa knows that are cutting/will cut the meat'

5.2.2. Analysis

Looking back over the data in the previous section, a generalization emerges. Long extraction of embedded subjects is possible whenever the output of the derivation is one in which the "edge" of the embedded TP projection (i.e. either a daughter of TP or T^0) is realized at PF. Mitigating adverbial expressions like *pányi lèé* occupy a TP edge (adjoined) position, as do resumptive lower copies in Spec, T and tense markers in T^0. Whenever the embedded TP edge is not marked at PF (i.e. whenever the tail of a non-

trivial chain is deleted and neither a TP adverbial nor tense marker is pronounced), the output of long subject extraction is illicit. What underlies this generalization? In the discussion that follows, I provide an answer.

The key fact around which everything will turn is a prosodic one. In Nupe, embedded unreduced/non-relative complementizers (e.g. *gànán*, *ke*, *kó:*) mark the right boundaries of Intermediate Phrases (INTPs). (Within the prosodic hierarchy, the Intermediate Phrase (also referred to as Phonological Phrase) represents the second most prominent prosodic domain after the Intonation Phrase.[8]) As such, the complement of embedded C^0 in the language is itself an independent prosodic domain. That is, fully propositional embedded TPs are obligatorily parsed as separate Intermediate Phrases in Nupe. In contrast, embedded TPs following reduced complementizers (e.g. *'án*) are not parsed as separate INTPs in the language. The evidence that unreduced non-relative embedded complementizers mark the juncture of two prosodic domains in Nupe comes from a number of observations. For one thing, a small pause separates C^0 from material in the embedded TP. Second, pre-pausal lengthening can be detected. That is, the complementizer is slightly lengthened when it occurs in an embedded position. A third line of evidence comes from the fact that following the phonetic realization of C^0, pitch is reset. The fourth and most compelling piece of evidence comes from the fact that otherwise regular phonological processes are blocked when C^0 introduces a complement clause. (14b) below illustrates that regressive assimilation is blocked in this environment, while (15b) highlights the fact that hiatus resolution is likewise blocked.

(14)   a.   PHRASE-INTERNAL REGRESSIVE ASSIMILATION IN NUPE:

/[gànán + u:]/ → [g**ù**n**ú**n u:]

Gùn**ú**n u: si   doko mafi Musa.
COMP   3rd.SG buy   horse please Musa
'That s/he bought a horse pleased Musa.'

      b.   ASSIMILATION BLOCKED ACROSS CP-TP PHRASE BOUNDARIES:

[INTP Zě Musa gàn gànán/*gùnún] [INTP u: má   du   o]?
     who Musa say COMP   3RD.SG know cook FOC
     'Who did Musa say knows how to cook?'

(15)   a.   PHRASE-INTERNAL HIATUS RESOLUTION VIA GLIDE FORMATION IN NUPE:

/[ke + u:]/ → [k**j**u:]

Kj   û: ko   ___   o?
what 3rd.SG grind   FOC
'What did s/he grind?

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b.   GLIDE FORMATION BLOCKED ACROSS CP-TP PHRASE BOUNDARIES:

[INTP Zě   u: bè   ke/*kj] [INTP u: má   du   na   o]?
    who 3RD.SG seem COMP   3RD.SG know cook PRT FOC
    'Who does it seem knows how to cook?'

Let's build on this observation. According to Nespor & Vogel (1986:190), Intonation Phrases (I-phrases) are isomorphic with syntactic constituents that are obligatorily parsed as I-phrases. Suppose the same were true for obligatorily parsed Intermediate Phrases. Then, the left edge of a fully propositional embedded TP (an obligatorily parsed Intermediate Phrase in the language) must be aligned with the left edge of INTP in Nupe. This is illustrated graphically below.

(16)   Syntactic structure: … V [CP C [TP …
        Prosodic structure: …………] [INTP …

Given that I-phrase/INTP phrasing must occur at the juncture between two prosodic words (Nespor & Vogel 1986, Schütze 1994), INTP will fail to align with TP if the edge of TP is phonetically unrealized because in that case its edge would lack a prosodic word and thus fail to constitute a potential prosodic boundary site. I understand "edge" in the Minimalist (syntactic) sense of the word (Chomsky 2001, 2007, 2008a): given a projection ZP, the edge positions of ZP include ZP's daughters (adjunct(s) and specifier(s)) and Z^0 (the projecting head). Given this, we can understand *Comp-trace* effects in Nupe as cases where an INTP and an embedded T projection fail to align as a consequence of the fact that the TP edge is phonetically unrealized when the copy of the subject is deleted at PF. When the TP edge is phonetically unrealized, the first prosodic word encountered in the parse of the embedded TP will be a verbal element residing in v^0. In this case, INTP will align with the v projection, a syntactic phrase that is *not* obligatorily parsed as an INTP in the language. The ensuing syntactic-prosodic mismatch triggers the judgment of ungrammaticality commonly referred to as a *Comp-trace* effect. This is schematized in (17) below.

(17)   a.   PROSODICALLY WELL-FORMED (Repair by realization of TP-initial modifier)

        Syntactic structure: … gàn [CP gànán [TP pányi lě [TP zě [T …
    √ Prosodic structure: ………………..] [INTP …

        b.   PROSODICALLY WELL-FORMED (Repair by resumption of embedded subject)

        Syntactic structure: … gàn [CP gànán [TP a: [T…
    √ Prosodic structure: ………………..] [INTP …

c. PROSODICALLY WELL-FORMED (Repair by spelling-out T^0)

Syntactic structure: … gàn [$_{CP}$ gànán [$_{TP}$ ~~zě~~ [$_T$ è/à …

√ Prosodic structure: ………………..] [$_{INTP}$ …
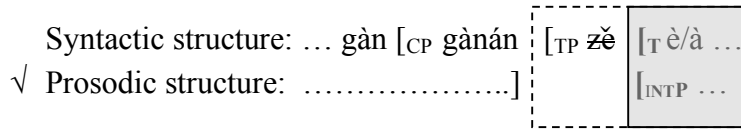
d. PROSODICALLY ILL-FORMED ($\varnothing$ TP-initial modifier, $\varnothing$ PF subject, $\varnothing$ T^0)

Syntactic structure: … gàn [$_{CP}$ gànán [$_{TP}$ ~~bagi-zì~~ [$_T$ $\varnothing$ [$_{vP}$ ~~bagi-zì~~ [$_v$ nì …

* Prosodic structure: ………………..] [$_{INTP}$ …
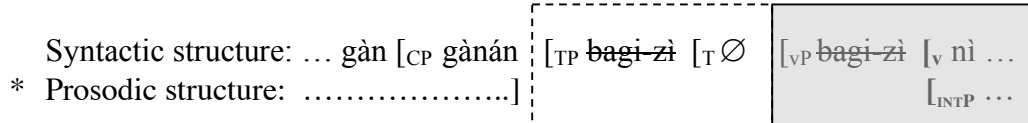
Stepping back, a broader generalization relating to the syntax-phonology interface can be surmised. Namely, the edge of an obligatorily parsed prosodic phrase must be phonetically marked. This observation was first made for I-phrases by An (2007a), who gave it the name "Intonational Phrase Edge generalization" (IPEG)[9].

(18) INTONATIONAL PHRASE EDGE GENERALIZATION (An 2007a)

The edge of an obligatorily parsed intonation phrase cannot be phonetically empty.

Nupe *Comp-trace* effects thus reduce to IPEG violations. Because embedded reduced complementizers (cf. (6b)) do not mark the right boundaries of Intermediate Phrases in Nupe (as mentioned at the outset of this section – see Kandybowicz to appear), extraction of embedded subjects across such complementizers will never trigger an IPEG violation. Hence, we derive the suspension of *Comp-trace* effects by C^0 reduction (cf. (6)). Furthermore, relative clause complementizers in the language (e.g. *na*) mark the *left* edge of INTP in Nupe, unlike the other complementizers in the language (Kandybowicz to appear). For this reason, subject extraction across a relative C^0 will never incur a violation of the IPEG: regardless of the PF realization of the relative TP following the complementizer, the edge of the relative clause will always be marked/phonetically realized by the relative complementizer (whose omission is always illicit). As such, relativization of a non-embedded subject constituent (e.g. (19) below) does not trigger a *Comp-trace* effect in the language.

(19) Bagi na __ ba nakàn na.
man COMP cut meat PRT
'The man that cut the meat'

5.3. THE FINER POINTS OF LOWER COPY RESUMPTION

Under the current analysis, Nupe *Comp-trace* effects are reducible to violations of prosodic well-formedness. Given the mechanics of chain linearization, once the lower

subject is extracted across C^0, an IPEG violation becomes inevitable if the lower subject copy is not pronounced or either a TP adverbial or tense marker is not independently realized in at least one parallel PF derivation. Viewed in this way, multiple copy spell-out in cases of long subject extraction across unreduced complementizers derives from prosodic conditioning. We can add the IPEG to our growing catalog of forces that shape the grammar of repetition.

In an effort to bolster the analysis of *Comp-trace* effects previously presented and at the same time gain a better handle on the circumstances under which multiple copy spell-out arises in this instance, I turn now to examine a few technical issues raised by lower copy resumption. I begin by investigating the nature of the resumptive occurrence itself.

5.3.1. *The Nature of the Resumptive Occurrence*

Thus far, I have simply assumed that the embedded pronominal subject in mitigated *Comp-trace* structures is a phonetically realized chain link. In other words, I have taken it for granted that the pronominal occurrence is a *copy* of the focused constituent. There is considerable evidence that these pronominal elements are in fact pronounced lower copies (cf. Lees & Klima 1963, Perlmutter 1972, Aoun 1982, Koopman 1984, etc.) and not, for instance, realizations of distinct base-generated elements of the numeration that are stranded by A-bar movement of the focused constituent (cf. Boeckx 2003). The evidence comes from two observations. First, recall that left-dislocation in Nupe, which is characterized by the occurrence of a lower pronominal, is impossible in embedded contexts (cf. (18c-e) in chapter four), unlike the resumptive pronominal in *Comp-trace* structures. Thus, the two pronominals differ in their derivational statuses. Furthermore, the concurrent realization of DP subjects and lower pro-forms is island-sensitive, suggesting that the two occurrences are related by movement, as the following data show.

(20)   √ RESUMPTION BELOW CLAUSAL COMPLEMENTS OF BRIDGE VERBS

a.   **Gana$_i$** etsu kpe   [gànán Musa gàn [gànán **u:$_i$**   ba nakàn]] o.
     Gana   chief know COMP Musa   say COMP 3RD.SG cut meat   FOC
     'The chief knows that Musa said that GANA cut the meat.'

b.   **Musa$_i$** etsu kpe   [gànán **u:$_i$**   gàn [gànán Gana ba nakàn]] o.
     Musa   chief know COMP 3RD.SG say COMP Gana cut meat   FOC
     'The chief knows that MUSA said that Gana cut the meat.'

c.   * RESUMPTION BELOW THE CLAUSAL COMPLEMENT OF A NON-BRIDGE VERB

     ***Bagi-zì$_i$** u: tán   Musa [gànán **a:$_i$**   si   doko] o.
      man-PL   3rd.SG pain Musa   COMP 3rd.PL buy horse   FOC
      'It pained Musa that THE MEN bought a horse.'

d. * RESUMPTION WITHIN A *WH-* ISLAND

*Zě$_i$ Musa kpe [ké **u:$_i$** si] o.
who Musa know what 3RD.SG buy FOC

e. * RESUMPTION WITHIN A SUBJECT ISLAND

*Etsu$_i$ [gànán **u:$_i$** si doko] tán Musa o.
chief COMP 3RD.SG buy horse pain Musa FOC
'That THE CHIEF bought a horse pained Musa.'

f. * RESUMPTION WITHIN A COORDINATE STRUCTURE

*Gana$_i$ etsu kpe [gànán [Musa tò **u:$_i$**] lo dzuko] o.
Gana chief know COMP Musa and 3RD.SG go market FOC
'The chief knows that Musa and GANA went to the market.'

In cases of resumption in the language, we have observed that the extracted DP and the lower pronominal must agree in number (cf. (9a-c)). Boeckx (2003) proposes that resumptive occurrences and their antecedents are base-merged together, but ultimately split apart when the antecedent undergoes A-bar movement, stranding the pronoun. If correct, this would imply that resumption does not involve lower copy pronunciation and thus that mitigated resumptive *Comp-trace* structures in Nupe are not instances of multiple copy spell-out. Boeckx argues that resumptive + antecedent splitting is conditioned by anti-agreement. Thus, resumptive stranding cannot obtain unless all of the φ-features of the antecedent and pronominal are mismatched. Any actual feature matching is viewed as accidental. It is clear that Nupe resumptive pronouns do not meet this condition of anti-agreement, nor do they agree in number accidentally. Nupe thus appears to be a counterexample to Boeckx's (2003) generalization.

I thus take it that there is firm evidence that the pronominal subjects that surface in grammatical *Comp-trace* structures are spelled-out copies of the heads of extraction chains, despite the fact that the two links bear no morphological or phonological resemblance. Ultimately, the reason that the lower copy is morphophonologically distinct from the realized chain head stems from the fact that it is a default nominal vocabulary item. Third person pronouns in Nupe exhibit a strong/weak alternation.[10] Although the strong and weak forms are for the most part in free variation (cf. (21a)), only the weak form may surface as the resumptive occurrence in *Comp-trace* configurations (21b).

(21) a. U:/wu:n bé.
3rd.SG come
'S/he came.'

b. Etsu$_i$ Musa gàn [gànán u:$_i$/*wu:n$_i$ nì   enyà] o.
   chief Musa say COMP 3rd.SG   beat drum FOC
   'Musa said that THE CHIEF beat a drum.'

Evidence that weak pronouns in Nupe are default nominals comes from extraction facts. When embedded (non-resumptive) subject pronominal expressions are long extracted and lower copy resumption ensues, the displaced (peripheral) occurrence and the lower resumptive copy agree in number features (as before), but fail to agree with respect to person features. As the data in (23) show, the resumptive occurrence is a third person form regardless of the person-features of the chain head, lending credence to the idea that the phonetically realized lower copy is spelled-out as a default nominal expression, that is, as a vocabulary item specified solely for grammatical category and number. (See (22) below.)

(22)   NUPE DEFAULT NOMINALS

     a.   [+NOML, +SG] ⇔ *u:*
     b.   [+NOML, +PL] ⇔ *a:*

As such, the surviving copies of the embedded subject extraction chain count as morphologically distinct from one another – the head of the chain is a non-default nominal expression, while the tail of the chain is a morphologically underspecified (impoverished) default form.

(23)   a. Mi: Musa gàn [gànán u:/*mi:/*a:/*yi: pa   eci] o.
           1ST.SG Musa say COMP 3RD.SG/1ST.SG/3RD.PL/1ST.PL pound yam FOC
           'Musa said that I pounded a yam.'

     b. Wo: Musa gàn [gànán u:/*wo:/*a:/*ye: pa   eci] o.
           2ND.SG Musa say COMP 3RD.SG/2ND.SG/3RD.PL/2ND.PL pound yam FOC
           'Musa said that YOU (singular) pounded a yam.'

     c. Wu:n Musa gàn [gànán u:/*a: pa   eci] o.
           3RD.SG Musa say COMP 3RD.SG/3RD.PL pound yam FOC
           'Musa said that S/HE pounded a yam.'

     d. Yi: Musa gàn [gànán a:/*yi:/*u:/*mi: pa   eci] o.
           1ST.PL Musa say COMP 3RD.PL/1ST.PL/3RD.SG/1ST.SG pound yam FOC
           'Musa said that WE pounded a yam.'

     e. Ye: Musa gàn [gànán a:/*ye:/*u:/*wo: pa   eci] o.
           2ND.PL Musa say COMP 3RD.PL/2ND.PL/3RD.SG/2ND.SG pound yam FOC
           'Musa said that YOU (plural) pounded a yam.'

    f. A: Musa gàn [gànán a:/*u: pa   eci]   o.
         3RD.PL Musa say   COMP 3RD.PL/3RD.SG pound yam FOC
         'Musa said that THEY pounded a yam.'

In the following subsection, I discuss the grammatical mechanism responsible for the insertion of the default resumptive occurrence.

5.3.2. *The PF Status of the Resumptive Occurrence*

Although the realization of a morphologically default vocabulary item ensures the distinctness of the surviving copies of the extracted embedded subject chain and thus facilitates linearization, the spell-out potential of the entire chain is underdetermined at the point of transfer of the lower C phase. That is, considerations of distinctness/linearization cannot drive the realization of the resumptive occurrence because at that point in the derivation, no other copies of the extracted subject have been spelled-out. I propose instead that the realization of the resumptive pronoun owes to the fact that the copy of the embedded subject is impoverished for person features (Bonet 1991). In the case of embedded subject extraction, as in (24) below, the copy of the extracted lower subject *etsu* 'chief' consists of a relatively simple morphosyntactic feature bundle, namely, [+NOM, +3rd, +SG] (abstracting away from Focus features), which remains in tact before the output is transferred to PF.

(24)   Etsu_i Musa gàn [gànán **u:_i**   gí eci]   o.
        chief Musa say COMP 3RD.SG eat yam FOC
        'It was THE CHIEF that Musa said ate a yam.'

Suppose that for some reason, this feature matrix is compromised prior to Vocabulary Insertion. That is, suppose the person features of the lower subject copy are deleted by the morphological operation Impoverishment (Bonet 1991). In this case, following deletion of its person features, the resulting feature matrix of the lower subject copy would be identical to the feature specification of the singular form of the default weak pronoun:

(25)   a. [+NOML, +3rd, +SG] − [+3rd] = [+NOML, +SG] → *u:*   (cf. (22a))
        b. [+NOML, +3rd, +PL] − [+3rd] = [+NOML, +PL] → *a:*   (cf. (22b))

As such, Impoverishment of the embedded subject would thus feed default resumption. To be fair, the precise conditions that trigger the Impoverishment of the embedded subject copy are unclear. However, the same can be said for the application of other morphological operations in DM (e.g. Fusion, Fission, Morphological Merger, etc.). In order to account for the ungrammaticality of the opposite spell-out relations in mitigated resumptive *Comp-trace* structures, namely, the pronominal realization of the chain head and the lexical realization of the lower copy (cf. (10)), it must be assumed that Impoverishment is only possible within the embedded C phase.

Now that we have an account of why the lower copy of the subject is phonetically realized and why it is spelled out as a default pronominal in cases of long embedded subject extraction, we can inquire into the productivity of lower copy resumption as a prosodic repair strategy. We find that multiple copy spell-out in this case is quite limited and as such, applies only as a last resort repair when none of the other devices for satisfying the IPEG (i.e. C^0 reduction, insertion of TP adverbials, and spelling-out tense markers) have applied. Evidence for this view comes from the fact that with the exception of resumption, all IPEG-satisfying scenarios may concurrently coexist in a given *Comp-trace* configuration, as illustrated below.[11]

(26) a. C^0 REDUCTION AND TP ADVERBIAL REALIZATION ARE COMPATIBLE

    Zě Musa kpe ['**án** **pányi lě** __ nì enyà] o?
    who Musa know COMP before PST   beat drum FOC
    'Who does Musa know that a long time ago beat a drum?'

    b. C^0 REDUCTION AND T^0 REALIZATION ARE COMPATIBLE

    Zě Musa kpe ['**án** __ **è/à** nì enyà] o?
    who Musa know COMP   PRS/FUT beat drum FOC
    'Who does Musa know is beating/will beat a drum?'

    c. C^0 REDUCTION AND RESUMPTION ARE INCOMPATIBLE

    ?/*Zě$_i$ Musa kpe ['**án** **u:**$_i$ nì enyà] o?
    who Musa know COMP 3RD.SG beat drum FOC
    'Who does Musa know that a long time ago beat a drum?'

    d. TP ADVERBIAL REALIZATION AND RESUMPTION ARE INCOMPATIBLE

    ?/*Zě$_i$ Musa kpe [gànán **pányi lě** **u:**$_i$ nì enyà] o?
    who Musa know COMP before PST 3RD.SG beat drum FOC
    'Who does Musa know that a long time ago beat a drum?'

    e. T^0 REALIZATION AND RESUMPTION ARE INCOMPATIBLE

    ?/*Zě$_i$ Musa kpe [gànán **u:**$_i$ **è/à** nì enyà] o?
    who Musa know COMP 3RD.SG PRS/FUT beat drum FOC
    'Who does Musa know is beating/will beat a drum?'

This constellation of facts is consistent with an analysis of resumption as a derivationally late PF repair strategy. If the IPEG is independently satisfied in the course of a derivation (as in (26c-e)), lower copy spell-out is unnecessary and hence uneconomical.

The reason it is tolerated in cases like (9a-c) is because it is forced. If a lower copy of the subject hadn't been phonetically realized in those cases, the IPEG would have been violated and at the point of transfer of the lower C phase, the derivation would have been cancelled. Thus, multiple copy spell-out in the Nupe nominal domain is conditioned by the IPEG, but just as in the verbal domain (cf. BRVRCs in the perfect (chapter three)), it is constrained by principles of pronunciational economy.

5.4. SUMMARY AND CONCLUDING REMARKS

In this chapter, I presented a third instance of multiple copy spell-out in Nupe, this time from the nominal domain. I have argued that instances of embedded subject extraction in the language are effectively cases in which both the head and a lower copy of the chain are phonetically realized. In these constructions, the lower copy is spelled-out as a morphologically default resumptive pro form, an outcome I attributed to morphological Impoverishment. In this way, the surviving copies of the chain are differentiated at PF, thus posing no difficulty for the linearization of multiple copies. The conditioning factor behind the pronunciation of the lower resumptive copy and the grammatical basis for the *Comp-trace* effect in the language, I argued, is a prosodic constraint that requires the edge of the embedded T projection, an obligatorily parsed prosodic domain, to be phonetically marked. Following An (2007a), I referred to this condition as the Intonational Phrase Edge Generalization. I showed that lower copy pronominal resumption applies late in the derivation as a last resort prosodic repair strategy and that its application is limited by conditions of pronunciational economy.

This investigation into lower copy resumption in Nupe has three immediate payoffs. The first is a radically new understanding of the *Comp-trace* effect that is less rooted in the narrow syntactic derivation than in the properties of interfacing sub-systems of grammar, namely, syntax and phonology. For a full PF-reductionist account of the *Comp-trace* effect, the interested reader is referred to Kandybowicz 2006, where I argue that *Comp-trace* violations are purely prosodic and do not represent a homogeneous phenomenon cross-linguistically. The second consequence of the investigation is that Nupe lower copy resumption represents a counterexample to Grohmann's (2000, 2003) theory of lower copy spell-out. Although his analysis of resumption as a PF repair strategy dovetails with the account put forth in this chapter, it incorrectly predicts that the resumptive occurrence and the antecedent will be related by anti-local movement. To the extent that the surviving copies in Nupe *Comp-trace* structures span different phases, we have no direct evidence that chain formation failed to respect anti-locality. Thus, the existence of distanced resumptive occurrences and antecedents, as in nominal multiple copy spell-out structures in Nupe, is ultimately mysterious under Grohmann's theory of copy spell-out. Third, the analysis of lower copy pronominal resumption enables us to expand our catalog of the conditions that comprise the grammar of repetition. In addition to phonological requirements like ToRC that bar prosodically unsupported tonal material (cf. chapter three) and morphological well-formedness conditions such as the Stray Affix filter (cf. chapters three and four), we can add prosodic requirements such as IPEG to the list of factors conditioning multiple copy spell-out at PF. In this way, we reach the

conclusion that the grammar of repetition is shaped by all interacting subsystems of the PF component (i.e. morphology, phonology and prosody), a relatively unsurprising conclusion given the architecture of the language faculty. In the next chapter, I shed some light on why this is the case.

NOTES TO CHAPTER 5

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[1] Notable exceptions include Deprez 1994, Kim 1999, Szczegielniak 1999, Hoge 2001, Pesetsky & Torrego 2001, Roussou 2002, 2006, Ishii 2004, Bayer 2005, Rizzi 2006, and Rizzi & Shlonsky 2007, among others.

[2] This chapter will not deal with cases of so-called "Anti-*Comp-trace* effects" in which subject extraction is licit *only* in the presence of an overt complementizer. As shown below, these effects can be found in Nupe, English (Pesetsky 1982), and Norwegian (Taraldsen 1986, Keer 1999), among other languages.

(i)   Nupe

    a.   Bagi **na** __ ba nakàn na
        man COMP cut meat PRT
        'The man that cut the meat'

    b.   *Bagi __ ba nakàn na
        man cut meat PRT

    English

    c.   [The linguist **that** __ wrote *Barriers*] retired.
    d.   *[The linguist __ wrote *Barriers*] retired.

    Norwegian (Taraldsen 1986)

    e.   Jeg vet hvem **som** __ vant.
        1ST.SG know who COMP won
        'I know who won.'

    f.   *Jeg vet hvem __ vant.
        1ST.SG know who won

    g.   Hvem **som** __ vant
        whoever COMP won
        'Whoever won'

    h.   *Hvem __ vant
        whoever won

Although they appear to be the inverse of *Comp-trace* effects, I suspect that anti-*Comp-trace* effects are rooted in entirely orthogonal grammatical processes and that the proper analysis of one will shed little to no light on the other.

[3] Kandybowicz & Baker (2003) argue that modal-auxiliary verbs like *má* are restructuring verbs and as such do not take clausal complements. In this way, extraction across domains inhabited by these verbs

does not constitute an island violation. I cannot begin to summarize the evidence for this conclusion in this note. The reader is referred to the previously cited article for this information.

[4] As in the previous chapter, I adopt a promotion analysis of relative clauses (Vergnaud 1974, Kayne 1994). As such, relative clause constructions involve the extraction/promotion of the relative clause head from a TP-internal position to a clause-peripheral landing site where it is phonetically realized.

[5] See Kawu 1990 for a discussion of the few exceptions to this generalization in Nupe.

[6] In Edo and other areally related languages, resumption is limited to two positions: the subject position and the first object (i.e. the goal) of a double object construction (Stewart 2001). Extraction from embedded double object constructions in Nupe does not trigger resumption in this way, as shown in the following examples.

(ii)   a.   Etsu$_i$ Musa gàn [gànán Gana yá (*u:$_i$)   èwò]   o.
                chief Musa say COMP Gana give 3RD.SG garment FOC
                'Musa said that Gana gave THE CHIEF a garment.'

        b.   Èwò$_i$ Musa gàn [gànán Gana yá   etsu (*u:$_i$)]   o.
                garment Musa say COMP Gana give chief 3RD.SG FOC
                'Musa said that Gana gave the chief A GARMENT.'

[7] The situation in Dutch is complex and requires further examination. For one thing, 'there' insertion does not seem to mitigate *Comp-trace* effects if the embedded verb is transitive (Bennis 1986:244) or if the extracted subject is relativized, topicalized, or cleft (Bennis 1986:245-246). Second, Dutch seems to divide into dialects that tolerate *Comp-trace* violations and others that do not. See Maling & Zaenen 1978, Bennis 1980, Reuland 1983, and Koopman 1983 for description and analysis of this variation.

[8] The existence of this domain is admittedly controversial. For example, Selkirk (1984) argues that phonological phrases are not motivated for English. While this may turn out to be true with regard to English prosody, I assume the domain may be motivated in other languages. For example, Truckenbrodt (1995) argues for the existence of the phrase in a number of other languages. The prosodic hierarchy I am assuming appears below.

(iii)   PROSODIC HIERARCHY

        Utterance
        Intonational Phrase (I-phrase)
        Intermediate/Phonological Phrase (INTP)
        Prosodic word
        Foot/syllable

[9] A revised and generalized version of IPEG appears in An 2007b as BONE ("Ban on Null Edge" generalization). BONE extends IPEG's jurisdiction to both the left and right edges of obligatorily parsed I-phrases.

[10] The strong/weak dichotomy is evident as far as third person singular pronominal forms are concerned, as shown in (21). However, the same cannot be said for the third person plural forms, which always take the form *a:*. That is, regardless of whether they appear in the syntactic positions that trigger default resumption or not, the morphophonological form of the third person plural pronoun is always the same. This does not mean that third personal plural forms in the language lack a morphological strong/weak alternation. It

could very well be the case that both forms exist morphologically, but that their phonological realization is identical. That is, I leave room for the possibility that both forms are homophonous.

[11] The other logically possible combination not considered in (26), namely, TP adverbial realization + T^0 realization cannot be tested because the two overt tense markers *è* 'PRS' and *à* 'FUT' are semantically incompatible with the sole TP adverbial in the language *pányi lě* 'a long time ago'.

CHAPTER 6

REPETITION AND BEYOND

Once the copy theory of movement is assumed and the existence of derivationally-introduced phonetically null traces is denied, the perennial tension between descriptive and explanatory adequacy arises. If movement operations are redefined as instances of Copy and Merge as conceived in the Minimalist Program, the output of a narrow syntactic computation involving displacement will yield at least two non-distinct copies. Formally speaking then, the existence of multiple-copy chains is guaranteed by the copy theory of movement. Nonetheless, instances of multiple copy realization are rare. Nunes (1995, 1999, 2004) offers a way of resolving this tension by shifting the locus of the problem to PF convergence. If multiple non-distinct links of a chain are phonetically realized at PF, the LCA will fail to yield a proper linear ordering of the chain and the resulting derivation will crash. The deletion of all but one chain link (Chain Reduction), thus follows as a consequence of the need to satisfy a PF Bare Output condition, namely, linearization of syntactic structure. This doesn't preclude the existence of multiple copy spell-out, however. It merely accounts for the relative low frequency of repetition. According to Nunes, multiple copy spell-out is possible whenever at least one chain link is rendered distinct from the others, thus facilitating linearization. Nunes identifies morphological reanalysis, formulated as Fusion in the Distributed Morphology framework, as the vehicle by which a chain link may be distinguished and thus escape deletion at PF. Chomsky (2005) proposes another way of reconciling the tension. He claims that the existence of multiple copies at PF places two design considerations in direct conflict: processing ease and minimization of computation. The former design principle, crucial for parsing and perception, would be achieved most effectively if all copies were phonetically realized. If no copies were deleted, Chomsky suggests, comprehension/parsing problems associated with locating gaps would be sidestepped. On the other hand, the latter desideratum, minimization of computation, demands the elimination of all but a single copy so that the phonological component can ignore the others. Chomsky maintains that the low frequency of multiple copy spell-out structures is a consequence of the fact that the design principle under which the language faculty evolved and operates is computational minimization. However, because minimization of computation is a design principle rather than an absolute constraint, the default outcome of deleting all but a single chain link at PF can be overridden by special circumstances in which interface conditions force the realization of additional copies. Chomsky, citing work by Boškovic (2001), Hiraiwa (2005) and Landau (2006), points to morphological requirements such as the Stray Affix filter (Lasnik 1981, 1995) as one pathway into multiple copy spell-out. My investigation into the grammar of repetition in Nupe suggests that there are several pathways into multiple copy realization, some of them morphological, some of them phonological/prosodic, others syntactic. By cataloging the forces that shape the grammar of repetition, the previously mentioned descriptive-

explanatory tension wrought by the copy theory of movement can be resolved in a satisfying way, thus lending both empirical and conceptual support to the copy theory of movement. This is the primary contribution of the book.

These findings can be situated in a broader context. In recent writings, Chomsky (2007, 2008a,b) argues for the primacy of the relationship between the internal language faculty and the external Conceptual-Intentional system (C-I), something hinted at in his previous work. In this way, he claims, language evolved as a system optimized relative to C-I, with the mapping to the Sensorimotor system (SM) functioning as a secondary/ancillary procedure. The mapping to SM, which Chomsky refers to as "externalization", is regarded as a highly variable and complex operation that is subject to large-scale historical accident. The reason for this, Chomsky claims, is that externalization involves mapping a (relatively speaking) newly evolved and optimally designed computational system to a Sensorimotor module that has been intact in the species for hundreds of thousands of years, effectively posing a cognitive problem of sorts. Chomsky (2008b) proposes that parametrization reflects the different, but limited ways of solving this cognitive problem. Because there is no single solution to the cognitive problem posed by the syntax-PF mapping, language variation can be thought of as restricted entirely to the PF wing of grammar. This provides a basis for understanding the conclusion reached in this book that there are a number of separate pathways into PF repetition. These pathways can be morphological, phonological or prosodic in nature because these are the grammatical systems engaged in language externalization. Syntactic pathways, too, are to be expected, given that copies are built and arranged by narrow syntactic operations like Copy and Merge. It is therefore unsurprising that we should find each pathway exploited in natural language. Nupe is one language that remarkably manipulates all available channels. On the basis of my investigation into PF repetition in the language, I reached the following conclusions:

(1)   a.   CONDITIONS ON MULTIPLE COPY SPELL-OUT

A linguistic object λ, containing multiple copies of a given occurrence, is a legitimate PF output if and only if:

(i)   λ can be mapped onto a linear order, and
(ii)   λ was constructed in accordance with principles of economy

b.   FORCES SHAPING THE GRAMMAR OF REPETITION

(i)   Stray Affix filter (Lasnik 1981, 1995)   [Morphological]
(ii)   Tonal Reinforcement condition   [Phonological]
(iii)   Intonational Phrase Edge Generalization (An 2007a,b)   [Prosodic]
(iv)   Parallel chain formation   [Syntactic]

An interesting possibility raised by the discovery of syntactic conditioning factors like parallel chain formation is whether the grammar of repetition includes other non-

external pathways into multiple copy realization. One possibility that comes to mind in this regard, given recent trends in the literature, is multi-dominance. In the wake of Chomsky's (2001) views on phrase structure and movement, there has been renewed interest in the geometrical possibilities offered by multiple domination structures. See Abels 2004, Citko 2005, Chen-Main 2006 and references therein. If nodes are allowed to be immediately dominated by multiple parent nodes, then it becomes possible to reconceptualize the copy theory of movement. Rather than creating a new copy, movement can be modeled as the creation of a new immediate dominance relation. For example, relating node F to node A in the tree below would not involve displacement along these lines, just the addition of a new tree-geometric relation in which F is immediately dominated by A as well as D.

(2)

A

F^i B

C   D

E F^i
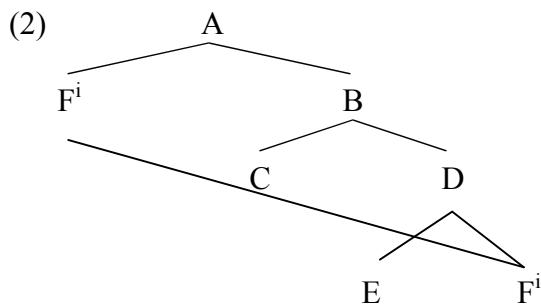
There is a sense in which the structure in (2) might feed repetition. If node F is immediately dominated by node A, then F asymmetrically C-commands node C, among other nodes. According to the LCA, then, F must precede C. If the same algorithm considers the relation between node C and node F's other dominance relation, namely the one in which F is immediately dominated by D, then node C must precede F in the linear order because C asymmetrically c-commands the D-dominated F node. Clearly, these instructions conflict, posing a potential danger for PF convergence. If F were phonetically realized twice, however, it could both precede and follow node C. As long as the computational system does not regard each pronounced occurrence of F as a copy, the familiar conceptual difficulties outlined in chapter one do not necessarily arise. In this way, multi-dominance structures like (2) above may be viewed as potential sources of repetition. Although an analytical possibility, this approach to multiple pronunciation does not strike me as particularly promising. I mention it here only in the context of other possible non-external pathways into PF repetition afforded by recent theories. I leave it for future research to flesh out the details of the proposal and determine to what extent the analysis is suited to the empirical particulars it is held to characterize.

Another potential syntactic pathway into repetition is sideward movement (Nunes 2001, 2004). Nunes points out that theories of movement stipulating that copied elements must be merged with syntactic objects containing the original constituent (i.e. internal merge) have the undesirable consequence of resurrecting D-Structure. He proposes that the combined elimination of D-Structure, the availability of generalized transformations, and the possibility of parallel derivations made available under

Minimalist assumptions allows copied elements leeway with respect to their merger targets. In particular, he claims that in addition to targeting an internal merger site, a copied element may directly merge with a structure that does not contain the original copy, an instance of so-called sideward movement. This possibility is illustrated graphically below for the sideward-moved constituent B, prior to the merger of A and C.

(3)

$$
\begin{array}{cc}
A & C \\
\ldots B^i \ldots & B^i \quad\quad D \\
& \ldots
\end{array}
$$
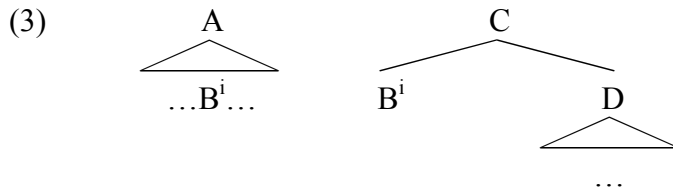
Under the assumption that chain links must stand in a c-command relation to one another, sideward movement represents an instance of narrow syntactic copying that is independent of chain formation. In chapter four, we observed that copies not directly related by chain formation could independently surface at PF giving the appearance of multiple copy spell-out, as long as Bare Output conditions like linearization are met. If the computational system permits occurrences to be related through sideward movement, as Nunes proposes, then we should expect to find multiple copy spell-out in such derivations given the appropriate circumstances. Whether other documented instances of copy repetition can reasonably be attributed to sideward movement is also something I leave for future research.

I began this book by motivating an investigation into the grammar of repetition on the grounds that relatively little is known about it. Surely, this is still the case, but at this point in the project we have a better sense of the value of the research. Inquiry into multiple copy spell-out in Nupe has revealed a number of implications for the theory of grammar. These include, but are not limited to: empirical and conceptual support for the copy theory of movement, the nature and inner-workings of the syntax-phonology interface, new insights into the mechanics of PF chain resolution, the unification of head and phrasal movement, new perspectives on parallel chain formation, and the revision of the grammatical status of *Comp-trace* effects. It is my hope that the initial steps taken in this book will serve a foot holes for these and related lines of research.

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