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A Case Grammar of Ga'anda

A dissertation submitted in partial satisfaction of the requirements for the degree Doctor of Philosophy in Linguistics

by

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The dissertation of Roxana Ma Newman is approved, and it is acceptable in quality and form for publication on microfilm.

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ABSTRACT OF THE DISSERTATION

A Case Grammar of Ga'anda

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This dissertation is a description of the syntax of Ga'anda, a language in northeastern Nigeria belonging to the Biu-Mandara branch of the Chadic language family.

The descriptive framework incorporates Fillmore's case grammar notions into Chomsky's model of transformational grammar. The modification of the base component to include case categories has proved essential in the analysis of the Ga'anda verbal system, where many "transitive" verbs may occur in two semantically distinct transitive constructions in simple sentences. The two transitive types are attributed, in terms of case grammar, to the ability of two different deep structure cases to each function as the direct object of the sentence in surface structure.

In Chapter 1, seven case relationships between Ga'anda verbs and their nouns are posited. These are Agentive, Dative, Objective, Benefactive, Instrumental, Locative, and Essive. In Chapter 2, verbs are definitively classified

according to the number and range of cases which they may take. The set of ordered transformations which map deep structure cases in the proposition into surface structure functions and sentence word order is presented in Chapter 3. Chapter 4 discusses in detail the various lexical and syntactic features of the category Noun, including the formation of adnominal constructions. In Chapter 5, the syntax of emphasis, question words, and relative clauses is analyzed as a whole since these constructions undergo shared transformations. Word and sentence negation are presented in Chapter 6. Chapter 7 deals with the five verb particles in Ga'anda and illustrates how they semantically extend the verb. In Chapter 8, the copula verb in association with the Objective, Essive, and Locative cases is shown to underlie all so-called "be" and "have" type constructions. Finally, in Chapter 9, the analysis of adjectives as verbs is presented.

Introduction

Ga'anda is a Nigerian language belonging to the Biu-Mandara branch of the Chadic language family (see Newman and Ma 1966). Its closest relatives are Hona, Tera, and Jara, with which it forms a distinct cluster within the Biu-Mandara branch. It is spoken by approximately ten thousand speakers in Ga'anda District, Adamawa Province in northeastern Nigeria. The principal villages are Ga'anda (pronounced [kə̀ándə̀]), Gabin ([kə́bùn]), and Boga ([pə̀kə̀]). This grammar is based on the speech of Ga'anda village, which is considered the major dialect of the language.

Ga'anda is a previously unstudied language. The only published material on this language is the list of words and short sentences compiled by C. K. Meek (1931:389-95) under the dialect name Gabin.

This grammar is a formal account of major syntactic constructions in Ga'anda. It is not intended to be a complete study. The aim of this grammar is to present the most important and most interesting aspects of Ga'anda syntax as explicitly and as cohesively as possible. The model of transformational grammar used here is that of Chomsky (1965), although I depart from it by including the modifications in the base component proposed by Fillmore (1968a). I will first outline the major components of this model and then discuss the improvements which result

from incorporating Fillmore's proposals.

A grammar of Ga'anda is conceived of as first having a set of context-free deep structure base rules which generate the basic grammatical categories of the language as linearly ordered strings of symbols. These base rules are simple expansion rules of the type X ---> YZ; they rewrite a symbol on the left side of the arrow into two or more immediate constituents on the right side. The relation of X to YZ is one of dominance. Base rules are followed by ordered transformational rules, which alter and manipulate specified strings of category symbols into surface structure sentences containing grammatical and lexical formatives (morphemes). Transformations perform three types of operations on deep and intermediate structure strings: a) deletion: XYZ ===> XZ or XØZ; b) permutation: XYZ ===> XZY; and c) addition or segmentalization: $XY_{<+W>}Z$ ===> XYWZ. This last operation segmentalizes morphemes generated as syntactic features attached to category symbols. Most transformational rules are obligatory; those that are optional are so marked.

The surface structure output of the transformational rules forms the input to the phonological component, which further specifies the phonetic form of all the formatives. A grammar also has a lexicon which has a two-fold function. First, it provides a list of all the lexical formatives (lexemes) in the language, indicating the major syntactic

categories to which each belongs by means of subcategorization features. For example, $X_{<\alpha F>}$ means that the lexeme X is categorizable by the feature <F>, (where the variable α ranges over the values plus + and minus -). In addition, lexemes are marked with other syntactically relevant selectional features which are needed for the operation of the transformational rules. Second, a lexicon provides an abstract phonological representation of the lexemes. Information stored in the lexicon enters the generative process in two separate stages according to the two functions. First access to the lexicon is available immediately after generation by the base rules and before application of the transformation rules. At this point, lexical insertion takes place by means of a convention which states that any item in the lexicon is insertable when its categorial features match the generated grammatical category. Insertion must take place here since many lexical features and certain lexemes are referred to in the structural descriptions of transformations. The second access to the lexicon is available after all transformational rules have applied. At this time, the phonological specifications of the lexemes and grammatical formatives are added so that they may be further modified phonetically by following morphophonemic and phonetic rules. In this grammar, neither a lexicon nor a phonological component are provided. However, in many of the discussions, lexical features are presented in detail (see

particularly the chapters on "Verb Subcategorization" and "Noun Phrase") to show how transformations depend on them. Morphophonemic and phonetic rules are presented only when they are needed to understand the surface representations of words.

The decision to incorporate the "case" notions of Fillmore as primitives in the base or categorial component is based on the conviction that his analysis is substantially correct, both as a general linguistic model and as a particularly reasonable analysis of Ga'anda. The advantages of his proposals can be discussed in terms of the topics deep vs. surface structure and lexical subcategorization vs. selection.

According to Chomsky, the notion of deep structure is defined as an abstract level of structure in which all the grammatical material necessary for the semantic interpretations of sentences is first generated. The notion of surface structure is defined as a concrete level of structure in which more than one string can have the same semantic interpretation, the difference between them being only a matter of a different superficial arrangement of the same formatives. For example, the passive construction or the "double object" construction in English are simple examples where transformations merely rearrange unique deep structure strings into at least two surface structure variations of the same semantic content. However, Chomsky himself has admitted (1965:119-20) that his concept of deep

structure is not able to capture the semantically relevant relationship between intransitive and transitive pairs of the same verb. According to his approach, the Ga'anda sentences /na təɓɗa xwar-ta/ 'the calabash will dry' and /na nuɗa xwar-an-ta təɓɗa/ 'the woman will dry the calabash' would have two different deep structure configurations even though the semantic interpretation of the verb /xwar/ and the noun /təɓ/ are exactly the same in each sentence.

In addition, a verb like /xwar/ has to have two separate entries in the lexicon as though these were unrelated, one being marked with the strict subcategorization feature [NP__] and the other with the strict subcategorization feature [__NP]. Moreover, the NP in each of these features will be marked with identical selectional features. Obviously a grammar with such a redundant lexical apparatus can become extremely costly. For a language like Ga'anda where most verbs have this dual aspect, such a grammar misses essential insights.

One of the advantages of Fillmore's analysis is that it preserves the obviously correct distinction between deep and surface phenomena at the same time that it provides the base component with categories which conceptually allow consistent semantic interpretations. Nouns are governed by verbs within a system of particular labelled semantic-syntactic relationships. These nouns are subsequently allowed, by certain hierarchic rules of selection, to become "subject, object" etc. in the surface structure of

actual sentences. But whatever their function at the surface level, their semantic-syntactic relation to the verb remains constant. The result of using a case categorial base is that the deep and surface levels are linked up together in two meaningful ways: a) different surface structures using the same case-labelled lexical items are meaningfully related; and b) surface structures using different lexical items in the same case-labelled relationships are meaningfully related.

Another advantage, due to the fact that verbs are classified according to case labels, is that the need for strict sub-categorization features is eliminated. Only selectional features involving the case labels themselves need be included in the lexicon. This leads to a natural and comprehensive classification of verbs and nouns, and contributes to an overall simplification of the syntactic features on lexical items.

Adopting case relationships in the base has proved to be particularly useful in the analysis of the Ga'anda verbal system. For example, many of the so-called "transitive" verbs can occur in two semantically distinct transitive constructions in simple sentences. Within a case model of grammatical relations, the two types can be attributed to the ability of two different deep structure cases to function as direct object. Within a configurational model of grammatical relations, only one type could be generated as a simple sentence, the other probably having

to be derived as an embedding within some sort of abstract "performative" or "causative" predicate, according to some recent transformational theories.

The case grammar of Ga'anda presented here is not intended to argue the respective formal merits of a pure Chomskyan base structure vs. the semantically characterized Fillmorean base structure. The intent is descriptive, to account for certain syntactic phenomena of a particular language as precisely as possible within a given linguistic model.

The grammar is organized into various chapters, each having just those base and transformational rules pertinent to the subject under discussion. Chapter 1 outlines the basic case categories of Ga'anda and the tense and aspectual system. Chapters 2 and 4 discuss in further detail the lexical categories, Verb and Noun, respectively. Chapter 3 presents transformations for selecting deep structure cases which are to function as subject, object, and indirect object, and arranges these into their correct surface structure word order. Chapter 5 deals with word questions, sentence emphasis, and relative clauses, constructions which undergo a set of shared transformations. Chapter 6 describes the systems of auxiliary and word negation. Chapter 7 discusses some of the syntactic behavior of verb particles. Chapter 8 treats so-called "verbless" constructions as a unitary set of propositional types. Chapter 9 describes the verb-like properties of

adjectives. Finally, there are two appendices. Appendix A lists all of the base rules; Appendix B lists all of the transformational rules, by chapter and page number.

The transcription used in the Ga'anda examples is for the most part morphophonemic rather than phonemic. Vowel length is indicated by double vowels. Tone is not marked except where it is specifically relevant to a particular discussion. For reference, the following chart presents the phonemic inventory of Ga'anda.

Consonants

		labial	alveolar	palatal	velar	lab-ized
Obstruents:	vl.	p	t	c	k	kw
	glot.	ɓ	ɗ	'y	'	
	pre-n.	mb	nd	nj	ŋg	ŋgw
Fricatives:	vl.	f	s	sh	x	xw
	lat.		ɬ			
Resonants:	nas.	m	n		ŋ	
	tap.		r			
	lat.		l			
	semi-v.			y	w	

Vowels

High:	i	ə	u
Low:	e	a	o

Tones

H = ´

M = ˈ

L = ˋ

Throughout the grammar, various symbols and notational devices have been used, which are explained below.

--->	rewrites as (base rules)
===>	transforms into (transformational rules)
=≠=>	does not transform into
=	is equivalent to (used in examples of optional transformations)
> , <	becomes, comes from (phonological rules)
⊁ , ⊀	does not become, does not come from
*	ungrammatical
**	ungrammatical as stands, but will become grammatical by a later obligatory transformation
$[X]_Y$	X belongs to or is dominated by the syntactic category Y
$X_{<+Y>}$	X has the syntactic or lexical feature Y
$X_{<-Y>}$	X does not have the syntactic or lexical feature Y
$\begin{bmatrix}<+X>\\<+Y>\end{bmatrix}$	X and Y co-occur in a feature configuration
+[X Y]	X and Y occur in the case frame feature
(X)	X is optional
...X...	X occurs, without regard to its linear position in the string
$\begin{Bmatrix}X\\Y\end{Bmatrix}$ or $\{X,Y\}$	X or Y

$\begin{bmatrix} X \\ Y \end{bmatrix}$ Z > $\begin{bmatrix} p \\ q \end{bmatrix}$ If X, then p; if Y, then q

X > Y / ___ Z X becomes Y in the environment Z

Chapter 1

Modality and Proposition

The first rules which generate sentences in Ga'anda are as follows.

B1. SENTENCE ----> #SEN (ADV) (Q)#

B2. SEN ----> (E) S

B3. S ----> MOD PROP

Base rule B3 generates the major constituents of a core sentence as MOD and PROP. The first half of this chapter will outline the structure of MOD, a category which comprises tense, aspect, and auxiliary negation. The second half will outline the structure of PROP and its semantic-syntactic case categories. The category ADV (adverbials) is not generally treated in this grammar. However, there are some very specific observations about the sentence adverbials IF and BEC in relation to negation in Chapter 6. The categories Q (sentence question) and E (sentence emphasis) are both discussed in Chapter 5.

B4. MOD ----> AUX (hab)

B5. AUX ----> $\begin{Bmatrix} aux_1 \\ aux_2 \end{Bmatrix}$ (neg)

MOD consists of the category AUX and the optional auxiliary aspect hab. This aspect (marked by the morpheme /$ə/) conveys the notion of repeated or customary action. Although it is generated as a co-constituent of all the

tenses of AUX, it may not co-occur with the continuous tense. This must be stated as a co-occurrence restriction on the morpheme /$ə/. AUX itself is comprised of five tenses, sub-categorized into two syntactically motivated subsets on the basis of the form of the verb. Verbs in $\underline{aux_1}$ are finite verb forms; verbs in $\underline{aux_2}$ are verbal nouns (see Nominalizer transformations later). Each of the five tenses may be optionally negated.

B6. aux_1 ----> $\begin{Bmatrix} pst\ (sqt) \\ sbj\ (imp) \end{Bmatrix}$

B7. pst ----> $\begin{Bmatrix} aor \\ prf \end{Bmatrix}$

There are three tenses in $\underline{aux_1}$, the two past tenses (aorist and perfective) and the subjunctive. The tense aor indicates simple present occurrence of the action or state indicated by the verb without regard to whether it is still on-going or completed whereas the tense prf indicates that the action or state is actually past and completed. In spite of the semantic characteristics of the aorist tense, it is grouped with the perfective under the category pst for a variety of syntactic reasons (e.g. co-occurrence with sequential aspect, tense neutralization, etc.). The form of aor is phonologically [Ø], that of prf marked by /ə/.

1. Ø kar wanda səm-ta — The boy refuses to eat
   aor refuse boy eat

2. ə kar wanda səm-ta The boy refused to eat
prf

Both past tenses may take an optional sqt or sequential aspect. This aspect denotes that the past action is in a temporal sequence or succession to some other action. sqt is most used in narration and relating sequences of events in the past. In the examples below, aor + sqt appear in the subordinate clause, and prf + sqt in the main clause. The form of sqt is a suffix /kə/ attached to the verb root.

3. Ø ʃəf-kə-i wanda, ə tə-kə-an
aor hit sqt I boy prf cry sqt he
(When) I hit the boy, (then) he cried

4. Ø .xəm-kə cini kə xuran, ə mər-kə-an
aor fall sqt lion inside prf die sqt he
(When) Lion fell inside, (then) he died

5. Ø ʃə raka-kə-mən, xasxas-mən
aor hab run sqt we healthy we
(When) we (hab) run, we are healthy

6. ə ʃə raka-kə-mən ə walwurca
prf hab
(Then) we (hab) ran in the mornings

The above examples illustrate the habitual marker with the two past tenses and the sequential aspect. For examples of past habitual without the sequential, refer to the discussion of transformation T5.7 in Chapter 5.

In addition to the difference in tense markers, there are some tone changes on the verb root associated with these tenses when they occur either with the negative

marker or the sequential marker, but we will not discuss these tonal differences at this time.

The third tense of $\underline{aux_1}$, the subjunctive, does not denote any specific time with respect to the occurrence or state of an action. Rather, it expresses the notion of obligation or desire that an action be done. It is thus most frequently used as the tense of sentence complements. sbj may take an optional imp or imperative aspect, which, if chosen with the second person pronoun subject, forms the basis for deriving imperative constructions. The form of the subjunctive marker is /kə/.

7. kə kar wanɗa səm-ta
   The boy should refuse to eat

8. kə ʃə raka-ən ə walwurca
   You should (hab) run in the mornings

9. kə ʃəf-ən wanɗa ===> 10. ʃəf-u wanɗa
   You should hit the boy Hit the boy!

B8. aux_2 ----> $\begin{Bmatrix} con \\ fut \end{Bmatrix}$

The tense set $\underline{aux_2}$ consists of the continuous and future tenses. con denotes action which is in progress and has not stopped (in contrast to aor, which need not imply that the action is still on-going). fut indicates an action which will occur in the future. The form of con is phonologically [Ø], that of fut marked by /na/. Subject nouns and pronouns immediately follow the $\underline{aux_2}$ tense markers (in contrast to $\underline{aux_1}$ tenses, where they all follow the verb

root). The subject pronouns in con take the disjunctive form; with fut, they are a suffixed set attached to /na/.

11. Ø ŋgət kar səm-ta — I am refusing to eat
con I

12. Ø wanda raka-ta — The boy is running
con

13. na-i kar səm-ta — I will refuse to eat
fut I

14. na wanda ʃə raka-ta — The boy will (hab) run
fut hab

B9. PROP -----> VBL ($K_{\langle D \rangle}$) ($K_{\langle A \rangle}$) ($K_{\langle O \rangle}$) ($K_{\langle B \rangle}$) ($K_{\langle I \rangle}$) ($K_{\langle L \rangle}$) ($K_{\langle E \rangle}$)

B10. VBL -----> (mdl) VB

B11. VB -----> V (prt) (prt)

The category VBL consists of an optional modal and a main verb. The verb itself consists of a verb root followed by one or two optional particles. Properties of the verb are described in Chapter 2; verb particles are discussed in Chapter 7. It is the first constituent generated by rule B10 with which we are concerned at the moment. The mdl constituent is one of the most interesting features of the Ga'anda verbal system. It is filled by the lexeme /na/ which, in the lexicon, is also the verb "be". This lexeme apparently functions in two syntactic roles, one as the constituent mdl and the other as the constituent VB. Significantly, /na/ cannot be chosen twice in the same generative

sequence, i.e., it functions either as one or the other, and this restriction must be stated as a condition on the lexical insertability of /na/. In its function as a main verb, /na/ is fully discussed in Chapter 8 on "be" and "have" construction types.

The lexeme /na/ as modal is semantically interpretable almost as a sort of auxiliary, causing the action of the main verb to be variously interpreted as "proceeding to do something, be/was doing something, keep/kept on doing something". This auxiliary-like character of /na/ as modal is further attested under certain conditions where tenses are neutralized, see that discussion in Chapter 5. The following examples illustrate the use of the modal in various tenses and aspects. (The suffix /-ta/ is explained later.)

15. Ø ŋgət na-ta raka-ta
con I mdl run
I am doing running

16. na nafda $ə na-ta ɓa-ta
fut man hab mdl come
The man will keep on coming

17. na-nda na-ta caŋga hausata
fut they mdl learn Hausa
They will be learning Hausa

18. Ø yax-incə sə kə na-ən ɓa-ta
aor want I sbj mdl you come
I want you to be coming

19. Ø $ə na-cə-i xuɗa-ta ə weenmətа
aor hab mdl I farm dawn
I (hab) proceed to farm at dawn

20. ə na-kə-i 'yara tanda
prf mdl sqt I insult them
(Then) I proceeded to insult them

21. ə $ə na-kə-i 'yara tanda
prf hab
(Then) I (hab) proceeded to/kept on insulting them

22. na-o $əf-u wanɗa[1]
mdl imp hit imp
Be/keep on hitting the boy!

(cf. example 10)

23. na-ama raka-ama
mdl pl imp run pl imp
Let's be running/proceed to run!

24. kə $ə na-nda raka-ta
sbj hab mdl they
They should (hab) proceed to run

Earlier, it was mentioned that $\underline{aux_1}$ was syntactically distinct from $\underline{aux_2}$ primarily because of the form of the verb with each auxiliary set. In the three tenses of $\underline{aux_1}$, the verb form is finite and subject pronouns are conjugational elements which are suffixed to the verb root.

25. Ø raka-wun (aor) You (pl) run

26. ə raka-wun (prf) " ran

27. kə raka-wun (sbj) " should run

---

1. The imperative suffixes /-o/ and /-u/ and phonologically condition allomorphs.

In the two tenses of $\underline{aux}_2$, the verb must appear as a verbal noun form.[2] Subject pronouns precede the verb. One of the ways in which verbal nouns are formally marked is by adding a nominalizer suffix /ta/ to the root.

28. Ø ŋgəwun raka-ta (con) You (pl) are running
29. na--wun raka-ta (fut) " will run

The morpheme /-ta/ could be introduced by a simple nominalizer rule which adds it to the verb in the environment of $\underline{aux}_2$. However, the conditions for adding a nominalizer are actually more general than the $\underline{aux}_1/\underline{aux}_2$ distinction and have to do with the number of constituents which can carry the lexical feature <vb>. The base rules generate three categories which are marked with this lexical feature <+vb>, these being the $\underline{aux}_2$ constituent, the modal verb /na/, and the main verb. The general rule states that any time there is a sequence of two constituents in a sentence each having the feature <+vb>, the feature <+N> is added to the second constituent. The reasons for having a feature <+N> rather than a morpheme /ta/ are given after the rule and examples following. (In all transformational rules, variables are conventionally designated by "X".)

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2. Similarly in Dera (see Newman 1971), both the continuous and the future tenses require verbal noun forms. Standard Kano Hausa uses finite verbs in the future although northern and western dialects still use verbal nouns in the future (see Gouffé 1967/68 and Zima 1969).

T1.1. Nominalizer

SD: $X - X_{<+vb>}$ (neg) (hab) $- X_{<+vb>} - X$

1 2 3 4

SC: $1 - 2 - 3_{<+N>} - 4$

This rule is a very early transformation and applies before subjectivalization and objectivalization rules, and before other rules permute any of the constituents. If neg and hab are not present, then the SD is satisfied by three possible base-generated <+vb> sequences: aux_2 + mdl; aux_2 + main verb; mdl + main verb. There is also a fourth possibility when the main verb happens to an "auxiliary" type verb selectionally requiring a verbal rather than nominal complement (see examples 36 and 37 below). In this case the structure is main verb + main verb and the SD of the rule is still met. In all of these, the second <+vb> constituent is nominalized. The rule applies twice in the case where the structure is aux_2 + mdl + VB. If neg and/or hab are chosen, then the first <+vb> constituent will be aux_2, since it is the only <+vb> element generated to the left of these two. (The examples below assume application of subject/object attachment rules as well as the rule which segmentalizes the feature <+N> as /ta/.)

30. Ø ŋgət nə́xa'-ta

$con_{<+vb>}$ I $VB_{<+N>}$

I am cooking

31. na- amən nə́xa-ta əssə
fut$_{<+vb>}$ we VB$_{<+N>}$
We will cook tomorrow

32. Ø ŋgə ŋgət yara-ta wa
con neg I VB
I am not writing

33. na- i $ə na-ta ca'a-ta sai ma ə man-incə
fut$_{<+vb>}$ I hab mdl$_{[<+vb>\ <+N>]}$ VB$_{<+N>}$ until if grow I

34. na Dəsanxa na-ta cok-ta kə $ə$ən-tə i-amən
fut mdl VB messenger of us
Dəsanxa will be becoming our messenger

35. ə na-kə-an səm-ta
prf mdl sqt he VB
Then he proceeded to eat

36. ə la-nda təɓa-ta
prf VB$_{<+vb>}$ VB$_{<+N>}$
They've already finished (lit. preceded finishing)

37. ə tam-incə də-ta kə Kano
prf VB VB
I've once gone to Kano

In 33 and 34, the rule has applied twice. In 36 and 37, the verbs /la/ 'to precede doing something' and /tam/ 'to do something once' are "auxiliary" verbs.

At this early stage of derivation, rule T1.1 adds the feature <+N> rather than the morpheme /ta/ to the verb. This is because there are environments where /ta/ does not appear on the surface although the verb must still be considered a verbal noun form. One of the restrictions on

the nominalizer is that it may not appear on the surface if there is a direct object immediately following the verb. If, for example, the verb /nəxa/ 'cook' of example 31 were followed by a direct object such as /$iwa/ 'meat', the nominalizer /ta/ is not present, compare to example 30. The verb is still considered a verbal noun form, however, as seen from its tone pattern /nə́xa/ (</nəxa/). Certain tone classes of verbs[3] with initial non-high tone undergo a tone rule changing this tone to high when the verb has the feature <+N>, regardless of the presence of /ta/.

There is further reason to treat segmentalization of /ta/ as a relatively late rule, operating at a rather shallow level of surface structure. This has to do with the relative clause construction. In the case where the embedded sentence contains a verbal noun whose direct object noun is identical to the head of the relative clause, the relative clause transformation deletes the direct object noun. Since, after the deletion, the verbal noun is no longer immediately followed by a direct object, the restriction against /ta/ segmentalization no longer holds and /ta/ will be added. This process can be informally illustrated by the following derivations. (A precise formulation of relative clause transformations is found in Chapter 5.)

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3. See my forthcoming article, "Downstep in Ga'anda", where the tonal system is discussed in some detail.

38. a) ə nincə pərs-a # na$_{<+vb>}$-nda xiy$_{<+N>}$ pərsa # ===>

prf see I horse fut they buy horse

b) ə nincə pərs-ɗi na-tə-nda xiy Ø ===>

DET rel

c) ə nincə pərsɗi [natənda xiy-ta]

I saw the horse which they will buy

39. a) tarɗi # ə la$_{<+vb>}$-nda təba$_{<+N>}$ tarɗi # ndəɗcan ===>

word prf already they finish work is good

b) tarɗi la-tə-nda təba Ø ndəɗcan ===>

DET rel

The work which they already finished is good

The segmentalization of /ta/ is handled by T1.2 following. (The "+" sign between items in the SC indicates that the formatives are bound or affixal in form.)

T1.2. Segmentalization of Nominalizer

SD: X - X $\begin{bmatrix} <+vb> \\ <+N> \end{bmatrix}$ - X

1 2 3

SC: 1 - 2 + ta - 3

Conditions: The first item in 3 is not 0 case

1 does not contain fut + neg

The second item in the SD includes all regular verbs as well as the modal /na/, which is <+vb>. It also applies

to <+vb, +N> items chosen directly from the lexicon (see following chapter) in addition to those generated transformationally. Like the preceding Nominalizer rule, this rule can apply more than once.

The first condition on the rule prevents /ta/ from being added to a verb when a direct object in O case immediately follows. It is added if an underlying O object should be deleted (as in relative clauses) or permuted (as in emphasis). It also allows /ta/ to be added when the direct object is in D case (see following chapter). When non-object nouns follow the verbal noun, such as locative expressions as in example 37, /ta/ is added.

The second condition states that the nominalizer is not added in the negative future tense, see these examples.

40. ŋgə-i raka wa
fut neg run neg
I will not run

But not *ŋgə-i raka-ta wa

41. ŋgə-i $ə na raka wa
hab mdl neg
I will not (hab) be running

42. ŋgə Desanxa na cok kə $ə$ən-tə i-amɔn wa
fut neg mdl
Desanxa will not be becoming our messenger

(cf. example 34)

43. ŋgə-amən ŋgər ɓa wa
repeat come
We will not come again

44. ŋgə-i tam ɗə kə Kano wa
I will never go to Kano

(cf. example 37)

Note in these last three examples that the nominalizer is absent from the main verb as well as from the modal and auxiliary verbs.

We now turn to a discussion of PROP, the other major constituent of the core sentence generated by base rules B3 and B9. This constituent is comprised of the verb as the head followed by one or more nouns drawn from an ordered set of associated nouns. The association of nouns to verbs is not direct, but is mediated through a presumably universal set of grammatical relationships called cases. Each case (symbolized by the category K) has a label (symbolized by subscript letters in angle brackets), indicating its particular semantic-syntactic relation to the associated verb.

B9. PROP ---> VBL $(K_{<D>})$ $(K_{<A>})$ $(K_{<O>})$ $(K_{<B>})$
$(K_{<I>})$ $(K_{<L>})$ $(K_{<E>})$[4]

The cases are generated in a basic sequential order with respect to each other. Later rules for determining which case functions as surface subject, object, indirect object, etc. will bring about permutations in this basic order (see Chapter 3 on sentence functions).

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4. It should be understood by convention that at least one out of the series of parenthesized elements must be chosen.

B12. K ---> (neg) prep NP

B12 is a rule schema showing that all cases have the same internal structure. The symbol "K" is a cover symbol for $K_{<D>}$, $K_{<A>}$, etc.[5] Each case is expandeable as an optional negative, a case preposition (whether overtly present or not), and a noun. The expansion of K and the rules deriving from it are taken up in Chapter 4.

Below is a brief semantic characterization of the Ga'anda case categories treated in this grammar.[6]

A Agentive - The case of the initiator of the action or state identified by the verb.

D Dative - The case of the noun affected by the action or state identified by the verb.

O Objective - The case of the noun whose role in the action or state of the verb is identified by the semantic interpretation of the verb itself.

B Benefactive - The case of the object or person for whose sake the action or state identified by the verb is done.

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5. I depart from Fillmore's (1968a) usage of the term "K", which he uses to indicate the preposition (in the case of English). In my grammar, "K" dominates a preposition and its noun. There are only a small number of true prepositions in Ga'anda, and they are unambiguously associated with particular cases.

6. This is not to say that these are the only cases in Ga'anda. For example, we no doubt will need a Comitative case as distinct from the Instrumental case to handle the small class of intransitive verbs like "come, go" which may take direct objects preceded by "with" to mean "bring, take". However, these are not discussed in the present grammar.

I Instrumental - The case of the object or force causally used in the action or state identified by the verb.

L Locative - The case of the noun which identifies the spatial/temporal orientation of the action or state identified by the verb or the location in place/time in "non-verbal" propositions.

E Essive - The case of the noun whose essence or being is identified by the action or state of the verb.

The first five cases above are set forth according to the definitions proposed by Fillmore (1968a). I depart from his suggestions in the following specific ways.

a) The Locative case in Ga'anda embraces both locative and temporal nouns. They share similar syntactic properties and take the same set of case prepositions. Contrary to Fillmore's assertion that a case may be chosen only once in single generation sequence, I submit that more than one L can be chosen per proposition. This will allow for such common expressions as: a) place + place ('he put it there on the table'); b) place + time ('he left for Kano at 2 pm'); and c) time + time ('he left yesterday in the morning').

b) The Essive case in association with the verb "be" forms one of the terms in the propositional type known as the "nominal or equational predicates". Fillmore hinted that such a case might be necessary, although he gave no detailed suggestions. The Essive case is discussed in detail in Chapter 8 on "be" and "have" constructions. This case is

not a "one-verb" case, however, and examples are given in that chapter to show that other verbs besides "be" may take Essive as one of their associated cases.[7]

c) The third "departure" from Fillmore is more properly an extension of his treatment of adnominal modifiers. His discussion of inalienable possession pointed out that the lexical category "verb" may not be the only category to which nouns are associated by case relationships. The lexical category "noun" may also take cases, in particular, the Dative case. An adnominal source is needed to generate certain kinds of possessive constructions which cannot be derived from reduced embedded sentences. I expand his notion of "adnominal modifier" by including Benefactive and Locative as adnominal modifiers in addition to Dative. All of these types of adnominals are described in Chapter 4.

d) I do not endorse Fillmore's views that lexical features such as <animate> are essentially case-related. For example, there are many instances in Ga'anda of inanimate Agents, and Dative as a semantic-syntactic construct has little to do with animateness. The only area where there does seem to be a direct correlation is between Instrumental and inanimateness. Nevertheless, I feel that, at this stage

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7. Lehiste (1969) has presented evidence in Estonian that other verbs beside 'be' take an Essive case and that this case is quite comparable to other cases in the range of verbs which can take it.

of research, Chomsky's notion of lexical features being co-occurrence features between nouns and verbs is more correct than Fillmore's notion of their being redundancy features of abstract syntactic-semantic relationships.

Although base rule B9 generates cases as independent, non-hierarchic categories, it seems to me that some hierarchy exists among cases in Ga'anda (and probably for all languages).

In the first place, a particular proposition generated in the base normally will not contain all of the above cases. Rather it will contain one case obligatorily and other cases optionally, not all cases being allowed to occur alone. The seven Ga'anda cases thus seem to fall naturally into two sets. A, O, and D cases are more "primary" than the other four in the sense that all verbs must be obligatorily specified for one or more of these cases. The other cases B, I, L, and E are always optional. Secondly, the cases A, O, and D serve to subcategorize verbs while the others do not.[8] Thirdly, some cases tend to be overtly marked by prepositions while others are not. The "secondary" cases B, I, L, and E are all marked by associated prepositions whereas A, O and D are not, relying on such devices as word order, bound vs. free forms, and paradigmatic and

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8. The verb /na/ 'be' is an exception. It must be marked not only for the primary case O, but also for either L or E, see Chapter 8.

tonal contrasts among pronoun sets to keep them distinct from each other.

Another consideration regarding cases is that the semantic distinctiveness between some cases is not always as clear between others. In particular, D and B, which are posited as separate cases and thus presumed to have different deep structure semantic interpretations, semantically overlap in certain verbs. Some Ga'anda verbs make no distinctions between D or B and seem to have only a generalized "archi-case" D-B. Example 45 has two semantic readings for one surface structure.

45. ə yaruci sə B { I wrote (something) to you / I wrote (something) for you }

Other verbs only take B but may not take D.

46. ə nəxuci sə I cooked (something) for you

47. ə capuci sə I washed (something) for you

It is only the "double object" verbs which very definitely distinguish between D and B (by means of the marker /sə/):

48. ə mbu'uci D I told (something) to you

49. ə mbu'uci sə B I told (something) for you

It is probably not coincidental that both D and B in the above environments have the same surface forms, particularly in light of the fact that closely related Chadic languages like Tera and Margi have no B case distinct from D case. Despite the indeterminacies above, it is necessary to have this distinction in Ga'anda. In particular, the analysis of

alienable vs. inalienable possessive constructions is founded on this distinction (see Chapter 4).

A final point in this discussion of case hierarchy is a matter already noted by Fillmore regarding dependency relations between cases.[9] In Ga'anda as in many languages, B is definitely dependent on the presence of A and cannot occur without it, although the reverse is not true. In certain case frames, where both A and B are optional, this dependency can be stated with the following notation: [...(A(B))...].

Ga'anda is not a "case language" with inflectional case morphemes on the order of Latin or Russian. Nevertheless it is necessary to posit a separate surface case system which is not merely a superficial mapping from the deep case system. For example, in the surface forms of pronouns, there are seven sets that are formally distinct from each other, (see paradigm chart in Chapter 4). We can characterize these differences by surface case features such as <disjunctive>, <nominative>, <dative>, <accusative>, etc. Surface case forms are not associated with deep cases on a one-to-one basis. For example <disjunctive> forms are found in a wide range of surface syntactic environments representing various deep cases. Surface <dative> forms may be manifestations of either deep structure Benefactive

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9. See Fillmore (1968a), footnote 34, pg. 26 and discussion on pg. 87.

or Dative. To keep the deep and surface case systems distinct and clear in the discussions, deep cases are always referred to by capital letters (A, O, D, B, etc.) and surface cases by lower-case names (dative, disjunctive, etc.).

Surface structure case features such as <+dsj>, <+dat>, <+ben>, etc. are added transformationally at various points in the grammar. Although these surface case features are added to case-labelled noun phrases in general, it is understood that they will be realized only on noun phrases which are pronouns. The conditions under which these surface case features are added partly depend on the surface configurations themselves. For example, any N, regardless of its deep case, may become emphasized by a rule which front-shifts it to sentence-initial position and adds the surface case feature <+dsj>. In other situations, however, the conditions may be the co-occurrence of certain cases with each other. For example, a deep case Benefactive may be realized as a surface <dative> in the absence of a deep case Dative. Elsewhere, it is realized as a surface case <benefactive>. After all the transformations have applied, each noun should be carrying both a deep case feature and a surface case feature. Both kinds of information are necessary for the input to the phonological component.

Chapter 2

Verb Subcategorization

In this chapter, we discuss verb features and verb subcategorization as they relate to the lexical entries for Ga'anda verbs. One of the lexical features of verbs is <± N>, which indicates that verbs can function as nouns. That is, all Ga'anda verbs can occur in structures where N is allowed. Verb roots functioning as nouns have the features <+vb>, <+N> and are thus subject to the Nominalizer Segmentalization rule described in Chapter 1 that adds the morpheme /ta/ in appropriate environments.

1. ce-ta 'yaŋ'yaŋ
   Shooting is difficult

Cf. 2. cə cuwena 'yaŋ'yaŋ
   Shooting an elephant is difficult

Cf. 3. tar-ɗiya 'yaŋ'yaŋ
   This work is difficult

4. ə sənincə xa tə ɗək-ta i-anda
   I'm used to their thrashing

Cf. 5. ə sənincə xa tə tar i-anda
   I'm used to their work

6. pəɗa-ta səm mə ɓa-ta
   Going is better than coming

Verbs are also subcategorizable by the feature <motion>.

Some verbs are only <-mot>, such as xiyə 'buy',[1] sa 'drink', and na 'be'. Some, such as pərə 'ride' and tərə 'climb', are <+mot> verbs, compare the <-mot> construction pər pirsha 'ride a horse' with the <+mot> construction pər kə pirsha 'ride on a horse'. Other verbs are intrinsically <+mot>, such as də 'go', yimə 'enter' and tərə 'put'. One of the functions of this feature is to condition the phonological specification of the Locative case preposition.

Another verb feature is <adjective>. Most verbs are <±adj>, i.e. they may or may not be "adjectives". When they take on the <+adj> feature, they undergo certain transformations (see Chapter 9) and are interpreted as adjectives. There is also one verb class which is inherently <+adj>, see later.

Another optional verb feature is <intensive>. The

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1. Verbs are listed by their basic or root form. In the examples, however, they are given in modified form. For example, CVCə verbs obligatorily delete the final vowel /ə/ in non-pausal position, unless the phonotactics of the word are violated. These verbs thus appear as CVC- in most environments. In pre-pausal position, verb final schwas are phonetically realized as [i], as is true of all schwas in that position regardless of the lexical category of the word. Compare the following surface alternants of the verb root xə$ə 'swell':

a) ə xə$ sartincə — My foot is swollen
b) sartincə ə xə$i — My foot, it is swollen

Another modification affects -a verb roots, which change to /-i/ in construction with aux$_1$ tenses. Compare the alternative forms of masa 'laugh':

a) tanda masa-ta — They are laughing
b) ə masi-nda — They laughed

presence of <+int> is marked by a reduplicative verb stem. The intensive form usually reinforces the number of times the action is performed, particularly if the object acted upon is plural.[2]

7. ə ɓəl-incə cinica

   I killed lions

8. ə ɓəɓal-incə cinica

   I killed lions (many of them)

9. ə ce-nda mərta xa

   They shot up the corpse

10. ə cəca-nda mərta xa

    They shot up (many times) the corpse

11. $ə necan 'yar-i-ta

    He is (hab) insulting me

12. $ə necan 'yə'yar-i-ta

    He is (hab) insulting me (without letting up)

The next series of verb features provides for verb particles, which are semantic extensions of the verb. There are five such particles, noted as <xar>, <in>,

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2. This reduplication can be represented by the following formula: $[C_1VC_2(V)]_{VB_{<+int>}}$ ---> $C_1əC_1aC_2(V)$. The "internal -a-" vowel change of the root is no doubt a reflex of the "internal -a- plurals" found in other Chadic (and Afro-Asiatic) languages. In Ga'anda, however, it is not considered as a formation of a plural verb stem agreeing in number with plural objects, since a) the object may be singular, and b) a non-intensive verb stem can be used with plural objects.

<kadə>, <xa> and <fa>. All verbs allow at least one of these particles. Some can take all whereas others can take certain ones and not others. Verbs have to be marked individually for these items. Particles as a class are discussed in Chapter 7.

The most important subcategorization feature for verbs are the "case frame" features. Base rule B9 generates the abstract sentential proposition as consisting of a "head" constituent which is filled by the category VB and other associated constituents which are filled by members of the category NP as mediated through a set of case relationships. Any particular proposition will be composed of a verb and a restricted subset of these case-labelled noun phrases. In this chapter, it is useful to speak of a verb as a "predicate" which takes certain case-labelled noun phrases as its "arguments." Predicates which take the same arguments are subgrouped together as a verb class and the kind and number of arguments of any given verb class is called its "case frame". Within the case frame itself, certain arguments may be obligatory -- a verb cannot occur without that case noun -- or optional -- a verb may co-occur with that case noun but need not. If an argument is not specified in the case frame of a particular verb class, then the verbs of that class cannot occur it. Case frames thus constitute both a major sub-categorization of verbs as well as a partial statement

about their selectional (co-occurrence) restrictions with nouns.

An important aspect of the case frame feature analysis of verbs is the matter of transitivity. In most languages, verbs are considered to be either transitive, in the usual sense of "occurring with a direct object", or intransitive, in the usual sense of "not occurring with a direct object." In Ga'anda, however, such a distinction is of little value since most "intransitive" verbs can also be transitivized, with the resultant construction usually, but not always, taking on a causative meaning. In terms of case grammar, the semantic distinction between the two kinds of "transitive" constructions is attributable to the difference in the choice of case serving as direct object. The "regular transitive construction", as we might call it, has an O case noun as direct object, whereas the "causative transitive construction" has a D case noun as direct object. The situation is a little more complex, however, since some "transitive" verbs can also take D case as direct object if O is not chosen.

The notion of "transitivity" is defined quite naturally within a case frame verb classification. Any predicate which occurs with only one argument (noun phrase) is said to be an intransitive predicate. Any predicate which occurs with two or more arguments of which one functions as a direct object is said to be a transitive

predicate. Certain predicates obligatorily require only one argument (and hence are intransitive) but they may optionally take other arguments (and hence become transitive). In this view, transitivity is not considered a deep structure sub-categorization feature of verbs at all. Rather, it corresponds more to an intuitively-felt distinction which we make about certain surface structure configurations of verbs and nouns.

Following is a presentation of the Ga'anda verb classes in terms of their case frames or case specifications. This classification is by no means exhaustive, but merely illustrative of the different classes. Case specification is defined in terms of obligatory or inherent arguments which a predicate must have, and optional arguments which it may have. Various notational conventions have been used to express this obligatory vs. optional distinction, as follows. A case not enclosed in parentheses is obligatory, e.g. +[...O...]. A case enclosed in parentheses is optional, e.g. +[...(O)...]. A diagonal between cases indicates that either must be chosen, but not both, e.g. +[...D/O...]. Interlocking parentheses between cases indicates that either or both may be chosen, but at least one, e.g. +[...D⌇O...]. Parentheses inside parentheses indicate that the inner case can be chosen only if the outer one is chosen, e.g. +[...(A(B))...]. Two cases, L and E, have been left out of the specifica-

tions, as they are not essential to the definition of any of the verb classes. The verb na 'be', which is an exception, is treated at the end of this chapter.

There are eight verb classes in Ga'anda. Since verbs are the heads of propositions, these eight classes can be thought of as corresponding to eight propositional types. Examples are discussed in terms of which cases occur as "subject" and "object" of the sentence, even though the transformations for assigning sentence functions, as well as word order, are yet to be described. In the examples, only D and B forms are tone-marked since they are tonally distinct according to their function as direct or indirect objects.[3]

I. +[A O (B) (I)]

Verbs in this class include na 'see', ka 'seek', redə 'dig', dəkə 'thrash', ʃəna 'seize', fədə 'beat (something)', yimə 'squeeze', tirekə 'hunt'.

Verbs in this class only occur in transitive constructions, with A as subject and O as direct object. B and I are optional.[4]

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3. The tones of D and B case pronouns vary both according to their sentence functions and according to the tone classes to which individual verbs belong.

4. In this verb class and others following, the I case is listed as optional for the class as a whole. In fact, however, there are lexical restrictions on its co-occurrence with individual verbs. These restrictions are a matter of low-level semantic compatibility and of little interest for purposes of establishing syntactically significant verb categories.

13. ə ka-mən wecə
prf seek we you
A O

We sought you

14. na-an ɗək xwarmɗa
fut he thrash guinea corn
A O

He will thrash guinea corn

15. Ø $ə tirek-cə-anda cinica (tə shukca)
aor hab hunt they lions with spears
A O I

They (h. h) hunt lions (with spears)

16. ə fəɗ-úcə̀-i $əmbərɗa sə
prf.beat you I drum for
B A O

I beat the drum for you

II. +[A D/O (B) (I)]

Verbs in this class include ɗəpa 'look at', para 'follow', rəkə 'chase', ce 'shoot', sənə 'know', kənə 'tie', mbəsə 'find', kaŋə 'chew', səmə 'eat'.

These verbs occur only in transitive constructions with either D or O case functioning as direct object. Both cases may not co-occur. The two transitive constructions are usually semantically distinct. D functioning as direct object is interpreted with a

causative[5] meaning, whereas O is not. Compare the following pairs.

	(a) O as direct object	(b) D as direct object
17a.	ə mal-incə wecə O I left you (behind)	17b. ə mal-úcé-i D I left you (alone)
18a.	ə rək-nda nafda O They chased the man (away)	18b. ə rək-án-nda nafda D D They had the man sent away
19a.	ɓecan kə dəpa nencə O He came to look at me	19b. ɓecan kə dəpa-î-ta D He came to have me looked at
20a.	na-i kwas wecə O I will untie you	20b. na-i kwas-ú-ta D I will free you
21a.	ə ce-incə ndə O I shot him	21b. ə ce-án-i D I had him shot

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5. The (b) constructions are not causative constructions. A true causative construction is not a simple transitive construction, but must be formed with the verb ɗəfə 'put, cause' plus a sentence complement in the subjunctive. Three-place predicates of the type "X causes Y to do Z" can only be expressed by using this verb. Compare a) below with examples 21a and 21b in the text.

a) ə ɗəf Musa nencə kə ce-i ndə — Musa had me shoot him
cause M me sbj shoot I him

Of course, a transitive construction like 21b could be expressed by a causative construction, but it is considered awkward.

b) ə ɗəf-incə kə ce-i ndə — I caused that I shoot him

22a. sən-mən nafdi
O
We know that man

22b. sən-án-mən nafdi
D D
We informed that man

With other verbs of this class, the semantic distinction between D and O as direct object appears to be negligible. The pairs below were considered equivalent in meaning. Perhaps other factors besides the structural differences are at work, for example, the semantic contribution of particular verbs themselves.

23a. ə dəkan kə kaŋ tanda = 23b. ə dəkan kə kaŋ-ándá-ta
O D
Then he went to chew them (up)

24a. naⁿda mbəs nencə = 24b. nandə mbas-í-ta
O D
They will find me

This incomplete correlation between structural and semantic differences is found not only in verbs of this class but in verbs of other classes which allow a direct object choice between D and O.

If B case is chosen in the proposition, it occurs in one of two places in the surface sentence, depending on whether the direct object is D or O case (see Benefactive Shift rule in Chapter 3 following). If D is not present, B is shifted into the "surface dative" slot, leaving the anaphoric /sə/ to mark its original place behind O in the deep structure sequence.

24a. na-i kwas-ándà wecə sə (tə ɬutədiya)
A B O for I
I will untie you for them (with this knife)

24b. na-i kwas-ú-ta i-anda (tə ɬutədiya)
A D B I
I will free you for them (with this knife)

III. +[A DO (B)]

Verbs in this class generate the so-called "double object" or indirect object proposition type. Among these verbs are fərə 'give' (e.g. 'give [me] [money]'), mbu'ə 'tell' (e.g. 'tell [him] [a story]'), cəxa 'ask about', yarkə 'steal from', 'ya 'call', shiyə 'beg', ɬənə 'send', yara 'write', xiyə 'buy/sell'.

These verbs occur only in transitive constructions and allow either D or O or both to be chosen. If only one is chosen, it functions as the direct object.

25. ə mbu'incə shi'shidəta
A O
I told a folktale

26. ə mbu'-úcə́-i
D A
I told on you (i.e. had you told)

27. na-an ɬən wecə
A O
He will send you

28. na-an ɬən-ù-ta
A D
He will have you sent

The verb xiyə means "buy" when O case functions as the direct object, but "sell" when D case functions as the direct object and the verb particle kaɗə 'away' is chosen. In example 30 and elsewhere, the formative /an/ is a result of the <dative> Noun Shift rule when D is a noun (see rule T.2.8 in the following chapter).

29. ə xiy-incə pərsa
A O
I bought a horse

30. ə xiy-án-i pərsa kaɗə
D A D away
I sold a horse (lit. had a horse bought away)

If both D and O co-occur, then O functions as the direct object and D functions as the indirect object (see Objectivalization rule in the following chapter).

31. ə mbu'-úcə̀-i shi'shiɗeta
D A O
I told you a folktale

32. na-amən cəxa-ándà shertə nafan
A D O
We will ask them about the old man

33. ə shiy-áǹ-nda yata kutiran
D A O D
They begged the chief for food

As pointed out in Chapter 1, D and B cases are distinctively contrastive with this class of verbs. Either can function as the indirect object when O is the direct object.

34. mbu'-í`-tən ndiktə'an
D A O
Tell me the news

35. mbu'-í`-tən ndiktə'an sə
B A O for
Tell the news for me

B functions as indirect object when either D or O is direct object, with the corresponding differences in word order noted earlier.

36. ə mbu'incə ndiktə'an i-kutiran
A O B
I told the news for the chief

37. ə mbu'-án-i yarda i-kutiran
D A D B
I told on the thief for the chief

D and B may not both serve as indirect objects within the same proposition since the three sentence functions subject, object, and indirect object can only be represented once each per proposition (see more discussion in the following chapter). In order to express the sentence "I told the news to them for the chief", a periphrastic construction using a "because" phrase must be used to express the Benefactive notion, e.g.

38. ə mbu'-ándàcə-i ndiktə-an kəʂəm kutiran
them I news because chief
I told them the news because of/for the sake of the chief

IV. $+\left[\left\{\begin{matrix} \text{A D/O (B)} \\ \text{D} \end{matrix}\right\} \text{ (I)}\right]$

Verbs in this class occur in both transitive and intransitive constructions. Among these verbs are finə 'ignite/light', capə 'be washed/wash', nəxa 'be cooked/cook', fi'yə 'be roasted/roast', kwasə 'be untied/untie', wuɓə 'be hidden/hide', xaɗə 'be sick/sicken', mbənə 'be pleasing/please', taxsə 'be ready/prepare, fix'.

In transitive constructions (represented by the upper portion of the case frame), either D or O can function as the direct object (as was the case with verb classes II and III). With this class of verbs, however, the semantic distinction between the two types of direct objects often seems negligible.

39. ə finincə wata — I lit a fire
A O

40. ə fin-ə̀n-i wata — I lit a fire
D A D

41. ə mbən-kə-nda ŋga'ən — (Then) they pleased us
sqt A O

42. ə mbən-á'ə́n-kə-nda — (Then) they made us pleased
D sqt A

43. na-i wuɓ wecə — I will hide you
A O

44. na-i wuɓ-ù-ta — I will hide you (have you hidden)
A D

45. miyta xaɗ məncə — Hunger sickens us (we are hungry)
A O

46. miyta xad-ámən-ta
A D
Hunger makes us sick

In intransitive constructions, the single argument D is necessarily the subject of the construction.

47. ə fin wata
D
Fire ignited

48. ə wubincə
D
I was hidden/I hid

49. ə kwasi saxtəda
D
The rope came untied

50. na toxwat-da nəxa-ta tə wata
D I
The soup will cook/be cooked by fire

These intransitive sentences are not passive constructions. There is no true "passive" construction in Ga'anda. The only means of expressing a passive notion is to use the impersonal pronoun /fee/ as the subject of a transitive construction, e.g.:

51. ə fin-án-fee wata
D A
One/someone lit a fire

52. ə fin-fee wata
A O
One/someone lit a fire

The I case is optional and can occur in either transitive or intransitive constructions.

53. na-nda cap ləɓokərɗa (tə 'yama)
A O I
They will wash the cap (with water)

54. na-nda cap-an-ta ləɓokərɗa (tə 'yama)
A D D I
They will have the cap washed (with water)

55. na ləɓokərɗa cap-ta (tə 'yama)
D I
The cap will get washed (with water)

56. na toxwatɗa nəxa-ta xəɓakka (tə wat-an)
D I
The soup will cook slowly (by the fire)

In the intransitive sentences of examples 55 and 56, I case may function as the subject and D case as the direct object (see Subjectivalization rule in the following chapter for further discussion).

57. na 'yama cap-an-ta ləɓokərɗa
I D D
The water will wash the cap

58. na wat-an nəxa-ar-ta toxwatɗa xəɓakka
I D D
The fire will slowly cook the soup

The co-occurrence of B with these verbs follows the same pattern as described for preceding verb classes.

59. ə cap-úcə̀ nuwa kapecɗiya sə
B A O
A woman washed these clothes for you

60. ə cap-án nuwa kapecdiya i-o
D A D B
A woman had these clothes washed for you

Intransitive constructions of this verb class (and the following one) can never contain B.

61. *ə cap kapecdiya i-o
*The clothes are washed for you

V. +[D (A(B)) (I)]

Verbs of this class may occur in either intransitive or transitive constructions. They include ndidə 'be full/fill', fələ 'be cracked/crack', tətnə 'be wet/dampen', kənə 'recover from illness/cure', ṣərə 'spill/pour', ce 'be broken/break', 'yə 'be burnt/burn', saka 'be lost/lose', xəṣə 'be swollen/swell', in 'be opened/open'.

These verbs differ from the preceding class in that they can only take D as the direct object in transitive constructions. In the pairs of intransitive/transitive sentences below, it is easy to see that transitivization can be interpreted with a causative meaning. However, since there is only one transitive construction for these verbs (as opposed to verbs in Classes II, III, and IV which allow two transitive constructions), the English glosses reflect a simple transitive meaning.

62. ə saki lawlawat-an
D
The book was lost

63. ə saka-án-i lawlawat-an
P A D
I lost the book

64. na 'yamɗa $ər-ta
D
The water will spill

65. na nuɗa $ər-án-ta 'yamɗa
A D D
The woman will pour the water

66. ə ndiɗ ɓutəɗa tə yema
D I
The pot was filled with water

67. ə ndiɗ-án-i ɓutəɗa tə 'yema
D A D I
I filled the pot with water

In intransitive constructions, these verbs are often best translated as "stative" in meaning, particularly in the aorist tense and co-occurring with the verb particles /xa/ or /kaɗə/, both of which add a semantic component of "completeness" or "finality" to the meaning of the verb (as illustrated further in Chapter 7).

68. Ø ndiɗ ɓutəɗa xa
The pot is full up

69. Ø xə$ sartə-i-incə kaɗə
My foot is completely swollen

70. Ø 'yə wurɗa kaɗə tə wata
The house is burnt up by fire

71. na-an kən-ta kaɗə wá
Will he recover completely?

With these verbs, If I is chosen in a sentence without A, then I functions as the subject of a transitive construction. This verb class, together with the preceding class IV, are the only ones which permit an I case to function as the subject of the sentence (see the following chapter).

72. na ɗakwanɗiya ce-an-ta faŋəndiya
I<+sj> D<+oj> D
This stone will break this stick

73. ə xə$-án ɓəɓiɗa sartə-i-incə
D I D
The fever made my leg swell

74. wata 'yə-án wurcə-i-amən kaɗə
I D D
Fire is burning our homes up

75. 'yera tətn-í-ta
I D
Rain is getting me wet

When B is chosen, it functions as the indirect object. Note that with these verbs, B only occurs in one position in the surface structure, after the direct object but before an I case noun, if present.

76. na Musa ce-án-ta faŋənɗa i-owun (tə ɗakwanɗiya)
A D D B I
Musa will break the stick for you (with this stone)

77. ə in-án-nda mikətnnda i-Musa tə makuli
D A D B I
They opened the door for Musa with a key

VI. +[D (A(B))]

Verbs of this class include masa 'laugh', raka 'run', pəɗa 'go, depart', yimə 'enter', ɓa'ə 'rise', tə 'cry', yipə 'rest', wi'yə 'walk'.

When D alone occurs, it is the subject of an intransitive construction. When A is also chosen, it becomes the subject of a transitive construction. As with other verbs where D functions as the direct object, a causative interpretation can be given to the transitive construction. Compare the following pairs.

78. ə masa-incə
I laughed

79. ə masa-úcə́-i
I made you laugh (lit. I laughed you)

80. na nafɗa ɓa'ta
The man will get up/arise

81. na nafɗa ɓa'án-ta wancəɗa
The man will get/raise the children up

82. xuna-o xa
Lie down!

83. xuna-án-tən xa
Lay it down!

84. ə pəɗi wa-i-incə
My child went, left

85. ə pəɗa-án-i wa-i-incə
I weaned my child (lit. made my child go)

B only occurs in transitive constructions only, as was true of classes IV and V.

86. ə $a'-án-i i-Musa
I made him get up for Musa

87. xuna-án-tən lawlawata i-incə xa
Lay the book down for me!

In order to express a "benefactive" notion in an intransitive construction, a "because" phrase has to be used.

88. raka-o kə ləmo kə$əm ŋgəta
Run to market for me! (lit. because of me)

89. ə pəɗa-incə kə$əm kutiran
I left for the chief

VII. +[D]

This small class of verbs form intransitive constructions only. They include mərə 'die', $ərə 'snore', sherə 'age', man 'grow big', weshe 'hurry', ɗə 'go', ɓa 'come', ɗaa$ə 'be clever'.

90. ə mər kaaka
Grandmother died

91. na-an sher leɗ
He will age/be old quickly

92. ə weshe-mən kə ləmo
We hurried to market

93. kə nat wancə ɗə kə mət ca'ata
All children should go to school

94. ŋgət ɗaa$-ta
I am being, getting clever

VIII. +[O],<+adj>

Earlier it was pointed out that one of the optional features on verbs was <adj>. For most verbs, this feature is optional; they may or may not be used adjectivally. Verbs of class VIII, however, are inherently <adj> and never function other than as adjectivals. Verbs in this class deal with words of "sensory quality or perception", such ŋjaŋ 'tall', ləklək 'heavy', ɗemɗem 'sweet', ŋa' 'red', werra 'thin', ləfədfəd 'soft', mbulla 'short', xeɗeɗa 'white'. Members of this verb class are phonologically and semantically unified in contrast to all other verbs previously discussed. The justification for subcategorizing them as verbs is given in Chapter 9. Only a few examples are presented at this time to show how they contrast with adjectivals derived from other verb classes.

95. ŋjaŋ-incə
I am tall

96. na wanɗa nata kwa'kwa[6]
The boy will be strong

97. kə na-nda ləklək
Let them be heavy

98. kapaɗiya xeɗeɗa
This gown is white

Adjectives derived from verb roots of other classes

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6. The modal /na/ is obligatory with all adjectival verbs of whatever class in all tenses except the continuous.

are formed by adding the suffix /-can-/. Note that verbs from all the classes I to VII are derivable into adjectives.

99.	səm-can-incə		
	I am greedy	< səmə 'eat'	I
100.	yaan-can-nda		
	They are quarrelsome	< yaanə 'fight'	II
101.	xiy-can Xoɗewa		
	Xoɗewa is acquisitive	< xiyə 'buy'	III
102.	mbən-can toxwata		
	Soup is tasty	< mbənə 'be pleasing'	IV
103.	fəl-can ɓuca		
	Pots are crackable	< fələ 'crack'	V
104.	man-can-mən		
	We are big	< manə 'grow big'	VI
105.	ɗaa$-can-incə		
	I am cleversome	< ɗaa$ə 'be clever'	VII

The final verb class to be mentioned is a one-membered class whose case specification is [O L(E]. The only verb with this case frame is na 'be'. Like most langauges which have a "copula", na in Ga'anda has unique features as a verb. It is always a two-place predicate in which O is the subject and either L or E or both are the "goals" (to use a very neutral term, since "transitive" and "direct object" are inappropriate here). E, as mentioned before, is an argument which is predicated not only of na but of other individual verbs as well. L and E cases and the construc-

tion types they generate are discussed fully in Chapter 8.

Chapter 3

Sentence Functions and Surface Order

In the preceding chapter, verbs are subcategorized into various classes on the basis of the number and range of their case arguments. The subcategorization itself is marked by means of case frames or case specifications expressed as features in the lexical specification of verbs. These case frames are though of as formulas which summarize the various case environments which any particular verb can occur in. For example, a verb marked with the case frame feature +[A D⁄O (B)] can occur in one of five theoretically possible environments: AO, AD, AOD, AOB, ADB. In each of these environments the deep structure semantic-syntactic relation of any one case to the proposition remains constant. What does not remain constant, however, is the surface structure position of any one case in the sentence. A sentence is a derivational mapping of cases from the deep-structure proposition into particular surface structure sentence functions known as "subject", "direct object", and "indirect object".

A Ga'anda sentence can have only one each of these three functions, each function potentially being fulfilled by any one of a number of cases. For example, given propositions composed of the cases permitted by the above case frame +[A D⁄O (B)], A will always be the subject,

either D or O will function as direct object, and either D or B will function as indirect object. Once a case has been chosen as one of the three functions, it is no longer eligible for the other two. This is ensured by ordering the three function transformations with respect to each other. The circumstances by which various cases are transformationally chosen to fulfill any given function are hierarchical, and can be stated as sets of ordered conditions. (All rules in this chapter are ordered; all are obligatory, unless otherwise noted.)

The first rule is the Subjectivalization rule. The hierarchy of conditions for choosing "subject of the sentence" is as follows:

a) If A occurs, then A is the subject.

b) If I occurs, then I is the subject.
(Optional if I and D co-occur.)

c) If D occurs, then D is the subject.

d) If O occurs, then O is the subject.

These four conditions are summarized by the following rule. It is to be understood that each item in square brackets in the SD is disjunctively and linearly (from top to bottom) ordered with respect to the other items, so that if the SD is not satisfied by the topmost item A, then it must be examined for the next item below it, i.e. I, and so forth, until a subject is found.

T3.1. Subjectivalization

$$\text{SD:}\quad X - \begin{bmatrix} \ldots A \ldots \\ \ldots (I) \ldots \\ \ldots D \ldots \\ \ldots O \ldots \end{bmatrix} - X$$

$$\qquad\quad 1 \qquad\qquad 2 \qquad\qquad 3$$

$$\text{SC:}\quad 1 - 2_{<+sj>} - 3$$

Whenever the SD is met, the appropriate case is marked with the syntactic feature <+subject>. A redundancy rule automatically marks all other non-subject nouns with the feature <-sj>. This feature is needed for a number of rules, including the Subject Placement rule (rule T3.7 to follow) and the Relative Clause rule (rule T5.4 in chapter 5). Note that A case will always be the subject of propositional types featuring verb classes I, II, and III, since it is obligatory for them. With verb classes IV, V, and VI, other cases will become the subject in the event A is not chosen. Examples illustrating each case as subject are given. (For purposes of illustration, these and other examples assume application of rules yet to be discussed.)

1. na nafcəda ce-án pəlaməta kutiran sə tə pindiku
   $A_{<+sj>}$ B $O_{<-sj>}$ $B_{<-sj>}$ $I_{<-sj>}$
   The men will shoot a baboon for the chief with a gun
   (Class II Verb)

2. ə fi'y ʂuɗa tə welələtə ələsca

$D_{<+sj>}$ $I_{<-sj>}$

The meat was roasted by hot coals (Class IV verb)

3. ə tətn-án feera xaaxiɗa

D $I_{<+sj>}$ $D_{<-sj>}$

Blood soaked the ground (Class V verb)

4. ə tətn xaaxiɗa tə feera

$D_{<+sj>}$ $I_{<-sj>}$

The ground was soaked with blood (Class V verb)

5. tanda masata

$D_{<+sj>}$

They are laughing (Class VI verb)

6. na ɰandiya na-ta kə malɗəm

$O_{<+sj>}$ $E_{<-sj>}$

This boy will be a teacher

7. rəftədiya ləklək

$O_{<+sj>}$

This load is heavy (Class VIII verb)

Example 3 illustrates condition b) when I can become the subject. If that optional condition is not chosen, then condition c) applies, and D becomes the subject, as in example 4. The Objectivalization rule following ensures that when I is chosen as subject, D will become the direct object.

When I functions as the subject of the sentence, its case preposition /tə/ is deleted, compare 3 and 4. The following rule deletes it in just this environment, before

the Subject Placement rule applies.[1]

T3.2. Instrumental Preposition Deletion

SD: $X - prep - I_{<+sj>} - X$

1 2 3 4

SC: 1 - 3 - 4

The next ordered transformation assigns the direct object sentence function. The two cases which can fulfill this function are O and D cases. The hierarchical conditions for assigning "direct object of the sentence" are as follows.

a) If O occurs, then O is the direct object.

b) If D occurs, then D is the direct object.

These conditions are summarized in the rule below. The conditions on disjunctive and linear application noted for the Subjectivalization rule apply equally to the bracketed items in the SD below.

T3.3. Direct Objectivalization

SD: $X - \begin{bmatrix} ...O... \\ ...D... \end{bmatrix} - X$

1 2 3

SC: $1 - 2_{<+oj>} - 3$

---

1. It seems likely that rules like T3.2 will eventually be replaced by universal conditions in the relationship between deep cases and surface functions, especially regarding the "secondary" cases.

Whenever the SD is met, the appropriate case is marked with the syntactic feature <+oj>. The feature <-oj> will be assigned by the next rule for indirect objects.

10. namεn red kwiy 'yema
    $A_{<+sj>}$ $O_{<+oj>}$
    We will dig a well

11. ε xiy-án-mεn xwerma kadε
    D $A_{<+sj>}$ $D_{<+oj>}$
    We sold guinea corn

12. ni kεn we$c\varepsilon$
    $A_{<+sj>}$ $O_{<+oj>}$
    I will tie you (on my back)

13. ni kεn-ú-ta
    $A_{<+sj>}$ $D_{<+oj>}$
    I will tie you up

14. ε nεxa-an wat-an shuŋgwema kadε
    D $I_{<+sj>}$ $D_{<+oj>}$
    The fire cooked up the bush cow

The last sentence function is the indirect object, which can be fulfilled by either D or B cases. The hierarchical conditions for assigning "indirect object of the sentence" are as follows:

a) If D occurs, then D is the indirect object.

b) If B occurs, then B is the indirect object.

These conditions are summarized in the rule below. As in the two previous function transformations, the items in

square brackets in the SD below are disjunctively and linearly ordered.

T3.4. Indirect Objectivalization

SD: $X - \begin{bmatrix} \ldots D \ldots \\ \ldots B \ldots \end{bmatrix} - X$

1 2 3

SC: $1 - 2_{<-oj>} - 3$

Whenever the SD is met, the feature <-oj> is assigned to the appropriate case. Summarizing the results of rules T3.3 and T3.4, it can be seen that O case is always <+oj>, D case may be either <+oj> or <-oj>, and B case is always <-oj>. In the examples below, note that $D_{<-oj>}$ and $B_{<-oj>}$ pronouns occur in the "surface dative" position with one tone pattern, as contrasted to a $D_{<+oj>}$ pronoun occurring in the "surface dative" position with another tone pattern.

15. ə 'ya-úcə̀-i ndə — I called him to you
$D_{<-oj>}$ A O

16. ə 'ya-úcə̀-i ndə sə — I called him for you
$B_{<-oj>}$ A O

Cf. 17. ə 'ya-úcə́-i — I had you called
$D_{<+oj>}$

The next group of ordered transformations bring about the proper surface word order of cases in their various sentence functions. They alter the base-generated sequence

of cases of rule B9, which is reviewed below along with two other relevant base rules.

B9. PROP ---> VBL ($K_{<D>}$) ($K_{<A>}$) ($K_{<O>}$) ($K_{<B>}$) ($K_{<I>}$) ($K_{<L>}$) ($K_{<E>}$)

B10. VBL ---> (mdl) VB

B11. VB ---> V (prt) (prt)

In rule B9, case categories are generated after VBL in a particular deep structure case order. After application of the sentence function rules, some of the cases will necessarily have to be repositioned, but others will not. For example, O, I, L, and E need no special placement rules. Rule B11 generates verb particles as co-constituents of verbs, but the Verb Particle Permutation rule moves them to a position after any case nouns which have been marked with the sentence function features <+sj> or <±oj> (see rule T7.2 in Chapter 7). After this rule, the V is then free for the various word order rules. The order of rule application is thus:

a) Sentence function transformations

b) Verb Particle Permutation transformation

c) Placement transformations

The placement rules described below have two major functions, the first being to ensure correct word order, the second to assign surface case features to the deep structure cases. (Surface case forms are described in Chapter 4.)

Before discussing the next two rules, we must first point out the nature of the "surface dative" position, as it has been referred to earlier. If either D or B is present in the proposition and not functioning as the subject of the sentence, one of them obligatorily occurs in this surface slot, regardless of whether it is functioning as direct or indirect object. The surface dative slot is found immediately to the right of the verb root. Forms are attached to it as suffixes and the resulting combinations may be considered stem formatives, for morphological purposes. Their tone depends both on the tone class of the verb root and their function as <±oj>. It is assumed that these cases are attached to V as sister nodes, i.e. they are dominated by the same node, which will be VB.

The first word order rule is T3.5, the Dative Case Placement rule. D was generated in the base as the right sister node of VB, i.e. dominated by PROP. Once the verb particle(s) are shifted out, D can be immediately adjoined as a suffix to the verb root V, resulting in a verb stem.

T3.5. Dative Case Placement

SD: $X - V - D_{\left\{\begin{smallmatrix}<+oj>\\<-oj>\end{smallmatrix}\right\}} - X$

$\qquad\quad 1 \quad 2 \quad 3 \qquad\qquad 4$

SC: $1 - 2 + 3_{<+dat>} - 4$

The rule attaches the D object to the verb and adds the surface case feature <+dat>. The next few examples only show D's (and B's) which are pronouns, since nouns present further word order complications to be discussed later.

18. na-i xiy-ówún-ta kaɗə ə ləmo mafata

A D[<+oj>
<+dat>] L

I will sell you (pl) at the slave market

19. na-i mbər xiy-ówùn fisha tə kwedeca

D[<-oj>
<+dat>]

I can sell you (pl) salt and bitter tomatoes

20. ə tər-îcé-nda kaɗə

$D_{<+oj>}$ A

They carried me away

21. ə tər îcê-nda $utəɗa

$D_{<-oj>}$ A O

They carried a knife to me

In propositions containing both D and B, rule T3.4 assigns B as the indirect object. Since the "surface dative" slot will already be filled by D functioning as the direct object, B remains in its base-generated position.

22. ə mbu'-úcé-i i-malɗəmtəɗa

D A B

<+oj> <-oj>

I told on you for the teacher

23. ndiɗ-án-tən i-incə
D A B
Fill it for me!

In transitive constructions containing O rather than D as direct object, B is obligatorily moved forward from its generated position behind O into the surface dative slot. This is accomplished by rule T3.6 following. More properly, the rule only shifts NOM forward, leaving Ø in its place, which together with the B preposition is realized anaphorically as /sə/. When B is shifted, the feature <+dat> is added.

T3.6. Benefactive Case Shift

SD: X - V - X O [prep - NOM]$_B$ - X
1 2 3 4 5

SC: 1 - 2 + 4$_{<+dat>}$ - 3 - Ø - 5

24. ə mbu'-úcə̀-i ndiktə'an sə (cf. example 22)
$B_{<-oj>}^{A}$ O
I told the news for you

25. na-amən ɨ́əf-ándà wanɗa sə
A B O
We will hit the boy for them

Next is the Subject Placement rule, which is a very general rule applying to any case which is marked with the sentence function feature <+sj>. The general statement about attachment of the subject NP is that it attaches to

the leftmost <+vb> constituent in the string of formatives. In Chapter 1, it was pointed out that three constituents have such a feature, the $\underline{aux}_2$ constituent, the modal /na/, and the verb root (or verb stem) itself. The subject NP can be attached to any of these. Surface case features are also assigned at this time, according to the type of auxiliary.

T3.7. Subject Placement

SD: $X - X_{<+vb>} (K_{<+dat>}) - X - K_{<+sj>} - X$

1 2 3 4 5

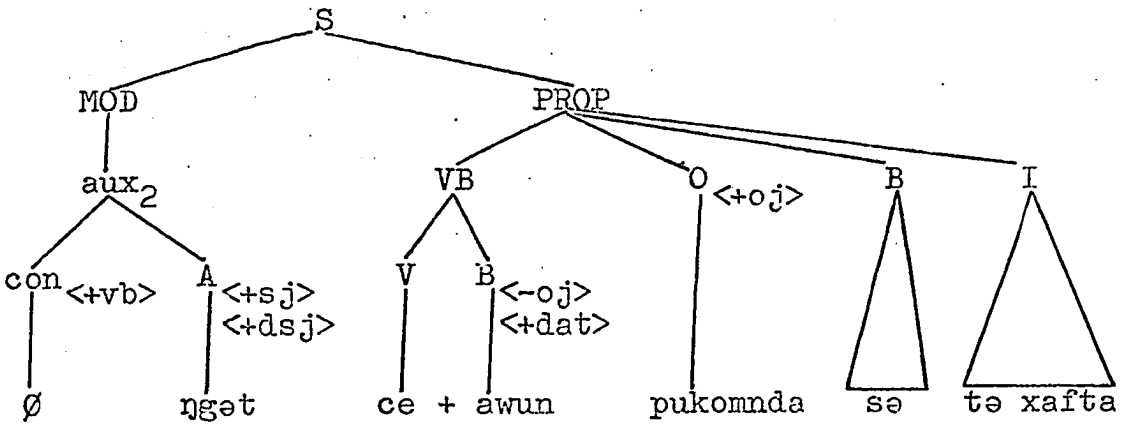
SC: 1 - 2 + 4 - 3 - 5

Conditions: 1 does not contain a <+vb> element

If 2 is con, then 4 is <+dsj>; otherwise, 4 is <+nom>

In the SD, the parenthesized $K_{<+dat>}$ refers to any D or B case which has been suffixed to the verb root by the two previous rules. If this constituent occurs in the SD, then "$X_{<+vb>}$" can only refer to the verb stem. In the absence of $K_{<+dat>}$, it can stand for any of the three constituents mentioned above. What is important here is that it be leftmost in the string. Following are a number of derived structural trees to illustrate this and the previous two rules.

26.

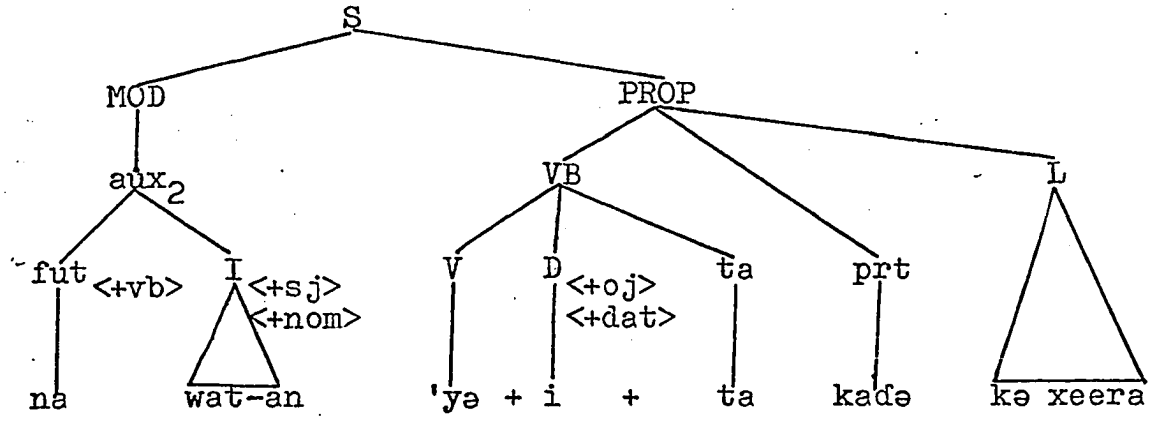


I shoot you rabbit for with arrow

I am shooting a rabbit for you with an arrow

(con tense is left-most <+vb> item.)

27.

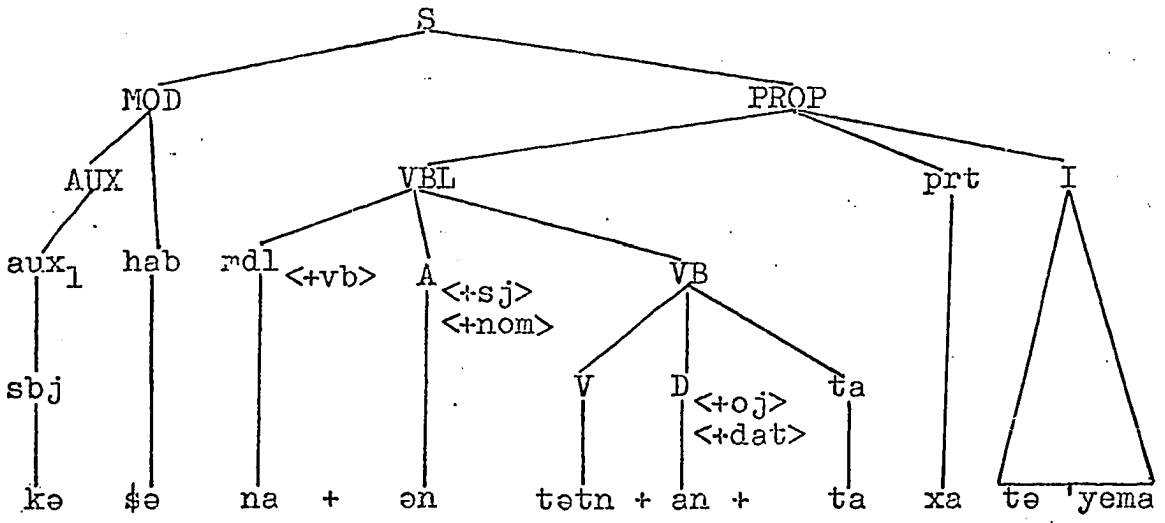


the fire burn me away on hand

The fire will burn me on (the) hand

(fut is the left-most <+vb> item.)

28.

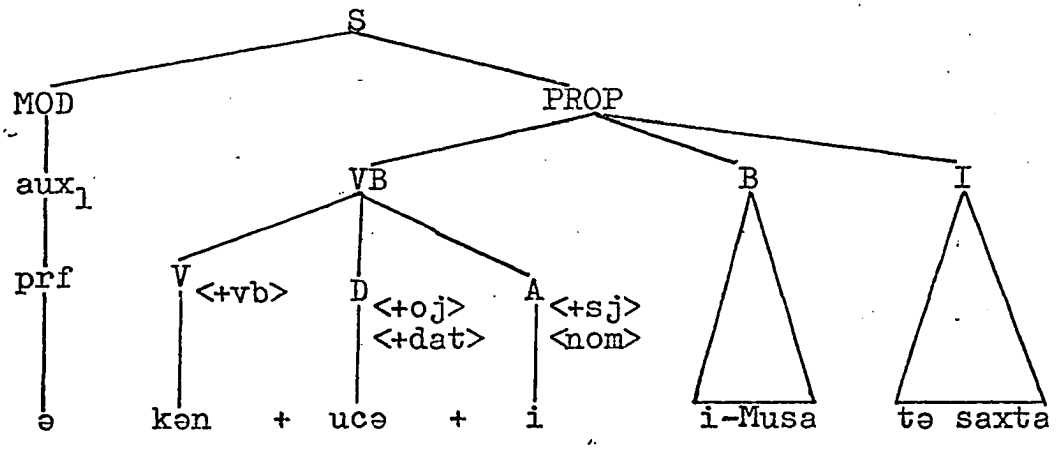


hab be you soak it well with water

You should (hab) be soaking it well with water

(mdl is the left-most <+vb> item)

29.

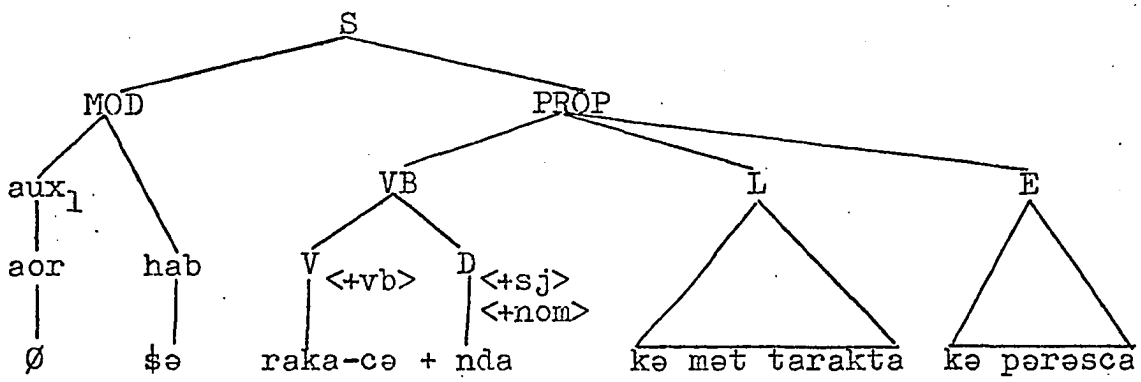


tie you I for Musa with rope

I had you tied with rope for Musa

(V is the leftmost <+vb> item)

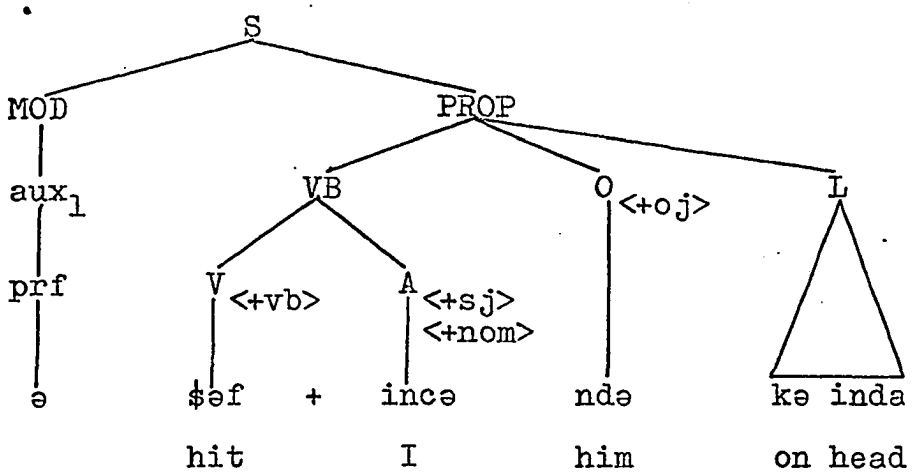
30.



They (hab) run to (the) playground like horses

(V is leftmost <+vb> constituent)

31.



I hit him on (the) head

(V is leftmost <+vb> constituent)

From these trees, it can be seen that a number of word order configurations are expressed in Ga'anda. In examples 26-28, the order is SVO. In example 29, the order is VOS. In example 31, the order VSO.

There remains a final transformation relating to case word orders called the <dative> Noun Pronominalization/ Shift rule. Both the Dative Case Placement and the Benefactive Case Shift rules move D and B noun phrases into the "surface dative" slot. In illustrating how these rules worked, only examples of D and B pronouns being suffixed to the root were given. (Pronouns are treated as a subclass of nouns with the feature <+pn>, see Chapter 4.) If the shifted D or B is a noun (i.e. has the feature <-pn>), it may not appear as a verb suffix, but has to be moved out of the dominating VB node. It is adjoined as an immediate right sister node of VB unless O case is present, in which case it follows it.

T3.8. <dative> Noun Pronominalization/Shift

SD: $X[V - K_{\begin{bmatrix}<+dat>\\<-pn>\\<\propto pl>\end{bmatrix}} - X]_{VB} - (O) - X$

1 2 3 4 5

SC: $1 + 2_{\begin{bmatrix}<+dat>\\<+pn>\\<-pl>\end{bmatrix}} - 3 - 4 - 2 - 5$

When the shift occurs the SC inserts a pronominal copy of the noun in the dative slot. In all instances, this pronoun is realized as the third person pronoun /an/ (all <-pl> nouns being redundantly <+III>, as described in Chapter 4). This pronoun is not sensitive to plurality,

being the form /an/ whether the replaced noun is plural or singular. As a pronoun, it is sensitive to whether the replaced noun functions as indirect or direct object, taking the corresponding object tone patterns for each. The examples below of input and output forms show this pronoun /an/ representing D and B nouns in both of their allowed sentence functions.

31. ** na-amən raka-terecəɗa-ta kə rəɓtəɗa ===>

A D [<+oj> <+dat>] L

31a. na-mən raka-án-ta terecəɗa kə rəɓtəɗa

A D D L

We will make the girls run to the dance

32. ** ə xiy-yikwata - i kaɗə ===>

D [<+oj> <+dat>] A

32a. ə xiy-án-i yikwata kaɗə

D D

I sold a goat

33. ** ə mbu'nafɗa - i ndiktə-an ɓəra ===>

D [<-oj> <+dat>] A O L

33a. ə mbu'án-i ndiktə-an nafɗa ɓəra

D A O D L

I told the news to the man yesterday

34. ** ə mbu'-nafda-i ndiktə-an sə bəra ===>

$$B \begin{bmatrix} A \\ \langle -oj \rangle \\ \langle +dat \rangle \end{bmatrix} \quad O \quad \text{for} \quad L$$

34a. ə mbu'-án-i ndiktə-an nafda sə bəra

B A O B L

I told the news for the man yesterday

The deep structure derivation of sentence 34 is given below, illustrating the relevant rules in this chapter.

34. ə mbu' i ndiktə-an i-nafda bəra
prf V A O B L
tell I news the for man yesterday

T3.1 ======> ə mbu' i ndiktə-an i-nafda bəra
<+vb> <+sj> <-sj> <-sj> <-sj>

T3.3 ======> ə mbu' i ndiktə-an i-nafda bəra
<+vb> <+sj> <+oj>

T3.4 ======> ə mbu' i ndiktə-an i-nafda bəra
<+vb> <+sj> <+oj> <-oj>

T3.6 ======> ə mbu' + nafda i ndiktə-an i-Ø bəra
<+vb> [<-oj> <+dat>] <+sj> <+oj>

T3.7 ======> ə mbu' + nafda i ndiktə-an i-Ø bəra
[<-oj> <+dat>] <+nom> <+oj>

T3.8 ======> ə mbu' + an + i ndiktə-an nafda i-Ø bəra
[<-oj> <+dat> <+pn>] <+oj> <-oj>

MP ======> /ə mbu'ání ndiktə-an nafda sə bəra/
I told the news for the man yesterday

The next two rules make slight adjustments in the surface realization between subject pronouns and <dative> pronouns when they co-occur in $\underline{aux}_1$ constructions. Recall that the Subject Placement rule assigns the surface case feature <+nom> to subject pronouns when the construction is in the aorist, perfective, or subjunctive tenses. In all these tenses, the subject follows or is suffixed either to the verb root itself or to the verb stem (i.e. root plus <+dat> pronoun). For example, in simple sentences, the rules have thus far generated strings of morphemes such as the following.

35. Ø ˌxiy + incə xwerma
    aor A O
    I buy guinea corn

36. ** Ø xiy + ú` incə xwerma
    $D_{\left[\begin{smallmatrix}<-oj>\\<+dat>\end{smallmatrix}\right]}$ $A_{<+nom>}$
    I sell guinea corn to you

37. ** ə kən-ú-incə
    prf $D_{<+oj>}$
    I had you tied up

38. ** kə raka-ándá-'ən
    sbj $D_{<+oj>}$
    We should make them run

39. ** ə mbu'-í`- nda ndiktə-an sə
    $B_{<-oj>}$
    They told the news for me

Example 35 has the correct surface structure and needs no further adjustments. Examples 36-39 illustrate a <+dat> D or B immediately juxtaposed to <+nom>. But Ga'anda surface structure does not allow pronouns with these two surface case features to be juxtaposed (with one exception, to be described at the end of this chapter). They must have an intervening "empty morph" /cə/, whose only function is to separate these two surface cases. (The tone of the <dative> forms is eventually spread onto this morpheme /cə/.)

T3.9. Pronoun Separator

SD: $X\ aux_1\ X - V - N\begin{bmatrix}<+dat>\\<+pn>\end{bmatrix} - N\begin{bmatrix}<+nom>\\<+pn>\end{bmatrix}\ X$

1 2 3 4

SC: 1 - 2 - 3 + cə - 4

Condition: 3 is not <+III,-pl>

36. ===> 36a. Ø xiy-úcə̀-i xwerma

37. ===> 37a. ə kən-úcə́-i

38. ===> 38a. kə rakà-ándàcə-'ən

39. ===> 39a. ə mbu'-ícə̀-nda ndiktə-an sə

In examples 36 and 37, a morphophonemic rule changes the first person singular <nom> form /incə/ > /i/ in the environment of a preceding <dat> pronoun.

That the /cə/ is truly an "empty morph" is confirmed by the fact that it does not appear in environments where

a) <dat> is not juxtaposed to <nom>, as in the $\underline{aux}_2$ tenses, and b) another morpheme is allowed to intervene between <dat> and <nom>. Point a) is illustrated by the following $\underline{aux}_2$ equivalents to 36-39.

40. ŋgət xiy-ú` xwerma
    con
    I am selling guinea corn to you

41. na-i kən-ú-ta
    I will tie you up

42. na-'ən raka-ándá-ta
    We will make them run

43. tanda mbu'-í` ndiktə-an sə
    They are telling the news for me

Point b) is illustrated by examples showing the past negative marker /wə/, the sequential marker /kə/ and relative marker /cə ~ tə/, all of which occur between <dat> and <nom> surface forms in appropriate tense environments. (For details, refer to the Past Negative rule in Chapter 6 and the Aspect Attachment rule in Chapter 5.)

44. Ø xiy-ú`- wə-i xwermə wa
        neg
    I don't buy guinea corn for you

45. ə kən-ú-wə-i wa
    I didn't tie you up

46. ə kən-ú-kə-i
        sqt
    (Then) I tied you up

47. ɓəra kən-ú-tə-i
rel
Yesterday I tied you up

48. tanda mbu'-í-cə ndiktə-an sə
rel
They told the news for me

49. ə raka-ándá-kə'ən
(Then) we made them run

The condition on the rule blocks the addition of the empty morph when the <dative> pronoun is the third person singular /an/. Compare the following examples.

50. Ø xiy-án -i xwermə kaɗə
$D_{<+oj>}$
but not * xiy-ancə-i

51. ə kən-án -i
$D_{<+oj>}$
I had him tied up

52. ə fər-áǹ -mən wanyimena
$D_{<-oj>}$
We gave kola to him

53. kə mbu'-áǹ -ən ndiktə-an sə
$B_{<-oj>}$
You should tell the news for him

There is one exception to this condition, to be described after the next rule.

The second pronoun adjustment rule has to do with the third person subject pronoun in the past tense (i.e. aorist

and perfective) constructions. In these tenses, it is deleted (i.e. is phonologically żero).

T3.10. Third Person Pronoun Deletion in Past

SD: X pst X V ($K_{\langle dat \rangle}$ cə) - N $\begin{bmatrix} \langle +nom \rangle \\ \langle +pn \rangle \\ \langle +III \rangle \\ \langle -pl \rangle \end{bmatrix}$ - X

1 2 3

SC: 1 - 3

This deletion rule follows the Pronoun Separator rule since the morph /cə/ is present.

54. Ø fər-ícə̀-Ø wanyimena
He gives me kola

55. ə mbu'-ándə̀cə-Ø ndiktə-an sə
He told the news for them

56. ə fər-í`- wə-Ø wanyimena wa
He didn't give me kola

The exception to the condition of rule T3.9 is when the <nom> subject pronoun is itself the third person singular pronoun.

57. Ø fər-áncə̀-Ø wanyimena — He gives him kola

58. ə mbu'-áncə́-Ø — He told on him

I have not tried to incorporate this exception into rule T3.9 but merely note it as such.

Chapter 4

The Noun Phrase

The base rule B9 generates the sentential proposition as consisting of a verb and a related set of abstract semantic-syntactic categories called cases. Case categories dominate or are realized by the lexical categories optional negative, preposition, and noun, as specified by the rule schema in B12:

B12. K ---> (neg) prep NP

The analysis of negated nouns is presented in Chapter 6. Prepositions are discussed at the end of this chapter. The present discussion deals with the various expansions of NP.

B13. NP ---> $\left\{\begin{matrix} \text{NOM (S)} \\ \text{SEN} \end{matrix}\right\}$

The first rewrite of NP is NOM, followed by optional S; this S is the source for embedded sentences which are discussed in Chapter 5. The second rewrite of NP is SEN, which provides the sentential source for adverbials such as IF and BEC clauses, see discussion of these in Chapter 6.

B14. NOM ---> nom $(\{K_{<D>}, K_{<B>}, K_{<L>}\})$

B15. nom ---> N (DET) (DST)

Rule B14 generates adnominal constructions; discussion of these is deferred until after the discussion of noun properties and co-constituents, as generated by B15. Nouns are subcategorized by a number of inherent lexical features, among which are <definite>, <plural>, and <T>. This last feature has to do with the noun linker Li which must be present in certain environments. Noun roots are classified into two classes on the basis of this feature.[1] <+T> nouns have a linker which is phonologically /tə/; <-T> nouns have a linker which causes ablaut in the root vowels.[2] The environments where Li as a surface constituent must be suffixed are slightly different for each class; therefore the rule is presented in two parts.

T4.1. Linker Addition

a) SD: $X - N \begin{bmatrix} <-def> \\ <-pl> \\ <-T> \end{bmatrix} - X$

$1 \quad 2 \quad 3$

SC: $1 - 2 + Li - 3$

---

1. Such a classification handles about 85% of all Ga'anda nouns. The remaining 15%, comprising loan words and words which have no Linker, are not handled in this grammar.

2. The ablaut form of the Linker on <-T> nouns is briefly described as causing the penultimate vowel only or all vowels if they are identical to be fronted according to their vowel height: high vowels /ə, u/ > /i/; low vowels /a, o/ > /e/.

b) SD: $X - N \begin{bmatrix} <\alpha def> \\ <-pl> \\ <+T> \end{bmatrix} - X$

1 2 3

SC: 1 - 2 + Li - 3

In a), Li is suffixed to <-T> nouns which are indefinite and singular. In b), Li is suffixed to <+T> nouns which are singular whether they are definite or indefinite.[3] Nouns which have none of these specified features simply occur in their root or base forms.

In the examples below, the plural marker is /cə/, the indefinite marker is /a/, and the definite marker is /an/. Examples with <-T> nouns:

1. wassan- > wesshen-a[4] a squirrel

Cf. 2. wassan-cə-a, wassan-cə-an squirrels, the squirrels

---

3. These environments seem to be almost opposite to the conditioning environments where a linker is added in Tera (Newman 1970:47). There, it is added when a noun root is followed by a plural or a definite marker or determiner. These syntactic differences between the two languages are such that one might question whether the Ga'anda forms should be treated as manifestations of a "linker" morpheme. Paul Schachter (personal communication) suggests that it might be treated as a number morpheme, specifically, a segmentalization of <-pl>. <+T> nouns would have /tə/ and <-T> nouns would have Ø alternating with ablaut for <+def> and <-def> nouns, respectively. My present analysis allows one to match the Ga'anda forms with the two morphologically identical T and ablaut linkers in Ters.

4. /s/ before a front vowel /i/ or /e/ is palatalized.

3.	naf- > nef-a	a man
Cf. 4.	naf-cə-an, naf-an	the men, the man
5.	dəŋ- > diy-a[5]	a bird
Cf. 6.	dəŋ-cə-a	birds
7.	wur- > wir-a	a house
Cf. 8.	wur-an	the house

Examples with <+T> nouns:

9.	yikwa- > yikwa-tə-a	a goat
10.	yikwa-tə-an	the goat
Cf. 11.	yikwa-cə-a, yikwa-cə-an	goats, the goats
12.	xaf- > xaf-tə-a	an arrow
Cf. 13.	xaf-cə-a, xaf-cə-an	arrows, the arrows
14.	mban- > mban-tə [mbandə][6]	a road
Cf. 15.	mban-cə-a	roads

Since plurality and definiteness are inherent lexical features of nouns, rules are needed to segmentalize these features as surface constituents and add them to the noun root in the proper sequence of morphemes. This is done by the following two ordered rules.

---

5. <-T> noun roots ending /-ŋ/ change to /-y/ under Linker ablauting.

6. /-t-/ preceded by any final nasal /m, n, ŋ/ is realized as /-nd-/.

T4.2. Segmentalization of Noun Plurality

SD: $X - N\begin{bmatrix}<+pl>\\<-pn>\end{bmatrix} - X$

$\quad\quad 1 \quad\quad 2 \quad\quad\quad\quad 3$

SC: $1 - 2 + Pl - 3$

The constituent Pl is suffixed immediately to the noun root, see preceding examples 2, 4, 11, and 15. The rule does not apply to pronouns, where person and plurality are incorporated as portmanteau forms.

T4.3. Segmentalization of Noun Definiteness

SD: $X - N\begin{bmatrix}<-def>\\<+def>\end{bmatrix} \left(\begin{Bmatrix}Li\\Pl\end{Bmatrix}\right) - X$

$\quad\quad 1 \quad\quad\quad\quad 2 \quad\quad\quad\quad 3$

SC: $1 - 2 + \begin{bmatrix}Idf\\Def\end{bmatrix} - 3$

Conditions: Idf is added only if 3 is #

Def is not added if 3 is DET

This rule segmentalizes both indefinite and definite markers; the two conditions on each of these is taken up in turn. Regarding the first condition, the previous rule T4.1 adds a linker to singular indefinite nouns in all environments. An overt indefinite marker /a/ is used only in one environment, that of prepausal position (symbolized by #). This marker /a/ is attached either to Li (in the

singular) or Pl. Compare the following non-final and final environments of indefinite nouns.

16.	wim sə	There is a rat
17.	ə nincə wim-a	I saw a rat
18.	ŋgə wum-cə sə wa	There aren't any rats
19.	ə nincə wum-cə-a[7]	I saw rats
20.	ə xiywi xaf-cə wa	I didn't buy arrows
21.	ə xiyincə xaf-cə-a	I bought arrows
22.	xaf-tə sə	There is an arrow
23.	ə cincə xaf-tə-a	I shot an arrow

Definite nouns add the Def marker /an/ immediately after the root, plus plural marker or Li, when present.

24.	xaf-tə-an xaaxa	The arrow is on the ground
25.	ə nincə xaf-cə-an	I saw the arrows
26.	yikwa-tə-an xaɗcan	The goat is sick
27.	yikwa-cə-an ɗəpara-ca	Goats are domesticated animals

The definite marker has two phonologically conditioned allomorphs, /an/ if preceded by a consonant, and /'an/ if preceded by a vowel. Therefore example 26 is /yikwa-tə-'an/. When morph-final schwa on the Linker is deleted, the form becomes /yikwat'an/ which becomes [yikwaɗan] since /t + '/ > [ɗ].

---

7. Morph-final /ə/ is deleted in non-pausal position unless the deletion would cause a violation of the phonotactic structure of the word: /wum-cə-a/> [wum-ca]; /xaf-tə-a/> [xaf-ta].

The second condition on rule T4.3 deals with the segmentability of <+def> when a determiner follows. As generated by rule B15, nouns optionally take a determiner. Determiners are structurally distinct from definite/indefinite markers, the former being lexical categories which are optional co-constituents of the noun, the latter being inherent properties of the noun. A noun not modified by a determiner must still be either definite or indefinite. In addition, the determiners themselves, of which there are four, are each marked in the lexicon with the feature <def>. Co-occurrence restrictions ensure, for example, that a <+def> noun can only co-occur with a <+def> determiner when that constituent has been chosen. The definite marker and a definite determiner may not both appear in the surface structure. Definiteness can only be overtly marked once, either by /an/ ~ /'an/ or by a determiner. The problem does not arise with the indefinite marker and an indefinite determiner since, as we have seen, an indefinite marker is only added in pre-pausal position. If a following indefinite determiner is chosen, this automatically precludes /a/ from being added. The four determiners are chosen directly from the lexicon, where they are marked by the category feature <+DET> and the lexical feature <-def> or <+def>. The two <-def> determiners are /na/ 'a certain, some X' and /ini/ 'a particular X'. The two <+def> determiners are /di/ 'that X'

and /ɗa/ 'the said X'.

This last determiner has the specific meaning of "previous mention" or anaphoric reference. In the examples below, note that a <-T> noun like /naf/ has the ablaut linker only with indefinite determiners, whereas a <+T> noun like /xaf/ has the /tə/ linker whether the determiner is definite or not, in accordance with rule T4.1.

28. nef-na, xaf-tə na — some/a certain man, arrow
29. nef-ini, xaf-tə ini — a particular man, arrow
30. naf-ɗi, xaf-tə-ɗi — that man, arrow
31. naf-ɗa, xaf-tə-ɗa — the said man, arrow

Rule B15 also generates an optional constituent DST denoting the category "distance". Nouns are optionally designatable as being "near/seen", marked by the lexeme /ya/, or "far/not seen" marked by the lexeme /yu/. These markers may be preceded by an optional intensifier /en/, which only occurs as a bound morpheme to /ya/ or /yu/. There are no restrictions as to definiteness of nouns co-occurring with distance markers. When DST morphemes and determiners co-occur, their combined semantic reading will often mean "this/that", but some of the English equivalents below are at best approximate.

31. naf-ɗi ya — that man near = this man
32. naf-ɗi yu — that man far = that man
33. naf-cə-ɗi en ya — these here men
34. naf-cə-ɗi en yu — those there men

35. naf-ɗa en ya — this here said man

36. nef ini en yu — a particular man there = that very man

37. ə ninɔə nef ya — I saw a man (near)

38. ni xiy pirshə yu — I will buy a horse (not near)

A noun modified by an embedded clause obligatorily requires a determiner (see Chapter 5 following). Head nouns may take any of the four determiners to introduce the relative clause. If DST is also chosen, it is post-posed behind the embedded sentence. One of the semantic functions of DST in this grammatical construction is that it serves to disambiguate the neutralization which occurs between continuous and future tenses in relative constructions. Sentence 41, for example, is ambiguous when no DST is chosen.

39. wanɗa ɓa-ta
The boy is coming

40. na wanɗa ɓa-ta
The boy will come

===> 41. wanɗa [na-cə ɓa-ta]$_S$
{The boy who is coming
{The boy who will come

When distance markers are chosen, however, the relative clauses are given unambiguous readings.

41a. wanɗa [na-cə ɓa-ta] ya — The boy who is coming

41b. wanɗa [na-cə ɓa-ta] yu — The boy who will come

In 41a, the presence of /ya/ causes the sentence to be interpreted as in the continuous tense, since the noun is

either near or seen. In 41b, the presence of /yu/ means that the object is not near or seen, thereby leading to a future tense interpretation.

In general, DST is preferred in relative clause constructions. In certain cases, DST may be the only marker which distinguishes an emphasized construction from a relative clause construction.

42. $iwdi səm-tə-i — It's that meat I ate

43. $iwdi [səm-tə-i]$_S$ — The meat which I ate

42 and 43 are phonologically identical but 43 contains a relative clause. If DST were chosen, the two sentences would not be homophonous, since DST must be permuted.

44. $iw-di-ya səm-tə-i — It's this meat I ate

45. $iw-di [səm-tə-i] ya — This meat which I ate

If no determiner is chosen, there is no ambiguity:

46. $iw səm-tə-i — It's meat I ate

This tendency of distance markers to be shifted to the end of a clause is not restricted to embedded sentences. Even in simple constructions, these markers are often shifted to the end of a "phrase" -- which I use in its vaguest sense since it is not very clear what the structural limitations of this "phrase" are. Perhaps it is also phonologically conditioned. Unlike the relative clause environment where permutation is obligatory, the permutations below are all optional but many informants prefer them. Since I cannot

formulate an explicit permutation rule at this time, I simply present examples of the various constructions where it may occur.

47. ə kuŋ mban-ɗi-ya xa =
This road really wound around
ə kuŋ mbanɗi xa ya
(DST permuted after verb particle)

48. pərs-ɗi ya yamən xaɗcan =
This horse of ours is sickly
pərsɗi yamən ya xaɗcan
(DST permuted after adnominal possessive)

49. naf-ɗa yu masa-ta =
That said man is laughing
nafɗa masata yu
(DST permuted after verb in $\underline{aux}_2$)

50. ə kəsáǹi tarɗa wanɗi yu sə =
I helped that boy with the work (lit. I caught the work for that boy)
ə kəsáǹi tarɗa wanɗi sə yu
(DST permuted after B particle /sə/)

51. xiy í caməscə-ɗi-yu sə xar =
Buy for me some of those chickens!
xiy í caməscəɗi sə xar yu
(DST permuted after B and verb particles)

An important grammatical distinction exists between

the two definite determiners in the context of embedded sentences. Determiners /ɗi/ and /ɗa/ mark the distinction between restrictive versus non-restrictive relative clauses, respectively. Restrictive clauses with /ɗi/ may be optionally modified by a universal quantifier such as /nat/ 'all, any', compare examples 52-53 to 54-55 with /ɗa/, which may not take this.

52. (nat) nafcə-ɗi [ɟə par-cə cə tera]$_S$ waat kə yipnda ə farwiyta

(All) men who (hab) spend the day working must rest at night

53. ɟən-i-tən wan-ɗi [na-wak-cə leekəta]

Send me a boy who doesn't fear/isn't afraid

54. nafcə-ɗa [ɟə par-cə cə tera] ya (tanda) yax sa mbaala ə farwiyta

The men, who spend the day working, (they) like to drink beer at night

55. ɟən-i-tən wan-ɗa [na-cə kə shiketəna]

Send me the boy, who is my friend

Another distinction between the two types is with regard to the "indirect question" clauses headed by the interrogative pronouns "who, what, when, where", which in Ga'anda are formed with the pro-forms of nouns designating "person, thing, time, place", respectively. (see later; also see Chapter 5). These relative clause heads must all be formed with the determiner /ɗi/, i.e. they are restric-

tive clauses. It is generally true of restrictive clauses that they not take DST, but this is not necessarily so. Non-restrictive clauses, on the other hand, are usually preferred with DST markers.

56. sənwi naf-ɗi [ba-ca]
<+pro>
man

I don't know who came

Cf. 57. sənwi naf-ɗa [ɓa-ca] yu

I don't know the man who came

58. ə sənincə ən-ɗi [xiy-tu]
<+pro>
thing

I know what you bought

59. ə mbu'-i-cə fartə-ɗi [na-tən pəɗata]
<+pro>
day, time

He told me when he was leaving

60. sənən mət-ɗi [sa'-tən 'yena] wá
<+pro>
place Q

Do you know where he sleeps?

As noted before, the determiner /ɗa/ is an anaphoric determiner indicating that the noun in question has been previously mentioned or is known, i.e. "the said X, who..." Within a discourse where the referent remains the same, the determiner /ɗa/ is used, for example:

61. i) ni xiy lawlawa-ta I will buy a book

ii) lawlawat-ɗa mancan The book is big

Recent research in transformational grammar has shown that it may be possible to distinguish between the two types of relative clauses by deriving non-restrictive ones from two conjoined sentences in which one sentence can be embedded into the other. Conjunction is not handled at all in this grammar, but it is conceivable that, given the conjunction of sentences 61 i) and 61 ii), we can derive 61 iii) from a rule which allows 61 i) to be embedded in 61 ii) just when the determiner /ɗa/ is present.

61. iii) lawlawat-ɗa $[$na-ti xiy-ta$]_S$ mancan

The book, which I will buy, is big

The crucial problem, of course, is how to generate anaphoric /ɗa/ in the first place within a sentence-generating grammar (as opposed to a discourse-generating one). I have allowed it to be chosen context-freely from the lexicon just like any of the other determiner morphemes. The Relative Clause transformation simply allows any determiner to be attached to the head noun. Admittedly, this is "weak generation" of the non-restrictive relative clause. On the other hand, it does allow us to generate such simple but distinct sentences as 62 and 63.

62. nafɗi-ya masata This man is laughing

63. nafɗa-ya masata This said man is laughing

We now continue our discussion of some of the other lexical features which nouns have. One of these is the feature <prp>, needed to distinguish proper from common nouns. Another more important feature is <pn>, which distinguishes common nouns from the subset of nouns called pronouns. Common nouns, marked <-pn>, are redundantly specified as being <+III>, i.e. as third person. This feature is needed in rules where pronominalization occurs. Pronouns, marked <+pn>, are further subdivided by the person features <+I>, <+II>, and <+III>, which, when combined with the feature <+pl>, generate singular and plural pronouns. Two more pronoun features are also needed. First person plural pronouns have to be specified <±inc> in order to account for the distinction between 'we' inclusive and 'we' exclusive. Another feature <spc> is needed in the third person plural to distinguish the impersonal or non-specific pronoun, which is morphologically a plural pronoun, from the normal third person plural pronoun 'they'.

Ga'anda is particularly rich in the number of pronoun paradigms it has. There are seven sets, each identified by a surface case feature. Surface case features are only relevant to pronouns, not nouns. These surface case features, as we have seen, are assigned transformationally under a variety of circumstances, such as subjectivalization, objectivalization, and emphasis. The paradigms are given here for reference only, in view of the fact that no

sample lexicon is given in this grammar. In the paradigm chart below, note that there are two sets with the surface case feature <+nom>. It is assumed that when the Subjectivalization rule assigns <+nom>, it will mean the set <+nom$_1$>. A later morphophonemic rule will specify <+nom$_1$> > <+nom$_2$> in specific grammatical environments, namely when the subject pronouns are suffixed to the future marker /na/, the sequential marker /kə/, or the relative marker /cə/. The seven surface case features are <disjunctive>, <nominative$_1$>, <nominative$_2$>, <accusative>, <dative>, <benefactive>, and <inalienable>.[8] This last case feature is the only one which is not transformationally assigned, since inalienable possessives are generated directly in the base as adnominal Datives. For the moment, I am assuming that there exists a (admittedly ad hoc) morphophonemic rule which says <+dat> > <+inal> in the environment of an immediately preceding N.

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8. Surface case features are all assigned positive values, i.e. <+x>, <+y>, etc. None are assigned <-x>, <-y>, etc.

Person	+dsj	+nom$_1$	+nom$_2$	+acc	+dat	+ben	+inal
<+I, -pl>	ŋgə̀t(a)	incə́/í[9]	i	nencə	i	íncá	ná
<+II, -pl>	ca	ən/ú	o	wecə	u	ó	ú
<+III, -pl>	mə̀$à̀n	Ø/á	an	ndə/ancə[11]	an	án	án
<+I, +pl, +inc>	ŋgəmən	mə́n	amən	mencə	amən	ámə́n	mə́n
<+I, +pl, -inc>	ŋgə'ən	'ə́n	a'ən	ŋgə'ən	a'ən	á'ə́n	'ə́n
<+II, +pl>	ŋgəwun	wún	awun	wuncə	awun	áwún	wún
<+III, +pl, +spc>	tanda	ndá	anda	tanda	anda	ándá	nándá
<+III, +pl, -spc>[10]	fə̀n	fə̀ə	fee	--	--	--	--

(Tones are only marked for sets which have inherent tone; other sets take their tone from the tense markers or the verb roots to which they are suffixed.)

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9. The first three persons in this paradigm have grammatically conditioned allomorphs. First person /i/ occurs when preceded by a <dative> pronoun; second person /u/ occurs when preceded by the rel allomorph /tə/; third person /a/ occurs in the subjunctive tense.

10. The impersonal pronoun "one" only occurs as the subject of the sentence in my data. However, I did not check whether this pronoun could serve in the other functions, or whether, for example, it could occur as the adnominal in an adnominal Dative construction.

11. /ndə/ is the historically older third person object pronoun. The form /ancə/ is obviously an analogic extension of /an/ + /cə/. This /cə/ appearing on most of the <accusative> pronouns seems to be an "empty morph", the same one as in the Pronoun Separator rule T3.9 discussed in Chapter 3.

Certain characteristics are shared by pronouns and proper nouns which are not shared by common nouns. Pronouns and proper nouns are inherently <+def> and <-pl>. They may not take indefinite/definite markers or co-occur with determiners. The first restriction can probably be stated as an extra condition on the T4.3 rule given earlier. The second restriction must be stated as a lexical co-occurrence restriction between these subsets of nouns and the determiners. Proper nouns and pronouns are classified as being <+T> nouns, although in most environments, a linker will not be overtly present. A special condition is needed on part b) of rule T4.1 so that it does not apply to <+T> nouns which are either <+prp> or <+pn>. The reason why these nouns must be marked <+T>, however, has to do with when they serve as head nouns of relative clauses. In that environment, a linker of the form /tə/ is obligatorily present, see rule T5.5 in Chapter 5.

There is a small set of nouns in the lexicon which have a special lexical feature not shared by the other nouns. This is the feature <pro>. Choice of <+pro> indicates that the noun is a "pro-form" or an unspecified, indefinite noun, corresponding to English "some, something, somewhere." Ga'anda pro-forms are identical with the subset of nouns comprised of /naf/ 'person, man', /mət/ 'place', /far/ 'day', and /ən/ 'thing'. Each of these four nouns

will be specified for the feature <pro> in addition to its other noun features. A <+pro> noun is redundantly <-def>. Whenever a pro-form noun is chosen, co-occurrence restrictions ensure that they occur with the pro-form determiner, which is the indefinite determiner /na/. Below are examples showing pro-forms in various cases and sentence functions.

64. ə ɓi [nef-na]$_{O}$ <+sj>

Someone came

65. ə $əf-icə [nef-na]$_{A}$ <+sj>

Someone hit me

66. ə rək-án-i [nef-na]$_{D}$ <+oj>

I had someone chased away

67. ə mbu'-án-i ndiktə'an [nef-na]$_{D}$ <-oj>

I told someone the news

68. ni nəxa [ənа]$_{O}$ <+oj>

I will cook something

69. ə səɓ [ənа]$_{O}$ <+sj>

Something happened

70. ə kənincə ndə [tə ənа]$_{I}$

I tied him with something

71. ni ɗəta [kə mət-ni]$_{L}$ <-tm>

I will go someplace

72. ə bincə [far-ni]$_{L_{<+tm>}}$ [12]

I came sometime ago, day before yesterday

In these last examples, note that Locative case nouns are either <+time> for time nouns or <-time> for place nouns, see more discussion in Chapter 8.

One of the syntactic properties of these pro-form nouns is that they are optionally deletable within a simple sentence (regardless of their case function) unless they have been chosen as the subject of the sentence. This means that an A case noun is never deletable, nor is any other case noun that has been subjectivalized. <+tm> nouns are also not deletable.

T4.4. Deletion of Pro-Form Nouns - OPT

SD: X - prep - $N_{<+pro>}$ $DET_{<+pro>}$ - X

1 2 3 4

SC: 1 - 2 - Ø - 4

Condition: 3 is not <+sj> nor <+tm>

---

12. In both these forms, the indefinite determiner has changed phonologically to /ni/. The form /mət-ni/ has a preferred phonetic variant [min-ni] in which syllable-final /t/ has assimilated to the following nasal, and the root vowel /ə/ has fronted due to a neighboring front vowel. (Both phonetic changes occur in other morpheme sequences. Underlying /ə/ is particularly unstable and will generally assimilate to neighboring--preceding or following--/i/ or /u/.) The form /far-ni/ can refer to "any time before yesterday", which may or may not actually be the "day before yesterday".

The resulting construction of prep + Ø is morphophonemically realized as one or another anaphora form, depending on the case:

$$\text{prep} + \begin{bmatrix} \emptyset_{<+D/O>} \\ \emptyset_{<+I/L>} \end{bmatrix} > \begin{bmatrix} /an/ \\ /sə/ \end{bmatrix}^{13}$$

Examples above which can undergo the deletion rule and which have anaphoric forms are:

68. ===>	68a.	ni nəxa-an-ta	I will cook it
70. ===>	70a.	ə kənincə ndə sə	I tied him with it
71. ===>	71a.	ni ɗəta sə	I will go there

If examples 66 and 67 were to undergo the deletion rule, the noun itself is simply deleted. /an/ appears in the surface structure, not because of the deletion rule, but because of previous application of rule T3.8 discussed in the preceding chapter.

66. ===>	66a.	ə rək-án-i	I had him chased away
67. ===>	67a.	ə mbu'-án-i ndiktə'an	I told him the news

The feature <pro> has syntactic relevance for another

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13. This /an/ is being treated as an anaphoric (portmanteau) morpheme rather than a result of pronominalization, although I am not sure that such a distinction exists. An /an/ resulting from a deleted O case will have to be moved up to the "surface dative" slot. B case anaphoric markers are not clear-cut, sometimes being realized as /sə/ (see rule T3.6), sometimes as /an/ (see rule T3.8, Chapter 3). In general, the analysis of pronominalization and anaphoric processes in Ga'anda still remains problematical.

class of "nouns". These are the question words, which are analyzed as noun pro-forms with the additional feature <+q>. Any <+pro> noun can be optionally <±q>. Following are the morphophonemic realizations of these question words, including the interrogative determiner. There is a general co-occurrence rule which prevents more than one <+q> item per proposition and it will prevent a question word from taking an interrogative determiner, or for that matter, from co-occurring with the sentence question constituent Q, which is also marked lexically as <+q>.

"person" [<+pro> <+q>]	--->	wunə	who/where?
"place" [<+pro> <+q>]	--->	ayə	where?
"time" [<+pro> <+q>]	--->	kwatə	when?
"thing" [<+pro> <+q>]	--->	mə[14]	what?
DET [<+pro> <+q>]	--->	yenə	which (one)?

These question words occur in sentences in the same positions in which <-q> pro-forms or regular nouns occur.

73. ə xiyi $iwa ə ləmo <-pro> He bought meat at market

74. ə xiyi $iwa ə mət-ni [<+pro> <-q>] He bought meat somewhere

---

14. /mə/ is the only question word for which a plural form exists, /məcə/.

75. ə xiyi ɬiwa ə ayə $\begin{bmatrix} <+pro> \\ <+q> \end{bmatrix}$ He bought meat where? (i.e. where did he buy meat?)

Question words share a further characteristic with regular nouns. All nouns can be optionally emphasized, regardless of whether they are common nouns, proper nouns, or pronouns. (Emphasis is indicated as the noun feature <+e>.) Question words are similar in that, with one exception, emphasis for them is also optional.[15] Only the question word /wunə/ 'who/whom' is inherently <+e>, so that it obligatorily takes the emphasis transformation in contrast to other question nouns which only optionally take it. Both emphasis and question word constructions are discussed further in Chapter 5.

We now turn back to base rule B14, which generates adnominal constructions.

B14. NOM ---> nom $(\{K_{<D>}, K_{<B>}, K_{<L>}\})$

Any noun, whatever its case function, can be optionally related to or modified directly by another case noun. Evidence for at least three cases which can function adnominally are found in Ga'anda. The abstract structure of each construction can be represented as follows:

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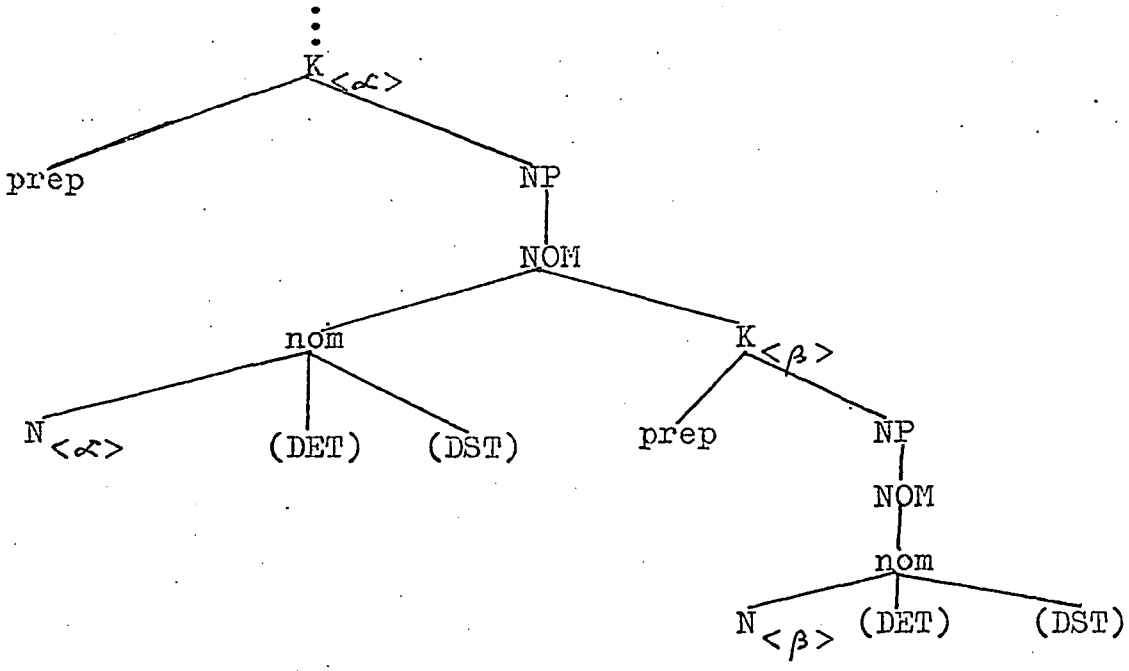
15. According to Schuh (1971), emphasis is an inherent feature of question words in most Chadic languages. Ga'anda, like Tera, constitutes a counterexample to his claim.



Note that both nouns in the adnominal construction are dominated by the case of the first noun. The braces notation within the parenthesized second constituent of rule B14 indicates that an optional adnominal may be chosen from among three possible cases. Since the rules are recursive, an adnominal may itself be adnominally modified.

Our present knowledge of adnominal constructions in Ga'anda leaves many questions unanswered, in particular, those relating to feature specifications between N + N constructions, conditions on lexical insertability, co-occurrence restrictions with determiners, co-occurrence restrictions as heads of relative clauses, etc. The following description of some adnominal construction types

only deals with a few of their details.[16]

The most obvious adnominal construction is the adnominal Dative which generates the inalienable possessive construction. This type of possession only applies to a small class of nouns denoting kinship relationships. With these nouns, marked <kn>, the possessor (noun or pronoun) is immediately juxtaposed after the head noun. The pronoun set used in this construction differs both from the regular possessive pronouns and from the dative pronouns which occur when D is an independent case in the proposition (see paradigm chart above).

76.	kwaa$ kaandeca	origin of (the) Ga'anda people
77.	kwaa$ na	my origin, ancestry
78.	shikecə nanda	their friends
79.	mbərtə Dəsanxa	Dəsanxa's age-group
80.	cəma perrəda	husband of the bride

In all the examples above, the D noun is presumably <+human>, accounting for the fact that it is interpreted as a possessive construction. However, not all adnominal Datives denote a relationship of possession. A second type is when the adnominal noun is in an intrinsic relation to the head noun or is an inherent property of that noun. The head noun need not be <+kn>, nor the adnominal <+hum>.

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16. See my article "Downstep in Ga'anda" for some tonal characteristics of adnominal constructions.

In fact, a range of nouns occur in both slots.

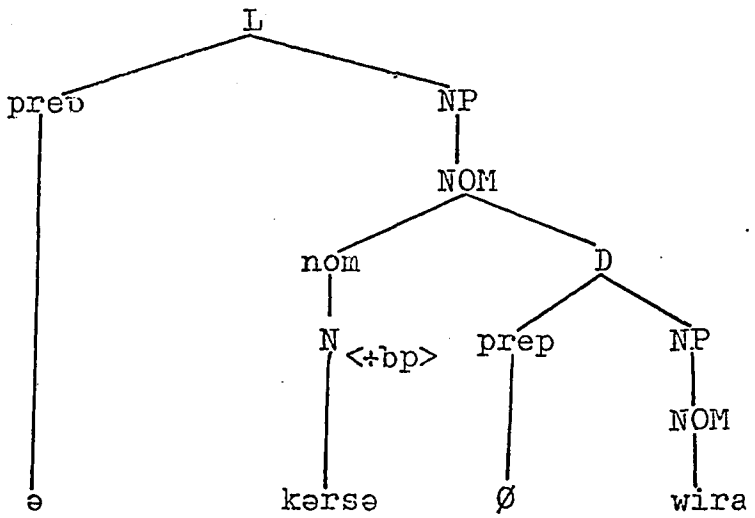
81.	kwaa$ kataku	origin of (the) sweet potato
82.	ləmo $iwa	market for meat, meat market
83.	al nɛfa	bone of man, human bone
84.	rəŋ tirekta	bow for hunting, hunting bow
85.	ɓəndu xwerma	guinea corn granary
86.	mban kanu	(the) Kano road
87.	tar xəŋga	farm work
88.	mbaal sa-ta[17]	beer of drinking, drinking beer (not for cooking)

A third type of adnominal Dative has to do with body part nouns (marked with the feature <+bp>). In Ga'anda, these nouns are normally alienably possessed (see examples later) but they can take adnominal Dative modification to indicate spatial relationship to some noun when they are dominated by L case (preceded by the preposition /ə/).

89.	ə kərsə wira	behind a house (lit. at back of house)
90.	ə mii kufa	at river's edge (lit. at mouth of river)
91.	ə xur akwati	inside a box (lit. in stomach of box)
92.	ə $əma na	beside me (lit. at my ear)

17. Recall that verbs can also be nouns, i.e. that they are marked in the lexicon with the feature <±N>. As nouns, they can occur in either noun position of adnominal constructions, compare examples 88 and 131.

The structural tree for example 89 would look like this:



The second kind of adnominal construction is the adnominal Benefactive, which generates the regular possessive construction. Ga'anda seems to be one of the few languages where this construction cannot be transformationally derived from any reduced embedded sentences of forms such as "X has Y", "Y is with X", or "Y is on X". Such deep structures do not exist in Ga'anda. Even the one construction which first appeared to be a possible source turns out to need an adnominal B in the first place. This is the independent possessive construction of the form "Y is X's", for example,/yikwat-diya yi-an/ 'this goat is his'. In Chapter 8, this sentence is shown to be derived from a predicate nominal source in which a repeated noun is deleted, i.e. 'this goat is his (goat).'

A noun or pronoun adnominally modifying a noun Benefactively is joined to it by the B case preposition /í/

"of/for". Compare examples 93-98 with examples 76-80.

93.	xaaxə i-kaandeca	land of (the) Ga'anda people
94.	pirshə i-incə	my horse
95.	wancə i-anda[18]	their children
96.	xaf-tə i-Dəsanxa	Dəsanxa's arrow
97.	nu i-nafda	the man's wife
98.	ɓindiw i-nu-nefa	a woman's granary

The B forms occurring in the regular possessive construction are the same as those which occur when B is a separate case in the preposition. Because of this, certain sentences may be ambiguous.

99. ə capani kapat í-̀an — I washed a gown for him
A D B

100. ə capani [kapat í-̀an]$_D$ — I washed his gown
A D B

These two sentences are phonologically identical although structurally different. In 99, B is a sister node of D; both are dominated by PROP. In 100, B adnominally modifies D and is therefore dominated by D. If the D nouns were to be optionally deleted from each sentence, the surface structures would no longer be identical. The B case preposition /í̀/ is realized as a long form /yî/ when the head

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18. The terms for 'child' and 'wife' are <-kn> and therefore take the regular not the inalienable possessive construction. The word /nu/ has two meanings, 'wife' as in 97, or 'female' as in 98, where it takes an adnominal Dative.

noun it adnominally modifies is deleted.

99. ===> 99a. ə capani Ø í-an I washed Ø for him

100. ===> 100a. ə capani Ø yì-an I washed his Ø

As we said earlier, body part nouns are alienably possessed in Ga'anda, that is, they take an adnominal Benefactive.

101.	kirshə i-Musa	Musa's back
102.	xwir i-wandə	the boy's stomach
103.	$əma-tə i-incə	my ear

However, even these nouns can take adnominal Dative modification when they function as Locatives, refer back to examples 89-92. In general, it appears that most nouns (except <+kn> nouns) can be adnominally modified by either B or D cases. Compare these further pairs illustrating B and D, respectively.

104.	ləmo i-ŋgopi	Gombi's market
Cf. 105.	ləmo ŋgopi	(the) Gombi market
106.	nafcə i-ɓukwiya	today's men
Cf. 107.	nafcə ɓukwiya	men (of) today
108.	'yem i-kwiy 'yamdə	the well's water (lit. water of the water hole)
Cf. 109.	'yam kwiy 'yamdə	the well water

Co-occurrence restrictions between head nouns and adnominal nouns have to take into consideration a number of factors. For example, as we saw, an animate noun can

adnominally modify a body part noun either Datively or Benefactively, e.g. /ə kərsə Musa/ 'behind Musa' or /ə kirshə i-Musa/ 'at Musa's back'. An inanimate noun can modify a body part noun Datively, e.g. /ə kərsə miikətnda/ 'behind a door' but it seems to be questionably grammatical Benefactively, e.g. (?) /ə kirshə i-miikətnda/ '(?) at the door's back'. However it is quite acceptable for inanimate nouns to modify non-body-part nouns Datively or Benefactively, as in examples 104-109.[19]

Examples 108 and 109 illustrate one of the differences between the two types of adnominals which I do not yet understand. In 108, an adnominal B construction, the head noun appears in its "linked" (ablauted, in this case) form; in 109 an adnominal D construction, the same noun appears in its root or unlinked form. More examples of this are 101-103 compared with 89-92, respectively. It appears that the head noun of an adnominal B construction like 108 can be indefinite or definite, and may also take a determiner. Compare the following:

110.	pirshə i-anda	their horse (indefinite)
111.	pərsə-an i-anda	the horse of theirs (definite)
112.	pərsə-diya i-anda	this horse of theirs

19. Adnominal constructions such as these point to the weakness of Fillmore's notion that abstract case categories can be linked directly to such concrete lexical features as <animate>.

In addition, the adnominal noun may be similarly modified.

113. pərsə-ɗa i-naf-ɗiya — the said horse of this man

114. pərsə-cə-ɗa i naf-an — the said horses of the man

By contrast, an adnominal D construction like 109 may attach these markers to only one of the nouns, the adnominal noun and not the head noun.

115. shiketə-nə́-tə-ɗiya[20] — this friend of mine

116. ləmo ɓiw-ɗa — the said meat market

117. kwiy 'yam-ɗiya — this well (hole of water)

Similarly, in relative clauses the obligatory determiner is attached according to the above description.

118. pərsə-ɗi i-anda [raka-cə kaɗə] yu
the horse of theirs which ran away

119. kwiy 'yam-ɗi [ndiɗ-cə kaɗə] yu
the well which flooded

Both types of adnominal possessive constructions may occur in "have" constructions (see Chapter 8 for more details).

120. pirshə i-incə sə — I have a horse

121. shiketə na sə — I have a friend

The last adnominal construction is the adnominal Locative. It has often been assumed that certain locative

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20. A linker is necessary between an inalienably possessed construction and a determiner.

expressions which appear to directly modify nouns may be derivable from reduced relative clauses of "copula" predicates. In Ga'anda such a derivation is conceivable, for example:

122. nafdi ə wiri yu < 122a. nafdi nec ə wiri yu
The man at home The man who is home

A transformation could simply delete the relative tense marker in 122a. Attributive adjectives are derived in just this way (see Chapter 9). Such reduced constructions leave a trace of their relative clause origins by the obligatory presence of the determiner on the head noun and a permuted distance marker if it has been chosen, i.e. /di...yu/.

But there are many other constructions which have no such trace.

123. cokcan [laaŋa ə ŋgopi]
He lives far from Gombi (lit. a distance from)

124. wir i-an [mel kum ə mət-diya]
His house is 10 miles from here

125. [laaŋa-tə-an kə ŋgopi] mel kum
The distance to Gombi is 10 miles

126. ə ɓi kə [xeshə ə xur wur-an]
He came out of the house (lit. to outside of inside of the house)

127. ə kuŋ [mbàn-an kə mərɓan] xa
The road to the village bent/wound around

128. ə sək [nef ə xeshə] xwartə i-incə
A man outside heard my cry

129. ŋgəmən na [nef ə rakata]
We see a man a-running

Cf. 130. ŋgəmən na nef rakata
We see a man running

In none of these examples are there any traces of a relative determiner. In some, the head nouns are indefinite, in others definite. Compare the noun /laaŋa/ in 123 and 125. Semantically, it would be both artificial and in many cases nonsensical to try deriving these from a relative clause such as 'the distance which is at/from Gombi.' In example 127, one might argue that the locative /kə mərɓan/ is simply a deep structure Locative case coordinate with the 0 case noun /mban-an/. But if this were the case, the verb particle /xa/ would have to precede the Locative (see Chapter 7 on verb particles), as in:

127. ə kuŋ mbanan xa kə mərɓan
The road bent around to the village

The semantic interpretations of the two sentences may be slight, but they are significant. If we analyze /mbanan kə mərɓan/ as a single constituent 0 which is internally complex, containing an adnominal Locative, then we can explain why the particle in 127 comes at the end of the 0 constituent. In example 129, the "stative adverbial" con-

sisting of the locative preposition and a verbal noun is provisionally being analyzed as an adnominal Locative; it is distinct from 130, which could perhaps be another type of adnominal or a reduction of conjoined sentences of the type "I see a man. A man is running."

We have only generated three cases which can function adnominally to other nouns but examples 131-133 provide evidence that more than three will be eventually needed in a fuller grammatical description of Ga'anda.

131. xur [mbaala]; ɓəl [cini]
brewing of beer/beer-brewing;
lion-killing (adnominal Objective?)

132. wan-mandə [kə xəsh-nefa]
brother, male sibling (lit. son-of-mother as male-person) (adnominal Essive?)

133. laaŋa [tə kufa]
far from/with a river (adnominal Comitative?)

An adnominal Objective as exemplified in 131 will probably be needed to make the distinction between so-called "derived nominals", which are inserted directly from the lexicon, and nominalized gerunds, which are transformationally derived. For example sentences 134 and 135 are structurally distinct.

134.	yaxincə [xur mbaala]$_O$	I like beer-brewing
135.	yaxincə sə [kə xur mbaala]$_S$	I like brewing beer
135a.	yaxincə sə [kə xur-i mbaala]	I like that I brew beer

In 134 the direct object in O case happens to be internally complex, containing a verb with the feature <+N> adnominally modified, presumably, by an Objective. In 135, the verb /yax/ requires /se/ when followed by a sentence complement in the subjunctive. Any verb in such a sentence complement can optionally undergo gerundive nominalization (from a sentence like 134a) when its subject is the same referent as the matrix sentence subject.[21]

We close this chapter on noun phrases by some comments about prepositions. Rule B12 rewrites the category symbol K as the constituents prep + NP, thus associating every case category with a preposition. Only four of the seven cases have overt prepositions, however, so that it might be questioned whether prepositions should actually be generated in the base in the first place. Perhaps it would be better to transformationally insert them later in the rules for just those cases which have them. Another alternative, of course, is to represent prepositions as noun features. The justifications for the deep structure source of prepositions in Ga'anda is as follows. a) Prepositions are unambiguously associated with their cases. They are sensitive to case relations only and not to other syntactic

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21. Sentence complementation and nominalization are not described in this grammar.

factors such as type of verb[22] or word order. b) In certain environments the preposition and the case noun must be considered a unit, as in the emphasis transformation (see rule T5.3 in Chapter 5). c) Anaphoric markers for deleted or permuted nouns depend on the presence of a preposition + Ø, not just on the deleted noun Ø. In cases where the entire unit prep + NP is permuted, there is no anaphoric marker. d) There are some syntactic environments where a preposition is obligatorily absent, for example, the Essive preposition. There are other environments where a preposition is optionally absent, for example, the Locative preposition (see Chapter 8 for a discussion of both of these). If prepositions were to be transformationally inserted, the rule specification would probably be very "costly" since very specific environments would have to be stated. In terms of simplicity of the grammar, it is much easier to delete (optionally or obligatorily) prepositions in just those few environments and have low-level realization rules in which other case prepositions are realized phonologically as zero.

The cases which have no overt prepositions are A, D, and O cases. The forms of the other case prepositions are given below.

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22. The fact that the realization of the Locative preposition depends on whether it is preceded by a <+mot> verb or not is considered a low-level morphophonemic rule and is of a different order than whether particular verbs "govern" particular prepositions, as they seem to in English.

/i/ = B case preposition 'of/for'

/tə/ = I case preposition 'with'

/ə/ = L case preposition 'at'

/kə/ = L case preposition 'to' (directional)

/kə/ = E case preposition 'as'

L case preposition is specified as /kə/ only when the verb is <+mot>. This L preposition and the E preposition happen to be homophonous.

Chapter 5

Relativization

In Ga'anda, "relativization" is used as a cover term for a group of related syntactic changes shared by relative clauses and constructions containing emphasis and question words. Briefly, relativization is a process involving a series of rules which displace or reduce elements from their assigned word order, add the relative marker in specific environments, and neutralize tense distinctions.

In order to make the examples easier to understand, we first discuss one of the most important relativization transformations, even though this rule occurs much later in the rule application sequence. This is the Tense Neutralization rule. Other Chadic languages like Hausa and Tera have been analyzed as having "relative" tenses, but Ga'anda does not have them. Rather, only a subset of the base-generated tenses occurs in relativized constructions and these obligatorily add a general rel marker. The rel constituent which triggers the tense neutralizations will come from rules which are discussed later. The rule has two sub-parts.

T5.1. Tense Neutralization

a) SD: X - prf - rel X
1 2 3

SC: 1 - aor - 3

b) SD: X - aux_2 - rel X

1 2 3

SC: 1 - mdl - 3

Part a) says that in the environment of rel, the perfective tense is replaced by the aorist tense. In this environment, the distinction between the two past tenses is lost and only aor occurs. (In all examples following, rel is shown in its surface position attached to either a /na/ or a verb root, see rule T5.8 later.)

1. Ø ɓa-co ə ayə$_{<+q>}$
   aor rel

   Where did you come from?

but not: *ə ɓa-co ə ayə

2. nafɗa$_{<+e>}$ Ø yim-cə kə xuran
   aor rel

   The man entered inside

but not: *nafɗa ə yimcə kə xuran

3. mə$ɨan$$_{<+e>}$ Ø $ɨəf-ti ɓəra
   aor rel

   I hit him yesterday

4. nafɗi [Ø yarkə-cə yikwat-incə]$_S$ yara
   aor rel

   The man who stole my goat is a thief

but not: *nafɗi [ə yarkə-cə yikwatincə] yara

5. pərsɗi [Ø xiy-an-ti kaɗə bəra]$_S$ yu kwa'kwa'
aor rel

The horse which I sold yesterday was strong

Part b) says that in the environment of rel, the distinction between the two tenses of aux_2 is neutralized; aux_2 is deleted and obligatorily replaced by the modal. The resulting constructions with /na/ are interpreted as meaning either the con or the fut tense (but see "Noun Phrase" chapter for one way to disambiguate this neutralization).

6. na-co ɗə-ta kə aya$_{<+q>}$
aux_2 rel

Where are you going/will you go?

7. ŋgət$_{<+e>}$ na-cə kəs-ú-ta sə
aux_2 rel

I am helping you/will help you

8. naf-ɗiya$_{<+e>}$ na-cə raka-ta
aux_2 rel

This man is running/will run

9. ə sher nuɗi [na-cə ɗə-an yata in]$_S$
aux_2 rel

The woman who is taking/will take him food is old

10. pərsɗi [na-ti xiyta]$_S$ kuɗkuɗ
aux_2 rel

The horse I am buying/will buy is black

11. na-cə-anda na-ta mən-ta kə aya$_{<+q>}$
aux$_2$rel mdl VB

Where will they be spending the night?

Example 11 has two surface occurrences of /na/, one functioning as the aux$_2$ replacive, the other functioning as an optional choice within VBL. This sentence is not ambiguous, due to the presence of the optional modal.

The phonological identity of the modal and the future marker might lead one to question whether the /na/ in sentences 6-11 above could not be analyzed as the future marker instead of as the modal. There are three good reasons to reject such an analysis. i) It does not explain the semantic ambiguity of these sentences. If the /na/ were the future marker, then we would have to say that in the special environment of rel, the future marker also carries the meaning of the continuous, which seems intuitively wrong. On the other hand, if the /na/ is analyzed as the modal replacing the two tenses of aux$_2$, then it is quite natural that it can be interpreted as being either tense. ii) In the aor tense, rel is attached to a <+V> element such as the optional modal or the main verb (see rule T5.8 later).[1] If /na/ were the future marker, a

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1. There are two distinct features, a sub-categorization feature <+V> and a syntactic feature <+vb>. All regular verbs, including /na/, are <+V> as well as <+vb>. The tenses comprising aux$_2$ are <+vb> only. The rel marker is attached to constituents with <+V>.

special rule would be needed to attach rel to an auxiliary if it is aux_2. Analyzing /na/ as the modal quite naturally explains why rel is attached to it. iii) This reason has to do with the shape of the negative morpheme. In non-rel constructions, the shape of the aux_2 negative is /ŋg(ə)/.

12. ŋgə mə$an səm ənа wa — He is not eating anything
con

13. ŋg-an səm ənа wa — He will not eat anything
fut

In rel constructions, the shape of the aux_2 negative is quite different. In fact, it is identical in shape and position to the negative relative in the aorist, where it is attached to a <+V> element such as the optional modal or the main verb:

14. mə$an na-wak-cə səm ənа
aux_2neg rel

He is not eating/will not eat anything

Cf. 15. mə$an Ø $ə na-wak-cə səm ənа
aor hab mdl neg rel V

He has not been (hab) eating anything

Cf. 16. mə$an Ø səm-wak-cə ənа
aor V neg rel

He didn't eat anything

The /na/ in 14 and 15 is obviously the same morpheme. In 14, /na/ functions as an auxiliary replacement; in 15, /na/ functions as part of the VBL constituent.

The fact that aux_2 is replaced by mdl under relativi-

zation is a source of confusion of identity even to Ga'anda speakers. Some, but not all, informants offer an alternate but much less preferred negative relative form of $\underline{aux_2}$, namely: /ŋgəwakcə/.

14. = 14a. məʂan ŋgə-wak-cə səm əna
aux_2 neg rel

This form is most unusual in that it has two overt negative markers /ŋgə/ + /wak/. It seems obvious that these speakers are attempting to recover the underlying $\underline{aux_2}$ which has been replaced by substituting the normal $\underline{aux_2}$ negative form /ŋgə/. This is confirmed by the fact that they do not accept /ŋgəwakcə/ as an alternate negated /na/ when it is dominated by VBL, i.e. it is the modal.

15. ≠ 15a. *məʂan Ø ʂə $[$ŋgəwakcə səm$]_{VBL}$ əna

For speakers who use /ŋgəwakcə/, the following additional realization rule is needed:

$$[na]_{aux_2} > ŋgə \;/\; \_\_\_wak$$

This rule specifies that a /na/ dominated by $\underline{aux_2}$ is realized as /ŋgə/ in the environment of the relative negative /wak/.

The next rule to be presented is one which precedes the Tense Neutralization rule in the sequence of rule application. This is the very general rule which inserts the constituent rel under the proper conditions. Whenever an auxiliary is in the environment of a <+r> NOM constitu-

ent and both are dominated by the same sentence, then it must add rel to it. This first condition regarding dominance is needed so that the relative marker is correctly attached to the auxiliary of the embedded sentence and not the matrix sentence. A later rule will move rel out of its position next to the tense marker and attach it to a verbal element in the surface structure.

T5.2. rel Addition

SD: $X - \left\{ \begin{matrix} pst \\ aux_2 \end{matrix} \right\} - X - NOM_{<+r>} - X$

1 2 3 4 5

SC: 1 - 2 - rel - 3 - 4 - 5

Conditions: Any S that dominates 4 also dominates 2
3 does not contain sqt

The SD is written so as to disallow rel being added when the tense is sbj. The second condition states that the rule is blocked if sqt is chosen with a past tense. If either of these constituents is present, relativization is blocked.

We will now describe the three syntactic environments where the syntactic feature <+r> appears. These are question word constructions, emphasis constructions, and relative clause constructions; the discussion follows in that order.

Question words, as described in the preceding chapter, are classified lexically as pro-form nouns which have the subcategorization feature <+q>. In the lexicon, there is a redundancy rule which specifies all <+q> and <+e> nouns as being also <+r>:

$$\left\{ \begin{array}{l} <+q> \\ <+e> \end{array} \right\} \text{ ---> } <+r>$$

It is this syntactic feature <+r> which triggers the addition of rel when a <+q> noun appears in the proposition. There is no overt question word marker apart from the question word itself.

17. Ø ʃəf-co wandi tə faŋnda kwatə$_{<+q>}$
aor rel

When did you hit that boy with a stick?

18. Ø tər-cə nafcəda safcəda kenə$_{<+q>}$
aor rel

How did the men carry the loads?

19. na-co wuɓanta kə ayə$_{<+q>}$
aux$_2$rel

Where are you/will you hide it?

20. na-canda nata kə məcə$_{<+q>}$ ə paŋa
aux$_2$rel

What (pl) will they be in future?

21. na-wak-cawun ɗəta kəʃəm mə$_{<+q>}$
aux$_2$neg rel

Why aren't/won't you (pl) go?

22. Ø mal-cə nafdi [na-cə xadcan]$_S$ kwatə$_{<+q>}$
aor rel aux$_2$rel

When did the man who was sick leave?

In example 22, it is clear that rule T5.2 has added rel to the matrix sentence since aor and /kwatə/ are dominated by the same S. The rel which appears in the auxiliary of the embedded sentence is a consequence of another rule, the Relative Clause transformation described later on.

As was pointed out elsewhere, the question noun /wunə/ 'who/whom' is the only <+q> noun which is inherently <+e>; all others are optionally <+e>. Constructions with /wunə/ obligatorily undergo the emphasis transformation (described later) in order to achieve grammaticality.

23. **Ø ɓa-cə wunə $\begin{bmatrix}<+q>\\<+e>\end{bmatrix}$ kə wirda ɓukwiya
aor rel

Who came to the house today?

24. **Ø fər-an-cə wandəɓə$a wunə $\begin{bmatrix}<+q>\\<+e>\end{bmatrix}$ ɓəra
aor rel

To whom did you give money yesterday?

The rule adds rel in the environment of an actual question word. But rel also occurs in constructions where there are no question words, as in:

25. Ø $əf-ci wandi tə faŋnda ɓəra

I hit that boy with a stick yesterday

26. Ø ɓa-canda kə miikətnda ɓukwiya

They came to the door today

27. na-cə nafɗa wuɓanta kə xur kwiy yamɗa

The man {is hiding / will hide} it inside the well

28. ɗə-wak-cə Xoɗewa ke$əm xaɗcan

Xoɗewa didn't go because she was sick

29. kar-cə nuɗa pəɗata

The woman refused to go

30. na-ci nata rakata əssə

I will be running tomorrow

These sentences contrast directly with the following set of sentences, which do not have rel and therefore have all the tense distinctions.

31. ə $əf-incə wanɗi tə faŋnda ɓəra

I hit that boy with a stick yesterday

32. ə ɓi-nda kə miiketnda ɓukwiya

They came to the door today

33. Ø nafɗa wuɓanta kə xur kwiy yamɗa
con

The man is hiding it inside the well

34. ə ɗə-wə Xoɗewa wa kə$əm xaɗcan

Xoɗewa didn't go because she was sick

35. Ø kar nuɗa pəɗata
aor

The woman refuses to go

36. ni nata rakata əssə

I will be running tomorrow

Sentences 25-30 state exactly the same semantic information as sentences 31-36 and yet the pairs are not identical in "meaning". Informants always identify the sentences with rel as being "more definite", as being a definite response or answer to a preceding question word question.[2] For example, to use a sentence like 26 implies that someone had asked information about when the boy was hit, i.e. a question just like the one in example 17. There are no such prior implications in a sentence like 31.

It is possible to account the minimal distinction between sentence pairs like 25/31, 26/32, etc. by generating rel in the base as an optional element of AUX. However, in all other places in the grammar where rel appears, it is syntactically predictable and is transformationally inserted. It is obvious that the rel in sentences 25-30 is also syntactically predictable. The problem is that the syntactic environment can't be stated in a sentence-generating grammar since it is outside the domain of the sentence. This type of difficulty is probably solvable only in a discourse-analysis grammar. The environment could be stated as: rel is transformationally added in the environment of a preceding S which contains a <+q> constituent.

The rel marker is not added when the construction contains Q or sentence question. The non-rel sentences

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2. These are not emphatic constructions, which are discussed later on.

31-36, if preceded by an appropriate /aa/ 'yes' or /aawa/ 'no', could serve as answers to sentence questions. Sentence Q is a high-level morpheme which essentially questions the entire proposition. Word question, on the other hand, queries a particular noun (or nouns) within the proposition. It is not surprising, therefore, that word question constructions share more syntactic properties with emphasis and relative clause constructions, both of which also elaborate on particular nouns in the proposition, than they do with sentence question constructions.

Question nouns may not co-occur with sentence Q in the same sentence. Since question nouns are freely inserted from the lexicon, and since sentence Q is an optional choice in the base rules, it is theoretically possible to generate an ungrammatical combination. We therefore need a co-occurrence restriction on the sentence Q morpheme /wá/ such that it may not co-occur with any <+q> noun.[3]

Before discussing the next two environments, emphasis constructions and relative clauses, we will briefly review some pertinent base rules dealing with the noun phrase. (B14 is not relevant to the discussion and is not presented.)

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3. It seems equally possible to state such a restriction on the <+q> nouns themselves instead of on the Q marker. The criterion for choosing between these alternatives are not clear to me.

B12. K ---> (neg) prep NP

B13. NP ---> $\left\{\begin{matrix}\text{NOM (S)}\\ \text{SEN}\end{matrix}\right\}$

B15. nom ---> N (DET) (DST)

A case relation K consists of an optional negative, a preposition and a noun phrase. The first rewrite of the noun phrase consists of a nominal optionally followed by a sentence, which is the source for relative clauses. The nominal may simply be a noun or may be modified by a determiner and/or a distance marker.

One of the optional syntactic features of nouns is <e>. If <+e> is chosen, then the lexical redundancy rule discussed earlier further specifies the emphasized noun as also having the feature <+r>. A sentence with a <+e> noun thus meets the SD of rule T5.2 and obligatorily has rel added to it. Only one <+e> constituent is allowed per sentence. This restriction has to apply at the time of the first lexical look-up, before transformations apply.

Constructions with emphasized nouns must undergo a further transformation which shifts the emphasized noun up to the front of the sentence. This rule applies irrespective of the case function or sentence function features of the emphasized noun; they are simply carried along with the fronted noun. The sentence function feature <±sj> of the emphasized noun will be used later to specify the allomorphs of rel marker (see MP rules at the end of this chapter).

T5.3. Noun Emphasis Fronting

SD: # - X - (neg) - prep - $NOM_{<+e>}$ - X

1 2 3 4 5 6

SC: a) 1 - 3 - 4 - $5_{<+dsj>}$ - 2 - 6

b) 1 - 3 - $5_{<+dsj>}$ 2 - 4 - Ø - 6

Condition: If 5 ≠ L or I, then only SC (a) occurs

The rule moves an emphasized noun plus its case preposition and neg, if any, to the front of the sentence (see discussion of negated <+e> nouns under "Negation" chapter) and assigns the surface case feature <+dsj> to it. An alternate word order, SC (b), is allowed if the emphasized noun is either L or I case. In this order, the L or I preposition remains behind and the displaced noun is replaced by Ø. This zero anaphora marker is needed for portmanteau realizations of these prepositions and their deleted nouns.

37. Ø xiy-[incə]$_{<+e>}$ cemscə cap ===>
aor

37a. [ŋgət] Ø xiy-cə cemscə cap
aor rel

I bought two chickens

38. ə xiy-incə [cemscə cap]$_{<+e>}$ ===>
prf

38a. [cemscə cap] Ø xiy-ti ===>
aor rel

I bought two chickens

39. ə fər-ə́ǹ-i pafən [Musa]$_{<+e>}$ ===>
prf

39a. [Musa] Ø fər-ə́ǹ-ti pafən
aor rel

I gave a gift <u>to Musa</u>

40. Ø [Xoɗewa]$_{<+e>}$ xur mbaala ===>
con

40a. [Xoɗewa] na-cə xur mbaala
aux$_2$rel

<u>Xoɗewa</u> is brewing beer

41. Ø Xoɗewa xur [mbaalɗa]$_{<+e>}$ ===>

41a. **[mbaalɗa] na-tə Xoɗewa xur
aux$_2$rel

Xoɗewa is brewing <u>the beer</u>

Example 41a is double-starred because it undergoes further transformations: a) the <u>rel</u> marker /tə/ after modal /na/ is deleted just in the environment of a following <-pn> subject; b) the verbal noun /xur/ will have the nominalizer segment /-ta/ added to it, since there is no immediately following noun object in this emphatic construction (refer back to Chapter 1, rule T1.2).

42. ə di wancəɗa [kə ləmo]$_{<+e>}$ ===>
prf D L

42a. [kə ləmo] Ø ɗə-tə wancəɗa
aor rel

It's <u>to market</u> the boys went

43. na-amən na-ta [ə wuran]$_{<+e>}$ ===>
fut O mdl L

43a. [ə wuran] na-tə-mən nata
aux$_2$rel

It's at home we will be

44. ə caaʂ-incə ɗəftəɗi [tə wurta]$_{<+e>}$ ===>
prf A O I

44a. [tə wurta] Ø caaʂ-ti ɗəftəɗi
aor rel

It's with an axe I chopped that tree

Examples 42-44 have emphasized nouns which are in L and I cases. The condition on the displacement rule allows the L and I prepositions to also remain behind, in which case the zero anaphora form for both cases is /sə/.

42. ===> 42b. [ləmo] Ø ɗə-tə wancəɗa sə (</kə/ + Ø)
It's market the boys went to

43. ===> 43b. [wuran] na-tə-mən nata sə (</ə/ + Ø)
It's home we will be at

44. ===> 44b. [wurta] Ø caaʂ-ti ɗəftəɗi sə (</tə/ + Ø)
It's an axe I chopped that tree with

This choice in word order is still allowed even if neg is chosen with L and I cases.

45. [ŋga ə ləmo] na-tu mbəs-i-ta wa =
It's not at market you'll find me

45a. [ŋga ləmo] natu mbəsita sə wa
It's not (the) market you'll find me at

46. [ŋga tə makuli] Ø in-an-ti xa wa =

It's <u>not with a key</u> I opened it

46a. [ŋga makuli] Ø inanti xa sə wa

It's <u>not a key</u> I opened it with

An emphasized N may itself be the head noun of a relative clause. In examples 47-49, rule T5.2 has added <u>rel</u> to the matrix sentence before rule T5.3 moves the emphasized NOM to the front of the sentence.

47. [ɓaŋɓaŋən mbaaldi [Ø sa-ti ɓəra]$_S$ yu]$_{NOM_{<+e>}}$ Ø

xaɗ-i-cə ɓukwiya

rel

<u>The sour beer which I drank yesterday</u> make me sick today

48. [ŋga kə ləmotədi [na-cə laanga]$_S$]$_{NOM_{<+e>}}$ na-tə-mən ɗə-ta wa

It's <u>not to the market which is far away</u> (that) we are going/will go

49. [wandi [njan]$_S$ yu]$_{NOM_{<+e>}}$ Ø yax-wak-tə-i

I don't like <u>the tall boy</u> (< the boy who is tall)

Question words, like other nouns, can be optionally emphasized and moved up to the front of the sentence. The emphasis rule is obligatory for constructions with /wunə/ 'who/whom', which is inherently <+e>.

50. Ø par-cə-awun kənə$_{<+e>}$ ===>

50a. kənə Ø par-tə-wun

<u>How</u> did you spend the day?

51. na-cə-o ɗəta kə mət wanfaŋənca kə$əm$_{<+e>}$ mə ===> aux_2

51a. kə$əm mə na-tu ɗəta kə mət wanfaŋənca

Why will you go to the police?

52. **Ø pər-cə wunə$_{<+e>}$ pərsɗiya ===>

52a. wunə Ø pər-cə pərsɗiya

Who rode this horse?

53. Ø $ə yim-cə nuɗa kə yenə$_{<+e>}$ ===>

53a. kə yenə $ə yim-tə nuɗa

Into which one does the woman enter?

53b. yenə Ø $ə yim-tə nuɗa sə

Which one does the woman enter into?

54. Ø mən-wak-cə nafcəɗa ə ayə$_{<+e>}$ ===>

54a. ə ayə Ø mən-wak-tə nafcəɗa

Where didn't the men spend the night?

55. **Ø xiy-an-cə-nda kapata wunə$_{<+e>}$ sə ===>

55a. wunə xiy-an-tə-nda kapata sə

For whom did they buy a cloth?

56. Ø $ə na-cə nəscəɗa $a'ta kwatə$_{<+e>}$

hab mdl

56a. kwatə Ø $ə na nəscəɗa $a'ta

When have the women been rising?

The last syntactic environment where the feature <+r> triggers relativization is in the relative clause. Any noun can serve as the head noun of a relative clause and any type of sentence, verbal or non-verbal, affirmative or

negative, can be embedded.[4] The Relative Clause transformation does several things. It ensures that the embedded sentence is always introduced by one of the four determiners (refer back to Chapter 4 for noun/determiner co-occurrences). If DST is also chosen along with DET, the rule moves it behind the embedded sentence. The rule replaces the identical noun in the embedded sentence with Ø, which has two functions. Ø serves to carry the feature <+r> so that rel will be added to the embedded auxiliary by rule T5.2. Ø is also needed for specifying zero anaphora forms. The feature <∝sj> on the deleted noun is transferred to the head noun, where it will be needed to specify the allomorphs of the rel marker (see MP rules further on). Finally, the embedded sentence boundaries are deleted.

T5.4. Relative Clause

SD: X - N - (DET) - (DST) - # - X - $NOM_{<\propto sj>}$ - X - # - X

1 2 3 4 5 6 7 8 9 10

SC: 1 - $2_{<\propto sj>}$ - 3 - 6 - $Ø_{<+r>}$ - 8 - 4 - 10

Condition: 2 - 3 - 4 = 7

---

4. There are probably universal restrictions on relative clauses which prohibit a sentence from being embedded if it contains Q, E, or a question word. Therefore, these are not stated as conditions on rule T5.4.

The condition states that the head noun and any determiner and/or distance marker must match the entire nominal in the embedded sentence. When this condition is met, the embedded NOM is deleted (i.e. replaced by Ø). The examples illustrate the variety of cases, determiners, and types of embedded sentences which are characteristic.

57. ə ninɛə naf-di [pər-ɛə kə pərsə-yo]$_S$ yu
O DET rel DST

I saw the man who rode on your horse

(O case noun is subject of S)

58. na wan-da [na-ɛə yarata]$_S$ ya ʂə pafən
A DET rel DST

The boy who is writing will receive a prize

(A case noun is subject of S)

59. namən tər yiwa saxtə-ini [xiy-tu bəra]$_S$ en yu
O DET rel DST

We will take that very same new rope which you bought yesterday

(O case noun is object of S)

60. nəsɛə-di maxkan [fər-áǹ-ti xwermə]$_S$ yu shertə nəsca
D DET D rel DST

The three women to whom I gave guinea corn are old women

(D case noun is indirect object of S)

61. ə di wanɛə-da [xiy-áǹ-ti kalarɛə sə]$_S$ yu kə mət tarakta
B DET B rel

The boys for whom I bought balls went to playground

(B case noun is indirect object of S)

62. mət-ɗi [na-ti nata sə]$_S$ laaŋa
L

The place where I will be is far

(L case noun is subject of S)

63. ndikca-na [mbu'í-tə-nda]$_S$ ndəɗcan
DET rel

Some news which they told me was good

64. ə mal ɕiw-na [na-cə ə xur tasau-ɗiya]$_S$
DET rel

Some meat which was in this dish has rotted

65. na nat wan-ɗi [na-wak-cə kə yara]$_S$ mbəs əna
DET rel

Any boy who isn't a thief will find fortune

(/ɗi/ introduces restrictive relative clause)

66. wan-ɗa [na-wak-cə kə shiketə-na]$_S$ ya yara
DET rel DST

This boy, who isn't my friend, is a thief

(/ɗa/ introduces non-restrictive relative clause)

67. toxwat-ini [ɗəf-wak-tən]$_S$ yu yi xiyta
DET DST

The very soup which she didn't put aside is for sale

The relative clause rule deletes the identical NOM inside the embedded sentence, leaving Ø in its place. If the deleted noun is in one of the cases which has an overt preposition, then prep + Ø will be replaced by special zero anaphora forms.

68. ləmotə-ɗi [ɗə-ti kə Ø] ===>
L prep

68a. ləmotəɗi ɗəti sə

The market where I went to

69. mərɓ-ɗi [na-tən nata ə Ø əssə] ===>
L prep

69a. mərɓɗi natən nata sə əssə

The town where he'll be at tomorrow

70. wurtə-ɗi [$ə caa$-təmən ɗəfcə tə Ø] ===>
I prep

70a. wurtə-ɗi $ə caa$təmən ɗəfcə sə

The axe which we (hab) chop wood with

71. kufi-ɗi [na xəŋgə-yan nduk tə Ø]
L prep

71a. kufiɗi na xəŋgəyan nduk sə yu

The river where his farm is near to

If the head noun is an adnominal Dative dominated by a Locative case in the embedded sentence, then the zero anaphora form is /an/.

72. teɓurtəɗi [ɗəf-ti ɗelwer[kə ɗar Ø]$_L$] ===>
L D

72a. teɓurtəɗi ɗəfti ɗelwer kə ɗar-an

The table which I put a book on top of

73. akwatitəɗi [na kapaɗa nata [ə xur Ø]$_L$] ===>
L D

73a. akwatitəɗi na kapaɗa nata ə xur-an

The box which the gown is inside of

74. kufiɗi [nawaktə xəŋgəyan ə $əmat Ø] yu ===>
L D

74a. kufiɗi nawaktə xəŋgəyan ə $əmat-an yu

The river which his farm is not beside (at side of)

In Ga'anda, proper nouns and pronouns are sub-types of N and can serve as head nouns of relative clauses. In this environment, both types of N must add a linker before the determiner which introduces the embedded sentence. These nouns are <+T> nouns, so that the form of the Linker is /tə/. Since these types of nouns are inherently <+def>, only the <+def> determiners /ɗi/ and /ɗa/ co-occur with them.

T5.5. Linker in Relative Clause

SD: $X - N \begin{Bmatrix} <+pn> \\ <+prp> \end{Bmatrix} - DET\ S\ X$

1 2 3

SC: $1 - 2_{<+dsj>} + Li - 3$

The feature <+dsj> is added to ensure that the surface form of a pronoun acting as head noun is in the disjunctive surface case.

75. ŋgət-tə-ɗi [na-cə ŋguɗex kəɗa] ya ə ɓəlani

I who am so small - I have killed him

76. mə$an-tə-ɗa [fər-ámə̀n-cə xwermə] kaa nefa

He, who gave us corn, is a good man

77. Dəsanxa-tə-ɗi [na-cə pərtə kə pirshə-incə] ya

The Dəsanxa who is riding on my horse (as opposed to any other boy named Dəsanxa)

78. Dəsanxa-tə-ɗa [pər-cə kə pirshə-incə]

Dəsanxa, who rode on my horse, (the known Dəsanxa)

When relative clauses contain pro-form nouns as heads, the sentences are interpreted as being "indirect question" clauses. Compare the different semantic readings resulting from the presence or absence of the feature <pro> on the head noun.

79. ə nincə naf-ɗi [yerkə-cə yikwat-yo]
<+pro>

I saw who stole your goat

Cf. 79a. ə nincə naf-ɗi [yerkancə]
<-pro>

I saw the man who stole it

80. sənwə nef-na mət-ɗi [sa'-tən 'yena]
<+pro> <+pro>

No one knows where he sleeps (reaches sleep)

Cf. 80a. sənwi mət-ɗa [mbəsantu wanda]
<-pro>

I don't know that place where you found the boy

An animate pro-form noun serving as head of a relative clause can be optionally pronominalized. Since the pro-form is being replaced by a pronoun, there must be number agreement. The relative pronouns are the singular /ʃaa/ 'the one

who/whom' and the plural /fee/ 'the ones who/whom', and they replace the pro-form noun and its determiner.

T5.6. Relative Pronominalization - OPT

SD: X - N $\begin{bmatrix} <+pro> \\ <+an> \\ <\alpha pl> \end{bmatrix}$ DET $_{<+pro>}$ - S X

1 2 3

SC: 1 - 2 $\begin{bmatrix} <+pn> \\ <\alpha pl> \end{bmatrix}$ - 3

81. naf-na [na xur-yan mancan] yu ===>

The person who has a big stomach

81a. ɬaa na xuryan mancan yu

The one who has a big stomach

82. ən arta cak-anda-cə xa tə nafcə-na [na-cə ə xur wuran] yu ===>

One thing divided them from the people who were in the town

82a. ən arta cakandacə xa tə fee nacə ə xur wuran yu

One thing divided them from those who were in the town

There is one more construction which has the syntactic properties of relativization, without requiring particular features such as <e>, <q>, or <r> to trigger the relativization process. Although the construction is quite unrelated to question words, emphasis, and relative clauses, the rule which assigns relativization to it must follow the

rules pertaining specifically to these other three grammatical environments. This construction is the simple past habitual construction. When past habitual is not in the environment of a question noun, an emphasized noun, or a relative clause, it obligatorily requires rel.

T5.7. Past Habitual

SD: X pst - hab - X
1 2 3

SC: 1 - rel - 2 - 3

Condition: 3 does not have the feature <+r>

The output of this rule undergoes part a) of the Tense Neutralization rule so that the past habitual is always in the aor tense.

83. Ø $ə ɗə-ci kə mət ca'ata ə walwurta
aor hab rel

I (hab) go to school in the morning

84. Ø $ə nəx-í-canda sərtə $iw sə
aor hab rel

They (hab) cook fried meat for me

85. Ø $ə na-cə nəscəɗa xuɗa xwermə tə katakuca
aor hab mdl rel

The women have been (hab) farming guinea corn and yams

Note that relativization is not a property of habitual when it co-occurs with other tenses.

86. na-i $ə rəka-ta kə mət ca'ata
fut hab

I will (hab) run to school

87. yax-incə sə kə $ə na-ən rakata
sbj hab mdl

I want you to (hab) be running

88. mə $ə ɓa-ən kə mət-ɗiya
neg sbj hab

Don't (hab) come here!

The SD of T5.7 specifies that pst and hab be immediately juxtaposed, thus disallowing an optional sqt to be present. If sqt is chosen, the SD is not met; relativization does not take place when the sequence pst + sqt + hab is generated. In fact, relativization is blocked whenever sqt is present, irrespective of anything else, as pointed out in the discussion of rule T5.2. Because rel is not present, tense neutralization does not take place; both tenses of pst occur with sqt + hab.

89. Ø $ə ɗə-ki kə ləmo Ø $ə na-ki nafcə kaan
aor hab sqt aor hab sqt

(When) I (hab) go to market, I (hab) see many people

90. ə $ə nəx-í-kanda sərtə $iw sə
prf hab sqt

(Then) they (hab) cooked fried meat for me

91. ə $ə na-kanda 'yara xəscə-yanda
prf hab mdl sqt

(Then) they have been (hab) insulting their husbands

In the above examples, note that sqt is attached to a <+V> element in surface structure even though it is generated next to the past tense constituents. Looking back over the examples with rel, note that rel too is attached to a <+V> element in surface structure, even though the rel Addition rule and the Past Habitual rule add it immediately after the tense constituents. sqt, which is generated in the base, has a very different status from rel, which is transformationally derived. Yet at the surface structure level, they both occur in the same slot in the sequence of morphemes. The following rule will attach sqt and rel to the appropriate <+V> constituent, in the environment of a past tense.

T5.8. Aspect Attachment

$$\text{SD:}\quad \underset{1}{X\ pst} - \underset{2}{\left\{\begin{matrix} rel \\ sqt \end{matrix}\right\}} - \underset{3}{(neg)\ (hab)} - \underset{4}{X_{<+V>}} - \underset{5}{X}$$

SC: 1 - 3 - 4 - 2 - 5

Condition: 4 is the leftmost <+V> constituent

The condition is needed so that sqt/rel is attached to the modal and not to the main verb in the case where modal is chosen as part of VBL.

92. Ø sa'-co kə mət-diya kwatə
aor V rel

When did you arrive here?

93. ə sa'-kə nafan kə wiri
prf V sqt

(Then) the man arrived home

94. Ø na-ki rakata ə xəm-ki xa
aor mdl sqt prf sqt

(As) I was running, (then) I fell

95. Ø ɬə na-camən xur mbaala kə feera
aor hab mdl rel always

We have always been (hab) brewing beer

96. ə ɬə na-kaməm 'yara tanda
prf hab mdl sqt

(Then) we have been (hab) insulting them

The Aspect Attachment rule shifts rel only when it co-occurs with a past tense (i.e. aor). When rel co-occurs with an aux_2 tense (which is replaced by mdl), it remains next to the mdl since this is a <+V> constituent.

97. na-co nəxa mə
aux_2rel V

What will you cook/are you cooking?

98. mafata na-cə ɬə tər-í` safcə sə
aux_2rel hab

A slave will (hab) carry loads for me

Example 98 contrasts minimally in word order with example 99 following. The former illustrates modal as a replacive for aux_2; the latter illustrates modal as a choice in VBL.

99. mafata Ø ɓə na-cə tər-í safcə sə'
aor hab mdl rel

A slave has been (hab) carrying loads for me

The rel marker has two grammatically conditioned allomorphs, /cə/ and /tə/. /tə/ occurs in emphasis and relative clause constructions. If either the fronted emphasized noun or the head noun of the relative clause is not the subject of the sentence or clause, i.e. is marked with the feature <-sj>, the rel marker to the right of these nouns is realized as /tə/. When morph-final /ə/ is dropped in non-pre-pausal position, $\begin{bmatrix} /tə/ \\ /cə/ \end{bmatrix} < \begin{bmatrix} [t] \\ [c] \end{bmatrix}$.

MPl. rel > tə / $X_{<-sj>}$ ...___

100. pərsɗi $\begin{bmatrix} <+e> \\ <-sj> \end{bmatrix}$ Ø xiy-ti

I bought that horse

101. ə ayə $\begin{bmatrix} <+e> \\ <-q> \\ <-sj> \end{bmatrix}$ Ø ɓa-tə-nda

From where do they come?

102. ŋgət $\begin{bmatrix} <+e> \\ <-sj> \end{bmatrix}$ na-tə-nda fər-áǹ cemsa

They are giving/will give a chicken to me

103. ə ninɔə wurɗi$_{<-sj>}$ [Ø yim-tə nafan sə]$_S$

I saw the house which the man entered into

104. kapaɗi$_{<-sj>}$ [Ø yo'm-tu] ndəɗcan

The gown which you sewed is pretty

In example 104, the head noun/kapaɗi/ is marked <-sj> (by the Relative Clause rule since it is the object of the embedded S) even though it is the subject of the matrix sentence.

In all other environments (emphasized or head nouns which are <+sj>; unemphasized <+q> constructions; past habitual), the form of rel is /cə/. The two MP rules are of course ordered.

MP2. rel > cə

105. pərsɗi Ø raka-cə kaɗə

That horse ran away

106. ŋgət na-cə fər-ú cemsa

I am giving you a chicken

107. kapaɗi [na-cə ndəɗcan] yina

The cloth which is pretty is mine

108. Ø ɓə ɗə-cə Xoɗewa kə ləmo

Xoɗewa goes (haɓ) to market

109. Ø ɓa-canda ə ayə (cf. to 99)

Where do they come from?

To summarize the previous discussions, two derivations are given to illustrate the order in which the major relativization rules apply. By convention, the rules apply first to the embedded sentences, then to the matrix sentences.

110. ə xiy-ən pərs-di yu # ə na-incə pərs-di$_{<-sj>}$ yu ðəra # kwatə $\begin{bmatrix}+q\\+r\end{bmatrix}$

prf buy v norse DET DST prf see I horse that yesterday when

Rel Cl ==========> ə xiy-ən pərsdi$_{<-sj>}$ ə na-incə Ø$_{<+r>}$ ðəra yu kwatə $\begin{bmatrix}+q\\+r\end{bmatrix}$

Rel Add ==========> ə xiy-ən pərsdi$_{<-sj>}$ ə rel na-incə ðera yu kwatə $\begin{bmatrix}+q\\+r\end{bmatrix}$

Neutral ==========> ə xiy-ən pərsdi$_{<-sj>}$ Ø rel na-incə ðəra yu kwatə $\begin{bmatrix}+q\\+r\end{bmatrix}$

Asp Attch ==========> ə xiy-ən pərsdi$_{<-sj>}$ Ø na-rel-i ðəra yu kwatə $\begin{bmatrix}+q\\+r\end{bmatrix}$

Rel Add ==========> ə rel xiy-ən pərsdi$_{<-sj>}$ Ø na-rel-i ðəra yu kwatə

Neutral ==========> Ø rel xiy-ən pərsdi$_{<-sj>}$ Ø na-rel-i ðəra yu kwatə

Asp Attch ==========> Ø xiy-rel-o pərsdi$_{<-sj>}$ Ø na-rel-i ðəra yu kwatə

MP 1, MP 2 ==========> Ø xiy-cə-o pərsdi Ø na-tə-i ðəra yu kwatə

/ xiyco pərsdi nati ðəra yu kwati[5] /

'When did you buy that horse which I saw yesterday'

---

5. In utterance-final position, /ə/ is realized as /i/. This is a low-level rule applying to all final schwa in this position.

111. na-men sa [ɓaŋɓaŋən mbaaldi# Ø mbaaldi$_{<+sj>}$ ə xur ɓutə-ɗiya #]$_{NOM}$ $\begin{bmatrix}+e\\-sj\\+r\end{bmatrix}$

drink sour beer con beer (is) inside pot this

Rel Cl ==========> na-mən sa [ɓaŋɓaŋən mbaaldi$_{<+sj>}$ Ø Ø$_{<+r>}$ ə xur ɓutəɗiya]$_{NOM}$ $\begin{bmatrix}+e\\-sj\\+r\end{bmatrix}$

Rel Add ==========> na-mən sa [ɓaŋɓaŋən mbaaldi$_{<+sj>}$ Ø rel ə xur ɓutəɗiya]$_{NOM}$ $\begin{bmatrix}+e\\-sj\\+r\end{bmatrix}$

Neutral ==========> na-mən sa [ɓaŋɓaŋən mbaaldi$_{<+sj>}$ na-rel ə xur ɓutəɗiya]$_{NOM}$ $\begin{bmatrix}+e\\-sj\\+r\end{bmatrix}$
mdl

Rel Add ==========> na-rel-mən sa [ɓaŋɓaŋən mbaaldi na-rel ə xur ɓutəɗiya]$_{NOM}$ $\begin{bmatrix}+e\\-sj\end{bmatrix}$

Neutral ==========> na-rel-mən sa [ɓaŋɓaŋən mbaaldi na-rel ə xur ɓutəɗiya]$_{NOM}$ $\begin{bmatrix}+e\\-sj\end{bmatrix}$

Emph Frt ==========> [ɓaŋɓaŋən mbaaldi na-rel ə xur ɓutəɗiya]$_{NOM}$ na-rel-mən sa-ta
$_{<-sj>}$

MP 1, MP 2 ==========> [ɓaŋɓaŋən mbaaldi na-cə ə xur ɓutəɗiya] na-tə-mən sa-ta

/ ɓaŋɓaŋən mbaaldi nec[6] ə xur ɓutəɗiya natəmən sata /

'We will drink the sour beer which is in this pot'

---

6. Verb roots ending in vowels /a/ and /ə/ undergo ablaut to /e/ and /i/, respectively, in the environment of a following palatal consonant such as the rel allomorph /cə/. A late phonetic rule deletes morph-final schwa in non-final position. /nəxa+cə/ > /nəxecə/ > [nəxec]; /na+cə/ >/necə/ > [nec]; /ɗə+cə/ > /ɗicə/ > [ɗic].

We conclude this chapter with a discussion of sentence emphasis. In the base, the sentence is generated with an optional emphasis constituent:

B2. SEN ----> (E) S

Emphasized sentences share one of the two main syntactic features of rel constructions, namely, the neutralization of tense distinctions. The tenses which occur in emphasized sentences are just those tenses which result from application of rule T5.1, the Tense Neutralization rule.

112. tə Ø ɗə Xoɗewa kə Kanu
E aor
It's the case that Xodewa went to Kano

113. tə Ø xiy-i pərsɗi pərtu sə
E aor
It's the case I bought the horse which you rode

114. tə na-i kə kutirɗa ə mərɓ-ɗiya
E aux_2
It's that I am chief of this town

115. tə na-mən raka-ta
E aux_2
It's the case we are running/will run

116. tə na-mən na-ta raka-ta
E aux_2 mdl
It's the case we will be running

In the lexicon, the sentence emphasis marker /tə/ is marked with the feature <+e>. This feature allows the co-occurrence rule prohibiting more than one <+e> constituent

per proposition to apply equally to sentence emphasis constructions, i.e. an emphasized sentence may not also contain an emphasized noun. Since the E marker is <+e>, it is also automatically specified as <+r> (according to the lexical redundancy rule discussed earlier in this chapter and the rel Addition rule must apply).[7] The rel constituent, in turn, triggers the Tense Neutralization rule.

Before emphasized sentences attain surface realization as in the examples above, they undergo one further rule, the rel Deletion rule. Emphasized sentences do not have an overt rel marker, and in this respect, they differ from all other relativized constructions.

T5.9. rel Deletion in Sentence Emphasis

SD: # E X - rel - X #
1 2 3

SC: 1 - 3

In the general ordering of the relativization rules, this deletion rule would appear after the Tense Neutralization

---

7. The SD of the rel Addition rule has to be slightly modified to allow the rule to operate when the <+r> item is generated to the left of the tense constituent. It is obvious that the transformation applies "whenever there is a <+r> element in the structure" where environment is not linearly specifiable. Conventional notation for transformational rules cannot handle non-linear structure such as this in any neat way that I know of.

rule and before the Aspect Attachement rule.

One could alternatively identify the sentence emphasis marker /tə/ with one of the forms of rel (see preceding MP rules). If this were the case, then the deletion rule above would not hold. Instead, a rule would be needed which moves rel in sentence emphasis up to sentence initial position, replacing E, which is simply a dummy symbol in the base:

SD: # - E - X - rel - X #
1 2 3 4 5

SC: 1 - 4 - 3 - 5

The advantage of such an analysis is that the sentence emphasis construction can be included as a typical rel construction, i.e. it is characterized by tense neutralization and an overt rel marker. The main objection to this alternative analysis is that I feel rel is really more like a surface "aspect" marker belonging at a much lower structural level than the sentence level. I also feel that this initial /tə/ has a more definite semantic meaning something like "It is the case that..." and that it is not merely a non-semantic grammatical morpheme such as a relative marker.

Chapter 6

Negation

This chapter on negation is organized into two sections. In the first, AUX negation is discussed; in the second, all other types of negation.

AUX Negation. The base rule generating the auxiliary allows an optional negative element:

$$B5. \quad AUX \text{ ---> } \left\{ \begin{matrix} aux_1 \\ aux_2 \end{matrix} \right\} \quad (neg)$$

All of the five tenses can be negated. When neg is chosen, a second negative marker is obligatorily added at the end of the sentential proposition, before any sentence adverbs or the question marker. There are two exceptions to this rule.

T6.1. Negative Spread

SD: X - neg - PROP - (ADV) (Q)
1 2 3 4

SC: 1 - 2 - 3 - 2 - 4

Condition: 1 does not contain sqt or rel

The second negative occurs at the end of the last item in the proposition, which may or may not contain a relative clause. The shape of the first or auxiliary negative

varies with the tense (the forms are underscored in the examples). The shape of the second negative marker is /wa/.

1. Ø mbəxa-wə wanda wa
   aor move child
   The child doesn't move

2. ə pər-wə-fee pərsdiya ɓukwiya wa
   prf one horse today
   This horse hasn't been ridden today
   (Lit. one hasn't ridden this horse...)

3. ə xiyán-w-i cimbita i-Xodewa kadə wa
   sell I cloth for prt
   I didn't sell a cloth for Xodewa

4. mə foxán-ən ɓutədə xa wa
   sbj you pot prt
   Don't smash up the pot

5. ŋgə məʃan də tə ancə kə ləmo wa
   con he go with him
   He isn't taking him to market

6. ŋgi fər-ú mbaala in wa
   fut I you beer prt
   I will not give you (any) beer

7. ə kadə-w-a'ən xar fartə-di [ɓa-tən]$_S$ wa
   we day come he
   We don't remember when he came

8. mə yaan nat nafdi [na-cə kə leeka]$_S$ wa
   sbj fight all man is coward
   Any man who is a coward shouldn't fight

9. ŋgan xiy pərsɗi [na-cə mbullə yu]$_S$ wa
fut he buy horse is neg short

He will not buy a horse which is short

The purpose adverbial PUR is part of the proposition and therefore the second negative follows it.[1]

10. ə ce-w-ən pindiku [kə$əm mə]$_{PUR}$ wa
shoot you gun because what

Why didn't you shoot the gun?

11. ə ɓa-w-i kə ləmo [kə$əm kə xiy-i cemsa]$_{PUR}$ wa
come I because sbj buy I

I didn't come to market (in order) to buy a chicken

12. Ø $ə yaan-w-a'ən [kə$əm kə səm-ta]$_{PUR}$ wa
aor hab fight we because eating

We don't fight (in order) to win (lit. to eat)

In contrast, BEC[2] and IF[3] clauses are sentence adverbials (dominated by ADV) and therefore outside of the proposition. The second negative precedes these non-propositional adverbials.

---

1. The assumption that PUR is inside the proposition and is not a constituent of ADV is motivated by the position of this second negative, see contrast between PUR and BEC adverbials in the text. PUR adverbials are not handled in this grammar.

2. PUR and BEC clauses are both formed with the conjunction /kə$əm/ 'because, for (sake of)'. /kə$əm/+ sbj is a purposive clause; /kə$əm/ + any other tense is a because clause. Despite the complementary distribution, they are considered syntactically distinct, having different transformational potentials. Rules for generating BEC clauses are given in the second part of this chapter.

3. Some rules for IF clauses are given in the second part of this chapter.

13. ə ɗə-wə wanɗa kə mət ca'ata wa [kə$əm yiɗ nakan]$_{BEC}$
school because dog is he

The boy doesn't go to school because he is lazy (lit. he is a dog)

14. Ø tarak-wə wanɗa wa [kə$əm ŋgə kwa'kwa' mə shikecə-an
play because not strong as friends his
wa]$_{BEC}$

The boy doesn't play because he is not (as) strong as his friends

15. ŋgi na ɓa wa [ma xaɗcan-ən]$_{IF}$

I'll not be coming if you're sick

16. mə səm-ən wa [ma ŋgə miyta xaɗ wecə wa]$_{IF}$

Don't eat if you aren't hungry

Like the sentence adverbials, Q is outside the proposition. The second negative precedes the question marker /wá/.

17. ə xiy-w-ən tanda ɓera wa wá
you them

Didn't you buy them yesterday?

18. ŋgə mə$an ɓa-ta kə na pərsɗi [na-ti xiy-áǹ-ta sə]$_S$
con he come sbj see horse aux$_2$ I buy him for
wa wá
Q

Isn't he coming to see the horse I am buying for him?

The condition on the Negative Spread rule prohibits the second negative marker from being added if sqt is chosen as part of a past tense (examples 19-20), or if the

sentence contains a rel marker (examples 21-26).[4]

19. ə raka-wa-kə nafda kə taleya
prf neg sqt bush

Then the man didn't run into the bush

20. cat kə Ø na-wa-kə cini kaata, nat takət wan$iwcə
ASA aor mdl neg sqt lion look all rest animals

ə raka-kə-anda

prf run sqt they

As soon as Lion wasn't looking, then all the rest of the animals ran away

21. wandiya Ø yerkə-wak-cə yat-yo
aor neg rel

This boy didn't steal your food

22. mə$an na-wak-cə tə-ta xa
aux_2 neg rel

He will not cry out

23. wunə Ø ba-wak-cə kə səpat-an
who aor neg rel

Who didn't come to the burial dance?

24. kə$əm mə Ø $əf-u-wak-tə-nda
why aor neg rel

Why didn't they hit you?

25. nafdi [Ø pər-wak-cə kə pirshəincə yu]$_S$ wanmanpaapa
aor neg rel

The man who didn't ride my horse is my uncle

---

4. Although sqt and rel are generated differently, one from the base and one transformationally, at a certain level of structure they behave alike, as we have already seen in discussing the Aspect Attachement rule of the preceding chapter.

26. kapaɗi [na-<u>wak</u>-tə Xoɗewa na-ta xiy-ta]$_S$ ndəɗcan
aux$_2$neg rel mdl

The cloth which Xodewa will not be buying is pretty

Examples 21-22 illustrate <u>rel</u> in emphasis constructions, 23-24 in question word constructions, and 25-26 in relative clauses. The first two constructions are simple ones, the last a complex construction. But because all three have in common the presence of a <u>rel</u> marker, they also share in not having a second negative added at the end of the S which contains the <u>rel</u>. This obviously presents some problems in the application of T6.1 with regard to complex sentences like 25-26. It has been hypothesized that transformations apply in a cycle, which means they apply as a group as many times as there are S's in the deep structure, starting with the most deeply embedded S and working upwards through the complex tree structure. If this is so, then the condition regarding <u>rel</u> of rule T6.1 cannot be met for relative clause constructions since <u>rel</u> would not have been added to the embedded S's in question until a later cycle. One solution is to say that a rule like T6.1 is a non-cyclic rule and applies whenever the proper conditions occur. This might mean that it applies at a fairly shallow level of structure, except for the fact that there are cases where it must be ordered before other rules (see discussion later on negative because clauses). For the moment, I leave the condition on rule

T6.1 as it stands, since it does capture the generalization that whenever rel is present, regardless of whether the construction is simple or embedded in another sentence, a second negative is not added. This is further confirmed by the fact that emphasized sentences, which do not have a rel marker (see rule T5.9 deleting rel in preceding chapter), do have a second negative (see examples in second half of this chapter).

When the negative is chosen with a past tense (i.e. either aor or prf) a transformation moves the first negative from its place beside AUX and attaches it as a suffix to the nearest <+V> constituent on the right. This constituent can be either the modal /na/ or the main verb.

T6.2. Negative Past Attachement

SD: X pst - neg-(hab)-$X_{<+V>}$ $(K_{\begin{bmatrix}<+dat>\\<+pn>\end{bmatrix}})$ - X

1 2 3 4 5

SC: 1 - 3 - 4 - 2 - 5

In the past tenses, the subject noun or pronoun comes after the attached neg unless sqt or rel are also present.

27. Ø wi'y-w-i xa ə farwiytə wa
aor walk I
I don't run around at night

28. Ø ʃə na-w-ən cap kàpecə wa wá?
aor hab mdl you

Haven't you been washing clothes?

29. ə də-w-anda kə ləmo bukwiya wa
prf they

They didn't go to market today

30. ə na-wa-kə-i 'yara tanda pe'
prf mdl sqt I

Then I wasn't insulting them anymore

31. kərsə nda'an, ə nda-wa-kə-amən cəkamə
prf say sqt we

After that, then we didn't say anything

32. nudi [nəxa-wak-cə yu]$_S$ komnda
cook rel

The woman who doesn't cook is blind

In 30 and 31, sequential /kə/ has been chosen; in 32, the S is embedded and thus contains the rel marker /cə/. The negative precedes both of these markers. sqt and rel have been moved to this position by a previous rule (see Aspect Attachement rule T5.8 in preceding chapter).

If there is a <dative> object pronoun (direct or indirect) suffixed to the main verb, the negative follows it, since the dative pronoun set is considered an inseparable part of the full verb stem.

33. ə xiy-án-w-i ləbokəra tanda sə wa
prf <dat> I cap them for

I didn't buy a cap for them

34. Ø pəd-í-wa-kə-an xa ə mək-kə-i ndə kə xa
aor <dat> sqt he pst sqt I him

When he didn't exceed me, then I threw him down

35. ə ʃəf-incə wandi [fər-ú-wak-cə ənа yu]$_S$
prf hit boy give <dat> rel

I hit the boy who didn't give you anything

The effect of the Negative Past Attachement rule is to impose the following order of morphemes: pst-V-<dative> pro-neg-$\begin{Bmatrix} \text{sqt} \\ \text{rel} \end{Bmatrix}$-subject pro.

36. Ø mbən-ú-wak-cə-i bəra
aor V <dat> neg rel<sj>

I didn't please you yesterday

37. ə xiy-í-wa-kə-an saxtə bəratə sə
pst V <dat> neg sqt<sj>

Then he didn't buy me a necklace

Once this ordering rule has applied, the phonological shape of the neg constituent is provided by these ordered realization rules.

$$\text{MPl.} \quad \begin{bmatrix} \text{aux}_2 \\ \text{sbj} \end{bmatrix} + \text{neg} > \begin{bmatrix} \text{ŋg(ə́)} \\ \text{mə} \end{bmatrix}$$

This rule specifies three portmanteau realizations of tenses in the negative. Negative continuous and future are both formed with /ŋg(ə́)/ followed by their respective pronoun sets. Negative subjunctive is simply /mə/.

MP2. neg > /wa/

MP3. /wa/ > wák / ___rel

MP4. /wa/ > wə / ___$X_{<+sj>}$

MP2 is a general rule specifying the shape of all other instances of neg as /wa/, thus accounting for the negative in the two perfective tenses and the second negative added by the Negative Spread rule. MP3 and MP4 alter this /wa/ in certain environments. In the past tenses, affirmative or negative, the third person subject singular pronoun is obligatorily deleted (refer back to rule T3.10 of Chapter 3). Here MP4 will not apply, since there is no following subject; the negative form remains /wa/:

38. ə səm-wa-Ø wa — He didn't eat

Cf. 39. ə səm-wə-i wa — I didn't eat

Cf. 40. ə səm-wə-nafda wa — The man didn't eat

Finally, there is a low-level phonetic rule which deletes morph-final schwa in non-pausal position unless the deletion would cause a phonotactically inadmissible sequence. If morph-final schwa is followed by a vowel-initial suffix, then ...Cə + V... > ...CV... Thus, the negative forms /ngə/ and /wə/ followed by vowel-initial subject pronouns are reduced to [ŋg] and [w]:[5]

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5. In many of the examples, this phonetic rule has been applied to the relative markers /cəwtə/ and the sequential sequential marker /kə/ followed by vowel-initial subject pronouns.

41. ŋgə-i səm wa > [ŋgi səm wa] He will not eat

42. ə səm-wə-a'ən wa > [ə səmwa'ən wa] We didn't eat

Negative "non-verbal" constructions follow the same rules as verbal sentences. "Non-verbal" differ from verbal sentences in that /na/ is chosen as the main verb provided it is not already generated as mdl (see Chapter 8). Since the Negative Past Attachement rule is written so that the postposed neg is attached to the first <+V> element, this element will always be /na/ as main verb (see 45, 47, and 48).

43. ŋgə malauri sə wa[6]
con rice there

There isn't any rice

44. ŋgamən na kə fəbə$cə wa
fut smiths

We will not be smiths

45. Ø $ə na-wi kə wurumndə wa
aor hab rich man

I haven't always been a rich man

46. mə na-nda kə yarcə wa
sbj thieves

Let them not be thieves

47. Ø $ə na-wə wanda ə mət ca'atə wa
aor hab boy school

The boy isn't always at school

---

6. In the continuous tense, /na/ as the main verb is phonologically zero due to deletion, see T8.1 in Chapter 8.

48. ə na-wa-kə yata sə
prf sqt food there
Then there wasn't any food

49. mə$an na-wak-cə ɗelweryan sə
rel
It's he who doesn't have his book

Other Negation. A number of major categories other than AUX can be negated. The shape of the negative in these cases is /ŋga...wa/.

50. ŋga [tə yarkə-i wanɗəbə$-yan]$_S$ wa
It's not the case that I stole his money
(neg of emphasized S)

51. ə mər-i ŋga [kə$əm mərəŋcə-yan]$_{BEC}$ wa
He died (but) not because of his wounds
(neg of BEC clause)

52. ə ɗə-wa wa ŋga [kə$əm tə leekə-a]$_{BEC}$ wa
He didn't go not because he was afraid
(neg of BEC clause)

53. Ø səm-wi wa [kə$əm ŋga tə na miytə xaɗ nencə wa]$_{BEC}$
I don't eat because it's not the case that I am hungry
(neg of S dominated by BEC clause)

54. ŋga mə$an $əf-ti wa
It's not he whom I hit
(neg of emphasized N)

55. ŋga pirshə na-cə sə yan wa
It's not a horse he has
(neg of emphasized N)

There are two ways to account for these different occurrences of the negative: a) the auxiliary neg is transformationally re-attachable to certain other categories; b) other categories besides AUX can have an optional neg constituent in the base. In fact, both these methods are needed to generate the negatives in the above examples. We will deal first with sentence negation, then noun negation. Both types of negation require that we review some facts about emphasis.

Sentence emphasis and negation

We first give some of the necessary base rules which generate the particular constructions dealt with in this section.

B1. SENTENCE ---> #SEN (ADV) (Q)#

B2. SEN ---> (E) S

B16. ADV ---> { IF / BEC / WHN / ⋮ }

B17. IF ---> if NP

B18. BEC ---> bec NP

B13. NP ---> { ⋮ / SEN }

The sentence itself, whether interrogative or not, can be emphasized, and this is marked by a preceding E marker /tə/. The same tenses are neutralized under sentence emphasis as are neutralized under noun emphasis (see T5.1, Chapter 5).

56. tə xiyincə pirsha
    It's the case that I bought a horse
57. tə na wandəbə$-yan sə
    It's the case he has money
58. tə wuɓ-a kə kərsə lawa
    It's that he hid behind a chair
59. tə ŋawun rakata kə rəɓtə-an wá
    Is it that you're running to the dance?

Sentences can be also negated, but these obligatorily co-occur with the E marker /tə/.

60. ŋga tə xiyincə pirshə wa
    It's not the case I bought a horse
61. ŋga tə na wandəbə$-yan sə wa
    It's not the case he has money
62. ŋga tə wuɓa kə kərsə lawa wa
    It's not that he hid behind a chair

The surface paradigmatic contrast between affirmative emphasized sentences 56-58 and negative emphasized sentences 60-62 would suggest that neg is an optional constituent of SEN just as E is. The fact that negated sentences cannot

occur unless the sentence has emphasis could presumably be expressed as a context restriction on the choice of sentence neg.

However, an important distributional restriction provides evidence that such an analysis is incorrect. Emphasized sentences, whether affirmative or negative, do not co-occur with a negated auxiliary. The following sentences are not expressible in Ga'anda:

63. *It's not the case that he didn't die
64. *It's the case that he didn't die

In other words, within a simple sentence, negation can only appear once. It can negate either the auxiliary or the sentence as a whole.

The correct source of a negated sentence is the co-occurrence of a negated auxiliary in an emphasized sentence. Under this configuration, the negative is obligatorily moved out of the AUX, thereby making it affirmative, and pre-posed to the emphasized sentence. Note in the examples that rule T6.1 spreading the negative applies to this construction since there is no rel marker present (due to its previous deletion by rule T5.9).

T6.3 Negative Sentence

SD: E - X - AUX - neg - X
1 2 3 4 5

SC: 4 - 1 - 2 - 3 - 5

65. *E ə $əf-u-wi ===>

E I didn't hit you

65a. ŋga tə $əf-ucə-i wa

It's not the case I hit you

66. *E Ø ŋgə ŋgət ɪakata wa ===>

E I am not running

66a. ŋga tə na-i rakata wa

It's not the case I'm running

67. *E Ø $ə na-wak-cə nuɗa nəxa ənа wa ===>

The woman hasn't been cooking anything

67a. ŋga tə $ə na nuɗa nəxa ənа wa

It's not the case the woman has been cooking anything

68. *E ə pək-wamən wanɗa wa ===>

E We didn't push the boy

68a. ŋga tə pək-mən wanɗa wa

It's not the case we pushed the boy

The rule can apply wherever SEN allows E. For example, -IF and BEC clauses allow the embedded SEN to be emphasized.

69. *ŋgi ɗə wa [ma [E ɗə-w-ən wa]$_S$]$_{IF}$ ===>

I will not go if E you don't go

69a. ŋgi ɗə wa ma ŋga tə ɗə-ən wa

I won't go if it's not the case you go (unless you go)

70. *ni təta [ma [E ŋgo fər-í` pafən wa]$_S$]$_{IF}$ ===>

I will cry if E you won't give me a gift

70a. ni təta ma ŋga tə no fərí` pafən wa

I will cry unless you give me a gift

71. *ə xiyincə pirshə [kə$əm [E ŋgə pirshəincə sə wa]$_S$]$_{BEC}$ ===>

I bought a horse because E I don't have a horse

71a. ə xiyincə pirshə kə$əm ŋga tə na pirshəincə sə wa

I bought a horse because it's not that I have a horse

72. ə xuna-wa xa wa [kə$əm [E ə xaɗ-wa wa]$_S$]$_{BEC}$ ===>

He didn't lie down because E he didn't get sick

72a. ə xuna-wa xa wa kə$əm ŋga tə xaɗa wa

He didn't lie down because it's not the case he got sick

There are other occurrences of negation associated with BEC clauses which cannot be accounted for by the above transformation. In contrast to sentences like 71 and 72, there are the following:

73. ə xiyincə pirshə [ŋga [kə$əm ŋgə pirshəincə sə wa]]

I bought a horse not because I don't have a horse (but for some other reason)

74. ə xuna-wa xa wa [ŋga [kə$əm ə xaɗ-wa wa]]

He didn't lie down not because he didn't get sick

75. ə səmnda ənа [ŋga [kə$əm miyta xaɗ tanda] wa]

They ate something (but) not because they were hungry

These BEC sentences are negative explanations. For example, 75 asserts that 'hunger was not the reason why they ate, but some other reason'. Similarly, 73 and 74 assert the opposite reason of 71 and 72. Because of this contrast, BEC clauses have to be generated with an optional negative element; the rule B18 generating BEC presented earlier must be revised as follows:

B18. BEC ---> (neg) bec

B19. bec ---> bc NP

A negative bec clause may contain an emphasized S with a negated auxiliary. This S will thus meet the SD of the Negative Sentence transformation, which it may undergo.

73. ...**ŋga [kə$əm [E ŋgə pirshəincə sə wa]$_S$]$_{bec}$ $\overset{T6.3}{\Longrightarrow}$

76. ə xiyincə pirshə [ŋga kə$əm [ŋga tə na pirshəincə sə]$_S$wa]

I bought a horse (but) not because it isn't that I have a horse

74. ...**ŋga [kə$əm [E ə xaɗ-wa wa]$_S$]$_{bec}$ $\overset{T6.3}{\Longrightarrow}$

77. ə xuna-wa xa wa [ŋga kə$əm [ŋga tə xaɗa]$_S$ wa]

He didn't lie down (but) not because it wasn't that he got sick

Admittedly, these transformed negative because sentences were considered "heavy-handed" in terms of normal usage. My informant much preferred to use the non-emphasized S with negated auxiliary in a negative bec clause, as in 73

and 74, although he fully confirmed the grammaticality of 76 and 77.

There is one further development in negative because clauses which is of interest. If both the main clause and the negative bec clause are affirmative, the negative on bec may be optionally incorporated into the main clause by becoming a negative on the auxiliary.

T6.4 Negative Because Incorporation - OPT

SD: $[X - AUX - X]_S$ - neg - bec - X

1 2 3 4 5 6

SC: 1 - 2 - 4 - 3 - 5 - 6

Condition: 2 and 5 do not contain neg

78. [ə də-incə kə mət wanfaŋəncə]$_S$ ŋga [kə$əm tə leeki]$_{bec}$ wa =

I went to (place of) the police not because I was afraid (but for some other reason)

78a. [ə də-wi kə mət wanfaŋəncə] [kə$əm tə leeki] wa

I didn't go to the police because I was afraid (but because...)

79. [ni cap kapec-yo]$_S$ ŋga [kə$əm kudkud]$_{bec}$ wa

I will wash your gown not because it is dirty (but because...)

79a. [ŋgi cap kapec-yo] [kə$əm kudkud] wa

I will not wash your gown because it is dirty (but because...)

In both Ga'anda and English, this type of contrastive because clause is usually (but not necessarily) followed by another clarifying because clause. In English, if the transformed sentence 78a is left unclarified, it is ambiguous (discounting intonational phenomena). The English 78a has two readings:

i. I went to the police, not out of fear (but out of a sense of duty)

ii. I didn't go to the police, because of fear (for my life)

In Ga'anda, there is no such ambiguity; 78a only has the first reading. The second reading is expressed as:

80. [ə də-wi kə mət wanfaŋəncə wa] [kə$əm tə leeki]

Since the main clause has a base-generated negative, the second negative /wa/ comes before the affirmative bec clause.

It is clear then, in the generation of sentences 78a and 79a, that the rules must be ordered in the following sequence:

i. T6.1. Negative Spread[7]

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7. The SD of the rule T6.1 has to be slightly modified to allow generation of a second neg on bec clauses and nouns. That is, the second neg is generated "in the environment of" any neg, except for the two conditions noted. We also need some housekeeping rule such that if two second negative /wa/'s should end up side by side, as would be the underlying structure in sentences 69-71, the second /wa/ must be deleted; there must be only one /wa/ in the surface structure.

ii. T6.4. Negative Because Incorporation

iii. T6.2. Negative Past

Rule T6.1 must precede the other two rules, i.e. the second negative must be added at the end of the because clause before bec negative is incorporated into the main clause auxiliary. If T6.1 applied after the T6.4, we would always get sentences like 80 with the second /wa/ before the bec clause, and there would be no way to derive sentences like 78a and 79a with the /wa/ behind the bec clause.

An emphasized sentence in which the bec negative has been moved into the main clause auxiliary by the Incorporation rule above meets the SD of the Negative Sentence transformation T6.3 and thus obligatorily undergoes that rule. If 78 and 79 had both been generated with E, then transformed 78a and 79a with E would not be grammatical until they undergo the Negative Sentence transformation.

78a. + E $\overset{T6.3}{\Longrightarrow}$ 78b.

ŋga tə də-i kə mət wanfaŋəncə kə$əm tə leeki wa

It's not the case I went to the police because I was afraid (but because...)

79a. + E $\overset{T6.3}{\Longrightarrow}$ 79b.

ŋga tə na-i cap kapec-yo kə$əm kudkud wa

It's not the case I will wash your gown because it's dirty (but because...)

Sentences 78b and 79b are derivable only if rule T6.4 precedes rule T6.3. There needs to be some restriction on the latter rule such that it cannot apply to a sentence if it is followed by a negative because clause.

Noun emphasis and negation

Any noun in the sentence can be emphasized. In the lexicon, one of the optional syntactic features of noun is <+e>. Nouns can also be negated. Like sentence negation, negation of nouns always co-occurs with the presence of emphasis. Unlike the analysis of negated sentences, there is no way to transformationally derive negated nouns from sentences with negated auxiliary.

81. ŋga nafda$_{<+e>}$ raka-cə wa ✗ 81a. *ə raka-wə nafda$_{<+e>}$ wa
It's not the man who ran *The man didn't run

The reason this derivation doesn't work is because it is possible to have both noun negation and auxiliary negation in the same sentence.

82. ŋga nafda$_{<+e>}$ raka-wak-cə wa
rel
It's not the man who didn't run

83. ŋga maldəm-ya'ən yax-wak-tə-'ən wa
It's not our teacher we don't like

The noun is generated with an optional negative at the highest level of structure for nouns, i.e. neg is an optional constituent of K. Below are the pertinent base rules. (B14

is irrelevant to the discussion and is not presented.)

B12. K ---> (neg) prep NP

B13. NP ---> { NOM (S) / SEN }

B15 nom ---> N (DET) (DST)

If neg is chosen with a noun, then emphasis is obligatorily added.

T6.5. Negative Noun

SD: X neg prep - N - X

1 2 3

SC: 1 - $2_{<+e>}$ - 3

All emphasized nouns, affirmative or negative, are subject to the Noun Emphasis transformation, refer to rule T5.3 in Chapter 5. To reiterate, the effect of that rule is to move any emphasized noun (whatever its case function), together with any negative or determiner, out of its position in the proposition to the front of the sentence. Later rules T5.2 and T5.8 add a rel marker to the left-most <+V> constituent in the environment of any <+e> noun, negated or not.

84. $[wan\text{-}diya]_{<+e>}$ yarkə-cə yikwatincə
A rel

This boy stole my goat

85. [ŋgət]$_{<+e>}$ na-cə kə kapa nefa ə mərɓyamən
D rel

I am the big man in our town

86. ŋga [ɓəra]$_{<+e>}$ xiy-ti cemsa wa ɓukwiya
L rel

It's not yesterday I bought a chicken (but) today

87. ŋga [ca]$_{<+e>}$ mbəla'-cə kəs-i-ta sə wa wá?
A rel

Is it not you who can help me?

88. ŋga [Dəsanxa]$_{<+e>}$ na pirshəyan sə wa
B

It's not Dəsanxa who has a horse

89. ŋga [pirshə kudkud]$_{<+e>}$ na-cə nat i-Musa sə wa
O rel

It's not a black horse Musa will have

90. ŋga [tə wurtə]$_{<+e>}$ cak-tə Musa ɗeftə-an wa
I rel

It's not with an axe (that) Musa chopped the tree

Emphasized nouns can be the heads of relative clauses.

91. ŋga [wandi [raka-cə yu]$_S$]$_N$ $_{<+e>}$ yarkə-cə yikwatincə wa
A rel rel

It's not the boy that ran away (who) stole my goat

92. ŋga [pərsdi [na-tu ɓəra yu]]$_N$ $_{<+e>}$ pər-ti ɓukwiya wa
O rel rel

It's not the horse you saw yesterday that I rode today

In this second section on negation, the shape of the first negative throughout is /ŋgá/, which is clearly

related to the aux_2 negative /ŋg(ə́)/. If we exclude the sbj negative /mə/,[8] we can say that any neg shape to the left of the verb is /ŋgə/ ~ /ŋga/. /ŋgə/ occurs in the environment of a following bound subject noun or pronoun (as in the case with aux_2); /ŋga/ occurs elsewhere as a fuller free form.[9] There is parallel vowel alternation in the post-posed past negative /wə/ ~ /wa/ (refer back to MP rules earlier). /wə/ occurs in the environment of a following bound subject noun or pronoun; /wa/ occurs if anything else follows (such as sqt, rel or deleted subject).

In light of the above, the earlier MP rules must be revised. Following is the complete, revised set of ordered realization rules for specifying the various phonological shapes of neg.

MP1. sbj + neg > /mə/

MP2. neg > /ŋgə́/ / ___...VBL

MP3. neg > /wa/

MP4. /wa/ > /wə́k/ / ___rel

MP5. $\begin{bmatrix} /ngə́/ \\ /wa/ \end{bmatrix}$ > $\begin{bmatrix} /ngə́/ \\ /wə/ \end{bmatrix}$ / ___$X_{<+sj>}$

---

8. Comparative evidence shows that /mə/ is a historically separate tense, distinct from the subjunctive /kə/. In present-day Ga'anda, these two tenses have come to be complementarily distributed, /kə/ in the affirmative, /mə/ in the negative, so that synchronically they can only be considered as syntactically conditioned allomorphs of the same tense.

9. While it is true that /ŋga/ can be followed by subject pronouns, as in /ŋga mə$an təcə wa/ 'It's not he who cried', these emphasized pronouns are not considered bound forms.

Chapter 7

Verb Particles

The base rule B11 introduces the main verb as consisting of the verb root followed by one or two optional constituents called particles.

B11. VB ---> V (prt) (prt)

Whenever a particle is chosen, the basic meaning of the verb is semantically extended in a particular way. These verbal extensions are analogous to the -ɛ, -o and -u grades of Hausa verbs except that where the grades in Hausa are each mutually exclusive,[1] two particles may be simultaneously chosen in Ga'anda.

There are no verbs which may not optionally take at least one particle. Some verbs are semantically compatible with all the particles, whereas others may only take certain ones. These co-occurrence restrictions are handled by features on the verbs such as <±kaɗə>, <-fa>, <+xar>, etc. Semantic interpretation does not result strictly from the choice between particles and verbs, however. Some of it obviously relates to the particular cases which can be

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1. The reason for this in Hausa is due to the fusion of the grade vowel to the root. Ga'anda particles are really more like the English separable verb particles (away, up, along, etc.) and have a similar freedom of movement and concatenation within the sentence.

chosen with a verb. This can be illustrated with the verb /xiyə/ 'buy/sell', which is shown below with four of the particles in two different case environments. The first environment is where O or D case functions as direct object; the second is where D case functions as indirect object.

1. ə xiyincə ɗelwer xar
   $O_{<+oj>}$
   I bought some paper
2. ə xiyincə ɗelwer in
   I bought paper along (the way)
3. ə xiyincə ɗelwer xa
   I bought paper down (e.g. on a down-payment)
4. ə xiyáni ɗelwer kaɗə
   $D_{<+oj>}$ D
   I sold paper (lit. had paper bought away)
5. ə xiyáǹi ɗelwer xar
   $D_{<-oj>}$ O
   I bought paper from him
7. ə xiyáǹi ɗelwer in
   I bought paper along to him
8. ə xiyáǹi ɗelwer kaɗə
   I sold paper for him (lit. bought him paper away)
9. *ə xiyáǹi ɗelwer xa

In examples 1 and 5, the semantic contribution of /xar/ differs. In 1, it relates to an O case noun, giving it a partitive meaning. In 5, it relates to a D case indirect

object noun, making it "ablative" in meaning. In example 4, the particle /xa/ can co-occur with O case whereas in example 9, the construction is ungrammatical because /xa/ can't generally co-occur with D case. At the moment, I do not know how to formally state such dependencies between verb particles and nouns in particular case relationships and sentence functions. It appears that most of the particles have two general kinds of meaning. The first meaning indicates something directional about the action or state described by the verb; the second indicates something about the degree of completeness of the action or state described by the verb. These generalized meanings only incompletely correlate to whether there is a direct object or not (i.e. transitive vs. intransitive) and to whether a particular case functions as the object (i.e. O vs. D).

There are five verb particles in Ga'anda, each marked in the lexicon with the category feature <+prt>. Whenever the constituent prt is chosen, any particular particle can be inserted from the lexicon provided the main verb is positively specified for that particle. The various meanings of these particles are illustrated first followed by a description of their syntactic properties.

The first particle /xar/ has two analyzable meanings.[2]

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2. /xar/ appears to be etymologically derived from the noun root /xár/ 'hand'.

The first meaning indicates a partitive action in the sense that only part of the action is done. Where there is an underlying O case noun, then only some of the object(s) are affected by the action.

10. ə wi'yincə xar kə ləmo
    I walked part-way to market
11. ni xiyta xar arta arta
    I will buy one each (lit. some one one)
12. $axu ɗelwer xar
    Tear some paper!
13. co cinicəɗiya xar
    Shoot some of these lions!
14. ə xiy-í-nda camәscəɗi sə xar
    They bought some of those chickens for me

The second meaning of /xar/ is "associational" (for lack of a better term) when a surface <dative> object co-occurs. Depending on the semantics of the particular verb, it can mean either performing the action with someone, helping him do it, or performing the action away from him.[3]

17. ə cok-ícə-nda xar ə kətəndiya
    They sat with me in this room

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3. As shown in Chapter 3, surface datives may come from several underlying deep case functions. This probably accounts for the different interpretations of /xar/. A thorough study showing the interrelationships between co-occurring particles, verbs, and cases is beyond the scope of my present knowledge.

Cf. 18. ə cok-ì cə́-nda ə kətəndiya

They seated me in this room

19. ni $ə ca'a-ô wun̂-ta hausata xar

I will (hab) teach you (pl) Hausa (lit. learn Hausa with you)

20. ŋgət raka-àn-ta cini xar

I am running from a lion

21. nafda xiy-án̂-tu pirshə xar yu

The man from whom you bought a horse

The meaning of the second particle /in/ is primarily translated as a non-directional "along" in transitive constructions in which D case does not function as direct object. In examples 22-26, the direct objects "modified" by /in/ are incidental to the action. For example, 22 is interpreted as 'they incidentally sent along medicine together with what they actually intended to send.'

22. ə $ənnda wanbəba in

They sent medicine along

23. ə $ənnda wecə in

They sent you along

24. mə nan xiyta in

What will he buy (along the way)?

25. kaxu kwaritəda in kə xəŋga

Pull along the donkey to the farm

26. ni 'ya Dəsanxa in tə Musa

I will call Dəsanxa and Musa along

If an indirect object is present, then /in/ relates to it and takes on the meaning of doing the action "in the direction" of the person indirect object, "for" that person. It is this meaning of /in/ which is equivalent to the "motion toward" meaning of the -o grade in Hausa.

27. ə $ən-úcə̀-nda wanɓəɓa in (cf. 22)
They sent you medicine

28. mə nan xiy-í-̀ta in (cf. 24)
What will he buy (and bring) for me?

29. sər-án̂-tǹ $iw in
Fry meat (and bring) to him!

30. mə ɲen ɗax-í-̀ta in wa
Don't be bothering me!

The slight difference between the Benefactive marked by /sə/ and the use of the verb particle /in/ is seen in these pairs:

31. xiy-án̂-tən in — Buy (and bring) to him
32. xiy-án̂-tən sə — Buy for him.
33. ə yark-îcə̀ in — He stole (and brought) for me
34. ə yark-îcə̀ sə — He stole for me

The third particle /kaɗə/ also has two basic meanings. The first denotes that the action is done "away, out, back".

35. na 'yem $ərta kaɗə — Water will spill out
36. ə wi'yincə kaɗə — I walked back (home)[4]

---

4. With motion verbs, /kaɗə/ often means 'back' in the specific sense of 'back home'.

37. ə məkani xwermɗa kaɗə — I threw out/away the corn

38. təru kaɗə — Take (something) back/away

39. ni xiy pirshə kaɗə — I will buy a horse away (e.g. sell)

Cf. 40. ni xiy pirsha — I will buy a horse

The second sense of /kaɗə/ indicates completeness of the action, often translated by "up". Certain intransitive verbs which are designated as having the case frame +[D (A(B)) (I)] (see Class V, Chapter 2) intrinsically have a meaning component of "completeness" or "finality" as part of their semantic description, such as səɓə 'spoil', cəkə 'divide', fələ 'crack', etc. For some of these verbs such səɓə, /kaɗə/ is obligatory and must be marked with the feature <+kaɗə>. Others such as fələ are <±kaɗə> but the option is often preferred, making the construction "sound better, more complete". It is this sense of /kaɗə/ which corresponds closest to the -u grade in Hausa.

41. ə səɓ yaɗan kaɗə
The food spoiled, is spoilt
but not: *ə səɓ yaɗan

42. na kufiɗa ndiɗta/ndiɗta kaɗə
The river will fill/flood

43. na reɗ-yanda cakta kaɗə
Their marriage will split up

Cf. 44. ə cakamən wanɗəbəṣɗa (kaɗə)
We divided (up) the money

45. ə kənən kaɗə wa?

Are you recovered (finally cured from your illness)?

Cf. 46. ə kənən wa?

Are you well, cured?

47. ə fəl ɓutəɗa (kaɗə)

The pot is cracked (up)

48. ə mərincə/ə mərincə kaɗə

I died/I am dead (finally)

The fourth particle /xa/, like the previous ones, has two meanings. The first is associated with a downward direction of the action.[5]

49. tər̀-an-tən xa

Take it down!

50. ə xuni wanɗa xa kə xaaxa

The boy lay down on the ground

51. ə yax sə cok-ta xa

He wants to sit down

52. tak-an wanɗəɓə$ɗa xa

Reduce the money!

The second meaning denotes that the action is both well done and completely done, sometimes translatable by "up". This sense is closest in meaning to the -e grade in Hausa.

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5. /xá/ appears to be derived from the noun root /xáaxá/ 'ground, earth'.

53. ə sərani caməsɗa xa

I fried the chicken well/up

54. ə ɓaxmən xa

We really suffered

55. sənincə xa tə 'yarat-yan

I'm familiar (lit. know well) with his insults

56. teɓru xa

Turn around! (lit. turn well)

57. ə in miikətəndɗa (xa)

The door opened (up)

For certain verbs, the choice between the particle /xa/ and the particle /kaɗə/ seems to be semantically slight (as in the English equivalent). Compare these pairs:

58.	ə wel xa	It really scattered
59.	ə wel kaɗə	It completely scattered
60.	ə taxəs akwatitəɗa xa	The box is prepared
61.	ə taxəs akwatitəɗa kaɗə	The box is ready

The fifth particle /fa/ has only one sense and is used with verbs where the action is performed on or onto the body of some object, animate or inanimate.[6] There are not too many verbs which allows this particle.[7]

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6. /fá/ appears to be derived from the noun root /fá-tə́/ 'body (usually of animate being)'.

7. See Chapter 8 for the use of /fa/ with the verb "be".

62. təkáǹ xer-yo fa

Touch your hand on it (lit. touch to it your hand on)

63. ə mək-í-̀nda ŋgwalcə fa

They threw stones onto me

64. ə càni fa

I shot on it

Cf. 65. ə cáni

I shot it

66. na kəmsicə taxs-ta fa

The youths will get prepared

Cf. 67. na kəmsicə taxs-ún-ta fatə-yanda kadə

The youths will get themselves fixed up (lit. prepare their bodies)

Note in example 66 that the construction with /fa/ is intransitive, whereas 67 is a transitive construction in which the reflexive construction, consisting of the noun /fa-tə/ 'body' + possessive pronoun, functions as the direct object. It is clear that the particle /fa/ is not to be thought of as some "reflexive" particle.

Rule B11 generates one or at most two optional particles per verb. While a detailed study has not been made regarding the combinatorial and concatenational possibilities of particles, certain limitations are known. The correct word order of particles is handled by the following rule.

T7.1. Particle Word Order[8]

SD: X - prt - prt - X

1 2 3 4

SC: 1 - 3 - 2 - 4

Condition: 3 ranks above 2 in the following order:

xar = 1

in = 2

kaɗə = 3

xa = 4

68. ə tər xar in

He took some along

69. nanda ɓa-i-ta toxwatə xar in

They will bring me some soup

70. ə tər xar kaɗə

He took some back

71. ə tər xar xa

He took some down

72. na'ən ʃən ndə in kaɗə

We will send him along back

73. ə xiyincə xumcakatə in kaɗə

I bought sugar cane along (the way) bakc

74. kə tər-ĩcə̀-ən kwari in kaɗə

You should bring a donkey along (the way) back for me

---

8. I have not found any particle combinations with /fa/; therefore it is not accounted for in this rule.

75. ə wel-án-i in xa

I scattered it down along the way

76. ə wel-án-i kaɗə xa

I scattered it away completely

The base rules generate verb particles as optional elements with verb roots for the obvious reason of assigning immediate constituency structure. However, in surface structure, Ga'anda particles seldom remain in the position next to the root. In fact, their position in the sentence is extremely variable. This syntagmatic fluidity is brought about by the next three transformations.

Base rule B9 generates the basic sequence of cases as D-A-O-B-I-L-E. Subjectivalization and direct/indirect objectivalization rules assign function features to appropriate cases. It is at this point that the rule placing verb particle(s) in their correct position applies, before further rules which make changes in the case word order. The placement rule moves the particles immediately to the right of the right-most case which is marked for either subject, direct object or indirect object.

T7.2. Verb Particle(s) Placement

SD: $X\ V - prt\ (prt) - X\ K \begin{Bmatrix} \langle +sj \rangle \\ \langle \pm oj \rangle \end{Bmatrix} - X$

1 2 3 4

SC: 1 - 3 - 2 - 4

Among the cases in the sequence D-A-O-B-I-L-E, we have seen that D, A, O, and B are most usually assigned these sentence functions, so that a verb particle occurs to the right of any one of these. If I is chosen as the subject, the particle follows it, but if it is not functioning as subject, then the particle precedes it, compare example 82 to 84 and 85.

77. ə wel xwarmɗa kaɗə

$A_{<+sj>}$

The corn scattered completely

78. kə ɓa-'ən kaɗə

$A_{<+sj>}$

We should come back (home)

79. ə xiyincə xwarmɗa xar tə wanɗəɓə$an

A $O_{<+oj>}$ $I_{<-sj>}$

I bought some guinea corn with the money

80. Xoɗewa xiy-ánì cimbita Katəta in

A D O $D_{<-oj>}$

Xoɗewa is buying along a cloth for Katəta

81. Xoɗewa xiy-án-ta cimbita i-Katəta kaɗə

A D D $B_{<-oj>}$

Xoɗewa is selling (it) a body cloth for Katəta

82. ə 'yə-ícé fiɗeta xa ə xeera

D $I_{<+sj>}$ $L_{<-sj>}$

The oil really burned me on the hand

83. na'ən $ən ndə in kaɗə

A $O_{<+oj>}$

We will send him along back (home)

In example 83, the shift rule has applied to two verb particles.

The next examples illustrate the particle occurring to the left of $I_{<-sj>}$, L, and E case nouns.

84. ə 'yə-án-i fat-incə xa [tə fideta]
D A $D_{<+oj>}$ $I_{<-sj>}$
I really burned my with oil
(cf. 82)

85. ə 'yə-án fideta nafda xa [ə xeera]
D $I_{<+sj>}$ $D_{<+oj>}$ L
The oil really burned the man on his hand

86. ni pish mish ini ya kadə [kə xaaxa]
A $O_{<+oj>}$ L
I will spread out this very beniseed on the ground

87. ə ɓa-incə kadə [ɓəra]
$D_{<+sj>}$ L
I came back yesterday

88. kə $ənən nencə in [kə $ə$ənda]
A O E
You should send me along as a messenger

If a verb particle falls directly to the right of a B case noun, it may optionally permute with it.

T7.3. Benefactive-Particle Permutation - OPT

SD: X - B - prt - X
1 2 3 4

SC: 1 - 3 - 2 - 4

81. = 81a. Xoɗewa xiyánta cimbita kaɗə i-Katətə
D D B

89. xun-án-tən wanɗa i-incə xa =
D A D B

89a. xunantən wanɗa xa 'i-incə

Lay the boy down for me!

The fluid position of particles is not limited to simple sentences. The last transformation deals with particles in the environment of embedded sentences. The earlier rule T7.2 places particles after entire case configurations. These may or may not be internally complex, i.e. contain an embedded sentence. If a particle is placed to the right of an embedded sentence, it may be moved forward or extraposed between the head noun and the embedded sentence. This extraposition is obligatory in two specific environments only and optional elsewhere.

T7.4. Particle Extraposition with Relative Clause - OPT

SD: X N DET - S - prt (prt) - X
1 2 3 4

SC: 1 - 3 - 2 - 4

Condition: Obligatory if 2 contains /na/ as VB or contains prt as the last item

90. ə $ər fiɗeɗi [xiyti]$_S$ kaɗə =

The oil which I bought spilled out

90a. ə $ər fiɗeɗi kaɗə [xiyti]

$I_{<+sj>}$

The oil spilled out which I bought

91. ə wuɓamən nafɗa [ɓec]$_S$ xar yu =

We hid from that man who came

91a. ə wuɓamən nafɗa xar [ɓeca] yu

A D

92. ɗəf-u səftəɗi [nati tərta]$_S$ xa kə xaaxa =

Put the load which I am carrying down on the ground

92a. ɗəf-u səftəɗi xa [nati tərta] kə xaaxa

O

Put down the load which I am carrying on the ground

93. Dəsanxa təɓanta ter ini [$ənantu ɓəra]$_S$ xa yu =

Dəsanxa is finishing that very work which you sent him yesterday up

93a. Dəsanxa təɓanta ter ini xa [$ənantu ɓəra] yu

Dəsanxa is finishing up that very work which you sent him yesterday

The first condition states that this rule applies obligatorily if the embedded sentence contains the lexeme /na/ 'be' functioning as the main verb. This particular verb takes cases L and E as its only arguments (see Chapter 8). In view of the fact that particles may not be placed

to the right of L and E cases in simple sentences, it follows that they cannot remain to the right of embedded sentences containing L and E but must be extraposed. The ungrammatical sequences of examples 94-96 (generated by T7.2) become grammatical in examples 94a-96a by application of rule T7.4.

94. **ə məkani 'yamɗi [nec ə xur təbɗiya]$_S$ kaɗə ===>
L

94a. ə məkani 'yamɗi kaɗə [nec ə xur təbɗiya]
I threw out the water which was in this calabash

95. **ɗəfu ɗelwertədi [nec kə yina]$_S$ xa ===>
E

95a. ɗəfu ɗelwertədi xa [nec kə yina]
Put down the book which is mine

96. **ŋgət pəɗánta nafɗa [nec kə malɗəm]$_S$ xa tə alkəta ===>
E

96a. ŋgət pəɗánta nafɗa xa [nec kə malɗəm] tə alkəta
I exceed the man who is the teacher in strength

The condition of the extraposition rule also states that if the embedded sentence ends in a particle itself, the rule must apply. This is to prevent particles from two different underlying sentences from appearing side by side in one complex surface string.

97. **kəsitən tasaucədi [xiyti in]$_S$ xar ya ===>

97a. kəsitən tasaucədi xar [xiyti in] ya
Help me hold these dishes which I bought along

98. **kə ɗaan $iwɗi [səranti xa]$_S$ in ===>

98a. kə ɗaan $iwɗi in [səranti xa]

You should take him along the meat which I fried so well

99. **na nəscə 'ya xəscədi [nec xuɗanta kaɗə]$_S$ in ===>

99a. na nəscə 'ya xəscədi in [nec xuɗanta kaɗə]

The woman will call the men along who are farming away

There are some interesting exceptions to the obligatory nature of extraposition when particles from two different strings end up side by side. These exceptions appear to be due to surface rather than deep structure constraints. Recall that two particles could be generated in a simple string but that only certain combinations of particles were known to occur (refer back to T7.1 and examples 68-72). Among the sequences allowed are, for example, /in/ + /kaɗə/ and /in/+ /xa/. It appears that if a matrix S particle is placed (by T7.2) behind a particle belonging to an embedded S and the resulting particle sequence is one allowed in simple constructions, then extraposition need not be obligatory (contrary to the condition stated in T7.4) but optional. Sentences 100 and 101, without extraposition, were generated by me and accepted by all my informants. So were their extraposed counterparts.

100. ə $axani kapaɗi [ɓitu in]$_S$ xa yu

I tore up the cloth which you brought along to me

101. ə xiyincə kapadi [fəritu in]$_S$ kaɗə

I sold the cloth which you gave along to me

These non-extraposed sentences seemed acceptable just because the particular particle combinations occurring here are also found in simple sentences. Similarly, if non-allowable particle combinations such as */in/ + /xar/ or */xa/ + /in/ did not have the second particle extraposed, they were not accepted. Sentences such as 97 and 98 have only one acceptable sequence, as given in 97a and 98a. Finally, if two identical particles end up side by side, extraposition must apply, as in 102a and 103a.[9]

102. **məkantən yaɗi [səɓcə kaɗə]$_S$ ka ===>

102a. məkantən yaɗi kaɗə [səɓcə kaɗə]

Throw out the food which has spoiled

103. **ə pərincə pərsɗi [fəritu in]$_S$ in ===>

103a. ə pərincə pərsɗi in [fəritu in]

I rode the horse along which you gave me

In closing, we can examine the results when either matrix or embedded sentence contains more than one particle. Only a little work was done on this aspect of particle behavior, so that we can only hint at the processes which

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9. Similar constraints of a surface nature are found in English particles as well. We can certainly say: "he chopped down the tree which was dried up" and perhaps "he chopped the tree down which was dried up". But can we say "(?) he chopped the tree which was dried up down" or even better "*he chopped the wood which was dried up up".

might be going on. The following sentences were generated by me and accepted.

104. (?) ə kaxnda kwaritədi [fərandəti in]$_S$ in kaɗə yu ===>

104a. ə kaxnda kwaritədi in kaɗə [fərandəti in]

They pulled along home the donkey which I gave along to them

105. ə ɓi tə mbaaldi [sati xa]$_S$ xar in ===>

105a. ə ɓi tə mbaaldi xar in [sati xa]

He brought some beer along which I drank up

If 104 was not extraposed, it was considered semi-grammatical only, again, it appears, because the final sequence, /in/ + /kaɗə/ is allowed in simple sentences. The extraposed 104a was fully acceptable, although some informants only extraposed the first particle of the matrix sentence, resulting in 104b.

104b. ə kaxnda kwaritədi in [fərandəti in] kaɗə yu

Note that the end result here is still an acceptable combination of /in/ + /kaɗə/. From the above examples, it appears very likely that surface structure constraints have an influence on the applicability of the extraposition rule as well as on the acceptability of the sentences resulting from this rule.

Chapter 8

"Be" and "Have" Constructions

This chapter deals with the so-called "non-verbal" constructions such as locative predicates, existential predicates, "have" predicates, and equational predicates. These are discussed together since they are all predicated on a common verb /na/ "be".

In Chapter 1, the lexeme /na/ was presented in its function as the modal, which is an optional element preceding a main verb. In this chapter, /na/ is presented in its function as the category VB. In this function, /na/ is subject to a co-occurrence restriction: /na/ is lexically insertable as a VB just in the case that mdl has not already been generated. The base-generated sequence */na na/ is not permissible.[1]

Like any other verb, /na/ is subcategorized according to the case arguments it takes. Its case frame is +[O L(E)], i.e. it obligatorily requires O and at least one other case, either L or E, and it may take both. As seen in Chapter 2, most regular verbs require or allow O and L, and a smaller number of them also allow E (see examples of

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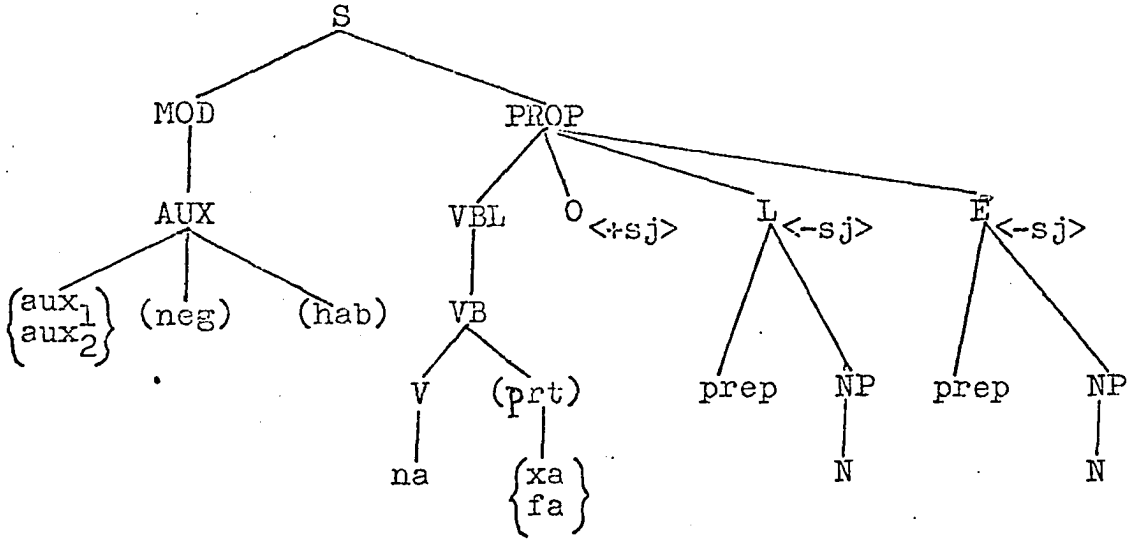
1. This sequence could only occur as a result of a transformationally inserted mdl (as a replacement for aux_2, see Tense Neutralization rule, Chapter 5), falling next to base-generated /na/ chosen as main verb.

these later, under equational predicate section). /na/ is also subcategorized by the other verbal syntactic features. It is <-trans>, <-mot>, <-xar>, <-in>, <-kadə>, <±xa>, and <±fa>. The use of the verb particles /xa/ and /fa/ are illustrated later.



As the tree indicates, there is no restriction as to the type of auxiliary which may occur. All five tenses may be generated, although the two past tenses are not commonly used. In all "be/have" constructions, O case functions as the subject of the sentence, as specified by the Subjectivalization transformation.

Although /na/ as a main verb occurs in construction with any of the five tenses, it must be obligatorily deleted from the surface structure of continuous tense constructions. In any "be/have" construction, affirmative

or negative, relativized or not, /na/ is phonologically zero in the continuous tense.[2]

T8.1. /na/ Deletion in Continuous Tense

SD: X con (neg) (hab) - $[na]_{VB}$ - X
1 2 3

SC: 1 - 3

Below are some examples of the various "be/have" constructions, in various tenses, affirmative and negative. Each type will be discussed in turn. (For convenience, non-occurring /na/ in the continuous tense is indicated by a dash).

1. Ø wanan - ə makaranta
con O L
The boy is at school

---

2. In addition to this environment, the lexeme /na/ is also "absent" in two other surface structure continuous tense constructions. a) /na/ must be present in the underlying structure (functioning as mdl) of all adjectival verbal constructions, although it is obligatorily deleted when these occur in the con/aor tenses (see rule T9.3 in following chapter). b) /na/ is generatable as optional mdl with any regular verb, but informants prefer not to use it in the continuous tense. /Ø ŋgət na-ta cok-ta/ 'I am doing sitting' is grammatically correct but is considered awkward due to the presence of /na-ta/. Despite these idiosyncratic facts about /na/ in the continuous, it is essential to posit /na/ in the deep structure, since it is present with all the other tenses, and delete it where necessary at the surface structure.

2. ŋgə mə$an - [ə wiri] wa
con neg O L

He isn't at home

3. na-amən $ə na-ta [ə ləmo [ə walwurca]
fut C hab L L

We will be (hab) at market in the mornings

4. **Ø nafɗi - [kə $əɓə$a][3]
con O E

That man is a smith

5. ŋgə-i na [kə malɗəm] wa
fut neg O E

I will not be a teacher

6. Ø $ə na-cə Xoɗewa [kə malɗəm] i-a'ən
aor hab rel O E B

Xodewa is (hab) our teacher

7. ma ə na-incə [kə $əxoɗata], na-i səmnda xa
if prf O E

When I am (become) a farmer, I'll eat well

8. yaxincə sə kə na-i [kə wurumnda]
sbj O E

I want to be rich (lit. be a rich person)

9. Ø 'yam - [sə] [ə xur kwiy 'yamɗa]
con O L L D

There is water in the well

10. Ø $ə na-cə ləmo [sə] [ə Kanu]
aor hab O L L

There is always (hab) a market at Kano

---

3. This example must undergo the Essive Preposition deletion rule presented later in this chapter.

11. ə na-kə nef [sə]
prf sqt O L

(Then) there was a man

12. Ø pirshə i-incə - [sə]
con O B L

I have a horse

13. na pirshə i-incə na-ta [sə]
fut O B L

I will have a horse

14. Ø $ə na-wa xwermə i-nef [sə] wa
aor hab neg O B L

Man does not always (hab) have food (lit. guinea corn)

15. ma' mə na wandəbə$ i-an [sə] wa
sbj neg O B L

Perhaps he might not have any money

The first "be/have" construction to be discussed is the locative predicate. The basic proposition consists of O and L cases. As pointed out earlier, L case differs from the other deep structure cases in that it may be chosen more than once within a single proposition. L nouns are subclassified by the feature <tm>. <-tm> nouns refer to place or location in physical space; <+tm> nouns refer to time or location in temporal space. Since /na/ is a <-mot> verb, the form of the case preposition for both types of L nouns is /ə/ "in,at".

16. mə$an-(ə) wiri ə ŋgopi

He is (at) home in Gombi

17. namən na-ta ə mət-diya (ə) tipesh cap

We will be at this place (at) two o'clock

18. ma Ø na-incə ə ləmo (ə) ɓukwiya, no mbəsita

If I am at market today, you'll find me

19. ma' kə na-anda (ə) ayə

Where might they be (at)? (lit. perhaps they are (at) where?)

20. yaxincə sə kə na təɓ-da ə xeshə

I want the calabash to be outside

21. [wandəbə$ i-incə]$_{O}$ - [ə xar i-an]$_{L}$
B B

My money is in his hands

In example 21, the nouns functioning as O and L are both adnominally modified by B case nouns.

The locative preposition /ə/ is optionally deletable. The option is usually chosen when L is <+tm>, less usually chosen when it is <-tm>. Examples 16-19 illustrate the rule below. The rule is quite general and can apply whether the main verb is /na/ or some other regular verb.

T8.2. Locative Preposition Deletion - OPT

SD: X - prep - NOM$_{<+L>}$ - X
1 2 3 4

SC: 1 - 3 - 4

Certain nouns functioning in L case may take adnominal Dative modifiers. In particular, such nouns belong to the

subset of nouns referring to parts of the body. When these are used locatively, they usually indicate spatial relations of the kind represented in English by the prepositions "beside, before, behind, beneath", etc. Compare the locative and non-locative forms below:

	<+L>		<-L>	
22.	(ə) xúr	inside (of)	xur	stomach
23.	(ə) kə́rsə̀	behind, back	kə̀rsə̀	back
24.	(ə) páŋ	before, front of	paŋ	front
25.	(ə) ʃə́mà	beside (of)	ʃə̀mà	ear
26.	(ə) kə́là	aside	kə̀là	side (of body)
27.	(ə) míi	edge of	mee	mouth
28.	(ə) kán	beneath	kàn	bottom, base
28a.	(ə) ɗár	top of	(no body-part equivalent)	

29. ŋgət - ə xúr akwati
    I am inside (of) a box
30. məʃan-ə ʃə́mà mbanan
    He is beside the road
31. na ɗelwertə-an na-ta (ə) ɗár tebur
    The book will be on a table

In the two lists above, note that there are tonal differences associated with the <+L> set. Any noun functioning as an L noun undergoes a tone rule which changes its first tone to High, regardless of its underlying lexical tone. This rule applies to body-part nouns as well as non-body-part nouns. A few nouns also have vowel differences.

32. wùr-àn - ngudex kəda

The house is small

Cf. 33. namən kaa ndə ə wúr-àn

We will look for him at the house

Cf. 34. namən kaa ndə ə wírì

We will look for him at home

35. ə capincə xur akwati

I washed (the) inside of a box

Cf. 36. ə capincə ə xúr akwati

I washed inside a box

37. ə xad $əmà-t i-an[4]

His ear hurt/got sick

Cf. 38. ə coki xa kə $əmàt i-incə

He sat down on my ear

Cf. 39. ə coki xa ə $əmàt-na

He sat down beside me

The last two examples illustrate an adnominal Benefactive functioning as a Locative (example 38) and an adnominal Dative functioning as a Locative (example 39).[5] Further examples are:

---

4. Nouns are subclassified according to the type of grammatical Linker they take. Some add /tə/, as in /$əma-t(ə)/; others undergo ablaut, as in /xur ~ xwir/, refer back to Chapter 4.

5. Adnominal Benefactive (or alienable possession) is joined to the head noun by the B preposition /i/ "of, for". Adnominal Dative (or inalienable possession) is juxtaposed immediately to the head noun (see further discussion Chapter 4). The possessive pronouns of each case are different.

40. wandakwanan - ə xwir i-incə

The stone is in my stomach

41. wandakwanan - ə xur-na

The stone is inside (of) me

42. mə$an - ə xwir i-nafca-an

It (e.g. evil) is in the men's stomach (i.e. they have evil in them)

43. mə$an - ə xur nafca-an

He is inside the men (i.e. among them)

44. namən na-ta ə paŋ i-an

We will be at its front

45. namən na-ta ə paŋ-an

We will be in front (of it)

In example 45, the adnominal D has been optionally deleted by the pro-form Deletion rule (see Chapter 4), leaving the anaphoric form /an/. Another environment where this anaphoric form appears is when the adnominal D noun is emphasized or serves as the head of a relative clause.

46. akwati-tə-di [na-ti ə xur-an]

The box which I am inside of (it)

47. mban-an na-tən ə $əmat-an

It's the road he is beside (it)

48. teɓur-tə-di [na delwer na-ta ə dar-an]

The table which the book will be on top of (it)

If an L noun (whether adnominally modified or not) is itself deleted either optionally or transformationally (as

in emphasis or relative clause constructions), the locative prepositions /ə ~ kə/ + Ø are anaphorically represented as /sə/.[6]

49. yaxinɔə sə kə ɗə-nda sə

I want them to go there

50. na wanɗa na-ta sə tipesh cap

The boy will be there at two o'clock

51. mət-ɗi na-təmən sə yu

The place where we are (at there)

52. xur akwatitədi na-ti sə

Inside the box where I am (at) (cf. 46)

53. ɓəmat mbanan na-tən sə

Beside the road is where he is (at) (cf. 47)

54. ɗar teɓurtədi na ɗelwer na-ta sə

The top of the table where the book will at (at) (cf. 48)

The presence of this /sə/, generally translatable as "there, at that place", is essential in the generation of the existential predicate. This is a sub-type of the locative predicate. An existential interpretation results when

---

6. The L case pro-form has the feature <-tm>, so that the anaphoric /sə/ refers to place and not to time. However, a sentence with /sə/ can be ambiguous with respect to place: /akwatitədi ɗəf-ti kapat sə/ "the box which I put a gown in (< /ə xur-an/) / on (< /kə ɗar-an/)". One problem in the optional deletability of a <+pro> L case noun is the optional deletability of the Locative preposition. Obviously the anaphoric /sə/ can only be derived if the preposition hasn't been deleted.

the O case noun is indefinite and where the pro-form L case noun is deleted and is thus represented as /sə/.

55. Ø yikwacə - sə

    There are goats (lit. goats are there)

56. yikwacə na-cə - sə

    There are goats (lit. goats are there)

57. na xwermə na-ta sə

    There will be guinea corn

58. ŋgə ənа mbənda - sə ə xuran wa

    There is no pleasure in it (lit. no thing of pleasing is there inside)

59. na 'yem $ə na-ta sə ə fekta

    There will (hab) be water in rainy season

60. ma' kə na 'yem sə ə paŋa

    Perhaps there will be water in future

61. Ø $ə na-cə fartə sə ə xur xurata

    There is (hab) a time of year (when this is done)

The last four examples each contain two instances of L, but it is only the first which is deletable (i.e. replaceable by /sə/). The deletion rule on L nouns applies only if the first of two L nouns is the pro-form. Two deletions may not occur, i.e. the sequence */sə sə/ is not allowed.

If the O noun is definite, having either the definite marker or a determiner (which is redundantly specified as <+def>), then the interpretation of /sə/ can only be with

its locational, not existential, meaning.

62. na xwarm-an na-ta sɔ

The guinea corn will be there (cf. 57)

63. na xwarm-diya nata sə

This guinea corn will be there

The verb particle /xa/ in its meaning of an action or state "well done, really done" can be chosen with the verb /na/. Although the use of this particle with this verb has not been really investigated, the following examples illustrate its meaning with /na/, which could be translated as "really being, existing".

64. dəɲcə - sə xa kaan

There are really a lot of birds (lit. birds are there really a lot)

65. na ʃiw na-ta sə xa əssə

There will really be meat tomorrow

66. na-cə na-ta-an xa kənə cox

How was the way of life/existence before?

Another sub-type of the locative predicate is the "have" predicate. A "have" interpretation results when the subject 0 case noun is adnominally modified by a Benefactive noun and the L case noun is represented as /sə/.[7]

---

7. There is no Ga'anda "have" construction which would correspond to the Hausa "X is with Y". The possessive construction "X's Y" is a deep structure adnominal construction and is not derivable from any reduced sentential source.

67. [pirshə i-incə]$_0$ - sə
O<-def>B L

I have a horse (lit. my horse is there)

68. ŋgə alkət i-nunef - sə ə wiri wa
O B

A woman has no power in the home

69. Ø $ə na-wə pirshə i-incə sə wa

aor hab neg O B

I don't (hab) have a horse

70. na wandəbə$ i-Musa $ə na-ta sə ə paŋa
O B

Musa will (hab) have money in future

71. ma' kə na ləmo i-fiu ɓukwiya
O B

Perhaps Biu may have a market today

In these examples, the O noun which is adnominally modified is <-def>. It may also have a definite marker, as below.

72. [pərsə-an i-incə]$_0$ - sə
O<+def> B L

I have the horse (Cf. 67)

73. na ɗelwercə-an i-Dəsanxa na-ta sə ma ə ɓi
O B

Dəsanxa will have the books when he comes

The examples above all illustrate the "have" construction whose subject is an alienably possessed noun of the structure N + adnominal Benefactive. Inalienably possessed nouns of the structure N + adnominal Dative may also occur

as the subject of a "have" construction. As noted in Chapter 4, head nouns of inalienable possessives are kinship terms.

74. kaa [shiketə-na]$_O$ - sə $əm-an wa Musa
O D L

I have a good friend named Musa

75. ŋgə parcə-na - sə wa

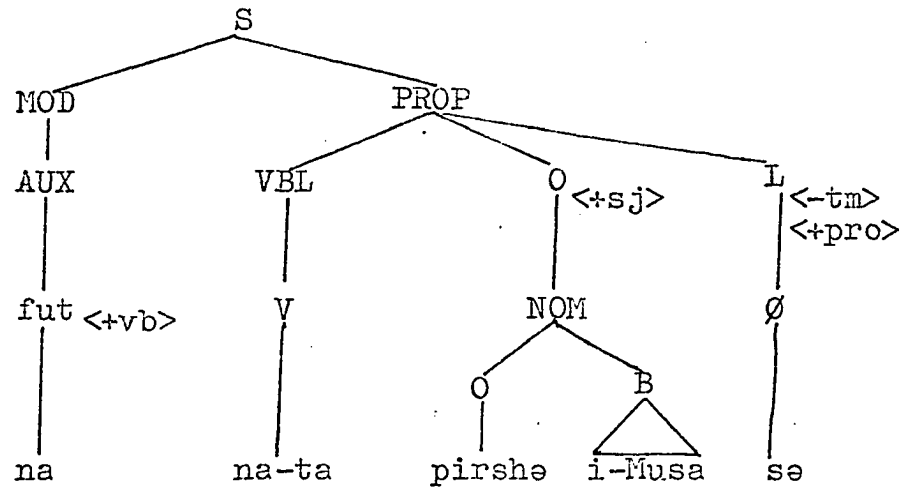
I don't have any relatives

76. na mbərtə-u na-ta sə $aa natəwun $ə wi'yta xa

You will have an age-group which you (pl) will (hab) "pal" around with

A "have" predicate in Ga'anda can appear in three different surface word orders in both non-emphasized and emphasized constructions. Presented below is a tree illustrating the basic surface order of a non-emphasized "have" sentence. The tree represents an intermediate level of structure, after subjectivalization but before the subject placement rule.

77.



OBVL: /na pirshə-i-Musa na-ta sə/

'Musa will have a horse'

The basic order illustrated here is referred to by the surface structure formula OBVL (where V stands for the surface position of the verb /na/). The tree shows that O dominates the adnominal construction consisting of O and B. The other two surface orders are derived from this order by a rule which allows the B case noun to be moved out of the dominating O node and shifted to a position either to the left or to the right of the L case anaphoric marker /sə/. This rule applies before the Subject Placement rule (T3.7, Chapter 3).

T8.3. <u>"Have" Separation/Shift</u> - OPT

SD: X $[na]_{VB}$ - $[O - B]_{O\ <+sj>}$ - prep $Ø_{<+L>}$ - X

1 2 3 4 5

SC: a) 1 - 2 - Ø - 3 - 4 - 5

b) 1 - 2 - Ø - 4 - 3 - 5

Both parts of the SC delete the B case from the dominating subject O node and insert it elsewhere. Order a), which is referred to by the formula OVBL, lets B precede L; order b), which is referred to by the formula OVLB, lets B follow L. The three different surface orders for sentence 77 are presented together as follows:

77a.	OBVL:	(base order)	na pirshə i-Musa na-ta sə
77b.	OVBL:	(order a)	na pirshə na-ta i-Musa sə
77c.	OVLB:	(order b)	na pirshə na-ta sə i-Musa
			Musa will have a horse

In the continuous tense, the orders OBVL and OVBL are phonologically identical due to the non-occurrence of the verb /na/, as described by T8.1.

78a.	OBVL:	pirshə i-Musa - sə
78b.	OVBL:	pirshə - i-Musa sə
78c.	OVLB:	pirshə - sə i-Musa
		Musa has a horse[8]

Regarding emphasized "have" predicates, the Emphasis transformation (rule T5.3, Chapter 5) front shifts the entire case configuration, which in this case means the entire adnominal construction dominated by O.

---

8. One of my informants was able to match Hausa equivalents to the three Ga'anda orders in this tense, as follows.

OBVL:	akwai doki na Musa	There is a horse of Musa's
OVBL:	Musa yana da doki	Musa has a horse
OVLB:	da doki a wurin Musa	A horse is at Musa's (place)

79. (pirshə i-Musa]$_O$ na-cə na-ta sə
aux$_2$rel

Musa will have <u>a horse</u> (lit. <u>Musa's horse</u> will be there)

80. [wir i-incə] na-cə - sə

I have a <u>house</u> (lit. <u>my house</u> is there)

If the optional T8.3 is applied, separating B from O, it then becomes possible to emphasize both O and B separately from each other, in two different surface orders.

81a. OVBL: pirshə na-cə - i-incə sə

81b. OVLB: pirshə na-cə - sə i-incə

<u>It's a horse</u> I have (O is emphasized)

82a. OVBL: ŋgət na pirshə - i-an sə

82b. OVLB: ŋgət na pirshə - sə i-an

<u>It's me</u> who has a horse (B is emphasized)

In examples 82a and 82b, when the B case noun is fronted, the B preposition /i/ + Ø is left behind. This preposition + deleted noun is represented anaphorically by /an/. /an/ is an anaphoric form and not a pronoun substitution. Therefore it is not sensitive to the underlying plurality of the shifted B noun, see examples 83 and 84.

83. ŋgəmən na wandəbə$ i-an sə

<u>We</u> have money

84. wancə-an na ɗelwercə i-an na-ta sə

<u>The boys</u> will have books

Relative clause constructions of "have" predicates exhibit the same three possible word orders.

85. OBVL: wur-ɗi i-incə na-cə - sə yu

86. OVBL: wur-ɗi na-cə - i-incə sə yu

87. OVLB: wur-ɗi na-cə - sə i-incə yu

The house which I have

Note in these examples that the determiner, which is obligatorily present under the Relative Clause transformation, is attached to the head noun O, not to the adnominal noun B.

Although all informants accepted all three word orders, they had preferences among the choices depending on the environment. In non-relativized constructions, regardless of tense, the order OBVL was preferred. In relativized constructions in which O was the head noun of a relative clause or emphasized, the order OVLB was preferred. The order OVBL was most preferred when B was the head noun or was emphasized.

The verb particle /fa/, which conveys the meaning of an action or state being done "on/onto the body", is used with the verb /na/ to denote a special semantic sub-type of the "have" predicate. There is a small set of nouns denoting physical states of the body, such as /ɓəɓ/ 'fever', /miytə/ 'hunger', /shiytə/ 'thirst', /'yen/ 'sleep', and /xaɗ-tə-fata/ 'sickness'. These nouns are marked in the lexicon with the feature <+fa>, and are lexically insertable

only when the particle /fa/ is chosen with /na/. Like most nouns, this set may be adnominally modified by a B noun, as in /ɓəɓ i-incə/ 'my fever', /miytə i-Dəsanxa/ 'Dəsanxa's hunger', etc. When such an adnominal construction is chosen as the subject of a "have" predicate, the <+fa> head noun undergoes an obligatory permutation.[9] This permutation rule follows the Subjectivalization rule but precedes the Verb Particle Placement rule T7.2 (which will not apply to it since the SD will no longer be met).

T8.4. T "Have" Permutation with /fa/

SD: $X\ [na]_{VS} - fa - [O_{<+fa>} - B]_{O_{<+sj>}} - \text{prep}\ \emptyset_{<+L>} - X$

1 2 3 4 5 6

SC: 1 - 3 - 2 - 4 - (5) - 6

The SC shows that the deleted L noun represented by /sə/ is only optionally present in the output. Most informants prefer to leave it out of the construction.

88. ɓəɓ - fa i-incə sə = 88a. ɓəɓ - fa i-incə
I have a fever (lit. a fever is (there) on me)

89. na miytə na-ta fa i-xəscəɗa
The men will be hungry (lit. hunger will be on the men)

---

9. The rule is considered obligatory only because I have not really checked out other word order possibilities and because my small amount of data on this construction only yielded the one order.

90. shiwtə-ɗi na-cə fa i-an

The cold, sniffle which he has

There is one lexeme /ɓəra/ "neck, debt, loan" which can be either <+fa> or <-fa>. The difference in meaning of the root in a "have" predicate depends on the presence of the particle /fa/, compare 91 and 92.

91. ɓəra-cə i-incə - sə — I have (given out) loans

92. ɓəra-cə - fa i-incə (sə) — I have debts (outstanding)

The last "be/have" construction to be discussed is the equational predicate. Before illustrating this construction type, it should be noted that a number of other verbs beside /na/ can take an Essive argument, as in the examples below.

93. ə cə-án-i [kə wurumnda]$_E$
do

I made him a rich man

94. ə məri [kə shertə nafa]
die

He died (as) an old man

95. yax-incə wecə [kə shiketa] ŋga [kə alekərita] wa
want

I want you as a friend, not as an enemy

96. ŋgan tam cək [kə kutira] wa
sit

He will never become chief (lit. sit as chief)

97. na wancə-ɗiya man-ta [kə yarca]
grow

These boys will grow up as thieves

98. ə ʃən-nda nencə sə [kə ʃəʃət i-anda]
send

They sent me there as their messenger

99. ŋgət mbəs-cə maanda [kə malɗəm]
find rel

I receive respect as a teacher

100. [kə malɗəm] mbəs-ti maanda

As a teacher I receive respect

In an equational predicate with the verb /na/, the basic proposition consists of O and E cases; L may be optionally chosen. The E case preposition is /kə/ "as".

101. Dəsanxa - ʃəɓəʃa

Dəsanxa is a smith

102. ŋgə ŋgət - shiketə-u wa

I am not your friend

103. cap-tə-an - yiɗakəta

The second one is laziness

104. nef ŋguɗex kəɗa - wanɓəɓ i-nef mancan

A little man is a big man's medicine

105. ʃox mərtə shertə nef - ənа nata ə kaanda
bury dead old man thing see

An old man's burial is a thing to see in Ga'anda

In these examples, which are all in the continuous

tense, note that the E preposition is not present. In this tense only, the preposition is obligatorily deleted.

T8.5. Essive Preposition Deletion

SD: X con X [na]$_{V\beta}$ X - prep - NOM$_{<+E>}$ - X

1 2 3 4

SC: 1 - 3 - 4

Condition: 1 does not contain rel

The condition states that the preposition is not deleted if the construction contains a rel marker. Compare these relativized equational predicates in the continuous, all of which have the preposition.

106. ŋgət na-cə - kə maldəm
aux$_2$ rel
I am a teacher

107. ŋga ŋgət na-cə - kə maldəm wa
It's not I who is a teacher

108. ŋgət ndak na-wak-cə - kə yera wa
I alone am not a thief

109. nafdi na-cə - kə wurumnda yu
The man who is a rich person

110. wun na-cə - kə kapa naf ə metdiya
Who is the big man here?

111. kə $ə$ənda na-ti - ə mət i-an
It's as a messenger I am at his place

In all the other tenses, whether rel is present or not, the preposition is not deleted.

112. namən na-ta kə maldəmca
We will be(come) teachers

113. na-cə-an na-ta kə mə
What will it be?

114. kə kutir i-anda na-tən na-ta
It's as their chief he will be(come)

115. ŋga Musa na-cə na-ta kə yera wa
It's not Musa who will be a thief

116. Ø $ə na--cə-an kə $əxodata cox
He was (hab) a farmer formerly

117. ə na-kə-an kə $əxodata
sqt
(Then) he was (became) a farmer

118. yaxincə sə kə na ter i-o kə ɓəl cini
sbj your kill lion
I want your job to be lion-killing

There is a further irregularity in the continuous construction of equational predicates involving emphasis of the E case noun. I do not attempt to give a formal rule generating this irregular construction, but discuss it simply because it involves a semantically common and widely used expression in the Ga'anda language. In accordance with the Noun Emphasis rule T5.3, any case noun with the feature <+e> is moved, together with its case preposition, to the

front of the sentence. The condition on the T8.5 just discussed prevents the preposition from being deleted when Essive is emphasized, resulting in the quite regular and predictable emphatic construction illustrated by example 111. While such a sentence is completely grammatical, it is usually not the one used by most informants when they want to emphasize Essive in a continuous tense equational predicate construction. The alternate construction simply involves a fronted E noun without the preposition, as in examples 119-121.

119. ʃəʃenda - na-ki
A messenger I am/I am a messenger

120. wun - na-ko
Who are you?

121. ŋga ʃəʃənda - na-ki wa
It's not a messenger I am

It seems that one way to generate such constructions is to allow E nouns to be emphasized in the continuous after the Essive Preposition Deletion rule has applied.

Another curious aspect of this alternate emphasis construction is the form of rel or the aux_2 marker (replaced in this environment by /na/). Application of the morphophonemic rules generating the shape of rel would result in the forms /na-ti, na-tu/, etc. and not /na-ki, na-ko/, etc.[10]

10. The only possible morphemic analysis of these forms is na + sqt + pronoun.

The first set of forms is used when the emphasized E noun is accompanied by its preposition (see examples 111, 114); the second set of forms is used when the E preposition is not there. I can only suggest that a possible ambiguity might arise were the grammatical correct forms /nati, natu/ to be used when the E preposition is not present. The sentence /$ə$ənda nati/ means "It's a messenger I saw". The verb /na/ "see" is homonymous with the modal verb /na/ "be". It is perhaps to avoid such an ambiguity that the exceptional forms /naki, nako/ are made use of.

In equational predicate constructions, there must be number concord agreement between the O and E nouns. It seems that one way to ensure this agreement is by a lexical redundancy rule stating that an E noun always agrees with a co-occurring O noun in number.

122. naf-ɗiya - $əyaanda

This man is a warrior (lit. agent of fighting)

123. naf-ca-ɗiya - fəyaan-ca

These men are warriors

(The singular form of the agential prefix is /$ə/; the plural form is /fə/. In addition, the plural marker /ca/ must be added to the root /yaan/.)

124. namən nata kə maldəm-ca

We will be teachers

The last item to be discussed about equational predicates is that they are the source for sentences involving

the so-called "independent possessives" such as "mine, his, Musa's". In Ga'anda, these are derived from reduced equational predicates in which the O and E nouns are identical in reference and E is adnominally modified by a B case noun. The basic structure is illustrated as follows.

125. yikwat-ɗiya - [yikwat i-incə]$_E$
O E B

This goat is my goat

126. na wanɗəbə$ nata [kə wanɗəbə$ i-Musa]

The money will be Musa's money

127. pərs-ɗi na-cə [kə pirshə i-anda]

The horse which is their horse

Under the conditions where O and E nouns themselves are referentially identical, E may be optionally deleted.

T8.6 Independent Possessives - OPT

SD: X [na]$_{VB}$ X - O - [E - B]$_E$ - X
1 2 3 4 5

SC: 1 - 2 - 4 - 5

Condition: 2 and 3 are identical in reference

125. ===> 125a. **yikwatɗiya - i-incə
This goat is mine

126. ===> 126a. **na wanɗəbə$ nata kə i-Musa
The money will be Musa's

127. ===> 127a. **pərsɗi nec kə i-anda

The horse which is theirs

The starred outputs 125a-127a will undergo a morphophonemic rule which changes the adnominal B bound form /i/ + N to a long form /yi/ + N.[11] The correct surface forms of the above sentences are:

125a. yikwatɗiya - yi-na

126a na wanɗəɓə$ nata kə yi-Musa

127a. pərsɗi nec kə yi-nanda

Note that these independent possessive constructions are structurally consistent with other equational predicate constructions. The E preposition /kə/ is present in all constructions except the non-relativized continuous (example 125a), from which it has been deleted by rule T8.5.

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11. The form of the B pronoun after this long form /yi/ is, curiously, the inalienable set of pronouns (refer to paradigm chart, pg. 97, Chapter 4).

Chapter 9

Adjectivals

Chapter 2 briefly described how all verbs, with the exception of one class, have an optional lexical feature <adj>. Only one class, noted as Class VIII, is inherently <+adj>. Members of this class are phonologically distinct from other verbs. They consist either of a CVC reduplicative form with all mid tones, such as kudkud 'dirty', demdem 'sweet', ɓaŋɓaŋ 'sour', ledled 'quick', ləkləkə 'heavy', kwa'kwa' 'strong', shimshim 'bright', etc. or of a varying phonological form with all high tones, such as ŋa' 'red', mbulla 'short', njaŋ 'tall', xeɗeɗa 'white', werra 'thin', xweŋŋa 'deep', ŋguɗex 'small'. Class VIII members are also semantically unified, indicating states of sensory quality, including color terms.

It might be questioned what the basis is for classifying these adjectival forms as verbs. Could they, for example, classified as a special sub-class of nouns (as in Hausa)? There are some "apparent" structural parallels between adjectival constructions and the equational predicate construction formed with the verb /na/. Compare the following pairs in three different tenses.

1. nafɗa mbulla
   The man is short

2. nafɗa $əxoɗata
   The man is a farmer

3. ni nata mbulla
I will be short

4. ni nata kə maldəm
I will be a teacher

5. kə na-nda mbulla mbulla
Let them be short

6. kə na-nda kə fəyaanca
Let them be soldiers

In the first pair of sentences, example 1 appears to be in the continuous and lacks /na/ just as in example 2 (refer to deletion rule 8.1 in preceding chapter), compare its appearance in all the other examples. In example 5, the adjective reflects plural concord (in the form of reduplication) to the subject noun, just as the E case in example 6. From the comparison, it looks very much as though the "predicate adjective" could be a sub-type of "predicate nominal", as has been the traditional terminology. If it were the case that adjectives were nouns, then, within the model of case grammar, adjectives must be case-labelled, but herein lies the difficulty. The only other case arguments allowed of the verb /na/ beside O as the subject are E and L, and adjectives are clearly neither E nor L. For that matter, none of the remaining cases fit either, and this is because Ga'anda adjectives in the forms given above are simply not nouns. They may become nouns, for example, by adding the abstract nominalizer suffix /kəta/ as in ɗemɗemkəta 'sweetness', shimshimkəta 'brightness', ŋa'kəta 'redness', etc.

The only other alternate proposal is to consider

adjectives as a type of verb.[1] In this proposal, the above noun-like syntactic properties of adjectives can be handled without much difficulty. In addition, this proposal naturally explains the verb-like syntactic properties of adjectives. The fact that adjectives co-occur with /na/ is of no great difficulty since /na/ already functions as an optional modal choice for all verbs. The only real difference here is obligatory nature of /na/ with adjectival verbs, but this is handled easily by a co-occurrence restriction which says that a <+adj> verb is only lexically insertable when modal /na/ has been generated. The requirement that the adjectival verbs be marked for plurality (often but not solely by means of reduplication) is found elsewhere in Ga'anda in the restricted environment of intensive verb stems (refer back to that discussion in Chapter 2), although reduplicated intensive forms are admittedly quite different from pluralized adjectival forms. The main reason for the analysis of adjectives as verbs, of course, is the fact that adjectives can be formed from verbs of all the other verb classes. Once regular verbs undergo the Adjectivalization transformation, they

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1. There is a third possibility within the framework of case grammar, and that is to consider adjectives as a third independent type of propositional head on a par with verbs and nouns. Such a proposal has been considered as being not as explanatory as the proposal that adjectives are verbs.

behave alike as a syntactic class with the "sensory quality" adjectives classified as Class VIII.[2]

The first transformation adjectivalizes verbs of all classes for which the feature <adj> is optional. If <+adj> is chosen in the environment of mdl, these verbs obligatorily add the stem formative /can/ immediately after the verb root. The condition on the rule means that it does not apply to the inherently <+adj> verb class, which as we recall, has the case frame feature +[O].[3] Adjectivalization can often be translated by the English suffixes "-able" or "-ful" added to the verb root.

T9.1 Adjectivalization

SD: $X \text{ mdl} - V_{<+adj>} - X$

1 2 3

SC: 1 - 2 + can - 3

Condition: 2 is not +[O]

---

2. Adjectives differ importantly from non-adjectival verbs in that they do not add the nominalizer suffix /ta/ in any environment. The Nominalizer rule T1.2 in Chapter 1 has to be amended as follows: item 3 in the SD should read "$X\begin{bmatrix}<+vb>\\<-adj>\end{bmatrix}$".

3. Although the condition disallows these verbs from adding the stem formative /can/, there are a few examples in texts where they are found, compare the following:

a) ləkləkcannda = ləkləknda They are heavy
b) ɗekɗekcan wesshena = ɗekɗek wesshena Squirrel is shy

When asked about the differences, informants felt that the forms with /can/ asserted more strongly the quality being discussed. It may very well be that some sort of adjectival emphasis is involved, but I have not investigated this at all.

Adjectivalization does not affect the original cases functioning as subject or object, etc., compare examples 7 and 8 (which happen to be homophonous due to the deletion of the third person pronoun). (In the examples, the non-occurrence of mdl in certain tenses is explained in the next rule.)

7. Ø fəl-can-Ø ɓuca
   aor he pots
   $A_{<+sj>}$ D

   He is apt to crack pots

   (< /fələ/ 'crack')

8. Ø fəl-can ɓuca
   $D_{<+sj>}$

   Pots are crackable

9. na ɓuca $ə na-ta fəl-can-nda
   fut $D_{<+sj>}$ hab mdl

   Pots will (hab) be crackable

10. na wurɗiya na-ta ndəɗcan ma ə təni
    $D_{<+sj>}$ mdl

    This house will be nice when it is built

    (< /ndəɗə/ 'be good, nice')

11. kə na nafɗi masa-can
    sbj mdl $D_{<+sj>}$

    That man should be sociable

    (< /masa/ 'laugh')

12. mə na-ən yaan-can wa
    neg sbj mdl

    Don't be quarrelsome

13. Ø ɗaaʃ-can-incə
aor $D_{<+sj>}$

I am cleversome
(< /ɗaaʃə/ 'be clever')

Cf. 14. Ø ɗaaʃ-incə, ə ɗaaʃ-incə
I am clever, I was clever

15. Ø mbəs-can-ən məriya
aor $A_{<+sj>}$ O

You are accident-prone
(lit. apt to find wound)
(</mbəsə/ 'find')

16. Ø ʃə na-cə pirshə raka-can
hab mdl $D_{<+sj>}$

A horse is (hab) fast
(< /raka/ 'run')

17. ə na-mən leek-can-mən
prf mdl $D_{<+sj>}$

We were fearful
(< /leekə/ 'fear')

18. Ø xaɗ-can shertə nafɗiya
$D_{<+sj>}$

This old man is sickly
(< /xaɗə/ 'be sick')

Adjectival verbs, in principle, co-occur with verb particles, but due to the limited data collected on this, my examples only show co-occurrence with the particle /xa/.

With adjectivals, /xa/ adds the meaning of an action "well done" or of a state "really being so".

19.	xasxas-incə	I am very healthy
20.	ndeleŋga' mbandiya xa	This road is really straight
21.	nan nata xuɓxuɓu$ xa	It will be really rubbery
22.	fəlcan-Ø ɓuca xa	He is really apt to break pots

(Cf. 7)

The continuous and aorist tenses are not both found in adjectival constructions. Only the aorist may occur. This need not seem surprising in view of the fact that semantically the aorist tense refers to present occurrence or state described by the verb rather than to on-going or past action. The rule below replaces con by aor whenever it occurs in the environment of an adjectival verb, whether this verb is inherently or derivatively <+adj>. The aorist is illustrated by examples 7, 8, 13, 15, 16, and 18 where, it should be noted, the $<+nom_1>$ surface case pronoun set is used.

T9.2. Aorist Adjective

SD: X - con - (neg) $V_{<+adj>}$ X

1 2 3

SC: 1 - aor - 3

In the next rule, the modal /na/ is deleted from the surface structure of aorist adjectival constructions except

where they are either emphasized or embedded, or contain the habitual marker. Recall that all these environments are ones where a rel marker is added. In adjectival constructions, rel is naturally added to mdl.

T9.3. mdl Deletion in Aorist Adjective

SD: X aor - X - mdl - $V_{<+adj>}$ X

1 2 3 4

SC: 1 - 2 - 4

Condition: 2 does not contain hab

4 does not contain <+r>

The net surface effect of this rule is to make the aorist adjectival construction look more like a surface continuous construction. Recall that "be/have" constructions in the continuous delete the main verb /na/, hence the apparent surface similarity of examples 1 and 2 earlier. Compare examples 13 and 15, where modal is deleted, with examples 12 and 17, where modal is present with tenses other than aorist, as well as with example 16, where the habitual occurs.

One of the interesting results of the fact that the continuous tense does not occur in adjectival constructions is that there seem to be two competing ways to negate any aorist adjectival construction. This is only true for those verbs which have undergone adjectivalization by T9.1. One

negative has the form /ŋgə.../ (as found in con constructions),[4] the other is simply the negative aorist (without the stem formative /can/). Both were offered as equivalents and as being the negative transform of the adjectival construction.[5] These are compared below with the negative continuous.

23a.	ŋgə ɗaa$-can-incə wa	I'm not cleversome
23b.	Ø ɗaa$-wi wa	
Cf. 23c.	ŋgə ŋgət ɗaa$-ta wa	I'm not being clever
24a.	ŋgə ndəɗ-can wurɗa wa	The house isn't nice, pretty
24b.	Ø ndəɗ-wa wurɗa wa	
Cf. 24c.	ŋgə wurɗa ndəɗ-ta wa	The house isn't (being) nice
25a.	ŋgə mbən-can-nda wa	They aren't pleasant
25b.	Ø mbən-wa-nda wa	
Cf. 25c.	ŋgə tanda mbən-ta wa	They aren't pleasing
26a.	ŋgə man-can-ən wa	You aren't big
26b.	Ø man-wə-ən wa	
Cf. 26c.	ŋgə ca man-ta wa	You aren't (growing) big

---

4. In Chapter 6, this idiosyncratic occurrence of /ŋgə/ in the environment of aorist adjectival constructions was not accounted for.

5. The negative aorist thus has two functions, one as the negative of a non-adjectivalized verb in the aorist, and the other as the negative of an adjectivalized verb in the aorist.

For those verbs which are inherently <+adj>, there is only one aorist negative construction, compare the following affirmative/negative pairs:

27a. Ø kwa'kwa'-incə I am strong

27b. ŋgə kwa'kwa'-incə wa I'm not strong
(but not *kwa'kwa'-wi wa)

28a. Ø ləklək ɗakwancəɗiya These stones are heavy

28b. ŋgə ləklək ɗakwancəɗiya wa These stones aren't heavy
(but not *ləklək-wa ɗakwancəɗiya wa)

Although adjectival constructions are generatable with the perfective tense (see example 17), they seem distinctly less preferred. Instead, the aorist construction is used with a time expression such as /cox/'formerly'.

29. Ø kwa'kwa'-incə cox I was strong/used to be strong

30. Ø man-can-nda cox They were big

In the aorist tense, if the subject is a noun, i.e. has the feature <-pn>, it is optionally permutable with the adjective (either kind of adjective). This rule follows the Subject Placement rule, which has attached the subject after the verb root or stem.

T9.4 Aorist Adjective Noun Permutation - OPT

SD: $X\ aor\ X - V_{<+adj>} - K_{\begin{bmatrix}<+sj>\\<-pn>\end{bmatrix}} - X$

1 2 3 4

SC: 1 - 3 - 2 - 4

(The starred examples 34b and 35b undergo a further rule to be described.)

31a. Ø mbən-can toxwatɗiya =

31b. toxwatɗiya mbəncan

This soup is pleasant

32a. Ø kwatkwatar kərsə təɓɗiya =

32b. kərsə təɓɗiya kwatkwatar

The back of this calabash is rough

33a. Ø kuɗkuɗ kurtəɓ i-o =

33b. kurtəɓ i-o kuɗkuɗ

Your trousers are dirty

34a. Ø ɗaa$-can wancə i-amən =

34b. **wancə i-amən ɗaa$-can

Our children are clever

35a. Ø ɓaŋɓaŋ tamənɕəɗa =

35b. **tamənɕəɗa ɓaŋɓaŋ

The tamarinds are sour

The effect of this rule is that the subject noun precedes the verb, very much as nouns do elsewhere in continuous tense constructions. It is perhaps this permutability which gives rise to the two forms of the negative in this tense discussed earlier. Although I have not checked this out with informants, I would venture to say that the regular negative aorist is more likely as the negative of the (a) versions of examples 31-35 whereas the negative with /ŋgə/ is more likely as the negative of the

(b) versions. In other words, the negated forms of 31a and 31b are 31c and 31d, respectively.

31c. Ø mbən-wə toxwatdiya wa
31d. ŋgə toxwatdiya mbencan wa } This soup is not pleasant

One of the ways in which adjectival verb roots are atypical of verbs in general is the requirement for subject agreement or plural concord. If the subject nominal (noun or pronoun) has the feature <+pl>, the adjectival root must reflect plurality. Concord is not sensitive to tense, but must occur in all the tenses.

Plurality is reflected in several ways, depending on the form of the adjectival root. We will first deal with the inherently <+adj> roots such as ŋa' 'red', mbulla 'short', njaŋ 'tall', and xeɗeɗa 'white'. These normally pluralize by reduplication, e.g. ŋa'-ŋa', njaŋ-njaŋ, xeɗeɗa-xeɗeɗa, etc. However, many adjectives of this class are already lexically reduplicative in form, e.g. kwa'kwa' 'strong', kuɗkuɗ 'black', and ɓaŋɓaŋ 'sour', etc., and therefore do not permit further reduplication. For these adjectives, plural concord is blocked. They will be marked by an inherent lexical feature <+rdp>. Part a) of the Concord rule will then apply only to roots which are specified as <-rdp>, changing them to <+rdp>.

T9.5. Adjectival Concord

a) SD: $X - V_{\left[\begin{smallmatrix}<-rdp>\\<+adj>\end{smallmatrix}\right]} - K_{\left[\begin{smallmatrix}<+sj>\\<+pl>\end{smallmatrix}\right]} \quad X$

1 2 3

SC: $1 - 2_{<+rdp>} - 3$

36. **werra-mən ===> werra-werra-mən We are thin
<-rdp>

Cf. 37. werrə-incə I am thin

38. **na-mən na-ta $werra_{<-rdp>}$ ===>

38a. namən na-ta werra-werra

We will be thin

39. **na wancədiya nat $njaŋ_{<-rdp>}$ ===>

39a. na wancədiya nat njaŋ-njaŋ

These children will be tall

40. **kə na-nda $mbulla_{<-rdp>}$ ===>

40a. kə na-nda mbulla-mbulla

Let them be short

The following inherently reduplicated roots do not undergo the concord rule.

41. ləklək-mən We are heavy

Cf. 42. ləklək-incə I am heavy

43. na wancədiya na-ta mbərmbərak These boys will be rough

44. kə na-nda na-ta kudkud Let them be dirty

The second kind of adjectival roots, derived from regular verbs by the stem formative /can/, undergo plural

concord only when the subject nominal is to the left of the verb. That is, it will apply to the output of the permutation rule T9.4 above. It also applies in the case of all other tense constructions, since the subject is either attached to the $\underline{aux}_2$ future marker or to the modal in subjunctive and aorist habitual constructions; these formatives all occur to the left of the verb. Plural concord is marked by attaching apronominal copy of the subject person to the stem formative. In the case of plural nouns, which are <-pn, +III>, the copy pronoun will be the third person plural pronoun /nda/ 'they' (see examples 45a-48a below). In the case of plural pronouns, an exact copy will be attached (see examples 49a-51a). (In the SD of the rule, the feature <psn> stands for the person features <I, II, III>.)

T9.5. Adjectival Concord

b) SD: $X - N_{\begin{bmatrix}<+sj>\\<+pl>\\<\alpha psn>\end{bmatrix}} - X - V\ can - X$

$\qquad\qquad 1 \qquad 2 \qquad 3 \quad 4 \qquad 5$

SC: $1 - 2 - 3 - 4 + 2_{<+pn>} - 5$

45. **cəməscə-incə maxkan xaɗ-can ===>

45a. cəməscə-incə maxkan xaɗ-can-nda

My three chickens are sick

46. **dəfcədiya man-can ===>

46a. dəfcədiya pakta-can-nda[6]

These trees are big

47. **wancə i-amən ɗaa$-can ===>

47a. wancə i-amən ɗaa$-can-nda

Our children are clever (cf. 34a)

48. **kə na kapecə ndəɗ-can ===>
sbj mdl

48a. kə na kapecə ndəɗ-can-nda

Let the clothes be pretty

49. **na-wun na-ta yaan-can ===>
fut mdl

49a. na-wun nata yaan-can-wun

You (pl) will be quarrelsome

50. **kə na-'ən raka-can ===>
mdl

50a. kə na-'ən raka-can-'ən

Let us be fast

51. **Ø $ə na-cə-nda səm-can ===>
aor mdl

51a. $ə na-cə-nda səm-can-nda

They are (hab) greedy

The last rule dealing with adjectivals is the Attributive Adjectival transformation. Attributives are derived

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6. /pàktà/ is the suppletive adjectival plural form of /mán/, cf. the non-adjectival plural construction /ə mán-nda/ 'they grew big'.

when an adjectival construction in the aorist tense is embedded as a relative clause. As mentioned earlier in this chapter, it is the modal to which the relative marker is attached, regardless of the kind of adjectival stem. Attribution results when the modal plus relative marker are both deleted, i.e. it results from a "reduced" relative clause.

T9.6. Attributive Adjective

SD: X N DET - [mdl rel - $V_{<+adj>}$]$_S$ X
1 2 3

SC: 1 - 3

Attribution of adjectives must follow after the Plural Concord rules, since the attributive forms reflect that plurality, as in example 53.

52. wandi [na-cə njaŋ] ya ===>
The boy who is tall
52a. wandi njaŋ ya
This tall boy

53. nafcə-di [na-cə njaŋ-njaŋ] ===>
The men who are tall
53a. nafcədi njaŋ-njaŋ
The tall men

54. toxwat-ɗi [na-cə mbəncan] yu ===>

The soup which is pleasant

54a. toxwat-ɗi mbəncan yu

The pleasant soup

55. camescə ini [na-cə kuɗkuɗ] yu ===>

Those particular chickens which are dirty

55a. camescə ini kuɗkuɗ yu

These particular dirty chickens

Recall that a distance marker /ya ~ yu/ originally generated on the head noun is moved behind the embedded sentence by the Relative Clause transformation. When attribution occurs, the distance marker still remains at the end of the embedding. This difference in word order serves to distinguish the regular adjectival construction from the attributive one, compare example 56 below with 52 above.

56. wandi-ya njaŋ This boy is tall

However, word order is not the only distinguishing feature, as there are tonal changes associated with relative clauses which will remain when attribution takes place.[7] Compare the tone-marked items in the derivations below, after a tone rule changes non-high roots to high.

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7. Tonal changes in relative clauses have not been discussed before in this grammar as I do not fully understand them at this time.

57a. malɗəmtədi-ya yàà̀n-cán

This teacher is quarrelsome

57b. malɗəmtədi [na-cə yáà̀n-cán] ya

This teacher who is quarrelsome

57c. malɗəmtədi yáà̀n-cán ya

This quarrelsome teacher

58a.	nafdi kwa'kwa'	That man is strong
58b.	nafdi [na-cə kwá'kwa']	The man who is strong
58c.	nafdi kwá'kwa'	That strong man

Examples 58a and 58c thus contrast minimally by tone alone. DST was not chosen and therefore word order is not a factor in this derivation.

An area for further study also relating to attributive adjectives is that attributives can occur without determiners. This is counterevidence to the claim in Chapter 5 that relative clauses must have a determiner added to the head noun. Corresponding to 58a-c, it is also possible to say 59a-c.

59a.	nef kwa'kwa'	A man is strong
59b.	nef [na-cə kwa'kwa']	A man who is strong
59c.	nef kwá'kwa'	A strong man

No doubt the analysis of determiners as they relate to relative clauses will have to accommodate the above data.

Finally, attributive adjectives formed from inherently <+adj> verbs may also be pre-posed to the head noun. When

this occurs, the Linker morpheme /tə/ occurs between the two constituents. Pre-posed attributives are almost certainly related to the past participle forms of non-adjectivalized verbs, which may also be pre-posed to a head noun of a presumably reduced relative clause, compare examples 60-62 with 63-65.

60.	kwa'kwa'-tə́ nef-a	A strong man
61.	njaŋ-njaŋ-tə nafca	Tall men
62.	kuʃkuʃ-tə kapat-ʃiya	This dirty cloth
63.	sher-tə nefa (< /sherə/ 'be old')	An aged/old man
64.	fi'y-tə $iwa (< /fi'yə/ 'roast')	Roasted meat
65.	pakᵣ-tə cemaᵣca (< /manə/ 'grow big')	Grown/big chickens

I have not attempted to formalize a rule for these pre-posed attributive adjectives and past participles since it is not at all clear that these come from reduced relative clauses as do the other attributives. For example, if example 60 were derived from 59c by a simple permutation rule, then tone has to be accounted for, since 60 appears to have the root tone, not the relative construction tone as in 59c. Another problem is the environmental specification of such a rule, which should be general enough to include both kinds of pre-posed roots. We obviously don't want one rule for pre-posing attributive adjectives and a different one for pre-posing past participles.

Appendix A

Base Rules

B1. SENTENCE ---> #SEN (ADV) (Q)#

B2. SEN ---> (E) S

B3. S ---> MOD PROP

B4. MOD ---> AUX (hab)

B5. AUX ---> $\left\{\begin{matrix} aux_1 \\ aux_2 \end{matrix}\right\}$ (neg)

B6. aux_1 ---> $\left\{\begin{matrix} pst\ (sqt) \\ sbj\ (imp) \end{matrix}\right\}$

B7. pst ---> $\left\{\begin{matrix} aor \\ prf \end{matrix}\right\}$

B8. aux_2 ---> $\left\{\begin{matrix} con \\ fut \end{matrix}\right\}$

B9. PROP ---> VBL $(K_{<D>})$ $(K_{<A>})$ $(K_{<O>})$ $(K_{<B>})$
$(K_{<I>})$ $(K_{<L>})$ $(K_{<E>})$

B10. VBL ---> (mdl) VB

B11. VB ---> V (prt) (prt)

B12. K ---> (neg) prep NP

B13. NP ---> $\left\{\begin{matrix} NOM\ (S) \\ SEN \end{matrix}\right\}$

B14. NOM ---> nom $\left(\left\{K_{<D>}, K_{<B>}, K_{<L>}\right\}\right)$

B15. nom ---> N (DET) (DST)

B16. ADV ---> { IF, REC, WHN, ⋮ }

B17. IF ---> if NP

B18. BEC ---> (neg) bec

B19. bec ---> bc NP

Appendix B

Transformational Rules

T1.1. Nominalizer p. 20

SD: $X - X_{<+vb>}\ (neg)\ (hab) - X_{<+vb>} - X$

$\quad\quad 1 \quad\quad\quad 2 \quad\quad\quad 3 \quad\quad 4$

SC: $1 - 2 - 3_{<+N>} - 4$

T1.2. Segmentalization of Nominalizer p. 23

SD: $X - X_{\left[\begin{smallmatrix}<+vb>\\<+N>\end{smallmatrix}\right]} - X$

$\quad\quad 1 \quad 2 \quad\quad 3$

SC: $1 - 2 + ta - 3$

Conditions: The first item in 3 is not 0 case

1 does contain fut + neg

T3.1. Subjectivalization p. 59

SD: $X - \begin{bmatrix} ...A... \\ ...(I)... \\ ...D... \\ ...0... \end{bmatrix} - X$

$\quad\quad 1 \quad\quad\quad 2 \quad\quad\quad 3$

SC: $1 - 2_{<+sj>} - 3$

T3.2. Instrumental Preposition Deletion p. 61

SD: $X - prep - I_{<+sj>} - X$

$\quad\quad 1 \quad\quad 2 \quad\quad 3 \quad\quad\quad 4$

SC: $1 - 3 - 4$

T3.3. Direct Objectivalization p. 61

SD: $X - \begin{bmatrix} \ldots O \ldots \\ \ldots D \ldots \end{bmatrix} - X$

1 2 3

SC: $1 - 2_{<+oj>} - 3$

T3.4. Indirect Objectivalization p. 63

SD: $X - \begin{bmatrix} \ldots D \ldots \\ \ldots B \ldots \end{bmatrix} - X$

1 2 3

SC: $1 - 2_{<-oj>} - 3$

T3.5. Dative Case Placement p. 65

SD: $X - V - D \begin{Bmatrix} <+oj> \\ <-oj> \end{Bmatrix} - X$

1 2 3 4

SC: $1 - 2 + 3_{<+dat>} - 4$

T3.6. Benefactive Case Shift p. 67

SD: $X - V - X\ O\ [prep - NOM]_B - X$

1 2 3 4 5

SC: $1 - 2 + 4_{<+dat>} - 3 - \emptyset - 5$

T3.7. Subject Placement p. 68

SD: $X - X_{\langle +vb \rangle} (K_{\langle +dat \rangle}) - X - K_{\langle +sj \rangle} - X$

1 2 3 4 5

SC: 1 - 2 + 4 - 3 - 5

Conditions: 1 does not contain a <+vb> element

If 2 is con, then 4 is <+dsj>; otherwise 4 is <+nom>

T3.8. <dative> Noun Pronominalization/Shift p. 72

SD: $X\ [V - K_{\left[\begin{smallmatrix}\langle +dat \rangle \\ \langle -pn \\ \langle \alpha pl \rangle\end{smallmatrix}\right]} - X]_{VB} - (O) - X$

1 2 3 4 5

SC: $1 + 2_{\left[\begin{smallmatrix}\langle +dat \rangle \\ \langle +pn \rangle \\ \langle -pl \rangle\end{smallmatrix}\right]} - 3 - 4 - 2 - 5$

T3.9. Pronoun Separator p. 77

SD: $X\ aux_1\ X - V - N_{\left[\begin{smallmatrix}\langle +dat \rangle \\ \langle +pn \rangle\end{smallmatrix}\right]} - N_{\left[\begin{smallmatrix}\langle +nom \rangle \\ \langle +pn \rangle\end{smallmatrix}\right]}\ X$

1 2 3 4

SC: 1 - 2 - 3 + ce - 4

Condition: 3 is not <+III, -pl>

T3.10. Third Person Pronoun Deletion in Past p. 80

SD: X pst X V ($K_{<\div dat>}$ cə) - N $\begin{bmatrix} <\div nom> \\ <+pn> \\ <+III> \\ <-pl> \end{bmatrix}$ - X

1 2 3

SC: 1 - 3

T4.1. Linker Addition

a) SD: X - N $\begin{bmatrix} <-def> \\ <-pl> \\ <-T> \end{bmatrix}$ - X p. 82

1 2 3

SC: 1 - 2 + Li - 3

b) SD: X - N $\begin{bmatrix} <\alpha def> \\ <-pl> \\ <+T> \end{bmatrix}$ - X p. 83

1 2 3

SC: 1 - 2 + Li - 3

T4.2. Segmentalization of Noun Plurality p. 85

SD: X - N $\begin{bmatrix} <+pl> \\ <-pn> \end{bmatrix}$ - X

1 2 3

SC: 1 - 2 + Pl - 3

T4.3. Segmentalization of Noun Definiteness p. 85

SD: $X - N \begin{bmatrix} <-def> \\ <+def> \end{bmatrix} \left(\left\{ \begin{matrix} Li \\ Pl \end{matrix} \right\} \right) - X$

1 3 3

SC: $1 - 2 + \begin{bmatrix} Idf \\ Def \end{bmatrix} - 3$

Conditions: Idf is added only if 3 is #

Def is not added if 3 is DET

T4.4. Deletion of Pro-Form Nouns - OPT p. 100

SD: $X - prep - N_{<+pro>} \quad DET_{<+pro>} - X$

1 2 3 4

SC: $1 - 2 - \emptyset - 4$

Condition: 3 is not <+sj> nor <+tm>

T5.1. Tense Neutralization

a) SD: $X - prf - rel\ X$ p. 118

1 2 3

SC: $1 - aor - 3$

b) SD: $X - aux_2 - rel\ X$ p. 119

1 2 3

SC: $1 - mdl - 3$

T5.2. rel Addition p. 124

SD: $X - \begin{Bmatrix} pst \\ aux_2 \end{Bmatrix} - X - NOM_{<+r>} - X$

1 2 3 4 5

SC: 1 - 2 - rel - 3 - 4 - 5

Conditions: Any S that dominates 4 also dominates 2

3 does not contain sqt

T5.3. Noun Emphasis Fronting p. 131

SD: # - X - (neg) - prep - $NOM_{<+e>}$ - X

1 2 3 4 5 6

SC: a) $\{1 - 3 - 4 - 5_{<+dsj>} - 2 - 6$

b) $1 - 3 - 5_{<+dsj>} - 2 - 4 - \emptyset - 6\}$

Condition: If 5 ≠ L or I, then only SC (a) occurs

T5.4. Relative Clause p. 136

SD: X - N - (DET) - (DST) - # - $X\text{-}NOM_{<\alpha sj>}$ - X - # - X

1 2 3 4 5 6 7 8 9 10

SC: $1 - 2_{<\alpha sj>} - 3 - 6 - \emptyset_{<+r>} - 8 - 4 - 10$

Condition: 2 - 3 - 4 = 7

T5.5. Linker in Relative Clause p. 140

SD: X - N $\begin{Bmatrix} \langle +pn \rangle \\ \langle +prp \rangle \end{Bmatrix}$ - DET S X

1 2 3

SC: 1 - 2 $_{\langle +dsj \rangle}$ + Li - 3

T5.6. Relative Pronominalization - OPT p. 142

SD: X - N $\begin{bmatrix} \langle +pro \rangle \\ \langle +an \rangle \\ \langle \alpha pl \rangle \end{bmatrix}$ DET $_{\langle +pro \rangle}$ - S X

1 2 3

SC: 1 - 2 $\begin{bmatrix} \langle +pn \rangle \\ \langle \alpha pl \rangle \end{bmatrix}$ - 3

T5.7. Past Habitual p. 143

SD: X pst - hab - X

1 2 3

SC: 1 - rel - 2 - 3

Condition: 3 does not have the feature <+r>

T5.8. Aspect Attachment p. 145

SD: X pst - $\begin{Bmatrix} \text{rel} \\ \text{sqt} \end{Bmatrix}$ - (neg) (hab) - X $_{\langle +V \rangle}$ - X

1 2 3 4 5

SC: 1 - 3 - 4 - 2 - 5

Condition: 4 is the leftmost <+V> constituent

T5.9. rel Deletion in Sentence Emphasis p. 152

SD: # E X - rel - X

1 2 3

SC: 1 - 3

T6.1. Negative Spread p. 154

SD: X - neg - PROP - (ADV) (Q)

1 2 3 4

SC: 1 - 2 - 3 - 2 - 4

Condition: 1 does not contain sqt or rel

T6.2. Negative Past Attachement p. 160

SD: X pst - neg - (hab) - $X_{\langle +V \rangle}$ $(K_{\left[\begin{smallmatrix}\langle +dat \rangle \\ \langle +pn \rangle\end{smallmatrix}\right]})$ - X

1 2 3 4 5

SC: 1 - 3 - 4 - 2 - 5

T6.3. Negative Sentence p. 168

SD: E - X - AUX - neg - X

1 2 3 4 5

SC: 4 - 1 - 2 - 3 - 5

T6.4. Negative Because Incorporation - OPT p. 172

SD: $[X - AUX - X]_S$ - neg - bec - X

1 2 3 4 5 6

SC: 1 - 2 - 4 - 3 - 5 - 6

Condition: 2 and 5 do not contain neg

T6.5. Negative Noun p. 176

SD: X neg prep - N - X

1 2 3

SC: 1 - $2_{<+c>}$ - 3

T7.1. Particle Word Order p. 189

SD: X - prt - prt - X

1 2 3 4

SC: 1 - 3 - 2 - 4

Condition: 3 ranks above 2 in the following order:

xar = 1

in = 2

kadə = 3

xa = 4

T7.2. Verb Particle(s) Placement p. 190

SD: X V - prt (prt) - X K $\left\{\begin{matrix}<+sj> \\ <+oj>\end{matrix}\right\}$ - X

1 2 3 4

SC: 1 - 3 - 2 - 4

T7.3. Benefactive-Particle Permutation - OPT p. 192

SD: X - B - prt - X

1 2 3 4

SC: 1 - 3 - 2 - 4

T7.4. Particle Extraposition with Relative Clause - OPT

SD: X N DET - S - prt (prt) - X p. 193
1 2 3 4

SC: 1 - 3 - 2 - 4

Condition: Obligatory if 2 contains /na/ as VB or contains prt as the last item

T8.1. /na/ Deletion in Continuous Tense p. 201

SD: X con (neg) (hab) - $[na]_{VB}$ - X
1 2 3

SC: 1 - 3

T8.2. Locative Preposition Deletion - OPT p. 204

SD: X - prep - $NOM_{<+L>}$ - X
1 2 3 4

SC: 1 - 3 - 4

T8.3. "Have" Separation/Shift - OPT p. 213

SD: X $[na]_{VB}$ - $[O - B]_{O_{<+sj>}}$ - prep $\emptyset_{<+L>}$ - X
1 2 3 4 5

SC: a) $\left\{ 1 - 2 - \emptyset - 3 - 4 - 5 \right\}$
b) $\left\{ 1 - 2 - \emptyset - 4 - 3 - 5 \right\}$

T8.4. "Have" Permutation with /fa/ p. 217

SD: X $[na]_{VB}$ - fa - $[O_{<+fa>}$ - B$]_{O_{<+sj>}}$ - prep $\emptyset_{<+L>}$ - X

1 2 3 4 5 6

SC: 1 - 3 - 2 - 4 - (5) - 6

T8.5. Essive Preposition Deletion p. 220

SD: X con X $[na]_{VB}$ X - prep - $NOM_{<+E>}$ - X

1 2 3 4

SC: 1 - 3 - 4

Condition: 1 does not contain rel

T8.6. Independent Possessives - OPT p. 224

SD: X $[na]_{VB}$ X - O - $[E$ - B$]_E$ - X

1 2 3 4 5

SC: 1 - 2 - 4 - 5

Condition: 2 and 3 are identical in reference

T9.1. Adjectivalization p. 229

SD: X mdl - $V_{<+adj>}$ - X

1 2 3

SC: 1 - 2 + can - 3

Condition: 2 is not +[O]

T9.2. Aorist Adjective p. 232

SD: $X - con - (neg)\ V_{<+adj>}\ X$

$\quad\quad 1 \quad 2 \quad\quad 3$

SC: $1 - aor - 3$

Condition: 3 does not contain hab

T9.3. mdl Deletion in Aorist Adjective p. 233

SD: $X\ aor - X - mdl - V_{<+adj>}\ X$

$\quad\quad 1 \quad 2 \quad\quad 3 \quad 4$

SC: $1 - 2 - 4$

Conditions: 2 does not contain hab

4 does not contain <+r>

T9.4. Aorist Adjective Noun Permutation - OPT p. 235

SD: $X\ aor\ X - V_{<+adj>} - K_{\left[\begin{smallmatrix}<+sj>\\<-pn>\end{smallmatrix}\right]} - X$

$\quad\quad 1 \quad\quad 2 \quad\quad 3 \quad\quad 4$

SC: $1 - 3 - 2 - 4$

T9.5. Adjectival Concord

a) SD: $X - V_{\left[\begin{smallmatrix}<-rdp>\\<+adj>\end{smallmatrix}\right]} - K_{\left[\begin{smallmatrix}<+sj>\\<+pl>\end{smallmatrix}\right]}\ X$ p. 238

$\quad\quad 1 \quad\quad 2 \quad\quad 3$

SC: $1 - 2_{<+rdp>} - 3$

b) SD: $X - N_{\begin{bmatrix}<+sj>\\<+pl>\\<\alpha psn>\end{bmatrix}} - X - V\ can - X$ p. 239

1 2 3 4 5

SC: $1 - 2 - 3 - 4 + 2_{<+pn>} - 5$

T9.6. Attributive Adjective p. 241

SD: $X\ N\ DET - [mdl\ rel - V_{<+adj>}]_S\ X$

1 2 3

SC: 1 - 3

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