

Construction Morphology: Issues in Akan Complex Nominal Morphology

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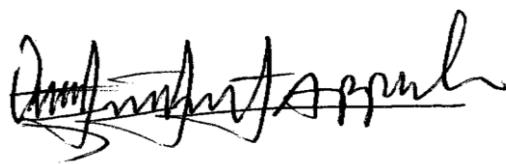
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DECLARATION

I certify that the present thesis is my own original work and that it has not been previously submitted either in part or whole for a degree anywhere. I also certify that I wrote the thesis and that any help I received in the preparation of the thesis, the data sources and the works I consulted have all been duly acknowledged.

A handwritten signature in black ink, appearing to read "Clement Kwamina Insaidoo Appah".

Clement Kwamina Insaidoo Appah

26th September 2013

Lancaster University

DEDICATION

To

Amma Afumwaa Appah (nee Amponsah), my wife
for being there

To

Felicia Mbiaba Daniels, my late mother
It's been a decade already since you left us, rest in peace

To

The rest of my family (too numerous to name individually)
for being there for me

To

All who may never get the chance to write a PhD thesis
I wrote this for you

ABSTRACT

Akan, like any other language, has both regular and irregular complex nominals (CNs). However, previous studies of Akan nominals have been constructive in approach, mostly adhering to a strict form of the principle of compositionality and assuming that the morphological, phonological and semantic properties of CNs can be accounted for fully by tweaking those of their constituents. Consequently, CNs whose properties cannot be so accounted for are either ignored or forced into the mould of regular ones. In this study, I do three things. First, I present a detailed empirically-based assessment of attested CNs in Akan based on a dataset of 1000 CNs drawn from a variety of written sources. This shows that Akan CNs may be grouped into four; compounds, affix-derived CNs, those formed by tonal changes and “lexicalized” forms, which have the form of phrases but occur as CNs and are mostly only partially compositional. Secondly, I present a detailed discussion of the formal and semantic properties of all the attested compounds and a subset of the lexicalized nominals. Thirdly, on the basis of the latter discussion, I examine what the formation and structure of CNs reveal about the interaction between morphology and syntax and about the architecture of the grammar. The analyses show that the formation of CNs in Akan may at once involve morphological and syntactic structure in a way that renders untenable the view that morphology and syntax constitute two completely different modules of the grammar which may be assumed to interact only because the output of the former is the input to the latter. The present study provides support for the constructional view of the grammar.

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LIST OF ABBREVIATIONS

1	First person
2	Second person
3	Third person
A	Adjective
AFV	Asante Final Vowel
Ak.	Akuapem (dialect of Akan)
A-N	Adjective-Noun compound
AS	Argument Structure
As.	Asante (dialect of Akan)
A-TEC	Akan Transpositional Exocentric Compounds
CM	Construction Morphology
CN	Complex Nominal
CxG	Construction Grammar
CxM	Constructional approaches to morphology
DEF	Definite article
DIM	Diminutive
Endo-N-N	Endocentric Synthetic N-N compounds
Exo-N-V	Endocentric Synthetic N-V compounds
Fa.	Fante (dialect of Akan)
FEM	Feminine/Femininity
FUT	Future
IA	Item and Arrangement
IC	Immediate Constituent
ICV	Inherent Complement Verbs
Intr.	Intransitive
IP	Item and Process
LCS	Lexical Conceptual Structure
LOC	Locative/Location
N	Noun
N-A	Noun-Adjective compound
NMLZ	Nominalizer

N-N	Noun-Noun compound
NP	Noun Phrase
Num	Numeral
N-V	Noun-Verb compound
OBJ	Object
PAS	Predicate Argument Structure
PAST	Past tense
PAT	Patient
PERF	Perfect
PHYS	Physical
PL	Plural
POSS	Possessive
Predictd	Predicated
PROG	Progressive
PRPTY	Property
RED	Reduplication/Reduplicant
RHR	Right-hand Head Rule
SE	Stem Extender
SEM	Semantics
SG	Singular
SUBJ	Subject
SVC	Serial Verb Construction
SVO	Subject Verb Object
TEC	Transpositional Exocentric Compounds
TP	Tonal Pattern
Tr.	Transitive
TU	Template Unification
UG	University of Ghana, Legon
V	Verb
VH	Vowel Harmony
V-N	Verb-Noun compound
VP	Verb Phrase
WP	Word-and-Paradigm morphology

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1 GENERAL INTRODUCTION

1.1 Introduction

This thesis is a study of the structure and formation of complex nominals in Akan. I define a complex nominal (CN) as any nominal that has at least two recognizable potentially meaningful constituents that may or may not exist independently outside of the nominal.¹ Since Akan has been studied for well over a century, the present thesis may be properly construed as a reanalysis of the data on Akan CNs from a constructional perspective. The purpose is twofold. The first, which is descriptive, is to investigate the attested types, structure and formation of CNs, based on a sample of 1000 CNs collected from a variety of written sources. Secondly, through a detailed analysis of aspects of the attested CNs, I seek to understand what the facts of Akan CN structure and formation reveal about the nature of the interaction between morphology and syntax and about the architecture of the grammar generally.

Ultimately, I aim to contribute to an adequate description Akan word formation as well as contribute to the literature on the constructional approach to morphology by presenting arguments in support of the theory of construction morphology (CM) as developed in Booij (2010c). The basic claim of the thesis, regarding the latter aim, is that the properties of Akan CNs are relevant for the debate on morphological models and provide evidence for construction morphology.

¹ I use the term complex nominals in Akan instead of popular terms like derived nominal or nominalization. As the review below will show these terms already have various uses in the literature mainly referring to CN nominals that are formed from verbs. In this regard, these terms do not transparently reflect the gamut of constructions I am concerned with in this thesis.

The present chapter provides the general background to the study. I begin in §1.2 with a brief introduction to aspects of the linguistics of Akan that will be needed for the understanding of the discussion in this thesis. The rest covers the statement of the problem (§1.3), the aims of the study (§1.4), the research questions (§1.5), the limitations of the study (§1.6), the approach to the argumentation in the thesis (§1.7) and the organization of the thesis (§1.8).

1.2 A brief introduction to the linguistics of Akan

Akan (ISO 639-3: [aka](#)) is a Kwa (Niger-Congo) Language spoken mainly in Southern Ghana and parts of the Ivory Coast. Akan has several dialects of which three – Akuapem (Ak.), Asante (As.) and Fante (Fa.) are regarded in the literature as the major ones (cf. Dolphyne 1988; Dolphyne & Kropp-Dakubu 1988). Bono is another dialect that should actually take the place of Akuapem on the three “major-dialects” list because it has more speakers than Akuapem. However, by some accident of history, it is not so regarded. That is, Akuapem gained its place on this list because it was the first dialect to have a written form and not because it has more speakers. Any conclusion drawn in this thesis will be generally applicable to all the dialects since the differences between the dialects are mainly phonological.

There are a number of linguistic features of Akan that will be referred to in the course of the discussion. I describe them in the rest of this section.

1.2.1 Phonology

1.2.1.1 Tone

Akan is a register tone language, which distinguishes between a high tone (henceforth, H-tone) marked with the acute accent [á] and a low tone (henceforth, L-tone) marked with a grave accent [à]. An H-tone may be lower in pitch than a preceding one mostly because of the effect of a preceding L-tone. The H-tone which is lowered in pitch is called a downstepped H-tone and it is marked by a superscript ('), as in ['á].² Tone is not ordinarily marked in the Akan orthography. In this thesis, therefore, unless tone is needed to make a distinction, I will not mark it.

1.2.1.2 Vowel Harmony

Vowel harmony, the co-occurrence restriction on the patterning of vowels which requires that vowels occurring in words of more than one syllable agree on a pertinent phonetic feature, is a very prominent feature of Akan phonology. In Akan, vowel harmony is based on Tongue Root Position, resulting in two classes of vowels – those

² DOWNSTEP(PING) is the process whereby the second in a series of two high tones is lowered in pitch, as a result of an intervening (floating/overt) low tone. Some scholars, including Katamba (1989: 199-200) restrict downstepping to cases where “a high tone is lowered in the absence of any preceding low tone in the phonetic representation.” Thus, for him, if there is an overt low tone causing the lowering of the pitch, then it is not downstep; it is DOWNDRAFT. As he puts it, “[d]owndrift is automatic lowering induced by the presence of a low tone immediately before a high tone in the phonetic representation. But downstep is phonetically nonautomatic lowering. The underlying low tone that causes the lowering does not occur in the phonetic representation.” Again, he argues that “[w]hile the phonetic motivation of downdrift is present on the surface, that of downstep is not” (Katamba 1989: 207). With this view, there is no significant difference between downstep and downdrift. However, there is reason to think that there is a more fundamental difference to be made between the two. I follow Abakah (2000, 2004) in using downstep for both the automatic and the non-automatic lowering in the pitch of a single high tone. Downdrift, which will not be exemplified/employed here, on the other hand, is reserved for the progressive downstepping of high tones in a phonological phrase, with the effect that a high tone at the end of the phrase will be much lower than one at the beginning, and even possibly lower than a low tone at the beginning of an extended utterance. I dare say that the distinction seems to make intuitive sense, given the literal meanings of the words *step* and *drift*.

that are produced with the tongue root pushed forward or advanced called Advanced Tongue Root (+ATR) vowels and those that are produced with the Tongue root either in a neutral position or retracted called -ATR vowels. They are shown in (1).

(1) Vowels by ATR harmony

+ATR:	i	e	æ	o	u
-ATR:	I	E	A	O	U

Usually, in a word of more than one syllable, it is expected that the vowels that occur in a word will come from one set, either +ATR or -ATR vowels. Vowels that occur in affixes, such as pronominal subject markers and tense/aspect affixes are expected to agree with the vowels in the base on the ATR feature. For example, the third person singular subject prefix may be realized as +ATR [o-] or -ATR [ɔ-] depending on the ATR value of the vowel in the base, as shown in Table 1.

Table 1. Vowel harmony within words

	Words with +ATR vowels	Words with -ATR vowels
Nouns		
1	òbùrònî /òbùròní/ ‘white man’	àbòròfóó /àbùròfúó/ ‘white men’
2	àkùtú /àkùtú/ ‘orange’	àkókó /akúkó/ ‘chicken’
3	òwú /òwú/ ‘death’	àwó /àwú/ ‘child bearing’
Verbs		
4	ð-bé-tú /ð-bé-tú/, /ò-bó-tú/ (Fa.) 3SG-FUT-fly 'S/he will fly'	ð-bé-kó /ð-bé-kó/, /ð-bó-kó/ (Fa.) 3SG-FUT-fight 'S/he will fight'
5	ð-rí-dzí /ð-rí-dzí/ 3SG-PROG-eat 'S/he is eating'	ð-ré-kò /ð-rí-kó/, /ð-rú-kò/ (Fa) 3SG-PROG-go 'S/he is going'

In addition to the ATR harmony that occurs generally in Akan, there is rounding harmony that occurs in Fante and some sub-dialects of Bono. In the rightmost column

of Table 1 we see the Fante realization of the future and progressive morphemes have rounded vowels because the root vowels are rounded. That is not the case for the other dialects whose realization of it is presented first.

As it is the case with rules, there are exceptions to vowel harmony rules in Akan, so that, under certain conditions, there can be mixed harmonies. For example, in the words *dua* /d̥wá/ ‘tree’ and *pia* /p̥iá/ ‘push’, there is a pairing of both [+ATR] vowels [u] & [i] and the [-ATR] vowel [a] whose [+ATR] counterpart is [æ]. The vowel harmony rules and the exceptions to them are discussed in detail in Dolphyne (1988).

1.2.2 Morphology

1.2.2.1 Nominal morphology

The Akan noun is made up of stem(s) and, in some cases, affixes. Dolphyne (1988: 79) groups the nominal stems into two – simple stems ((2)a-d) and compound stems ((2)e-f). Compound stems usually come in two forms, as different stems ((2)f) or as reduplication of the same ((2)e).

(2)	Word	prefix(es)	stem	suffix	gloss
a.	<i>ofie/efie</i>	o-/e-	<i>fí</i>	-e	‘house’
b.	<i>nsuo/ensuo</i>	n-/en-	<i>su</i>	-o	‘water’
c.	<i>sika</i>	-	<i>sika</i>	-	‘money’
d.	<i>onua/inua</i>	o-/i-	<i>nua</i>	-	‘sibling’
e.	<i>adidie</i>	a-	<i>di, di,</i>	-e	‘eating’
f.	<i>anieden</i>	a-	<i>ani, ye, den</i>	-	‘haughtiness’

The nominal prefix is either a vowel or a nasal. The suffixes are usually derivational while the prefixes may be either derivational or inflectional, mainly marking number

(singular/plural). The singular prefixes are all vowels but the plural prefixes are either the vowel (a-/e-), or a nasal that is homorganic with the initial consonant of the base. Mass nouns usually have nasal prefixes ((3)d).

(3)	Singular	Gloss	Plural	Gloss
a.	<i>a-bofra</i>	'SG-child'	<i>m-bofra</i>	'PL-children'
b.	<i>ɛ-dan</i>	'SG-house'	<i>a-dan</i>	'PL-houses'
c.	<i>i-dua</i>	'SG-tree'	<i>n-dua</i>	'PL-tree'
d.	<i>n-su-(o)</i>	'water'		

1.2.2.2 Verbal morphology

The Akan verb word has a stem and affixes. The essentials of Akan verbal morphology revolve around its tense, aspect and mood system (Osam 1994a, 2004). The range of verbal affixes includes pronominal (person/number) markers, tense/aspect markers, mood markers, motional prefixes and negation markers. I will not discuss these here because they are not of immediate relevance to this work.

1.2.3 Syntax

Akan is a strictly SVO language. Being a nominative-accusative language, the (A) argument precedes the verb and the (P) argument follows the verb in a simple transitive clause. The S argument of an intransitive clause also precedes the verb, as exemplified in (4).

(4)	a.	<i>Amma</i>	<i>dzi-i</i>	<i>edziban</i>	<i>no</i>
		Amma	eat-PAST	food	DEF
					'Amma ate the food'
	b.	<i>Ama</i>	<i>su-i</i>		
		Ama	cry-PAST		
					'Ama cried'

Akan NPs are mainly head-initial, but it is possible to have two juxtaposed nouns in an NP in which the first modifies the second, the head ((5)a). This kind of NP is distinguishable for the analogous N-N compound only by means of tone, as discussed in Chapter 5. The head noun in NPs can be definite as in ((5)b) where the noun is modified by the definite determiner *no* ‘the’. The head of the NP can be modified by an adjective as in ((5)c). Finally, the subject of the NP is a genitive, expressed by means of the possessive pronoun *ne* ‘his/her/its’, as in ((5)d).

- | | | | | | |
|--------|---------------------------|-------------|----|-------------------|-----------|
| (5) a. | <i>n-dua</i> | <i>dan</i> | b. | <i>dan</i> | <i>no</i> |
| | PL-wood | house | | building | DEF |
| | ‘Wood(en) house/building’ | | | ‘the building’ | |
| c. | <i>dan</i> | <i>kɔkɔ</i> | d. | <i>Kofi</i> | <i>ne</i> |
| | building | red | | K. | 3SGPOSS |
| | ‘red building’ | | | building | |
| | | | | ‘Kofi’s building’ | |

1.3 Statement of the problem

Payne (1997: 6) observes that “[t]he bond between form and meaning in real language, [...] is neither rigid nor random; it is direct enough to allow communication, but flexible enough to allow for creativity, variation, and change.” Thus, we should expect language to be full of regularities as well as irregularities or sub-regularities and that is what we find in morphological data. However, most studies of Akan nominal morphology tend to concentrate on the regular and transparent aspects of complex nominal formation, leaving the “untidy” (non-transparent irregular) bits mostly unaccounted for (cf. Marfo 2004a, 2004b; Obeng 2009). Others analyse irregular forms just like they would analyse regular ones, forcing such data into models that are not meant for them (cf. Abakah 2004, 2006; Anderson 2013; Appah

2003, 2009a; Boadi 1966). When the latter happens, some aspect of the data may simply be overlooked.

These previous studies have generally been morpheme-based and constructive in approach, in the sense of Blevins (2006). They assume that all CNs are formed from smaller (presumably meaningful) units and that all their properties are determined by the properties of their subparts. Even studies on the phonology of Akan CNs (Abakah 2004; Dolphyne 1988; Obeng 2009; Schachter & Fromkin 1968) assume that the phonological properties of complex words follow entirely from those of their constituents. Abakah (2004: 328), for example, coins the term ***tone cloning*** to refer to “a non-sandhi scenario by which a root word or reduplicated form copies, without any hint of the slightest modification in its segmental and tonal melodies in the reduplicant when it reduplicates.”

However, a look at randomly picked data from Akan texts reveals that whilst some CNs can indeed be accounted for in a morpheme-based approach, because all the properties of the CNs can be found to occur in their constituents, there are many CNs that cannot be accounted for in this model. The selection of nouns in (6), from the first page of a standard four (equivalent of a first year high school level) reader in the Fante dialect of Akan – *Apokɔ ho nymdzee* ‘the knowledge of fishing’ (Otoo 1946), attests to the varied nature of CNs in Akan.

- | | |
|---|--|
| (6) a. <i>kyere-kyere-nyi</i>
RED-teach-NMLZ _[SG.person]
‘teacher’ | b. <i>n-ye-e</i>
NMLZ-do-NMLZ
‘doing/execution’ |
| c. <i>a-koko-dur</i>
NMIZ-chest-heavy
‘courage/bravery’ | d. <i>n-hwε-yie</i>
NMZL-look-well
‘carefulness’ |

- | | |
|---|--|
| e. <i>a-ho-ɔ-dzen</i>
NMLZ-self-be-hard
'strength' | f. <i>a-po-kɔ</i>
NMLZ-sea-go
'sea faring/fishing' |
| g. <i>hem-ba</i>
vessel-DIM
'canoe' | h. <i>a-far-fo</i>
NMLZ _[SG] -fishing-NMLZ _[person]
'fishermen' |
| i. <i>adwen-da-hɔ</i>
mind-lie-there
'astuteness/presence of mind' | j. <i>a-dwen-dwem-fo</i>
NMLZ-RED-think-NMLZ _[person]
'thinking/thoughtful being' |
| k. <i>ɔ-ba-dwen-ba-nyi</i>
NMLZ _[SG] -child-think-child-NMLZ _[SG.person]
'wise/thoughtful person' | |

All, but two, bear affixes and so may be regarded as affix-derived words. However, the bases that the affixes attach to are not uniform at all. Some studies ignore these differences and treat the CNs simply as compounds or affixes plus lexical bases. For instance, in the literature, example ((6)e) has been analysed as a compound (Christaller 1875; Dolphyne 1988). However, as discussed in Chapter 8, the same scholars who analyse it as a compound show that the construction has the structure of a sentence. In addition to this, there is a prefix that is attached to the structure, meaning that it is probably an affix-derived word with some kind of sentential base. The straightforward compounding account masks this sentential base and the prefix attached to it.

Apart from their formal opacity, it is clear that these nominals are semantically not totally transparent and cannot all be accounted for straightforwardly in a bottom-up fashion. For example, it is not possible to derive the meaning 'astuteness/presence of mind' from the constituents of the word in ((6)i); one will have to infer from the literal meaning of the construction – 'the mind is there (vacant)' – that, being there, could mean readiness to take and process information swiftly. Christaller (1875: 23)

mentions an extreme pattern of polysemy where a palatal suffix, realized as a front high vowel, attaches to various kinds of bases ‘to form nouns that refer to (i) the agent or instrument of the action, (ii) the action itself, (iii) the thing produced by the action, (iv) the place of the action [exemplified in ((6)b)], and (v) the time of the action’.

Again, in ((6)k) the morpheme *ba* ‘child’ occurs twice in the same word, and it is not clear what meaning contribution each one makes to the CN and in what order they will attach to the base, if we assumed a morpheme-based approach, since a base with only one instance of *ba* does not exist in Akan. Thus, a morpheme-based approach will force a parse of this CN that may not be faithful to its structure.

The effect of the overly constructive approach has been that holistic properties of complex words (formal and semantic) have either not been accounted for or have been accounted for by a battery of rules that aim solely at arriving at the properties of the complex word by tweaking those of their constituents.

However, the difficulty with this approach has not gone wholly unnoticed. There are hints of the awareness that we cannot account for all properties of Akan complex words by looking at the properties of their constituents. Christaller (1933: XXI), for instance, underscores the opacity of some Akan CNs when he observes that ‘of many nouns the derivation is unknown’. Dolphyne (1988), studying the phonology of Akan compounds, identified two types of Akan nominal compounds that are classified according to their surface tonal melodies (see these tonal patterns exemplified in §6.2, Table 16 and Table 17, and a constructionist interpretation of the same in §6.4.4.1). Dolphyne suggests, however, that there is no reason to believe that the surface tone

melodies depend on those of their constituents. Even Abakah who strongly espouses the constructivist position relative to the tone of Akan compounds (Abakah 2004, 2006) seems to acknowledge this with his positing the so-called *defective cloning* by which he means ‘after tone cloning has applied to a morpheme, some other tone rules apply to generate the final output’ (Abakah 2004: 330).

1.4 Aims of the study

The foregoing shows that there are clear instances of transparent CNs in Akan as well as others that are not totally transparent. The formation of Akan nouns thus, may be divided into two – regular and irregular CN formations, and their product classified into regular CNs and irregular CNs. Regular CNs are formally transparent, involving clear bases and/or nominalizers (although their semantics may not necessarily equally transparent). Irregular CNs, on the other hand, are generally non-transparent in that they may include constituents that are either not well-formed or have some other formal and/or semantic quirk.

This thesis, therefore, aims to show that a complete and insightful analysis of Akan CNs will result, if CNs are regarded as being capable of having idiosyncratic holistic properties that are not compositionally derived from their constituents. In this regard, the thesis presents arguments in favour of an approach that considers complex words as constructions – form-meaning pairs with holistic properties. I present groups of CNs whose members have features that cannot be shown to be a compositional function of their constituents. The ultimate goal is to show that previous accounts have not been thoroughgoing and that adopting a constructionist perspective does justice to

the data. The advantage that the constructional approach has over previous accounts is that it handles all the regular transparent data that morpheme-based approaches handle in addition to the not so regular patterns that morpheme-based models fail to handle.

Thus, this thesis aims to contribute to the growing body of work that seeks to show the usefulness of assuming a constructional approach to the analysis of complex words which are regarded as word-level constructions (Booij 2010c). I hope that it will encourage research into other aspects of the grammar of Akan CNs that have been forced into morpheme-based models and so have not been fully dealt with. The data that is adduced will be sufficient to prove that even morphologically poor languages can have significant portions that elude analysis in a bottom-up model.

1.5 Research questions

In this thesis I seek to answer two principal questions, one relating to the descriptive goal of understanding the structure and formation of Akan CNs and the other relating to the theoretical goal. I observed above that Akan CNs may be grouped into two – regular CNs and irregular CNs. I also argued that previous accounts have not been comprehensive enough because they have concentrated on the regular and sometimes treated irregular forms like the regular ones. Therefore, the first and absolutely necessary question to ask is 1:

1. What is the structure of complex nominals in Akan?

To answer this question fully, I will attempt to answer the following minor questions that target specific aspects of the major questions.

- a. What types of complex nominals are attested in Akan?
- b. What are their properties
- c. What are the structures from which the nominals are formed?
- d. How are the nominals formed?
- e. In what sense are they nominals?

Previous accounts of Akan complex nominal morphology assume a view of grammar in which complex forms are formed by stringing together putatively meaningful lexical stems and affixes whose formal and semantic properties determine the properties of the CNs. Given the fact that Akan CNs contain word groups, words and subword units,

- 2. What are the implications of the structure of Akan CNs for our conception of interaction between morphology and syntax and the architecture of the grammar?

1.6 Limitation

It is impossible to do any meaningful work on a subject matter with illuminating outcome if one is not selective in the material one chooses to analyse. Thus, given the level of detailed account of the classes of Akan CNs that I hope to present, the need to delineate a section of the subject matter cannot be overemphasized. I have decided to concentrate on presenting a detailed account of properties of attested compounds and personal attribute nominal constructions (PANCS) in the dataset of 1000 CNs.

The primary motivation for analysing only a portion of the dataset is the desire to have a very detailed description of the data as well as the limited time available. However, the selection of CNs that is analysed in this study constitutes a coherent whole because first of all, they have all been previously analysed as compounds. In this regard, the fact that the present study shows that at least one group of these nominals – PANCs – are not mere compounds, as argued in Chapter 8, is significant. Secondly, the selection of CNs that is discussed in this thesis also constitutes a coherent whole in the extent to which they together provide evidence for the constructional view of grammar. Thus, the portion of the dataset that is analysed in this thesis is sufficient to show how this study agrees with and also differs from previous studies of Akan CNs.

1.7 Approach to the argumentation

Because I principally seek to show that a constructionist approach brings us closer to a more comprehensive account of the properties of Akan CNs, in the various chapters, I first present what I believe to be the properties of the relevant class of CNs. I then show how they have been analysed previously in the Akan literature and where they fail or are not convincing. I then present the proposed CM account. In some instances, this means a simple illustration of my assumption about how the construction may be presented. In other cases, it will mean showing how tenets of CM may be interpreted or combined in order to capture the details of the properties of the construction. Where possible/useful, I show to what extent similar constructions in other languages have been handled and why the CM account is superior.

1.8 Organization of the thesis

This thesis is divided into nine chapters. The remainder is organised as follows: in chapter 2, I present CM, the conceptual framework for this study. Before that I present a quick survey of the concept of construction and other key notions of Constructions Grammar. I also discuss various models of morphology.

Chapter 3 is a description of the nature of the data to be discussed in this thesis and how I went about gathering and processing the data. In this chapter, I also discuss the subject of productivity. Here, I take a qualitative view of productivity (Bauer 2001b) whereby it is assumed that if a pattern has a variable slot that can be substituted to form novel instantiations of the pattern, then that pattern is productive. Thus, in this work, the exact degree of productivity and its statistical significance will not be in focus because, to a large extent, the dataset I rely on is quite limited. Secondly, my primary aim is to describe the identified patterns of Akan CNs.

Chapter 4 is a survey of the literature on compounding. It covers the definition of compounding, the classification of compounds, headedness and semantic relations within compounds. This chapter serves as a general background to the discussion of compounding in chapters 5 to 7.

In chapter 5 I discuss various classes of Akan compounds grouped under the heading verb-internal compounds (§5.4) and non-verb-internal compounds (§5.5). These are further classified into various classes.

In chapter 6 I discuss Akan N-V compounds which had previously been analysed as N-N compounds with deverbal right-hand constituents. I argue that the argument for the de-verbal status of the right-hand constituents is at best weak. I then go on to present arguments in favour of the N-V compound analysis. In this chapter, I show that the N-V compound analysis can be extended favourably to the analysis of similar compound type in Sranan, a language that is distantly related to Akan. These compounds had also been previously analysed as N-N compounds with deverbal right-hand constituents.

In chapter 7, I discuss two classes of compounds that can have coordinate reading – N-N and V-V compounds.

The point I make in these three analysis chapters on compounding (5-7) is that the various classes of compounds dealt with have holistic properties that make them well suited to constructional analysis and so serve as evidence for CM.

In chapter 8, I posit and discuss a special construction type that had previously been treated as a compound. I argue that the constructional approach leads to an insightful account of the properties of the construction.

Chapter 9 is the conclusion.

2 CONCEPTUAL FRAMEWORK

2.1 Introduction

The primary aim of linguistic theory is to identify and characterize grammatically significant patterns in language, show how new forms relate to established patterns as well as how completely novel forms may be constructed (Gurevich 2006).³ Thus, given a set of data, linguists extract as many general/recurrent properties as possible and write them out as rules, principles or constraints that underpin subsequent theorizing.

Theories so propounded may be distinguished along many lines including what proponents consider the minimum unit of linguistic analysis and how the relation between minimal units and complex ones may be characterized. Morphological theories, for example, may be classified as morpheme-based (e.g. Lieber 1983; Selkirk 1982) or word/lexeme-based (Aronoff 1976, 1994) depending on whether proponents regard the morpheme or the word/lexeme, respectively, as the minimum unit of linguistics analysis.⁴ Linguistic theories may also be distinguished on whether they regard the minimal unit of form (morpheme or word/lexeme) as being co-extensive with the minimal unit of meaning. The implications of these distinctions for the domain of word formation are discussed in §2.3.

As indicated in chapter 1, the goal of this thesis is to present a detailed description of CNs formation in Akan and also to seek to know what the form and formation of

³ Some theories also provide formal representations of generalizations embodied in identified patterns.

⁴ See §2.3.3 for other classificatory systems that are orthogonal to the dichotomy mentioned her.

Akan CNs reveal about the nature of the interaction between morphology and syntax as well as the *architecture of the grammar*. Regarding the latter, we need to be able to define what we mean by the architecture of the grammar. I will discuss this issue here, contrasting two opposing views – the modular view of the mainstream generative grammar tradition (Chomsky 1965) and the constructionist view of the cognitive linguistics tradition (Fillmore & Kay 1987; Goldberg & Jackendoff 2004; Jackendoff 1997a, 2008; Lakoff 1987). I hope to show that adopting this constructionist perspective leads to a fuller account of the properties of Akan CNs since CNs that previous accounts either ignored for their apparent aberrant behaviour or were placed in classes they did not belong to can be shown to fit naturally into this framework.

The rest of this chapter is organized as follows: in §2.2, I discuss the concept of the architecture of the grammar. In §2.3 I discuss the important issue of compositionality. In §2.4, I discuss morphological theory and in §2.5 I focus on the tenets of Booij's CM (Booij 2007a, 2010c). §2.6 concludes this chapter.

2.2 On the architecture of the grammar

Another important goal of linguistic theory is the proper characterization of the human language faculty or the architecture of the language system or grammar (Jackendoff 1997a: 100). Booij (2002b) suggests that there have to be in-depth studies of the grammars of individual languages to serve as the empirical foundation for the accomplishment of this theoretical research goal. In other words, it is only by knowing the architecture of many languages can we be sure of approximating what the

architecture of the language system is. In this section I briefly deal with the two opposing views on the nature of the architecture of the grammar.

2.2.1 The non-constructionist view

The dominant view of the architecture of the grammar is the mainstream Chomskyan generative grammar (Chomsky 1965, 1981, 1993, 1995). I will organize the discussion around the term construction, which I will employ extensively in this thesis.

2.2.1.1 “Construction” in the pre-generative grammar era

The notion of construction is a traditional one that goes back at least to the Roman orator, Cicero who, in the first Century BCE, used the word *constructio* (the source of English ‘construction’) to refer to a grouping of words. Later, *construction* was used as a grammatical term by Priscian (c. 500 CE), and in the 12th Century, by the Medieval Linguists known as the Modistae who defined the term as “an ordering of words that agree and express a complete meaning” (Goldberg & Casenhiser 2006: 343).

The Modistae mostly studied the nature of the construction itself, with the basic criterion being that the would-be construction consists of at least two words in which one of the words was said to ‘govern’ or ‘require’ the other word(s). They expected that the construction so defined would be grammatically well-formed and express a meaningful sentiment. Thus, as Goldberg and Casenhiser (2006) observe, for the Modistae, groups like *The crowd run* and *Colorless green ideas sleep furiously* would

be rejected; the former, for the lack of subject-verb agreement and the latter for its semantic vacuity.

In traditional descriptive grammar, the term construction referred to recurrent (clause-level) syntactic patterns (e.g., *passive construction*, *existential construction*, etc.) that pair a particular form with a particular meaning. For instance, that English has a “passive construction” is justified on the grounds that sentences with passive meaning have a specific syntactic form that correlates with the *passive* meaning. For a construction to pass as a passive construction in English, it must contain a form of the verb *to be* with a participle, although the passive meaning cannot be derived from the meanings of the verb *to be* and the participle. The passive meaning is thus a holistic property of the construction.⁵

Thus, pre-generative grammar approaches to grammatical analysis were explicitly or implicitly “construction-based” and grammatical organization above the level of the word (phrase, clause, etc.) was analysed as patterns with characteristic form, meaning and usage (Gurevich 2006). Indeed, Bloomfield (1933: 169) regarded combinations of forms within and above the word as constructions. He argued that:

Whenever two (or, rarely, more) forms are spoken together, as constituents of a complex form, the grammatical features by which they are combined, make up a construction. Thus, the grammatical features by which *duke* and -*ess* combine in the form *duchess*, or the grammatical features by which *poor John* and *ran away* combine in the form *poor John ran away* make up a construction.

⁵ For an overview of the use of “construction” in various theoretical traditions, see Schönefeld (2006).

2.2.1.2 “Construction” in the generative grammar era

The constructionist view of grammatical organization survived into the early years of the development of generative grammar. However, the atomistic approach to linguistic analysis of American structuralism (cf. Harris 1951) and later generative approaches which handle grammatical analysis in terms of conspiracies of conditions (Chomsky 1977) and principles (Chomsky 1991, 1995) took over and the constructionist approach was relegated to the background. Harris, for example, accounted for complex grammatical structure through the interaction of simple operations, leaving out the meaning of the constructions. Hence, Matthews (1999: 118) concludes that ‘Harris excluded meaning from linguistics’.

Later generative approaches to syntax were motivated by the idea of “uniformity” which found expression in the syntax, so that forms that were thought to be related (like the active and passive) were linked derivationally by assuming that they share an underlying form and that the surface forms resulted from the application of derivational rules (cf. Culicover & Jackendoff 2005). The place of constructions as the mapping between form and meaning with idiosyncratic or holistic properties diminished; morphemes and combinatorial rules had taken over.⁶

The generative grammar tradition is sometimes called the componential model (Croft 2001) because proponents hold the view that a speaker’s knowledge of his/her language is organized into components with each component describing one dimension of the properties of a sentence – phonological, syntactic and semantic.

⁶ Croft & Cruse (2004: 227) observe that “[o]ne of the crucial characteristics of this model is that there are no idiosyncratic properties of grammatical structures larger than a single word.” This observation is, however, highly debatable because idioms are clearly recognized as being larger than words and having idiosyncratic properties.

The phonological component, for example, consists of the rules and constraints governing the sound structure of a sentence of the language. The syntactic component consists of the rules and constraints governing the syntax – the combinations of words – of a sentence. The semantic component consists of rules and constraints governing the meaning of a sentence.

(Croft & Cruse 2004: 225)

Jackendoff (2002: 107ff) characterizes mainstream generative linguistics as *syntactocentric* because the syntactic component is the sole source of combinatoriality. That is, all computations are carried out in the syntactic component whose output served as input to “the phonological and semantic components [that] are [...] purely interpretive” (Chomsky 1965: 16). Thus, in this model, semantic and phonological properties are read off the output of the syntactic computation and form-meaning biuniqueness is largely expected. Indeed, following Katz & Postal (1964), Chomsky (1965) claimed that the deep structure is the level of syntax relevant for determining meaning. As he puts it, “the syntactic component of a grammar must specify, for each sentence, a deep structure that determines its semantic interpretation” (Chomsky 1965: 16, 198 n.10).

This model of grammar concerns itself with the so-called core aspects of grammar and not with issues about pragmatics, the interface between language and extra-linguistic factors and systems of knowledge that influence the meaning of an utterance. Morphemes were assumed to carry their own meanings that are combined to provide the meaning of the larger structure (complex words and sentences) in which they occur in a bottom-up fashion.

Fillmore (1968) stressed the role of semantics and semantic roles (deep case roles) in determining the meaning of a sentence rather than syntax. He argued that the deep structure of a sentence contains a predicate and a set of case meanings that are mapped onto grammatical roles in the surface structure by means of mapping rules. With this, Fillmore (re)-introduces the top-down approach to the realization of the meaning of a construction, in contradistinction to the bottom-up approach in which the meaning of a construction is assumed to be assembled compositionally from the meanings of the words and sub-word units that make up the construction.

Generative grammarians hold the view that the inputs and outputs of the components of grammar interact in specific restricted ways. For example, the idea that words are formed in the lexicon (lexical component) whose output feeds derivation in the grammar/syntax (rule component) and that these are strictly ordered, goes back at least to the very first formulation of what the word formation component of the grammar should look like (cf. Halle 1973). Ordinarily, with this conception, the outputs of syntactic derivation cannot feed word formation unless they are lexically listed (Bresnan & Mchombo 1995; Sato 2010) and such outputs of syntactic derivation are list-worthy only if they are irregular and cannot be generated by the rule component of the grammar.⁷

It is worth noting that there are approaches within mainstream generative linguistics that accept that regular syntactic derivations feed word-formation. However, for these approaches, morphology is deconstructed and reconstructed as part of syntax (cf. Halle & Marantz 1993; Lieber 1992; Marantz 1997).

⁷ The circularity of the argumentation is pretty obvious.

2.2.2 The constructional view

The rule versus list view which characterizes the mainstream generative view is deemed a fallacy (Langacker 1987). The alternative which Fillmore's pioneering work motivated and which this thesis provides evidence for is the constructional view in which the notion construction plays a central role and meaning is seen as a property of constructions rather than individual constituents thereof. The foundational claims are as follows:

1. THE CONSTRUCTIONAL VIEW

- a. There is a cline of grammatical phenomena from the totally general to the totally idiosyncratic.
- b. Everything on this cline is to be stated in a common format, from the most particular, such as individual words, to the most general, such as principles for verb position, with many sub-regularities in between. That is, there is no principled divide between 'lexicon' and 'rules'.⁸
- c. At the level of phrasal syntax, pieces of syntax connected to meaning in a conventionalized and partially idiosyncratic way are captured by CONSTRUCTIONS.

(Goldberg & Jackendoff 2004: 532)

In this section, I briefly discuss these assumptions. Because the immediate relevance of the discussion in this section is to be found in its application to morphology, I will reserve all the critique for the sections on CM.

Approaches to the study of grammar which assume the constructional view are termed *constructionist approaches* with the term *constructionist* having more than one

⁸ This follows from a foundational axiom for all construction grammars which is that lexicon and grammar are not distinct components, but form a continuum of constructions (Langacker 2005: 102).

association (Goldberg 2006). First, it underscores the central role of constructions, premised on the basic assumption in cognitive linguistics that language is symbolic in nature. Therefore, the grammar (language user's knowledge) of a language is captured entirely in terms of a vast structured inventory of symbolic units which are entrenched (conventionalized and routinized) pairs of form and meaning called constructions (Langacker 1987: 57).

Of course this feature of the constructionist approach cannot be merely assumed without argumentation and part of the justification for it is the observation that there are many constructions whose meanings do not depend on the meanings of their constituents. A famous example that illustrates the claim that constructions can have properties that do not emanate from their constituents is the English *caused-motion construction*, exemplified in 2, in which the intransitive verb *sneeze* is used transitively, and correlates with the presence of an object that moves along a path, specified by the preposition *off*. The two properties – the transitive use of *to sneeze* and the meaning that the sneezing caused the *napkin* to move – must be assumed to be holistic properties of the construction (Goldberg 1995).

2. Kweku sneezed the paper off the table

Another is the English “time-away” construction (see 3) which has the structure [V NP *away*]. The formal properties of this construction cannot be accounted for by the rules of English grammar and the meaning of the utterance is not obvious from just considering the meanings of the words in it. For example, it is unclear what *to sleep the holidays* in (3c) means, unless it is compared to similar time-away constructions,

and then it becomes clear that it indicates that the specified time was expended executing the activity designated by the verb (Goldberg & Jackendoff 2004).

3. a. Aba danced the night away.
 b. Amma knitted the entire journey away.
 c. Francis slept the holidays away.

Other examples that behave this way are phraseologisms (Fleischer 1992, 1997) or prefabs (Erman & Warren 2000).

The point with the kinds of constructions discussed above is that the properties of the components (including the meanings) do not exhaust the properties of the whole composite. As Wray (2002: 4) observes, in discussing formulaic expressions, if you break them up, they mean one thing, but if you treat them as wholes and in their accustomed forms, they possess meanings other than, or in addition to the constituent parts. Some of them also licence constituents that ordinarily should not occur in constructions like that. Therefore, it is important that we can choose the level of analysis where we stop breaking them down, going from the observed form to the conventional(ized) meaning. In other words, the composite has to be regarded as an entity in its own right (Lampert & Lampert 2010: 35)

A second point to be made about constructionist approaches which contrast sharply with generative grammar approaches is the view that there can be no real principled distinction between “core” phenomena that are central to grammar and “peripheral” phenomena that are not so central; the whole of language is interesting and worth investigating (cf. Gisborne & Trousdale 2008; Goldberg 1995; Langacker 1987). That

is, besides concerns about meaning, constructional approaches seeks to account for all aspects of grammar in contradistinction to mainstream generative grammar which is concerned with the so-called “core grammar”.

True to the commitment to describe the totality of grammar, various constructions types have been posited, some of them based on some quirky feature and one of the practices has been to posit a separate construction if the observed properties of a pattern cannot be accounted for by regular rules of the grammar or if the properties are not licensed by any existing construction. This is evident in the following:

Any linguistic pattern is recognized as a construction as long as some aspect of its form or function is not strictly predictable from its component parts or from other constructions recognized to exist. In addition, patterns are stored as constructions even if they are fully predictable as long as they occur with sufficient frequency.

(Goldberg 2006: 5)

As the quotation above shows, the second basis for positing a construction is usage-based. That is, in addition to positing constructions based on the non-predictability of their properties, fully predictable patterns with high frequency are stored as constructions. Thus, Goldberg provides us with two conditions under which constructions may be posited but I will be working with the first mainly due to the small size of my dataset that does not provide me with good enough basis for making any serious statement about frequency effect.

The effect of this methodological stance has been that a lot of the structures that are discussed in the constructionist literature seem to belong to what generativists regard

as non-core. But there is a philosophy behind what appears to be a fascination with unusual patterns, which is that “fundamental insights can be gained from considering such non-core cases, in that the theoretical machinery that accounts for non-core cases can be used to account for core cases” (Goldberg 1995: 6). That is, “an account of the rich semantic/pragmatic and complex formal constraints on these patterns readily extends to more general, simple, or regular patterns” (Goldberg 2006: 5).⁹

Constructions show varying degrees of schematicity, ranging from schematic patterns that abstract over sets of formally and semantically related structures, to less schematic (or fully concrete) patterns across constructions (token expressions). These constitute a network in which various kinds of relationships obtain. As Michaelis and Lambrecht (1996: 216) put it, “[i]n CG, the grammar represents an inventory of form-meaning-function complexes, in which words are distinguished from grammatical construction only with regard to their internal complexity.”

With this view, it may be argued that the difference between morphological constructions and syntactic ones is that the former may be made up of mainly bound forms whilst the later are made up of predominantly free morphemes.¹⁰ This should ultimately amount to a rejection of the modular view of grammar in favour of a continuum view of the relationship between lexicon and grammar and suggests that

⁹ This is consistent with Kay and Fillmore’s (1999: 1) view that “[t]o adopt a constructional approach is to undertake a commitment in principle to account for the entirety of each language”.

¹⁰ Compounding and especially inflectional morphology will not fit neatly into this dichotomy. This statement is, therefore, true mostly of affixational derivational morphology. See Gurevich (2006) for a constructional approach to inflection.

pieces of syntactic structure can be listed in the lexicon with associated meanings, just like individual words in the language because they are all constructions.¹¹

A third point to be made about the term constructionist is that it emphasizes that languages are learned. That is, languages are constructed on the basis of the input together with general cognitive, pragmatic, and processing constraints (Goldberg 2006). Regarding this, Goldberg makes a further strong point about the constructionist view on the need to study the totality of a language including the process of learning of generalizations about irregular patterns/constructions. She argues that:

Whatever means we use to learn these patterns can easily be extended to account for so-called “core” phenomena. In fact, by definition, the core phenomena are more regular, and tend to occur more frequently within a given language as well. Therefore if anything, they are likely to be easier to learn. Since every linguist agrees that the “peripheral,” difficult cases must be learned inductively on the basis of the input, [...] there is no reason to assume that the more general, regular, frequent cases cannot possibly be.

(Goldberg 2006: 14)

I assume this view in this thesis because it affords the facility to present a unified account of Akan CNs.

¹¹ Note, however, that not all constructionists completely eschew the modular view of grammar. Jackendoff’s tripartite parallel architecture (cf. Jackendoff 1997a, 1999, 2002, 2003, 2007, 2009a, 2009b, 2013) which is discussed below and also underpins Booij’s constructional approach to morphology is modular in that it assumes three modules – syntax, semantics and phonology each with its own internal organization.

2.2.3 On how words and differ from grammatical constructions

As the foregoing discussions show, constructionist approaches hold the view that there is no firewall between morphology and syntax. As Goldberg (1995: 7) puts it:

In Construction Grammar, no strict division is assumed between the lexicon and syntax. Lexical constructions and syntactic constructions differ in internal complexity, and also in the extent to which phonological form is specified, but both lexical and syntactic constructions are essentially the same type of declaratively represented data structure: both pair form with meaning. It is not the case, however, that in rejecting a strict division, Construction Grammar denies the existence of any distinctly morphological or syntactic constraints (or constructions). Rather, it is claimed that there are basic commonalities between the two types of constructions, and moreover, that there are cases, such as verb-particle combinations, that blur the boundary.

Michaelis & Lambrecht (1996: 216) similarly argue that “[i]n CG, the grammar represents an inventory of form-meaning-function complexes, in which words are distinguished from grammatical constructions only with regard to their internal complexity” I will show below that Booij (2005a, 2007a, 2010c) cites Michaelis and Lambrecht’s observation as showing the relevance of CxG for the analysis of words.

However, the claim that lexical and syntactic constructions differ only in their internal complexity is difficult to uphold because it is motivated mainly by the structure of the more familiar Germanic languages. It fails to take into account the remarkable differences in the morphosyntactic make-up of languages and will not stand up to scrutiny when judged against data from polysynthetic and agglutinative languages. In these languages, what looks like a simple word may be internally as complex as, if not

more complex than, syntactic constructions in isolating languages.¹² For example, what is regarded as a simple word in Kiswahili like *nimemkamata* 4 has in it all the grammatical relations that may obtain in a simple sentence in English as the glosses show. So it cannot be any less complex than the simple sentence in English.

4. *ni-me-m-kamata*
 1SGSUBJ-PERF-3SGOBJ-catch
 'I have caught him'

Again, the Yimas expression in 5 is regarded as a single morphosyntactic word because of the rigidity of linear ordering and adjacency between formatives. As Foley puts it, “[t]his form is morphologically a single composite unit. The morphemes must occur in this order and no other [...]. Further, no other morpheme may be inserted into this sequence” (1991: 82). That notwithstanding, it is translated into a very complex construction in English. This shows that the internal structure of sentences cannot be assumed *a priori* to be more complex than that of words, at least in these languages.¹³

5. *ya-mpu-park-mpi-kipik-mpi-wark-t*
 Vpl.OBJ-3pl.AGT-split-and-break-and-tie-PERF
 ‘They split the branches, broke them and tied them’ (Foley 1991: 82).

I believe the correct position to assume is that their internal structures differ to the extent that they respond to different constraints and are relevant for different levels of the grammar. Whereas the internal structure of the sentence is relevant to the larger

¹² It is not even clear whether Michaelis and Lambrecht accept the partial autonomy of morphology that Booij argues for.

¹³ The internal complexity of a word may be due to the univerbation or lexicalization of a phrase. For example the Akan complex noun *pese menkomenya* ‘selfishness’ is hardly any less complex than the phrase from which it is derived, as shown in (1).

(1) *me-pe-se-me-nko-me-nya* > *pese menkomenya* ‘selfishness’
 1SGSUBJ-want-COMP-1SGSUBJ-alone-1SGSUBJ-get
 ‘I want to have it all for myself (*lit.* I want that I alone get)’

syntactic and discourse context, that of the word is ordinarily not. I take it that the issue of complexity is orthogonal to that of the morphology-syntax distinction: there are varying degrees of complexities in both morphological constructions and syntactic constructions.¹⁴

Thus the so-called distinguishing feature of internal complexity is both false and an unnecessary part of the characterization of constructions and should be jettisoned if the definition is to be crosslinguistically useful. The distinction between morphological and syntactic constructions should be based on criteria other than the internal complexity. The criteria should be underpinned by the view that morphology and syntax differ only to the extent that there are principles that apply only in one domain and not the other. This view is consistent with Goldberg's (1995: 7) view that rejecting a strict separation between lexicon and grammar does not amount to a denial of "the existence of any distinctly morphological or syntactic constraints (or constructions)".

There are various pieces of mainly language-specific support for this position. For example, whereas within a language word order may be strictly of a particular type in syntax, e.g. SVO in most Kwa languages, unless altered by principles of information structure, the same set of words occurring in compounds may not follow the same order. Akan VPs, for instance, have VO linear order. However, the most productive compounds in Akan have the structure NV in which the noun is the notional object of the verb, giving an OV linear order. This is a specifically morphological property and one that is not shared by the syntax.

¹⁴ Indeed the definition of complexity is itself a vexed issue (Bane 2008).

Booij (2002b) provides evidence of morphology-specific restrictions in his discussion of left constituents of Dutch nominal compounds. Booij observes that Dutch nominal compounds can have non-head phrasal constituents, as the data in 6 show. The facts about inflection confirm the phrasal status of these AN sequences: the adjectives terminate in schwa, an inflectional pattern possible only in phrases. Again, stress falls on the last words in the sequences like phrases.

6. [AN]_{NP} [blote-vrouwen]_{NP} blad ‘nude women magazine’
 [hete-lucht]_{NP} ballon ‘hot air balloon’
 [QN]_{NP} [drie-landen]_{NP} punt ‘three countries point, where three countries meet’
 [vier-kleuren]_{NP} druk ‘lit. four colours printing’ (Booij 2002b: 146)

Booij observes that not just any NP can occur in compounds: it is only the combination of bare nouns and their modifying adjectives or quantifiers that are allowed as constituents of compounds. However, the NPs need not be lexicalized before they can occur in the compound because of the productivity of the pattern (cf. Booij 2002b: 146-147). Further evidence comes from the fact that, as a consequence of the possibility of NPs occurring within words, plural nouns are also found in the non-head position. In the Dutch examples in 7 the non-heads are plural and it seems natural because the heads refer to a kind of container or a mass. However, the plurals must be the *-en* type. Nouns with different plural endings are impossible in this context (Booij 2002b: 147).

7. [daken] zee ‘sea of roofs’
 [huizen] rij ‘row of houses’
 [vakken] pakket ‘packet of subjects, subject chosen for graduation’

Thus, morphology defines the exact nature of the NPs that may occur as constituents of compounds. As Booij observes, the theoretical implications of this is that the word-formation component of the grammar cannot be qualified as presyntactic, since syntactic rules like adjective-noun agreement must be allowed to apply within these compounds.

Aside from the language-specific evidence for principles that are specifically morphological, Booij (2009b) makes us understand that the lexical integrity may be regarded as a formal universal. If that is right, it is clearly of particular relevance to the morphology.

The point here is that whereas morphology and syntax have a lot in common, there are some features which are specifically syntactic and some that are specifically morphological. This should not be taken to mean a denial of the continuum view of the relation between morphology and syntax. Rather it should be seen as amounting to asserting that morphology is a relatively autonomous part of the grammar of a language (cf. Booij 2010c, 2010d).

2.3 On compositionality

Central to the argument for the constructional analysis of Akan CNs in this thesis is the issue of compositionality, a hotly debated issue in linguistics (cf. Aronoff 2007; Fodor & Lepore 2002; Jackendoff 1997a; Jenssen 2012; Katz 1973; Langacker 1990; Sweetser 1999; Szabó 2012; Taylor 2002). There appears to be a dichotomy of scholars who believe in compositionality and scholars who do not. In reality, however, the division is between scholars who believe in a strict form of compositionality also

called direct compositionality (DC) or strong/strict compositionality (SC) (e.g. Dever 2006; Fodor & Lepore 2002; Frege 1979[1914]) and those who do not necessarily oppose compositionality but believe that compositionality can only be partial (e.g. Croft & Cruse 2004; Goldberg 1995; Lampert & Lampert 2010; Taylor 2002). I will briefly discuss compositionality in general, dealing with some of the debates and concluding with a review of Taylor's (2002) view on compositionality which is the view assumed in the present thesis.

2.3.1 Compositionality

Many of the complex expressions that a speaker of a language encounters on a daily basis have potentially never been heard or seen in print before, yet competent speakers of the language are able to interpret them. Linguists and philosophers reason that because speakers cannot be assumed to have memorized every expression they say or hear, it has to be assumed that there is some mechanism for building up the meaning of complex expressions from those of their constituents. That is, the routine process of understanding utterances is possible because the complex expressions are made up of familiar bits that are put together in familiar ways (Dever 2006: 633). As Fodor & Lepore (2002: 2) put it, mental and linguistics representations of utterances which are creatively built up and which symbolize mostly unique conceptualizations that the hearer is nonetheless able to interpret without difficulty, are made up of a finite number of recurring primitive or conventionalized parts whose arrangement determines the structure and content of all the complex representations.¹⁵

¹⁵ With this, scholars mean to show that, although the relationship between the meaning of a simplex word and its form is usually arbitrary, not all linguistic signs are arbitrary. If they were, we would have to memorise an awful lot of linguistic expressions and language will not be a flexible communication system. Fortunately, language is a layered combinatorial system in which complex structures – words, phrases, clauses – are built out of simplex forms and so their meanings and forms can be seen to be (at least, partially) motivated (Booij 2007b: 207).

As Frege (1980[1914]: 79) puts it “[t]he possibility of our understanding propositions which we have never heard before rests evidently on this, that we construct the sense of a proposition out of parts that correspond to the words”. This understanding is crystallised in the principle of compositionality – the assumption that the meaning of a construction is a function of the meanings of its constituents and how they are combined (the structure).

Fodor and Lepore (2002: 1) define compositionality as “the property that a system of representation has when (i) it contains both primitive symbols and symbols that are syntactically and semantically complex; and (ii) the latter inherit their syntactic/semantic properties from the former”. For example, that English has the complex symbol *boys* [bɔɪz], which is made up of meaningful simplex constituents *boy* and *-s*, whose individual meanings it inherits, is a function of the compositionality of English. The same can be said about the complex symbol *John eats*.

Compositionality therefore requires three factors to be properly aligned – the meanings of atoms, the meanings of complexes, and the parthood relation between atoms and complexes (Dever 2006: 641). Thus, once we know how a complex unit is constructed from primitive elements and we know the meanings of the primitive elements, we are able, without further ado, to tell the meaning of the complex expression.¹⁶

¹⁶ Compositionality was originally meant to be a constraint on the relation between syntax and semantics of language “a tool for limiting what can be relevant to determining the meaning of a complex expressions” (Dever 2006: 634). Thus, As Dever (2006: 634) further observes, compositionality represents the simultaneous imposition of two constraints – *Semantic Closure* which states that only semantic information can go into the determination of the semantic value of a complex expression and *Semantic Locality* which states that only information derived from parts of a complex expression can go into the determination of the semantic value of that expression. Semantic Closure prevents, for example, the meaning of (1) from being determined in part by the phonetic, morphological, historical-causal properties, etc. of the word ‘Superman’, rather than the *meaning* of the

2.3.1.1 Justifying compositionality

Compositionality seems to find natural justification in language users' intuitions about meaning and structure which coincide with the basic construal of compositionality. It is, however, noted (Brenier & Michaelis 2005) that this kind of defence is too modest since, notwithstanding the possibility of its convincing some, it leaves unanswered why compositionality is true. Among scholars, therefore, the standard argument for compositionality is that language and thought are both productive and systematic (Fodor & Lepore 2002: 2).

Productivity is defined as the property that a system of representation has when it contains an infinite number of syntactically and semantically distinct symbols. Systematicity, on the other hand, is the property that a system of representation has when it contains families of semantically related but distinct expressions like *John loves Mary*; *Mary loves John*; *Does John love Mary?* *Does Mary love John?* In other words, there are definite and predictable patterns in the sentences that we understand, so that anyone who understands *John loves Mary* can also understand *Mary loves John*.¹⁷

word. Semantic Locality, on the other hand, prevents the meaning of *Superman can fly* in 1 from being a function of the meaning of *believes*.

1. Lois Lane believes that Superman can fly.
Combining Semantic Closure and Semantic Locality yields Compositionality – the requirement that the meaning of a complex expression be determined by the meanings of its part. This leads to the view that, in a construction that is compositional, semantic scope reflects structural hierarchy (cf. Booij 2007b: 208).

¹⁷ The effect of the above argument is that speakers of a language can understand a large (potentially indefinite) number of complex expressions, and with that comes the ability to understand other expressions obtained by *recombining* the constituents of those complex expressions. This view of compositionality allows for a “theoretically elegant” account of the semantics of, for example, compound expressions and it is assumed to be necessary for the learnability of natural language. However, as discussed below, opponents of this view of compositionality point to the many cases where the meanings of complex (e.g. adjective-noun compounds) seem to depend on factors outside of the expression, factors that do not affect the meanings of the parts of the expression, such as speaker intension and the general (extra-)linguistic setting in which the utterance took place (Brenier & Michaelis 2005).

2.3.1.2 On determination: the analysis of compositionality

Dever (2006: 635-640) argues that the notion of determination is crucial for understanding what goes into the computation of compositionality. Two approaches to this discussion are identified in the literature – functional analysis and substitutional analysis. According to Dever “[t]he heart of the functional conception of compositionality is the requirement that the meaning of a complex expression be a function of the meanings of the parts of that syntactic expression and their mode of composition.” Dever gives a complex implementation of this statement which yields a four-fold relativized notion of compositionality: a language can be compositional relative to a parthood relation, a level of structural analysis, a collection of possible extensions of the language, and a range of admissible meaning composition functions (Dever 2006: 635-636).

The level of structural analysis yields two views of compositionality – strong compositionality and weak compositionality, which are characterised as follows (Dever 2006: 636):

Strong Compositionality

[Language] **L** is *strongly compositional* if every expression has a coarsest non-trivial syntactic analysis, and the meaning of every expression is a function of the meanings of the meanings of its parts and their mode of combination, under that coarsest analysis

Weak Compositionality

L is *weakly compositional* if every expression has a finest syntactic analysis, and the meaning of every expression is a function of the meanings of the meanings of its parts and their mode of combination, under that finest analysis.

As noted above, some researchers hold the view that strong compositionality is clearly wrong whilst weak compositionality in its various manifestations is trivially true (cf. Fillmore; Kay & Michaelis 2006; Michaelis 1993; Sag 2007; Steels 2010; Taylor 2002). They do not rule out the existence of compositionality completely. However, they believe that strong compositionality hardly holds of any complex expression because the meaning of a complex expression is rarely, if ever, compositional. That is, complex expressions always have a meaning that is more than, or even at variance with the meaning that can be computed by combining the meanings of the component parts. They may also contain elements that are not symbolized by any of the constituent elements of the constructions (Taylor 2002).

For Taylor (2002: 13), this is because humans are smart and, with only snippets of information, are able to “rapidly fill out the details, supplying missing data, attributing unspoken motives and intensions to actors, inferring causes from effects, and predicting effects from present circumstances”. For this reason, the interpretation of a linguistic expression goes beyond what is said. In the same way, typically the sources of the linguistic expressions also do not need to include each and every fact of a conceptualization. The speaker needs to mention only a few salient aspects and leave the rest to the hearer to infer.¹⁸

¹⁸ Jackendoff (1997a) also distinguishes two views of compositionality in contemporary work on syntax. They are simple compositionality (also referred to as syntactically transparent semantic composition) and enriched compositionality.

(1) *Syntactically transparent semantic composition*

- a. All elements of content in the meaning of a sentence are found in the lexical conceptual structures (LCSs) of the lexical items composing the sentence.
- b. The way the LCSs are combined is a function only of the way the lexical items are combined in syntactic structure (including argument structure). In particular,
 - i. The internal structure of individual LCSs plays no role in determining how the LCSs are combined;
 - ii. pragmatics plays no role in determining how LCSs are combined (Jackendoff 1997a: 48).

Sweetser (1999) points out that given simple Adjective-Noun constructions like *red apple*, *red pencil*, *good parent*, *fake guns*, etc. it cannot be said that they refer to the simple intersection of *apples* and *pencils* with *red things*, *parents* with *good people*, or *guns* with *fake things*. For example, *good parents* may be *bad accountants* and so ‘good parents’ is not plausibly the intersection of independently determined sets of parents and good things. With this line of argumentation, we are led to the point where a rejection of a simple set intersection theory of the semantic relation of nouns and modifying adjectives, which characterises strong compositionality, is the logical next step (Sweetser 1999: 130).

In place of that, Sweetser presents an analysis of the mechanism of linguistic compositionality involved specifically in English adjective-noun modification construction in terms of *Mental Space Blending* (Fauconnier & Turner 1995, 1996, 1998a, 1998b). For this, she argues that we need at least all the semantic mechanisms

Explaining this, Jackendoff observes that under this set of assumptions, composition is guided entirely by syntax, so that syntactic structure can be conceived of as directly mirrored by a coarse semantic structure that idealizes away from the internal structure of lexical conceptual structures (LCSs). Under the simple compositionality view, lexical items are regarded as semantically undecomposable entities, as such, it is expected that there will be no interaction between the internal structure of lexical items and phrasal composition. Now, because “the standard treatment of compositionality requires a disambiguated syntax; hence no aspects of a sentence's interpretation can arise from outside the sentence itself” (Jackendoff 1997a: 49).

(2) Enriched composition

- a. The conceptual structure of a sentence may contain, in addition to the conceptual content of its LCSs, other material that is not expressed lexically, but that must be present in conceptual structure either (i) in order to achieve well-formedness in the composition of the LCSs into conceptual structure (*coercion*, to use Pustejovsky's term) or (ii) in order to satisfy the pragmatics of the discourse or extralinguistic context.
- b. The way the LCSs are combined into conceptual structure is determined in part by the syntactic arrangement of the lexical items and in part by the internal structure of the LCSs themselves (Pustejovsky's *cocomposition*) (Jackendoff 1997a: 49).

According to the enriched compositionality view, the internal structure of LCSs is not opaque to the principles that compose LCSs into the meaning of the sentence. Composition proceeds through an interaction between the syntactic structure and the meanings of the words that compose it. Assuming this view means accepting that the interface between syntactic structure and conceptual structure is more complex and that “the effect of syntactic structure on conceptual structure interleaves intimately with the effects of word meanings and pragmatics.” (Jackendoff 1997a: 50)

proposed in cognitive linguistics, including metaphor, metonymy, frames, mental spaces, active zones and profiling, implicit evocation of the speaker's epistemic and communicative spaces (1999: 129). The advantage of her approach, she suggests, is that it permits us to unpack a host of acknowledged genuine possibilities for interpretation of supposedly more tractable examples.¹⁹

Croft & Cruse (2004) present what is referred to as the dynamic construal approach to meaning. In this approach, meaning is assumed to be organic, continuously changing with the modification of the parameters such as context, the background knowledge that speakers and hearers bring to the communicative event, the purports or the basic "raw material" contributed by the input, etc. This makes the determination of the meaning of a word a matter of construal. In this theory, words only have a very skeletal meaning on their own. They acquire meaning depending on the context in which they are embedded. Croft & Cruse (2004: 105) propose a modification of the compositionality principle, which reads: "[t]he meaning of a complex expression is the result of a construal process one of the inputs to which are the construals of its constituent parts." The following is how they explain this new formulation:

¹⁹ Sweetser (1999) departs largely from many in the cognitive (construction) linguistics family who emphasize the non-compositionality of many constructions, and even posit separate constructions on the basis of perceived non-compositionality of identified structures (see Jackendoff (2008) in the NPN construction, Goldberg (1995) on the "time-away" construction, etc.). Sweetser argues that "what is compositional depends on what semantics is" (p.132). Based on this, she emphasizes the point that compositionality is a common property of human language, a view that is shared by both linguists and non-linguist. As she puts it, "the basic fact of compositionality remains".

Regarding the question of what semantics is, we have to first point out that cognitive linguistics provides the basis for a particular view of semantics, which is a semantics that aims at being cognitively realistic, one that takes seriously the need for semantic categories to be humanly accessible and learnable, and for them to be processed against the kind of framework genuinely involved in the processing of understanding. This is what Croft and cruse (2004) call the semantics of understanding. Linguist who adhere to the semantics of understanding "no longer think that meaning is a set of binary features, corresponding to objective truth-conditional relationships between form and real world" (Sweetser 1999: 133).

Is cookery a compositional art? Certainly, the final result is determined by (a) the ingredients and (b) the processes applied, so there is an element of compositionality. But it is not what the proponents of the principle usually have in mind. If we think of global construals, then they are almost certainly compositional only in the cookery sense. But there may be aspects of meaning that do obey the classical principle, at least up to a point. Logical properties are determined by boundary placements, so perhaps the pre-meanings created by boundary construals behave in the classical way.

Thus, whether or not one considers Fregean compositionality (FC) useful depends on what the theory considers the minimum meaning-bearing units in the language in question.

2.3.2 Taylor (2002) on compositionality

The foregoing discussion reveals two views of compositionality. The first is strict/strong compositionality (SC) also called direct compositionality (DC) and the second is partial compositionality (PC) also called weak compositionality. The hypothesis of DC is summed up in the slogan: “[t]he syntax and the semantics work together in tandem” (Barker & Jacobson 2007: 1) and it requires that for every syntactic operation there must be a corresponding semantic operation. This is the compositionality principle: *the meaning of an expression is a function of the combined meanings of the parts and how they are put together.*

To finish the discussion of compositionality I present Taylor’s (2002) position which I assume in this study. Taylor characterizes strict compositionality as follows:

“Strict compositionality: The meaning of a complex expression is fully determined by (a) the meanings of its component parts, in conjunction with (b) the way in which the parts are combed” (Taylor 2002: 98).

He goes on to argue that the two-clause principle can be further broken down into the following four more specific but highly questionable propositions:

- a. Each component of a complex expression has a fixed and determinate meaning in the language system.
- b. The manner in which simpler items combine to form complex expressions makes a fixed and determinate contribution to the meaning of a complex expression.
- c. The semantic properties of the parts of an expression are fully maintained in the complex expression.
- d. There is no ‘surplus’ meaning accruing to a complex expression that is not attributable to its parts and the manner of their combination.

Taylor observes that statement (a) is not consistent with the fact that words exhibit *semantic flexibility*. That is, the meanings of words are, in general, not fixed and unchanging, but rather tend to change dependent on their context of use. For example, he argues, when *run* is predicated of humans, mice and horses, does not designate the same manner of motion. Thus, “[t]he meaning of an expression is not solely a product of its parts, but emerges relative to what is presumed to be plausible or possible” (Taylor 2002: 99).

The claim in statement (b) that syntagmatic combination of units makes fixed and determinate contributions to semantic structure is problematic in the case of semantically *vague* constructions as exemplified by the meaning of nominal compounds of the form [N₁ N₂] whose meaning can, at best, be characterized as an N₂

with a relation R to N₁. The actual meaning is dependent on the pragmatic context as discussed extensively in §4.2.4. For example, *water pistol* is a pistol that shoots water, a *water truck* is a truck that carries water, *water colours* are paints made from a water base and *water skis* are skis that can be used on water.

Statement (c) is found not to hold when we consider examples like *fake guns*, *stone lion* and *imitation hair*. It is common knowledge that a *fake gun* is actually not a *gun*. In the same way, a *stone lion* is “really” not a *lion*. Thus, whereas in the case of *loaded gun* and *small lion* there is an actual gun and an actual lion respectively, in *fake gun* and *stone lion*, the first component does not just add a meaning specification to the second constituent; it drastically alters its semantic character. This is the point made extensively in Sweetser’s (1999) discussion of compositionality referred to above.

Statement (d) is also very difficult to sustain given the fact that the interpretation of many linguistic expressions depends on the extra linguistic context in which the expression occurs. Taylor (2002: 105-109) illustrates this with an extensive discussion of the expression “the ball under the table”. In this thesis, and in Chapter 8 in particular, I show that morphological constructions like Akan CNs do have semantic properties that clearly do not emanate from their constituent parts. This is one reason we cannot assume strict compositionality.

Aside from the complex expressions cited above which seem to contradict the claims embodied in strict compositionality, there are constructions that are noted even by proponents of strict compositionality to be “out of bounds” to strict compositionality.

They include idioms (e.g. *spill the beans*), figures of speech (e.g. metaphors, metonymy, etc.) and constructions whose interpretation depends on pragmatic context.

Taylor observes that the very existence of non-compositional expressions should not in itself threaten compositionality “provided that the exceptions can be clearly identified as such” (Taylor 2002: 100). The problem, however, is that a large number of expressions are idiomatic to some degree and most expressions are subject to some kind of pragmatic interpretation. Thus, the problem that the existence of idiom, figures of speech and expressions that are subject to pragmatic interpretation pose to strict compositionality is that they cannot be easily separated from expressions that are allegedly subject to strict compositionality. Their ubiquitous nature casts doubt on both the centrality of strict compositionality and the viability of the compositionality principle (cf. Taylor 2002: 100-105).

Taylor’s argument is that compositionality can only be partial. That is, the component units of a complex expression may contribute semantic content to the expression, but the complex expression itself is often subject to interpretation on the basis of conceptual knowledge that goes beyond what is actually symbolized in a complex expression. In other words, contextual information and conventional knowledge play central roles in the interpretation of a linguistic expression even of the most banal kind. Thus, it is mostly not possible to tell the meaning of linguistic expressions from only the meanings of their constituents. This is amply illustrated for Akan CNs in the body of the thesis.²⁰

²⁰ Indeed, Hinzen, Werning & Machery (2012) report that at the time the principle of compositionality was formulated by Frege, there was a sister principle that now appears to be directly opposite. That is the principle of contextuality which maintained that “even though judgements are composed of concepts, they have meaning only in the context of the judgements” (Hinzen; Werning & Machery

Given the foregoing understanding of how the meanings of complex forms may be determined, constructionists argue that the characteristic top-down approach to meaning does not amount to a total rejection of the idea of compositionality. Rather, a looser sense of compositionality is assumed where the meaning of a construction is not strictly composed of the meanings of its constituents (Goldberg 1995).

In this thesis, I assume the constructionist view that compositionality is mostly partial. The finer details of the degree of compositionality are not explicitly dealt with. However, there are cases of absolute exocentricity, where the meaning of the whole is not related to those of their constituents at all. I mention such cases explicitly.

2.4 Morphological theory

A traditional distinction in linguistics is that between simplex words (e.g., *teach*, *move*) and complex words (e.g., *teacher*, *movement*) and the purpose of morphology is to account for the proper characterization of the internal structure of such complex words. A morphological theory must seek to specify the acceptable constituents of complex words, the order in which those constituents can appear and indicate well-formedness constraints on complex words. It should also indicate what sorts of new words a speaker could form. Aronoff (1976: 17-18) argues that, “just as the simplest goal of syntax is the enumeration of the class of possible sentences of a language, so the simplest task of morphology, the least we demand of it, is the enumeration of the class of possible words of a language.”

2012). This principle is presently widely replaced by the principle of compositionality. However, Jenssen (2012) points out that Frege himself never quite abandoned the Principle of contextuality and that compositionality in its contemporary form is rather a creation of Frege’s students, Carnap (1947) and, later, of Montague.

As noted in §2.1, approaches to the analysis of complex words are classified as either morpheme-based or word-based depending on what scholars consider the minimal unit of grammatical analysis. I discuss these models below.

2.4.1 Morpheme-based models

Morpheme-based approaches isolate recurrent bases and exponents within a system and encapsulate each in a rule or entry that represents its grammatical properties. It is from these extracted elements that complex word forms are supposedly derived. Often characterized as the syntax of morphemes, the morpheme-based models have their foundations in (American) Structural linguistics of the (post-)Bloomfieldian era and were articulated in such work as Bloomfield (1933), Harris (1942, 1951) and especially Hockett (1947; 1954; 1958) who distinguished between I(item) and P(rocess) and I(item) and A(rrangement). An IP model takes a base and applies a derivational rule to it to yield a complex word (cf. Anderson 1992; Aronoff 1976, 1994). An IA model involves the addition of a formal unit to another to form a complex word (cf. Lieber 1980, 1983; Selkirk 1982; Williams 1981).

In the (post-)Bloomfieldian era, morphology was thought to have the singular goal of accounting for the relationship between a word and its constituents. Morphological analysis thus essentially involved *morphotactics* (a process of segmentation and classification) and *allomorphy* (responsible for the shape of the morphemes in the complex words).

2.4.1.1 Issues with the morpheme-based models

A fundamental assumption in morpheme-based models is that the smallest unit of form – the morpheme – is also the smallest units of meaning and that the meanings of larger units are constructed bottom-up, being a compositional function of the meanings of their constituents so that biuniqueness (perfect forms-meaning co-variation) is expected. There are, however, several problems with this assumption, as enumerated below. I employ Lieber's (2004: 2) characterization.

One, *the polysemy problem*; the same form may have different context-specific meanings. For example, English *-ize* sometimes means, “cause to become” (*unionize*); “cause to go into X” (*containerize*) or “perform X” (*anthropologize*).

Two, *the multiple affixation question*; different affixes may have the same function or create the same kind of derived words. For example, English *-ize* and *-ify* create causative verbs whilst *-er* and *-ant* form agentive nouns.

Three, *the zero-derivation question*; a change in the semantics does not engender a concomitant change in form. For example, the noun *a walk* is derived from the verb *to walk* without any change in form.

Four *the semantic mismatch question*; the correspondence between form and meanings is usually not one-to-one. This takes several forms: (i) there are the so-called *empty morphs*, forms that make no contribution to the meaning of the complex words they occur in. For instance the *-it* in *repetition* and the *-in* in *longitudinal* do not seem to add anything to the meanings of the respective words. Also, in the words

echolalically, the second *-al* [highlighted] does not mean anything because someone exhibiting *echolalia* is *echolalic*, and *echolalical* does not exist to function as the base for *echolalically*. (ii) There are the so-called *zero morphs*, meaning units that have no formal realization, like the plural in English words like *sheep* and *furniture*. (iii) There is the so-called *portmanteau morph*, a formal unit which expresses two or more meaning units cumulatively, as exemplified by *-s* which occurs on English verbs to express *third person, singular* and *present tense*.

Related to this is (iv) the so-called *extended* or *multiple exponence* where a single morphosyntactic property is expressed by more than one formal element (cf. Matthews 1991: 182). (v) There is the case of “derivational redundancy” (Lieber 2004: 2) where different forms expressing the same meaning occur in the same word, as in *dramatical* in which both *-ic* and *-al* are adjectivalizing suffixes. Finally, (vi) sometimes the meaning of a morpheme seems to be subtracted from the overall meaning of the word. As Lieber (2004: 2) points out, ‘*realistic* does not mean “pertaining to a realist”’. These issues show that the grammatical properties of a word form cannot be fully allocated to its parts and that sub-word units may not necessarily carry enough information to reconstruct the original meaning of a word (Blevins 2006). This is evidence against strong compositionality as discussed in §2.3.

2.4.2 Non-morpheme-based models

The problems enumerated naturally lead to a rejection of the morpheme-based approach in favour of a word-based approach (Blevins 2006; Matthews 1972) and, as recently argued for, a construction-based approach (Booij 2005a; Gurevich 2006;

Riehemann 2001), both of which argues that the smallest units of form need not necessarily be the smallest meaning-bearing units. I discuss of these models below.

2.4.2.1 Word-and-Paradigm morphology

Word-and-Paradigm (WP) morphology (Anderson 1992; Aronoff 1994; Matthews 1972, 1991; Stump 2001), is directly contrasted with both IA and IP models by Hockett (1954), and seems to be “an older traditional model which had been suppressed in the search for minimal building blocks” (Gurevich 2006: 40). WP regards word forms as the basic unit of a system and classifies recurrent parts – roots, stems and exponents – as abstractions over full forms (Blevins 2006: 532-533). The idea of the morpheme as the minimum unit of meaning is dispensed with and the focus is on full words and the relationship between them.²¹ Thus, words don’t have to be broken into their component parts in search of the smallest unit of meaning. The part-whole relation that is expressed between a word and its constituting morphemes in the morpheme-based models is deemed to exist between words and paradigms within which the words can be contrasted.

Modern WP models (Anderson 1992; Aronoff 1994; Stump 2001), represent word formation as realizational (spell-out) rules, or instructions for associating bundles of morphosyntactic properties (paradigm cells) with forms, as in 8, where the property ‘plural’ is associated with a morphological rule that combines a stem and an affix.

8. $\begin{array}{|c|} \hline \text{Plural} \\ \hline /X/ \\ \hline \end{array} \rightarrow /X+z/$ (Matthews 1991: 175).

²¹ It has to be pointed out though that it was already clear in Harris (1951) that morphemes could only be regarded as building blocks which didn't have to be meaningful: words had to be meaningful.

The rule allows for both a one-to-one mapping of a morphosyntactic property onto a unit of form as well as a possible mapping of any number of semantic and morphosyntactic properties onto any number of form exponents, in a many-to-one/one-to-many fashion. Thus, it is absolutely normal to have all the situations identified above as weaknesses of the morpheme-based model without violating principles of the theory. This could include having morphemic forms which are there for the formation of the complex word with no semantic contribution to the complex (cf. Anderson 1992; Aronoff 1994).

2.4.2.2 Lexeme-Morpheme Based Morphology

The problem of form-meaning correspondence has also motivated the so-called “Separationist Hypothesis” which underpins Robert Beard’s (1988, 1990, 1995; 2005) work on *Lexeme Morpheme Base Morphology* (LMBM), as well as Aronoff’s (1994) work on lexeme-based morphology. Beard argues that since the form-meaning correspondence is hardly one-to-one, the semantics of word formation should be strictly separated from its formal aspects. In LMBM, there is no direct link between the aspect that deals with the form of the word and the aspect that deals with the syntax and semantics.

Word formation in this model is seen as a semantic or morphosyntactic process (e.g., formation of *causative verbs* or *agent nouns*), which is strictly separated from the addition of formal morphological markers (such as *-ize*, or *-er*). Dressler & Ladányi (2000) characterise this as a splitting of morphological meaning (morphosemantics) from morphological form (morphtactics). Thus, in LMBM, there is no expectation that the correspondence between form and meaning will be one-to-one.

The separationist hypothesis is not without its critics. See Booij (2010c: 77) for arguments on why Beard's approach to polysemy in word formation, for example, should not be adopted.

2.4.3 Blevins' (re-)categorization

As the forgoing discussions show, the various models of morphology (IA, IP, WP, LMBM) can be grouped into two – the morpheme-based approaches (IA, IP) and word/lexeme-based approaches (WP, LMBM). However, Blevins (2006) argues that the two approaches may crosscut each other in having either a top-down or a bottom-up view of how word structure is computed. He, therefore, (re-)categorizes the approaches to the analysis of word structure into two.

The first, which is morphotactically morpheme-based, he terms the CONSTRUCTIVE model, because they involve the building of complex words from sub-word units. Explaining this, Blevins argues that although there are important differences in the way that surface forms are derived in the models identified in Hockett (1954) – IA, IP and WP – each of them takes some minimal forms, as a point of departure, for the derivation of larger units. Therefore, each of them can be interpreted constructively. For instance, a constructive perspective is implicit in the IA idea that morphological analysis “isolates minimum meaningful elements” and describes “the arrangements in which the minimum meaningful elements occur” (Hockett 1947: 321). In the same way, “an IP model is constructive when it regards a derived form as consisting of “one or more underlying FORMS to which a PROCESS has been applied” (Hockett 1954: 227-228) and even ‘realization-based’ models are constructive in orientation, to the

point that most contemporary ‘word and paradigm’ approaches are more accurately described as ‘stem and paradigm’ models (Blevins 2006: 534).

The other model, which is mainly word/lexeme-based, Blevins (2006) terms the ABSTRACTIVE model, because the creation of new words in this model involves extracting patterns from the structure of sets of existing words and forming the new word based on the extracted pattern. The assumption is that, having seen enough words of the same form the speaker of a language recognizes a pattern in the structure of those words that then becomes a recipe for forming new words. For example, Booij (2010c: 1-3) observes that the speaker of English observing the paradigmatic relation between sets of words like the verbs (left column) and the nouns (right column) in 9 captures the difference in terms of word-internal morphological structure like 10.

- | | | |
|----|-------|--------|
| 9. | sing | singer |
| | kill | killer |
| | keep | keeper |
| | dance | dancer |
| | write | writer |

10. [[sing]_N er]_N

The pattern in 10 may in turn be conceptualized as a template, like 11, which expresses a generalization about the form and meaning of existing deverbal nouns and may serve as a schema for forming new nouns in *-er*. Thus a new noun is formed by simply replacing the variable *X* in the schema with a verb, an operation referred to as *unification*.

11. $[[X]_V er]_N$ ‘one who Vs’ (Booij 2010c: 2)

Thus, in the abstractive models, morphological analysis is not just a question of breaking up a complex form into its building-blocks. Rather, it is a matter of whether a given form shares properties (phonological and/or semantic) with similar forms in the language.²² Again, in this model, creating complex forms is not just a question of assembling component parts. Rather, it is about creating a form in accordance with existing constructional schemas (cf. Taylor 2002: 282).²³ I show in chapters 5-8 that this view of the formation of complex words is the most efficient way of accounting for the formation of Akan compounds.

The idea that speakers abstract schemas from sets of related words and use them as basis for coining new ones goes back over a century to Paul (1880 [3rd edition 1898]), cited in (Booij 2010d: 544) who asserts that: “the language learner will start with learning individual words and word forms, but will gradually abstract away from the concrete words (s)he has learned, and coin new words and word forms according to abstract schemas. This enables the language user to be creative both in word formation and in inflection.”

Indeed, recent psycholinguistics studies on language acquisition seem to support Paul’s observation about word formation based on abstract schemas in the mind of speakers of a language. Tomasello (2000), for instance, claims that language acquisition starts with storing mental representations of concrete language use. That is, language learners acquire the abstract systems underlying linguistic constructs as they observe the nature of constructs with similar properties. For Langacker (2000: 7), the assertion that schemas are extracted and used for forming new forms actually

²² This model has been termed the network model (Bybee 1985), where *network* refers to the conceptualization of the set of relationships between the words in the lexicon.

²³ Thus, the only process sanctioned is that of schematization (Lampert & Lampert 2010).

amounts to a fairly minimal claim: “that the commonality inherent in multiple experiences is reinforced and attains some kind of cognitive status, so that it has the potential to influence further processing.” I discuss schemas and their extraction below.

2.4.4 Constructional approaches to morphology

In recent years, various constructional approaches to the task of morphological analysis have emerged (Booij 2005a, 2007a, 2010d; Gurevich 2006; Orgun 1996; Riehemann 1998, 2001; Sag; Wasow & Bender 2003). I will refer to them collectively as constructional approaches to morphology (CxM) and identify each specific version with the name of the proponent. These theories take, as a point of departure, the assumption that meaning is a holistic property of a construction and not necessarily a compositional function of the meanings of individual sub-parts thereof. Riehemann (1998, 2001) observes that CxM has grown out of disenchantment with the overconcentration of mainstream approaches to morphology on regular and transparent instances of word formation, leaving the non-transparent and sub-regular patterns unaccounted for. She contends that any one of the challenges faced by morpheme-based models (§2.4.1.1), should be an argument for using a constructional descriptive framework; more than one heavily tip the balance in favour of a constructional approach.

The concentration of mainstream theories on regular morphology conceals the fact that sub-regular patterns do not lend themselves easily to analysis in the constructive, bottom-up approach, where properties of complex words are assumed to emanate entirely from those of their constituents. However, Riehemann (2001: 243) argues that

“[b]ecause of the ubiquity of complex words with meanings that are not fully predictable from their parts, the matter of how these should be treated is important.”

She notes further that sub-regular patterns should not be viewed as completely separate from fully transparent words and that doing so will lead to the loss of linguistically significant generalizations. Therefore, both regular and sub-regular patterns should be dealt with in the same framework. In keeping with this observation, I argue that because the top-down approach accounts well for irregular compounds it is more economical to extend it to the analysis of regular compound types as well.

Gurevich (2006: 216) argues that “[i]n general, it seems that most languages with morphologically complex system[s] have at least some non-compositional properties”. However, the discussion of Akan nominal morphology below will show that even languages with not-so-complex morphology have both sub-regular and downright irregular patterns. Therefore, a theory that seeks to offer a complete account of the morphology of complex words in any language must provide a framework within which both regular and sub-regular patterns can be accounted for as well as provide for the expression of holistic properties of words that cannot be distributed to their constituents. That is the kind of framework that the constructionist approaches offer. In chapters 5-7, I compare the constructional account of Akan CNs to various non-constructional accounts. However, the superiority of the constructional solution comes out most clearly in the analysis of exocentric synthetic compounds in chapter 6.

In the view of Gurevich (2006), CxM restores the traditional pre-generative intuitions about the role of whole words and phrases as the most stable means of capturing morphological and syntactic generalizations. In this respect, CxM is consistent with WP morphology in taking a “top-down” view of the structural properties of words,

where larger structures determine both the overall meaning and the selection of smaller units within the complex.

This view is justified on the grounds that often “larger units unambiguously predict smaller units, whereas the smaller units are of more limited predictive value” (Blevins 2006: 568). The top-down approach of CxM makes it particularly well-suited to the representation of established patterns and the provision of a natural and psychologically plausible way of capturing recurrent patterns. I review three CxM models in setting the stage for the discussion of Booij’s version which I adopt for the present study.²⁴

2.4.4.1 Riehemann (1998, 2001)

Riehemann defends a construction-based account of the formation and productivity of *-bar* and *-able* adjectives, in German and English respectively, as well as non-concatenative derivational patterns in Hebrew. She presents her approach in terms of complex recursive schemas structured in a hierarchical multiple inheritance lexicon in which constructions (recursive schemas) of different degrees of specificity populate the hierarchy. In this model, there are no lexical rules and affixes do not have independent existence, although one could think of a schema as an unusual kind of ‘lexical entry’ for an affix (Riehemann 2001: 261).

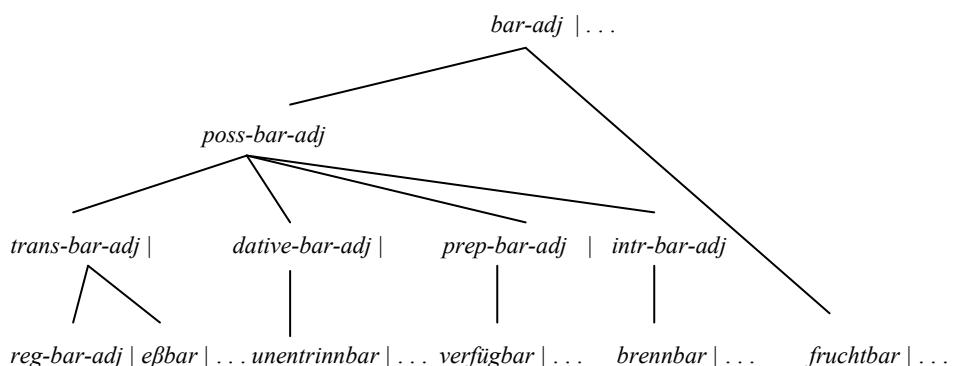
She observes that the received wisdom is that *-bar* adjectives in German are formed by a fully productive suffixation rule that attaches *-bar* to the stems of all and only

²⁴ As with many phenomena in linguistics, going by the name construction morphology does not guarantee uniformity in approach. The various constructional models vary in significant ways, not least in the formalism employed for the representation of morphological structure.

transitive verbs (such as *lesen* ‘read’ → *lesbar* ‘readable’). Counter examples to this generalization then will be transitive verbs which do not allow *-bar* suffixation and intransitive verbs which allow *-bar* suffixation. Riehemann argues that such data exist. There are also lexical exceptions which do not conform to the productive rules. For example, the formation of *-bar* adjectives like *essbar* ‘edible’ (from *essen* ‘to eat’) exhibits a number of semi-regular constraints on the semantics, syntax and phonology of the participating verbs, but, “there does not seem to be a single generalization [a rule] that is general enough to encompass all existing and possible *bar*-adjectives and at the same time specific enough to exclude impossible examples” (Riehemann 2001: 244).

Against this backdrop, she argues for a constructional approach in which the generalization that the suffix *-bar* attaches to transitive bases is maintained and exceptions are adequately handled in a type hierarchy in which schemas for both the regular and irregular patterns inherit from the same underspecified type – ‘transitive bar-adjective’, as in 12.

12. A partial hierarchy for bar-adjectives (Riehemann 2001: 264)



Sub-regular patterns or nuances in the semantics of *bar*-words are represented as legitimate subtypes of *bar*-adjectives. As she explains, “[e]very linguistic object that

is of a particular type has to be of one of the subtypes of that type, and every object has to belong to a maximal type at the bottom of the hierarchy” (Riehemann 2001: 264-265). The specific stems at the bottom of the hierarchy are lexicalized types of *bar*-adjectives that have to be listed either because they have irregular properties or they are conventionally known words.

According to Riehemann (1998) the lexical type hierarchy does four things. First, it structures the lexicon by representing linguistically relevant subclasses of words explicitly. Secondly, it reduces redundancy by relating lexicalized (idiosyncratic or exceptional) patterns to rules, rather than just listing them. Thirdly, the resulting structure can be used to account for productive word formation. That is, speakers use their knowledge of learned patterns to form new words, making it unnecessary to posit separate lexical rules for this purpose, as word-syntax approaches do. Finally, these hierarchies can be used to describe word-formation that is analogical and not strictly rule-governed.

2.4.4.1.1 Some minor reservations about Riehemann’s approach

Riehemann’s model has virtually all the theoretical machinery needed to account for the Akan data – it is designed to account for derivational morphology, it assumes a hierarchical lexicon which makes it easy to express sub-regularities and semi-productive patterns of words formation and also adopts the mechanism of inheritance to show shared properties within the hierarchical lexicon. However, there is one reason why I do not adopt her model – the assumed mode of inheritance.

Feature inheritance in Riehemann's framework is MONOTONIC, meaning that a node inherits all the properties of a dominating node without the option of the more specific properties of the lower node superseding those of the higher node. This is also called full inheritance. For her, this is desirable from a language acquisition point of view, because "if all information were defeasible it would be unclear how the schemata would be formed" (Riehemann 1998: 72). However, adopting a monotonic view of inheritance is not an unavoidable, one-choice-only option, since the same kind of information can be expressed by means of default inheritance, the mode of inheritance by which more specific properties of lower nodes can override those of higher nodes.

Another reason she gives for adopting monotonic inheritance is that it is more constrained, "since none of the generalizations emerging from the data can be dropped or changed" (Riehemann 2001: 274). Again, generalizations embodied in a higher node need not necessarily be maintained, especially if they conflict with the specific properties of a lower node. Morphological data are usually replete with cases where specific properties identified in subtypes of words are not present in the type itself. The converse is also abundantly available. These may result, for instance, from language change. Semantic drift, for example, may result in words being used with certain idiosyncratic meanings, even though the original meaning of the word still exists. An example is the specific use of the word *challenged* meaning "handicapped" in some relevant area, as found in politically correct expressions like *vertically challenged* 'short', *follically challenged* 'bald', *physically challenged* 'disabled' and *factually challenged* 'ignorant'. See Booij (2010d) for more examples and discussion.

The point is that every grammatical theory must provide a framework for the expression of the effect of language change and for the expression of such

idiosyncratic/context-specific uses of words. The mechanism of default inheritance, which allows more specific properties of lower nodes to override those of parent nodes, is therefore to be preferred to monotonic inheritance where the properties of a dominating node occur wholesale on a daughter node. Default inheritance is consistent with the condition of mutual exclusivity called Panini's principle (or the Panini principle), also called the *elsewhere condition*, which states that where two rules compete, the more specific one wins (Kiparsky 1973). As Anderson (1992: 132) renders it, “[a]pplication of a more specific rule blocks that of a later more general one”. I will argue in all the analysis chapters that assuming default inheritance is crucial for expressing the properties of the relevant Akan CNs.

2.4.4.2 Constructional morphology (Gurevich 2006)

Gurevich (2006) draws on insights from CxG and WP to design a model to represent compositional, non-compositional and extra-compositional patterns in morphosyntax. She focuses on the description of non-compositional patterns and paradigmatic contrast between related constructions. Her immediate interest is the representation of patterns inherent in the Georgian verbal system, specifically the Georgian *version*.²⁵

The framework is essentially exemplar-based, because novel items are assumed to be formed on analogy to existing ones and contrasts between related words are crucial in determining word meanings. It is unlike morpheme-based approaches in assuming that word meanings are not assembled from those of their constituent morphemes. For Gurevich (2006: 49), “any set of form-meaning constraints that cannot be derived

²⁵ “originally a morphosyntactic marker of participant affectedness or salience. Version represents a case of mismatch between form and function: the same morphological resources can mark participant affectedness in some constructions and unrelated categories in other contexts, such as voice, tense, and conjugation class” (Gurevich 2006: 1-2).

compositionally from the form-meaning constraints on its constituent elements is considered a construction.”²⁶

In Gurevich's framework, constructions are represented as *templates* (she uses HPSG-like feature structure notation) that impose constraints on morphological or syntactic content of linguistic expressions. A typical constructional representation in this model has two key components: a top-level sign type which is “Construction” and groups of features including SEM(antics), SYN(tax), MORPH(ology), and PHON(ology).

13.
$$\left[\begin{array}{ll} & \text{construction} \\ \text{SEM} & \langle \dots \rangle \\ \text{SYN} & \langle \dots \rangle \\ \text{MORPH} & \langle \dots \rangle \\ \text{PHON} & \langle \dots \rangle \end{array} \right]$$

Not every sign must have all of the above groups of features specified, as the representation in 14 shows, (Gurevich 2006: 50).

14.	<p><i>construction</i>"kick the bucket'</p> <p>SEM [frame "die"]</p> <p>SYN $\left[\begin{array}{c} \boxed{1} \quad \text{construction-verb} \\ \text{SYN} \quad \quad \quad [\text{VERB}] \end{array} \right], \boxed{2} \left[\begin{array}{c} \text{construction-NP} \\ \text{SYN} \quad \quad \quad [\text{NOUN}] \\ \text{PHON} \quad \quad \quad \text{the bucket} \end{array} \right]$</p> <p>MORPH (...)</p> <p>PHON $\boxed{1} \text{ PHON} + \boxed{2} \text{ PHON}$</p>
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In this representation, SYN, which consists of a flat list of syntactic dependents, is to be seen as a set of instructions for assembling the constituents of the construction – the verb *kick* and the NP *the bucket*. The construction may be seen essentially as an instantiation of a regular NP-VP construction, with idiosyncratic meaning. Thus SEM

²⁶ This is consistent with Goldberg's (1995, 2006) view of constructions. Like Goldberg, Gurevich considers morphemes as constructions, given apparent psycholinguistic evidence that morphemes exist in the mental lexicon, albeit only as units parasitic on words (Hay & Baayen 2005). As noted above, Goldberg (2006) also adopts a usage-based view in positing constructions.

does not have to bear a direct relationship to the syntax, as is indeed the case in 14, since the overall meaning is different from what one would expect from a normal combination of the semantics of the constituents. SEM is represented as a frame (Fillmore 1982).

2.4.4.2.1 Sub-word units

So how well does inflectional morphology fit into the view of construction as designating any linguistic expression whose meaning cannot be inferred from those of its constituents? Gurevich (2006: 51) argues that inflectional morphology belongs to this category because inflectional morphology in the language(s) she is concerned with is quite non-compositional. Demonstrating this with the declension of Russian nouns (see Table 2), she argues that declensional classes are associated with additional semantic features such as gender and the case endings cannot have individual meanings in isolation from the declensional classes with which they are used, unless one posits many homophonous affixes.

Table 2. Declension Classes of Russian Nouns

Decl.	Ia (masc.)		Ib (neuter)		II (fem.)		III (fem.)	
	SG	PL	SG	PL	SG	PL	SG	PL
NOM	<i>stol</i>	<i>stol-y</i>	<i>bljud-o</i>	<i>bljud-a</i>	<i>vilk-a</i>	<i>vilk-i</i>	<i>kost'</i>	<i>kost'-i</i>
ACC	<i>stol-a</i>	<i>stol-y</i>	<i>bljud-a</i>	<i>bljud-a</i>	<i>vilk-u</i>	<i>vilk-i</i>	<i>kost'</i>	<i>kost'-i</i>
GEN	<i>stol-a</i>	<i>stol-ov</i>	<i>bljud-a</i>	<i>Bljud</i>	<i>vilk-i</i>	<i>vilok</i>	<i>kost'-i</i>	<i>kost'-ej</i>
DAT	<i>stol-u</i>	<i>stol-am</i>	<i>bljud-u</i>	<i>bljud-am</i>	<i>vilk-e</i>	<i>vilk-am</i>	<i>kost'-i</i>	<i>kost'-am</i>
INST	<i>stol-om</i>	<i>stol-ami</i>	<i>bljud-om</i>	<i>bljud-ami</i>	<i>vilk-oj</i>	<i>vilk-ami</i>	<i>kost'-u</i>	<i>kost'-ami</i>
LOC	<i>stol-e</i>	<i>stol-ax</i>	<i>bljud-e</i>	<i>bljud-ax</i>	<i>vilk-e</i>	<i>vilk-ax</i>	<i>kost'-i</i>	<i>kost'-ax</i>
Gloss	'table'		'dish'		'fork'		'home'	

A phonological form like *-a* (in Table 2) marks various case forms, including the Accusative and Genitive singular of class I, the Nominative and Accusative plural of class Ia, and the Nominative singular of class II. The phonological form of the suffix

participates in the various case marking constructions without any specific contribution to the meaning of the construction; it is a mere formative. The only way to infer case endings for different declension classes is by comparing paradigms. Subword constructions are represented as 15. Other types of constructions have more information, but the formalism is not different

15.	$\begin{matrix} cxn - GenPL - Ia \\ \left[\begin{matrix} SEM & [GENETIVE MEANING] \\ SYN & [cxn - noun] \\ MORPH & \left[\begin{matrix} CLASS Ia & \\ CASE & GEN \\ NUMBER & PL \end{matrix} \right] \\ PHON & [X + /ov/] \end{matrix} \right] \end{matrix}$	(Gurevich 2006: 53)
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2.4.4.2.2 *On the ontological status of constructional schemas*

Gurevich questions the ontological status of constructional schemas, arguing that “[w]hile it is clear that whole words are stored, and that more general patterns may be extracted from them, there is no clear evidence that the abstract schemas are stored separately from the examples that gave rise to them” (Gurevich 2006: 53). For her, schemas are merely a matter of notational convenience for the linguist. The actual generalizations that schemas embody ‘are likely stored in a distributed fashion’ (Gurevich 2006: 53).

The problem with this assertion, though, is that she does not indicate into what components the generalizations are distributed. One might argue that it is not inconceivable that abstracted schemas will co-exist with their instantiations in the lexicon, if the lexicon is conceptualized as a generalization over the linguistic knowledge of speakers of a language. That is, if the schema is assumed to be part of

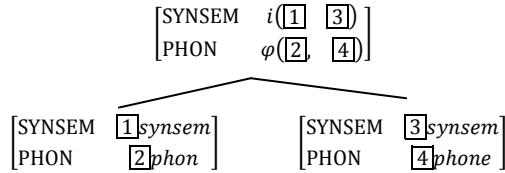
what the speaker must know in order to form or use the words that instantiate the schema, then its ontological status can probably not be in doubt.

Like Riehemann model, Gurevich's proposed CxM model has many features that may be needed to account for Akan CN morphology. However, I am not sure that the model can be easily employed for the analysis of the Akan data that I am concerned with in this study. Besides, the HPSG formalism, in my view, is not easily accessible to the uninitiated.

2.4.4.3 Sign-based morphology and phonology (Orgun 1996)

Orgun's (1996) Sign-Based Morphology (SBM) model which has been applied in work like Orgun (1997, 1999) and Orgun & Inkelas (2001) and is cited as motivating the Morphological Doubling Theory (MDT) of Inkelas and Zoll (2005), is broadly constructionist. In SBM each node in a syntactic or morphological structure is a construction – a *sign* – and it imposes form and meaning constraints on its constituents. Again, any morphological rule or pattern that combines sisters into a single constituent is a construction. That means, in this model, each individual affix, compounding rule, truncation construction, and/or reduplication process is a unique morphological construction and they can be related to each other under a more general “meta construction” which generalises over the properties of the morphological components of the grammar (Inkelas & Zoll 2005: 12). A typical construction in SBM is as presented in 16. This is an elaborated versions of phrase-structure rules that encode the semantic, syntactic, and phonological mappings between daughters and mothers.

16.



Like any constructionist approach to grammatical analysis, SBM and its offshoot MDT accept that the meta-construction can have properties that do not come from its daughters. This means that it is possible that every semantic property in the mother will also be in its daughters, in which case a simple percolation account may suffice. It is also possible that some meaning component in the mother will not occur in any daughter, in which case it would be said to be a stipulated (idiosyncratic) property of the meta-schema.

The SBM has features that may be employed in the analysis of the Akan data but it cannot be adopted completely for our purpose because it is designed specifically to deal with phonological phenomena and the morphology-phonology interface, but the focus of the present work is not on the phonology.

2.4.4.4 Preliminary conclusions

Thus far, only minor objections relating to the formalism and the mode of inheritance have been raised against the constructional approaches discussed. Thus, not adopting any of them is a matter of preference rather than fatal weakness(es) in the framework; any of them can, with slight tweaking, account fully for Akan CN formation. This attests to the utility of constructional approaches to the analysis of complex words. I discuss Booij's CM in the next section.

2.5 Booij's construction morphology (CM)

Unlike Riehemann's (1998, 2001) and Gurevich's (2006) versions of CxM which are based on the tenets of HPSG and WP respectively, Booij's CM appeals directly to the theory of CxG, with the observation that theoretical insights from CxG, specifically, the notion of *construction* can be applied in fruitful ways to give an insightful account of the properties of complex words. Gurevich (2006) observes, in applying CxG to the analysis of complex words, that Booij lays the philosophical foundation of the theory of morphology in CxG. The main tenets of Booij's CM are a theory of word structure, a theory of the notion of ‘construction’ and a theory of the lexicon. I will deal with the theory of word structure and of the lexicon since the view of construction is inherited from CxG, as discussed above.

2.5.1 The theory of word structure in CM

Being abstractionist and word-based, the theory of word structure in CM is underpinned by the assumption that the word is the minimal linguistic sign, a form-meaning pair. The structure of a word comprises two dimensions – its phonological form and its morpho-syntactic properties. This means that each word links three types of information – PHON(ological), SYN(tactic) and SEM(antic) – and morphology or *the grammar of words* (Booij 2007b) must deal with the systematic relation between all three components (Booij 2010c: 5). This view of word structure calls for a grammar with “tripartite architecture” as introduced in Jackendoff (1997a) and applied in Jackendoff (2002, 2007, 2009b) and Culicover and Jackendoff (2005, 2006). Jackendoff's model, called the Parallel Architecture (PA), is made up of multiple “generative engines” connected by interface models, as shown in (Figure 1, below).

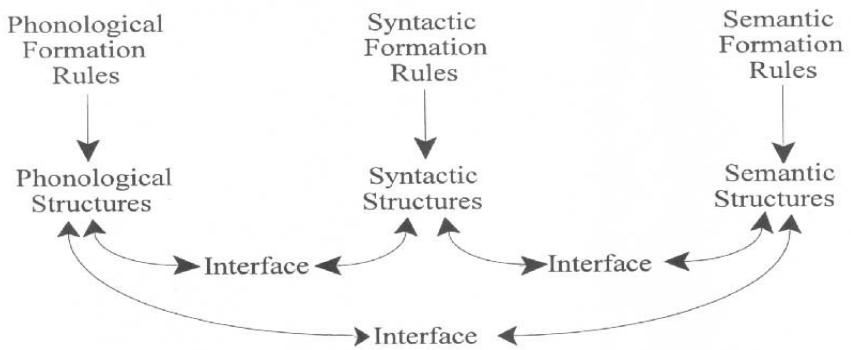


Figure 1: The parallel architecture (Jackendoff 2009b: 585)

Each level of representation PHON, SYN and SEM, has its own primitives and is constructed and governed by independent ‘formation rules’ (set of rules and principles) and particular autonomous (i.e., domain-specific) structure and interfaces to other structures. An interface in the PA model is not a level of structure but a connection between two levels of structure. Thus, the relation between sound and meaning is mediated by a set of interface components, which characterizes the systematicity in the correspondence between the three types of information which make up the word (cf. Jackendoff 2009b: 586).

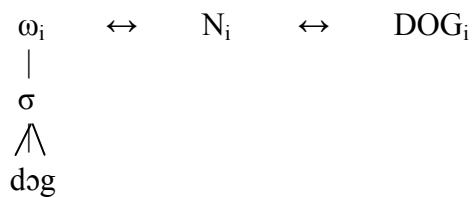


Figure 2: The representation of *dog* (Booij 2007b: 154)

Drawing on insights from PA, Booij argues that each word is a set of interface rules, as the representation of *dog* in Figure 2 shows – the PHON (a phonological word (ω) consisting of one syllable (σ) which also consists of a sequence of three sounds), the

SYN (a noun) and the SEM (expressing the predicate DOG), all three co-indexed ($_i$) to show the correspondence between them.

In a complex word, we are able to show that each kind of information (PHON, SYN and SEM) affects the other, as the formation of *baker* from *bake* through *-er* suffixation (Figure 3) shows. *Baker* is a phonological word consisting of two syllables (ber) $_{\sigma}$ and (kər) $_{\sigma}$ and five sound segments (PHON). It is a deverbal noun (SYN) and the “agent” of the action designated by the base *bake* (SEM).

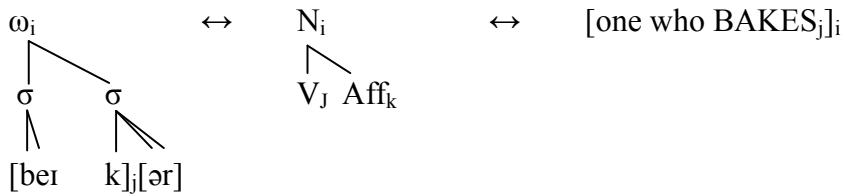


Figure 3: The representation of *baker* (Booij 2010c: 7)

Here again, the relation between base and derived words is expressed by co-indexation of the three pieces of information. If we assume that each lexical item has an index (call it *lexical signature*) that is attached to the three pieces of information of a word, say $[_{17}]$ for *bake*, then its properties may be indexed, PHON $_{17}$, SYN $_{17}$, SEM $_{17}$. Figure 3 can be generalized into a template for deverbal agentive subject nouns in *-er* by replacing the word-specific information with the more general label, PRED(icate) or simply SEM(antics), which refers to the semantics of the base verb, as in Figure 4.

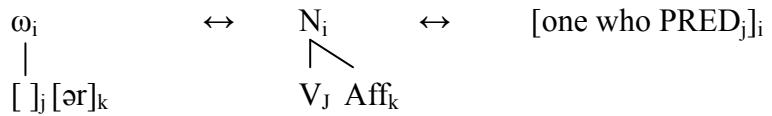


Figure 4: The schema for deverbal *-er* nouns (Booij 2010c: 8)

The operation at the PHON level would involve the concatenation of the sound sequence corresponding to the suffix to the right of the base, creating a particular sequence of segments. The prosodic structure of nouns in *-er* and the syllabification of *baker* as *ba.ker* is computed by means of general phonological algorithm for computing prosodic structure.

As with all constructional approaches, observed patterns are represented as abstract schemas that express generalizations about sets of existing complex words and various formalisms are employed for the expression of the generalizations that schemas embody. Booij adopts the formalism from Jackendoff (2002) for the representation of morphological structure. The PHON is paired with a SEM specification, as in 17, where *x*, and *y* stand for arbitrary phonological strings and *i*, *j*, and *k* stand for syntactic categories (N, V, A, etc.). Thus, the formalism has all the parts of the tripartite structure represented except that the SYN is realized as categorial labels on the bracket.

$$17. \quad [[x]_i [y]_j]_k \leftrightarrow [\text{SEM}_j \text{ with relation } \mathbf{R} \text{ to } \text{SEM}_i]_k$$

This schema is for a right-headed compound of the type *fishing boat*. Here X is instantiated as *fishing* and Y as *boat*. Therefore, the schema (in fact its instantiation) is to be interpreted as a *boat* with some relation to *fishing* and the relation **R** will be spelled out as “(used) for”. Thus, a *fishing boat* is a boat *used for* fishing. Below, I discuss schemas and how they are used in CM to express the properties of complex words.

2.5.1.1 Schemas

As indicated above, in CM language users are assumed to make generalizations about general predictable properties of existing complex words which are captured in terms of templates, called *schemas*. A schema is characterized as a cognitive representation comprising a generalization over perceived similarities among instances of usage, which emerges from repeated activation of a set of co-occurring properties (Barlow & Kemmer 2000: xxiii).

2.5.1.1.1 Schema extraction

The process of schema extraction involves recognizing and focusing on core commonalities and abstracting away from less important details which may differ from one concept or cognitive experience to another. The ability to extract schemas, therefore, reflects human's ability to generalize (Langacker 1987). This is a basic cognitive capability that may be applied in any domain of human cognition and psycholinguistic studies confirm that schema extraction and use is a regular part of human communication.

Dąbrowska (2000) studies the acquisition of interrogatives in a single child, Naomi, from first word combination to age 3;8. Working with the hypothesis that word groups that recur are likely to be stored, the study defines a formulaic utterance as any sequence of simple units with or without a slot, which occurs at least five times in Naomi's corpus. The study shows that about 88% of Naomi's utterances is formulaic. This proportion decreases with age but it shows that "early, and not-so-early, questions are highly stereotypical" (Dąbrowska 2000: 90). It also shows "a clear progression ... from invariant formulas ([e.g.] *Can-I-get down?*), through increasingly

abstract formulaic frames ([e.g.] *Can-I-PROCESS?* ABILITY VERB-*I-PROCESS?*) to a fairly general constructional schema in which none of the slots are tied to particular lexical items (ABILITY VERB-PERSON-PROCESS?) in Naomi's development" (Dąbrowska 2000: 92).

Dąbrowska argues that there is a two-phase process involved in the development of schemas – *analysis* and *schematization*. The analysis phase involves three processes – segmentation of the phonological representation, semantic analysis, and establishing correspondence between chunks of phonological material and salient aspects of semantic structure.²⁷ Analysis at the semantic level involves the child subtracting the meaning of the known parts from the meaning of the whole. As Dąbrowska (2000: 93) observes, "if the child knows that the phonological chunk /dædi/ refers to Daddy and /wərzdædi/ means 'What is the location of Daddy?', she can deduce that the remaining phonological material, /wəərz/, is a request to provide information about an entity's location."

Once the formula has been analysed into its component parts, the next phase – schematization or schema extraction – which is needed to help the child to go beyond rote-learned units is ready to take off. The schemas and their instantiations have the same structure and are represented in the same format as complex symbolic units. Therefore, all the information contained in the schema is implicit in the analysed formula and can be regarded as "a minimum grammar" for assembling one particular expression. Constructional schema extraction entails moving from this "minimum grammar" to a more general grammar.

²⁷ This view of the first phase recalls the thinking underpinning the tripartite parallel architecture of grammar (Jackendoff, 1997).

The best way to think about schematization is in terms of “overwriting” (Dąbrowska 2000: 94). That is, as more formulas are acquired, the representation of newly learned ones overwrites previously learned ones. As an example, suppose that a learner acquired the multiword units *Where's the ball?*, *Where's Daddy?*, and *Where's the milk?*, and analysed them partially as in Figure 5a-c., and “super-imposed” the analysed formulas. The result would be the schema in Figure 5d. That is, the shared parts [?LOCATION/wɛərz] remains unchanged, whilst the non-shared parts “blurs” into a generalized representation of the landmark, [THING/___].

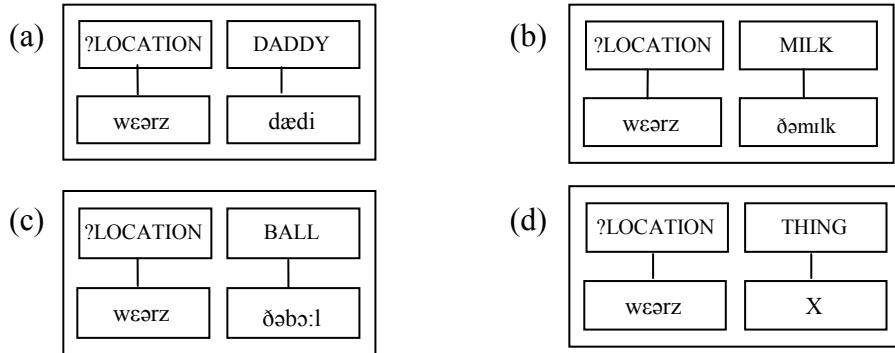


Figure 5: Three partially analysed formulas (a, b, c) and a schema implicit in them (d), (Dąbrowska 2000: 94).

Dąbrowska (2000: 95) describes Constructional schema formation in learners as follows:

Since the schema is the part of the representation which is shared by several formulas, it is already implicit in the first formula acquired by the learner, once the latter is analyzed into its component units. As new formulas are added to the learner's repertoire, the schema becomes more and more entrenched, and eventually becomes a symbolic unit in its own right, ... the schema can be used to assemble novel utterances. Thus, once the learner has abstracted [?LOCATION-THING/wɛərz ___] from *Where's Daddy?*, *Where's the ball?*, and *Where's the milk?*, she can use it to produce previously unheard questions like *Where's the book?*, *Where's Mommy?*, [...]. Low-level schemas like *Where's-THING?* and

Can-I-PROCESS?, then, are generalizations over rote-learned formulas. Once such schemas have been extracted, the same process of analysis and schematization can apply again, yielding more general schemas [...]. Gradually, the child's formulas "open up" and usage becomes more flexible.

We may assume that the development of schemas in adults will not be particularly different from what obtains in children's acquisition of such schemas. Just as children acquire such schemas on exposure to constructions of the same structure over a period, adults come to see patterns in structures that they encounter over time. This is consistent with Bybee and Slobin's (1982) study of the formation of past-tense forms of irregular English verbs which concluded that both adults and children use schemas which are speakers' generalization over stored patterns. Hence, Booij (2009a: 207) argues, following Tomasello (2000: 238), that the endpoint of language acquisition is to be defined in terms of linguistic constructions of varying degrees of complexity, abstraction and systematicity.

We can suggest that speakers acquire the morphological systems of their language in the form of abstract morphological schemas, on the basis of their knowledge of sets of words that instantiate those patterns. In other words, once people have come across a sufficient number of words of a certain type, they infer an abstract schema and on the basis of that, they are able to expand the relevant class of words. Blevins and Blevins (2009: 1) capture the tendency to see and to seize patterns for our own purposes in this manner:

The human mind is an inveterate pattern-seeker. Once found, patterns are classified, related to other patterns, and used to predict yet further patterns and correlations. Although these tasks are performed automatically, they are far

from trivial. The analogical reasoning that underlies them requires the discovery of structural similarities between perceptually dissimilar elements. Similarities may be highly abstract, involving functional and causal relationships. And while the recognition of analogical relations may seem like a passive process, it is in fact an aggressive process, driven by a search for predictability. A systematic structural similarity independent of perceptual similarity can be extended to yield novel inferences about the world.

2.5.1.1.2 The utility of schemas

In cognitive science, the notion schema refers to a data structure for representing generic concepts stored in memory (Rumelhart 1980), making the terminology particularly useful for capturing generalizations across all levels of linguistic and non-linguistic abstraction. In the 1980s, schemas were employed in various studies to express phonological properties of words and to show that some aspects of language acquisition and use are organized in terms of output-oriented patterns. These studies largely sought to prove that it is not always possible to arrive at the properties of complex words by looking at the properties of their constituent parts (Bybee & Moder 1983; Bybee & Slobin 1982; Haspelmath 1989; Zager 1981).

Schemas were seen as associations among lexical items that occur at various levels – phonological, syntactic, semantic, morphological, etc. On the phonological level, lexical items might be associated by initial segment, by rhyme, by stress pattern, or by the number of syllables; on the syntactic level, they might be associated by categorial membership (e.g., noun or verb); on the semantic level, they might be associated by being similar or opposite in meaning, or by belonging to the same semantic field (cf. Bybee & Moder 1983: 267).

2.5.1.1.2.1 Development and use of the English past tense (Bybee & Slobin 1982)

Bybee and Slobin study the formation of past-tense forms of irregular English verbs in three groups of speakers (preschooler, 8-10 year olds and adults) and draw some conclusions, including the following relevant ones: (I) Irregular forms of verbs are rote-learned and stored in the lexicon. (II) Speakers make generalizations about the stored forms in the form of schemas. (III) Schemas describe general phonological properties of various classes of verbs. This way, the schemas define prototypes of the various morphological classes. (IV) Schemas have three main functions (V) Both children and adults make use of schemas in organizing and accessing the lexicon. (VI) The organization of the lexicon is based on family resemblance. (VII) Schemas are product-oriented rather than source oriented (cf. Zager 1980), so that it is possible to group past-tense forms of various verbs (e.g., the right column in 18), based on family resemblance, although their base forms (the left column) vary significantly in their phonological make-up.

18.	Present	Past
	strike	struck
	sneak	snuck
	stick	stuck

Thus (VIII) schemas are phonologically defined but not all the members share a single phonological feature. Rather, there is a prototypical member of the class to which other members stand in a family-resemblance relation. (IX) The problem with schemas is finding the right semantic restriction so that it defines just the class of items intended. (X) It is possible that both source-oriented rules and product-oriented schemas co-exist in the language.

2.5.1.1.2.2 Hausa plural formation (Haspelmath 1989)

Haspelmath (1989) studies plural formation in Hausa and argues that if product-oriented schemas are adopted for the representation of the structure of plural nouns in Hausa, they will reveal interesting levels of systematicity in what previous studies present as completely chaotic. The sense of chaos that is said to characterize plural noun formation in Hausa is illustrated by the assertion that “[t]here are certain types of words whose plural follows a regular plan once the singular is known ..., but in all other cases the actual plural in use must be learned, as it is impossible to know which one of the formations ... will be chosen” (Abraham 1959: 25, cited in Haspelmath 1989: 34).

The reported chaos in plural formation in Hausa, according to Haspelmath, is because of the theoretical orientations of previous accounts, including Extended Word-and-Paradigm theory (Tuller 1981), Autosegmental phonology (Halle & Vergnaud 1980) and upside-down phonology (Leben 1977). These studies fail to bring order into the perceived chaos because they assume that the properties of the plural derive from those of the singular. Haspelmath’s position is that any theory that is exclusively source-oriented cannot satisfactorily account for plural formation in Hausa; the generalizations that characterize plural nouns become statable only if a product-oriented view is adopted. For this, the notion of constructional schema, as developed in psycholinguistics could be fruitfully employed.

Haspelmath (1989) provides seven types of schemas that together describe the set of plural nouns in Hausa. He shows that each class is characterized by a set of morphophonological features, including tone. There are prototypical as well as non-

prototypical members within each class of plurals that instantiates the particular schema. This shows that schemas are not particularly different from other cognitive categories which have members that do not share all the features of the class (1989: 44).

One implication of this view is that they can be assumed to have an organization similar to other cognitive categories (cf. Bybee and Moder 1983), and considering the fact that groups of schemas may have shared properties, it may be possible, in dealing with schemas, to abstract the properties that are common to the relevant schemas and to construct a *meta-schema* that dominates all relevant schemas (Haspelmath 1989: 59-60). This schema will not contain features that are specific to any particular word type that instantiates it. This observation finds natural expression in a hierarchical lexicon, as discussed below.

2.5.1.2 Motivating subschemas

Tuggy (2007) describes a schema as a superordinate concept which specifies the basic outline common to many, more specific concepts. The specific concepts (called elaborations, instantiations or subcases), fill in the outline in varying, often contrastive ways. That is, schemas define prototypical properties of classes of words. To make them account for real properties of words, therefore, there must be subschemas that specify idiosyncratic properties of subtypes of words that instantiate the schema in question. The properties that motivate subschemas can be formal, semantic, diachronic, synchronic, etc. In this section, I explore some of them.

2.5.1.2.1 Head category

The R(ight-hand) H(head) R(rule) (Williams 1981) captures the fact that right constituents of complex words determine their properties, including syntactic category. This is true for most compounds in Germanic languages which may be represented by the abstract schema in 19.

$$19. \quad [[a]_{X_i} [b]_{Y_j}]_{Y_k} \leftrightarrow [\text{SEM}_j \text{ with relation R to SEM}_i]_k$$

$$\quad \quad \quad | \quad |$$

$$\quad \quad \quad [\alpha F] \quad [\alpha F]$$

(Booij 2010c: 51).

This general schema may be instantiated by various slightly more specific schemas which specify the syntactic category of the head constituent. If Y is assumed have the value N, V or A, then in principle we have three immediate subschemas, as exemplified in 20, which are each more specific in showing the category of the right constituent, and in showing, for example, that if the right constituent is a noun then the compound is itself a noun. A lower node or subschema in 20 inherits every property from a dominating schema except the syntactic category of the head. The subschema may in turn dominate a schema that is more specific in some other way.

$$20. \quad [[a]_{X_i} [b]_{Y_j}]_{Y_k} \leftrightarrow [\text{SEM}_j \text{ with relation R to SEM}_i]_k$$

$$\quad \quad \quad [[a]_{X_i} [b]_{A_j}]_{A_k}$$

$$\quad \quad \quad |$$

$$\quad \quad \quad [[\text{lemon}]_N [\text{green}]_A]_A$$

$$\quad \quad \quad [[a]_{X_i} [b]_{N_j}]_{N_k}$$

$$\quad \quad \quad |$$

$$\quad \quad \quad [[\text{black}]_A [\text{board}]_N]_N$$

$$\quad \quad \quad ?[[a]_{X_i} [b]_{V_j}]_{V_k}$$

$$\quad \quad \quad |$$

$$\quad \quad \quad ?[[\text{baby}]_N [\text{sit}]_V]_V$$

The position of the head element of complex words in a language may also motivate subschemas. This can be illustrated with the behaviour of the Italian evaluative suffixes *-ino*, which does not determine the syntactic category of the complex words it

occurs in, as in 21, where the syntactic category of the diminutive noun, adjective and adverb is the same as that of the base.

21. (i) [tavolo]_N → [tavolino]_N “table – little table”
(ii) [giallo]_A → [giallino]_A “yellow – yellowish”
(iii) [bene]_{Adv} → [benino]_{Adv} “well – so so” (Scalise 1984: 131)

This led Scalise (1984) to propose a separate level of morphology – between inflectional morphology and derivational morphology – to account for this unique behaviour, a position that is clearly unsustainable (cf. Stump 1993). In construction morphology, this additional machinery of level ordering can be discarded. Instead, we assume a schema for evaluative suffixes which instantiates a general schema for suffixation with the simple restriction, ‘left constituent is head’, as in 22.

22. $\begin{array}{c} [[a]_x b]_y \\ | \\ [[a]_{x_j} \text{ino}]_{x_k} \leftrightarrow [\text{HAVING PROPERTY}_j \text{ TO A LESSER DEGREE}]_k \end{array}$ (Booij 2010c: 55)

I discuss headedness in compounds generally in chapter 4 and then again in chapter 5 with specific reference to Akan. In chapter 5, I argue that indexation can be exploited a bit more than is normally the case in CM to signal semantic headedness. As currently formulated, it captures formal headedness well but not variation in semantic headedness.

2.5.1.2.2 Recursivity

One way in which schemas for compounds may differ is in the property of recursivity. Ordinarily, compounds can be recursive in the head, the non-head or both

constituents. However, not all compound types permit recursivity. For example, Booij (2009a: 205-206), shows that in Dutch only N+N compounds (and under certain condition V+N compounds) can be recursive in both the head and the non-head positions, as exemplified in 23.

23. a. *left constituent recursive:*
- | | | |
|---|--------------------|-----------------|
| $[[[ziekte]_N [verzuim]]_N]$ | $[bestrijdings]_N$ | $[programma]_N$ |
| illness | absence | fight |
| 'program for reducing absence due to illness' | | |
-
- | | |
|-------------------------------|-------------|
| $[[[aardappel]_N [schil]]_V]$ | $[mesje]_N$ |
| potato | peel |
| 'knife for peeling potatoes' | |
- b. *right constituent recursive:*
- | | |
|--------------------------------|---------------------------|
| $[[zomer]_N$ | $[[broed]_V [gebied]]_N]$ |
| summer | breed area |
| 'breeding area for the summer' | |
- c. *both constituents recursive:*
- | | |
|--|-----------------------|
| $[[[grond]_N [water]]_N$ | $[[over]_P [last]]_N$ |
| ground | water |
| over burden | |
| 'groundwater problems' (Booij 2009a: 205). | |

In $[A-N]_N$ compounds, neither the head nor the non-head can be recursive, and the A must be simplex. Thus, the property “N can be a compound itself” has to be stated for N-N compounds and the condition “A is simplex” stated for $[A-N]_N$ compounds, and each will instantiate a subschema (cf. Booij 2010c: 52-53). I discuss recursion in Akan compounds in §4.2.5.

2.5.1.2.3 Semantic arguments for subschemas

Semantic sub-generalizations, sometimes resulting from the effect of language change (e.g., reanalysis leading to a word acquiring more abstract meaning), call for subschemas. For instance, in compounds a constituent may have a specific meaning that differs from the meaning that the same word has when used in isolation. An example is the Akan word (*o*)*wura* ‘lord/owner’ which occurs in various compounds with the meaning ‘seller’, in 24.

- | | | | |
|--------------------------|-----------------------|--------------------|------------------------|
| 24. a. <i>aburo wura</i> | b. <i>bankye wura</i> | c. <i>emo wura</i> | d. <i>edziban wura</i> |
| maize owner | cassava owner | rice owner | food owner |
| ‘maize seller’ | ‘cassava seller’ | ‘rice seller’ | ‘food seller’ |

In these words, *wura* no longer carries its literal meaning and it cannot be said to be a case of complete reanalysis but a specific usage of the words which deviates from the original meaning in a specific way that may be semantically motivated. A possible explanation for this specific use of *wura* is that the referent of the compound is expected to own the referent of the left constituent in the first place before (s)he can dispose of it through “selling”. This context-specific usage of *wura* can be expressed as a constructional idiom – morphological or syntactic schemas in which one or more positions are lexically fixed, whilst the other slots are left open and represented by variables, as in 25.

25. $[[X]_N [Y]_N]_N$ (general N-N-compound schema)
- |
- $[[x]_{Ni} [wura]_{Nj}]_{Nk}$ ²⁸ \leftrightarrow [SELLER OF SEM_i]_k

²⁸ This representation makes *wura* look like an affix, differing only in having a category label which affixes lack.

Another word with a context-specific meaning, when it occurs in some compounds, is *panyin* ‘elder’. In 26, *panyin* has the specific meaning ‘head/leader/chief’, which is not available as an interpretation for the word in isolation; it occurs only in the context of these compounds.

26. a. *ɔɔʃʃo panyin* b. *adwuma panyin* c. *ɔman panyin* d. *sukuu panyin*
priest elder work elder nation elder school elder
‘chief priest’ ‘CEO’ ‘head of state’ ‘head of school’

Again, this context-specific usage has to be expressed as a subschema of the schema for N-N compounds 27, a constructional idiom with the right constituent specified as *opanyin*, with three specific-but-related meanings which is possible only in the relevant specific context.

27. $[[X]_{Ni} [Y]_{Ni}]_{Nk}$ (schema for N-N compounds)
- $$\begin{array}{c}
| \\
[[X]_{Ni} [panyin]_{Nj}]_{Nk} \leftrightarrow [\text{SEM}_i \text{ at the top of the hierarchy'}] \quad (\text{a}) \\
[[X]_{Ni} [panyin]_{Nj}]_{Nk} \leftrightarrow [\text{top in the hierarchy of doers of SEM}_i] \quad (\text{b}) \\
[[X]_{Ni} [panyin]_{Nj}]_{Nk} \leftrightarrow [\text{leader of SEM}_i] \quad (\text{c, d})
\end{array}$$

Booij (2010c: 61) observes that the rise of sub-patterns of compounding in which one of the constituents is lexically specified does not necessarily coincide with the meaning of the specific constituent becoming completely detached from its original lexical meaning and vaguer. Rather, these quite specific ‘bound’ meanings are acquired when they are embedded in complex words.²⁹ This means that the existence of these constructional idioms does not block the formation of regular N-N

²⁹ The interpretation of polysemous lexical items that is bound to particular constructions, morphological or syntactic, is referred to as **heterosemy**.

compounds in which the word *wura*, for example, carries its original meaning as witnessed by the existence of *ofie wura* ‘landlord’ (lit. house owner).

2.5.1.2.4 Polysemy patterns and subschemas

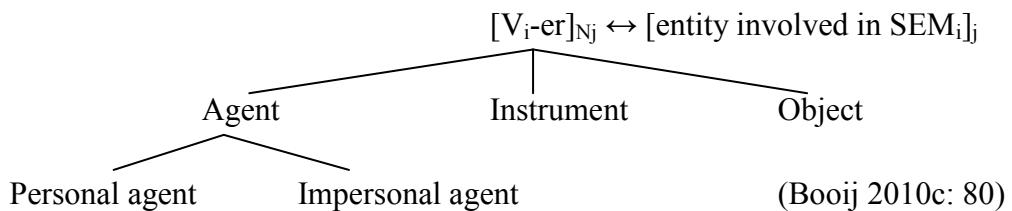
Semantic variation (polysemy patterns) in word formation processes provides evidence for different levels of generalization and motivates subschemas for the subpatterns in the lexicon. There are three main approaches to polysemy in the morphological literature – separationist, monosemy and regular polysemy. Separationists argue, as noted above, that the pervasive lack of systematic form-meaning correspondence in morphology means that form and meaning should be accounted for by different modules of the grammar (cf. Beard 1995). Booij (2010c: 77) argues that this is a course not worth taking since it amounts to giving up on the task of accounting for the cross-linguistic systematicity found in polysemy.

The two other approaches – monosemy and polysemy – that are not mutually exclusive, take some level of systematicity in the relation between form and meaning as a point of departure. The monosemy approach is abstractionist: it assigns a general and vague meaning to a certain morphological pattern as a first step. For example, the class of nouns formed with the derivational affix *-er* in Germanic language are usually called agentive nouns because the subject of the base verb (which *er*-nouns realize) usually carry the semantic role of agent. However, there are many *er*-nouns – *believer*, *hearer*, etc. for which agentivity is virtually zilch. Therefore, proponents of monosemy (e.g., Booij 1986; Rappaport Hovav & Levin 1992) argue that we can account for non-agent *er*-nouns as well by qualifying deverbal *er*-nouns as *subject names* (Booij 2010c: 78).

Clearly, the abstractionist view does not do justice to the full range of interpretation of *er*-nouns. Other interpretations like object, event, causer, (cf. Booij 2010c: 77-78) are not covered by the abstract ‘subject noun’ characterization. This calls for a ‘regular polysemy’ approach in which a prototype constitutes a starting point from where other meanings are derived through regular semantic extension mechanisms like metaphor, metonymy, and inference.

The polysemy of *er*-noun can be accounted for by assuming that the prototypical agent is a human being but non-human agents can also function as subjects. It is in this sense that a movie can be said to *thrill* and so be called a *thriller*, in the same way that an inanimate entity that contains something can be called a *container*, one that computes, a *computer* and another that prints is a *printer*. Here, these non-human devices are conceptualized as agents. Thus, agent is the source of *instrument*. This is polysemy arrived at through the sense extension mechanism of metaphor.³⁰ The important point here is that there are various subtypes of *er*-nouns whose conventionalized interpretations should be recognized by assigning them to separate subschemas. This will result in 28, as a first approximation, with the details of each subtype to be spelled out in a subschema. Akan has similar patterns. See chapter 3.

28.



The discussion in this section shows that abstract schemas can license subschemas that deviate from them in specific ways and can be used productively in the formation of

³⁰ See Booij (2010c: 79) for the view that the motivating mechanism might be metonymy.

words. However, not every conceivable subschema may actually occur. The degree of productivity can affect the establishment of a subschema. For instance, although in principle there can be verb-headed compounds in Germanic languages, there appears not to be any motivation for establishing a schema for verbal compounds because that is not a productive category, hence the symbol “?” in 20 above.

2.5.1.3 Summary

The theory of word structure in CM can be summarized this way: speakers make generalizations about the structure of words in their language. These generalizations are conceptualized as abstract patterns that may be used as schemas for forming new words. Schemas may have subtypes that may vary in having some specific features that are not inherited from the parent schema.

2.5.2 The lexicon

The term LEXICON refers to a synchronic component of the language faculty or a component of the grammar of a language which minimally contains a specification of the lexical units of that language. It is a theoretical concept distinct from the “dictionary” which is a practical concept (Brinton & Traugott 2005: 4). It is often called the “mental lexicon”, a term which underscores the fact that the lexicon is to be seen as a cognitive concept. All theoretical frameworks assume a form of lexicon that houses structures of varying degrees of internal complexity. However, opinions vary on exactly what is listed in the lexicon (Hoeksema 1985: 2ff) and on whether or not the lexicon is structured. Thus, any discussion of the lexicon must answer two questions. One, what does the lexicon contain? Two, is the lexicon structured?

The framing of the question on the content of the lexicon conceals the assumption that speakers have intuitions about what qualifies as potential or actual words of their language (Halle 1973). That is, speakers have the capacity to tell (a) what a word in their language is, (b) what the components of words are, if any, and (c) which combinations of those components are acceptable and which are not. For example, a speaker of English ‘knows’ that, (i) *red* is a word of English, but *kɔkɔɔ* is not, (ii) certain words have internal structure (e.g. *un-drink-able*), and (iii) word-internal structure respects a certain order of occurrence of constituents, so that *un-drink-able* is an acceptable order but, **un-able-drink* and **drink-un-able* are not. In some languages (e.g., Ecuadorian Quechua (Muysken 1981)), the same set of morphemes may be permuted in various ways with systematic differences in meaning.

2.5.2.1 Models of the lexicon

Traditional grammarians divided language into two major parts – grammar and lexicon. The latter contained formatives whilst the former contained the rules for combining them. In the work of the traditional grammarians, the *word* was deemed the minimal unit, so the lexicon was a list of words (or lexemes). Around 1881, Baudouin de Courtenay coined the term MORPHEME to refer to the minimal “meaningful” forms in a language. Bloomfield adopted the idea of the morpheme and defined it formally as ‘a recurrent (meaningful) form which cannot in turn be analysed into smaller recurrent (meaningful) forms’ (1926: 155). With this, the lexicon which was assumed to be a list of words was redefined as a list of morphemes, as this assertion shows: “the total stock of morphemes in a language is the lexicon” (Bloomfield 1933: 162).

The primary criterion for listing in the lexicon is the presence of some idiosyncratic property. Selkirk (1982: 11), for instance, argues that because the meaning of monomorphemic words is not predictable, it is reasonable to pair a word and its meaning in the lexicon. Bloomfield makes this point strongly when he (1933: 274) suggests that:

The lexicon is really an appendix to the grammar, a list of the basic irregularities. This is all the more evident if meanings are taken into consideration, since the meaning of each morpheme belongs to it by an arbitrary tradition. In a language like English, where each morpheme is arbitrarily assigned to some grammatical class, this feature also is an irregularity: the speaker must learn from experience and the describer must list the fact that *pin* is a noun, *spin* a verb, *thin* an adjective, *in* a preposition, and so on. This task also is customarily assigned to the lexicon.

The idea of the lexicon as the repository of irregularities is also present in Di Sciullo and Williams' theory of the lexicon. For instance, referring to the arbitrariness of the form-meaning of *transmission* 'a part of a car' and *take to task* 'to rebuke', Di Sciullo and Williams (1987: 3) argue that "[t]o the extent that an object does not have the form or interpretation specified by the recursive definition of the objects of the language, that object and its properties must be ‘memorized’". The memorized elements are referred to as *listemes* and the property of being memorized as *listedness*. Following this, they (1987: 3) make the now famous statement about the view of the lexicon as a list of irregular forms in a language:

If conceived of as the set of listemes, the lexicon is incredibly boring by its very nature. It contains objects of no single specifiable type (words, VPs, morphemes, perhaps intonation patterns, and so on), and those objects that it does contain are there because they fail to conform to interesting laws. The lexicon is like a prison – it contains only the lawless, and the only thing that its inmates have in common is lawlessness.

However, discussing the theory of the lexicon, Hoeksema (1985: 2) argues that “[i]f the lexicon is really just a set of irregularities and arbitrary facts, then, surely, it would make no sense to speak of a “lexical theory””. Surely, there must be another view of the lexicon that makes it worthwhile propounding a theory of the lexicon. This, from a lexicalist perspective, is the conception of the lexicon as that component of a grammar that houses the vocabulary and word formation rules of a language. With this view, the lexicon emerges as an “active” component of the grammar.³¹

2.5.2.2 A theory of the lexicon CM

The range of items that is deemed list-worthy is wide, but may be easily justified on the grounds that the lexicon is meant to be a conceptualization of a component of the language faculty that stores forms and the possibilities for combining the forms, rather than a dictionary-like structure lying outside of human cognition (Brinton & Traugott 2005). Thus, the question about list-worthiness may be reframed, in psycholinguistic terms, as two separate-but-related questions, as suggested by Jackendoff (2009b: 588).

- A. What must the language user know about the lexical items in the language in order to begin a conversation?
- B. What can the speaker construct online in the course of communication?

The questions, thus framed, refocus the issues and lead us to conclude that if the claim to communicative competence in a language suggests prior knowledge of a form and its meaning/function or the rules for constructing that form, then that form (probably, together with the rules) is list-worthy. This is consistent with Booij’s (2007b: 231)

³¹ For detailed discussions of how the concept of the lexicon has developed over the years and how the two questions have been answered, the interested reader may refer to Booij (1977), Mchombo (1978), Selkirk (1982), Scalise (1984), Hoeksema (1985), Hoekstra et al. (1980), Stowell & Wehrli (1992), Lieber (1992), *inter alia*.

observation that “[k]nowledge in a particular domain of human cognition always comprises both storage of information and the ability to compute new information.”

Obviously language users know individual simplex words (or lexemes) that can be combined into complex structures in various ways. Thus, the lexicon of a language would contain all the simplex words or roots from which complex structures may be formed, those items that must be learnt individually by the speaker, including the Akan words in 29:

29.	<i>dzi</i>	‘to eat’	<i>tena</i>	‘to sit’	<i>ye</i>	‘to do’	<i>ku(m)</i>	‘to kill’
	<i>ɔbaa</i>	‘woman’	<i>akokɔ</i>	‘fowl’	<i>ɔba</i>	‘offspring’	<i>abofra</i>	‘child’
	<i>kɔkɔɔ</i>	‘red’	<i>nyaa</i>	‘slow’	<i>tenten</i>	‘tall’	<i>tuntum</i>	‘black’

This shows that simplex words are by definition lexical units. However, the lexical units of a language are more than the set of simplex words. In other words, the notions ‘simplex word’ and ‘lexical unit’ are not coextensive. Communicatively competent languages users are expected to have command of hundreds, if not thousands, of complex words, idiomatic expressions as well as phrases and sentences that are formed by regular rules and yet have specific properties that must be learnt individually. These usually are conventionalized and/or have some idiosyncratic properties like specialized meaning that is not a compositional function of the meanings of the components parts (cf. Fillmore; Kay & O'Connor 1988; Jackendoff 1997a, 1997b, 2008).

The point here is that if some multiword expression has a property that is idiosyncratic, then that expression must be listed in the lexicon (i.e., memorized)

together with the property in question. For this reason, multiword expressions whose meaning is idiomatic must also be listed in the lexicon.³² For example, the fact that *red tape* and *urban legend* mean ‘bureaucracy’ and ‘popular myth’ respectively cannot be deduced from the combined meanings of the constituent words. The same is true of other phrasal units and compounds that have classifying function such as *green house gas*, *yellow pages*, *fire wall*, *red herring*, *garden path*, etc. This property makes such multiword expression not different from simplex lexemes in that the link between form and meaning is absolutely arbitrary.

Scholars (e.g., Lieber 1980; 1992; Selkirk 1982), have held the view that the lexicon should contain lexicalized phrases and sentences. This view assumes added weight in CM because of its CxG provenance. As, indicated above, an important assumption in CxG is that grammatical patterns that occur in natural languages, including phrasal units with identifiable rules, may have unusual quirks in either their formal properties or their semantic interpretations or both. This property makes them similar to simplex words in the arbitrariness of the form-meaning correspondence and so they have to be memorized. More than this, the basic tenet of CxG as originally developed in Fillmore, Kay & O'Connor (1988), Lakoff (1987), Brugman (1988), and Lambrecht (1994), is that traditional constructions are the basic units of language. This means that some constructions, including sentences, are listed in the lexicon for their quirkiness.

³² A word may be deemed conventionalized if it is, for example, the preferred word in a community for denoting a particular concept. As Booij (2010d: 10) illustrates, the device from which one takes cash money is denoted by the English compound *cash dispenser*. It may also be denoted by the compounds *cash machine* and *automatic teller machine* (ATM), but not *money machine*, although *money machine* is well-formed and has a transparent meaning. Hence, the compound *cash dispenser* and its associated meaning must be stored in the lexicon.

Some phrasal patterns may be listed because they are entrenched. Examples of such lexical phrasal units are the so-called phraseologisms (Fleischer 1992, 1997) or prefabs (Erman & Warren 2000), in which the choice of some constituents is lexically fixed, as in 30, where *strong* and *weak* cannot be replaced by their respective near synonyms *mighty* and *feeble*.³³

Their meanings are compositional but they require specific choice of lexical items to fill certain slots. Makkai (1972) calls these “idiom of encoding”, underscoring the fact that prefabs like *strong tea* and *weak tea* are semantically transparent and so decoding them is usually not a problem – their quirkiness stems from the fact that they have to be encoded in a particular way with particular words occurring in some particular slots and in particular order. This property makes prefabs different from other idiomatic expressions like *red herring* whose meaning is non-compositional. It is estimated that about 55% of all written English consists of prefabs (Erman & Warren 2000).³⁴ This means prefabs must be listed in the lexicon for both their rigid choice of constituents and their frequency. This is consistent with Goldberg’s (2003: 219-222) view that linguistic patterns are stored if they have unpredictable properties or if they are fully predictable but occur with sufficient frequency.

³³ This is consistent with Dąbrowska's (2009: 17) observation that speakers have very specific knowledge about the collocations and semantic preferences of individual words in the language.

³⁴ Willem B Hollmann suggests that this depends very much on how prefabs are defined and that if a high degree of schematicity is allowed, the percentage will approach 100%.

Up until now, nothing has been said about where affixal morphemes fit in. It is clear though, that language users know that there are sub-word units that are added to words to build more complex structures which may or may not carry any meaning/function. Being a word-based theory, affixes in CM have not got lexical entries because they are not considered lexical items. Rather, they occur as part of word formation schemas which are stored in the lexicon.

As noted above, Goldberg (2006: 5), treats morphemes as constructions with lexical entries on account of the arbitrariness of their form-meaning correspondence. Commenting on this, Booij (2010c: 15) argues that the category ‘morpheme’ should not be included in the list of constructions because morphemes are not linguistic signs – independent pairings of form and meaning. The minimal linguistic sign, is the word, he argues, and “the occurrence of the category ‘morpheme’ in this list is to be seen as an infelicitous remnant of morpheme-based morphology.” He continues to note that “bound morphemes form part of morphological schemas, and their meaning contribution is only accessible through the meaning of the morphological construction of which they form a part.” As noted above, this view was already clear in Harris (1951). This suggests that the lexicon should contain schemas like 31 which indicate the category the affixes can combine with:

31. [e- [x]_V]_N ‘act/process V-ing’ (Akan)
 [[x]_V er]_N ‘one who Vs’ (English)

Affixoids are different because of their status as being intermediate, between affixes and lexical items, as in the case of *out*-verbs like *outdo*, *outsmart*, *outplay*. For them,

the lexicon may contain schemas like 32, and as the discussion of constructional idioms shows, this type of schema is justified on empirical grounds.

32. $[[out]_{\text{Adv}} [x]_{\text{Vi}}]_{\text{Vj}} \leftrightarrow [\text{to exceed someone/thing in SEM}_i]_j$ (Booij 2010c: 19)

With the many different items that are argued to belong in the lexicon, the question that arises is: how are the listed items organized? In the next section, I present the CM position on this which is that all listed items (simplex words, established complex words and lexicalized phrasal patterns, etc.) are assumed to co-exist with the schemas that they instantiate, in a hierarchically structured lexicon with different kinds of relations obtaining between the constructions (the listed items). This contrasts with the view of unstructured lexicon in mainstream generative grammar (cf. Chomsky 1965; Di Sciullo & Williams 1987).

2.5.2.2.1 The hierarchical lexicon

On how grammar is conceptualized in CxG, Michaelis and Lambrecht (1996: 216) observe that “[t]he inventory of constructions is not unstructured; it is more like a map than a shopping list. Elements in this inventory are related through inheritance hierarchies, containing more or less general patterns.” This underscores the view of the lexicon in CM: a structured repository of connected complexes, comparable to a map. This view of the lexicon as a network of lexical knowledge is what the idea of hierarchical lexicon captures. In the hierarchical lexicon, there are two types of relations – “instantiation” which exists between a (word formation) schema and a word that is formed by the schema and the “part of” relation which obtains between a

complex word and its constituents. A concrete example will help make the point clearer.

As discussed above, in Germanic languages, compounds are usually subtypes of their right constituents; recall the RHR (Williams 1981). This fact can be represented by the general template in (33a), which generalizes over all sets of endocentric compounds, where the variables a and b stand for phonological strings. A more specific schema with the variable substituted by specific lexical items (33b) instantiates this general template, showing what a word formed by the dominating schema looks like. The more specific template inherits every property from the general template, to the extent that the inherited features do not conflict with its specific features. The meaning specification attached to (33b) is a spelling out of the relation ‘R’ which, in this case, is interpreted as “for”, as in ‘a mill *for* corn’. (33b) again inherits features from the individual lexical items (33b) which form “part of” the compound.

33. a. $[[a]_X [b]_{Y_i}]_Y$ ‘ Y_i with a relation R to X’
 |
 b. $[[\text{corn}]_N [\text{mill}]_N]_N$ ‘a mill for corn’
 / \
 c. $[\text{corn}]_N [\text{mill}]_N$

The hierarchical structure of the lexicon results from the fact that every word is somewhat connected to another which is also connected to another. In other words, complex words bear multiple relations. For example, 33 does not stand alone as an abstract word-formation schema. It is also connected to other words in the lexicon, creating a network of related words. For example, *mill* in *corn mill* will be linked to words like *water mill*, *millstream*, *millhand*, etc. Also, *corn* will be linked to others like *yellow corn*, *corncob*, *corncockle*, etc. Such linkages create word families like

[*yellow corn*, *corn*, *corn mill*] and [*mill*, *corn mill*], etc., whose existence manifests, among others, in what is termed the “family-size effect” – the view that the larger the size of a family, the faster that word can be retrieved in a lexical decision task (cf. De Jong; Schreuder & Baayen 2000: cited in Booij 2009a: 205).

Adopting a hierarchical lexicon has advantages. One is that formally, for each individual word, only those properties that are not inherited from the dominating node may be specified. Two, because a word may inherit properties from more than one dominating node, it helps explain what may appear as conflicting properties in the same word, as in the case of the so-called mixed categories (Malouf 2000a, 2000b). Three, a property of a base may not recur in the complex word, just as not all information on a higher node may be preserved in a dominated node. As Copestake (1993: 226) puts it, ‘[t]he effect of default unification is that incompatible values for attributes are ignored, rather than causing unification failure’.

2.5.3 Criticisms of Booij’s CM

Gurevich (2006) and Melloni & Bisetto (2010) have questioned aspects of the framework and the representational mechanism employed by Booij. I review some of their criticisms here.

2.5.3.1 On the representational mechanism (Gurevich 2006)

The first problem Gurevich identifies is “[t]he limited scope of application [which] prevents Booij’s framework from being easily applied to the Georgian data” (Gurevich 2006: 33). The observation is spot-on since, as of 2005, the framework had been

applied mainly to Dutch with indication that the analyses could be applied to related Germanic and Romance languages like German, English, Italian and French. Again, it had been used to analyse compounding and derivation mainly. However, it is far from clear if, aside from sheer number (of languages), WP, which Gurevich defends, has been applied or can indeed be applied to typologically varied-enough languages to make it any different from CM (of 2005) in terms of scope of application. The issue is, however, a legitimate one and the application of the framework to Akan data will serve it well. CM has presently been applied to only few other languages (cf. Arcodia 2011, 2012a; Gaeta 2010; Koutsoukos & Pavlakou 2009).

The second point on which Gurevich criticizes Booij is that “he does not provide a mechanism for representing the morphology-syntax interaction”. This is another apt observation. However, it can be dismissed if we consider the fact that the unpinning theoretical framework – CxG – assumes a morphology-syntax continuum and rejects a modular view of grammar, making this a moot point. Again, granted that the expression of some morphology-syntax interface phenomenon is deemed necessary, it will not be inconceivable to express this in Booij’s model of CM because the tripartite parallel architecture (Culicover & Jackendoff 2005; Jackendoff 1997a, 2002, 2010) which also underpins recent formulation of the theory makes it pretty easy to account for various kinds of interface phenomena.

The third criticism, which is related to the second, is the observation that ‘the format used to represent templates and hierarchies is not yet well-defined’. This results, in part, because “it is not clear that the ‘schemas’ themselves have any status in the grammar, above and beyond the generalization that they embody” (Gurevich 2006:

34). Obviously, this relates to Gurevich's underlying scepticism about the ontological status of constructional schemas, as discussed above. This criticism is understandable but can only be justified if one sees schemas as mere representational tools with no other properties, in which case Gurevich's AVM approach cannot be shown to have any advantage over the labelled brackets employed by Booij. Indeed, to a large extent, representational mechanism of morpheme-based approaches (34a) and Booij's CM (34b) may be regarded as notational variants, except that in CM affixes have no lexical categories because they only exist as part of constructional schemas.

34. a. [[work]_V [er]_N]_N
- b. [[work]_V er]_N

However, schemas seem to have the advantage that they can be output-oriented as well (Bybee & Moder 1983; Bybee & Slobin 1982; Haspelmath 1989; Zager 1981, 1983), hence it is easy to express properties of words that do not come from any of their constituents such as tone. In some languages it can be shown that certain words have what may be termed output tone patterns that are not dependent on the tone patterns of their constituents. In such cases, the schemas for the relevant complex words could be specified to have the tone pattern in question (cf. Booij 2007b: 12-13). Akan is suggested to be such a language (Dolphyne 1988: 120). In chapter 6, I discuss compounds that are subclassified based on their output tonal melody.

It has been suggested to me by Francis X Katamba, playing the devils advocate, that the touted advantage of the output-orientedness of constructional schemas might be unreal and that what the constructionist models bring to the table are post-hoc realizational approaches in which proponents are relaxed about the relationship

between inputs and outputs. Thus, unlike traditional approaches where proponents believed that you reap what you sow, constructionists believe you can sow maize and harvest cocoa and coffee.

One cannot overlook the insightful analogies contained in the observation. However, constructionists will have to worry about these concerns if it is indeed the case that every property of the whole can be accounted for in the parts. Evidence of complex words and other constructions having properties that cannot be accounted for in the constituents abound. Indeed, it has to be pointed out that these analogies are in fact part of the very motivation behind CxG since it is pretty obvious, as discussed above that in language strict compositionality often fails.

In chapter 6, I discuss coordinate-compounds including cases where the compounding of two verbs yields nominal compounds. There, I argue that it is not possible for rule-based models to account for this without positing an abstract nominalizer which will normally be difficult to justify aside from the desire to make the compound amenable to endocentric analysis. Constructionists do not have to adopt this ad hoc measure because they can ascribe the extra-compositional property to the construction itself. Crucially, constructionists do not deny the place of the parts and their contribution to the whole. The wholes-with-parts approach simply provides for the existence of holistic properties that are not attested in the parts.

Fourth, Gurevich takes issue with the association of form and meaning. She argues that by associating forms with meanings, Booij inadvertently ends up with a stem-based approach to morphology and leaves himself with no mechanism for representing meaningless stems. She observes that for languages like Dutch, where

compound stems correspond roughly to words, this would not matter, but for the representation of inflectional paradigms, the issue of meaningless stems is important and the framework must provide for their representation.

Whereas this concern is legitimate, it does not seem to me that representing stems with specific properties is difficult at all. The idea of constructional schemas (Jackendoff 2002) as an intermediate level of abstraction between meta-schemas and the individual existing words affords a great deal of flexibility in the expression of properties of words and it can be employed to express all kinds of idiosyncratic uses of stems and the idea of a hierarchical lexicon coupled with the mechanism of default inheritance makes this even easier to do.

2.5.3.2 On parasynthesis

Melloni and Bisetto (2010) argue that Booij's CM fails to account for "parasynthetic compounds" in Slavic and Romance languages because of their peculiar ternary structure. Parasynthesis is usually seen as a derivation involving the simultaneous adjunction of a prefix and a suffix to a base, as in 35, where the intermediate binary structures in 36 are non-existent.

35. a. im-bust-are 'to put in an envelope'
 b. ad-dolc-ire 'to sweeten'
36. a. *in+busta *bust(a)+are
 b. *a+dolce *dolc(e)+ire

The property of parasynthesis is also claimed to be shared by English synthetic compounds like *able bodied*, *blue eyed*, etc. which are assumed to involve both

compounding and category-changing derivation. The two processes are assumed to be intrinsically linked since, as 37 shows, the derived constituent – *eyed*, is bound whilst the compound base – *blue eye* is not independently attested.

37. *blue-eyed* *[blue-eye] / *[eyed]

This criticism targets one specific aspect of Booij's framework, the so-called template unification, a “shortcut” mechanism which assumes that two or more independent word formation schemas can be combined to form a word which is two or more degrees more complex from a simplex base without going through the intermediate derivations, as exemplified in 38 for the English word *unforgettable*.

38. [un-A]_A + [V-able]_A = [un[V-able]_A]_A

For synthetic compounds, Booij (2007a) claims that Dutch compounds like *brand-bluss-er* ‘fire extinguisher’ or *gif-meng-er* ‘poison mixer, poisoner’ would be derived by means of the conflation of N-V compounding and the suffixation of *-er* to the compound. This is the result of the unification of the independently attested schemas [N-V]_V and [V-er]_N yielding the schema [[N-V]_V -er]_N for synthetic compounds.

Melloni and Bisetto argue that Booij's CM fails to account for Slavic data like 39 and that the framework of Ackema and Neeleman (2004) handles this phenomenon better. Without going too much into the details, it is difficult to see that this criticism is not merely a case of preference for one theory over another since Booij's theory is constructionist and Ackema and Neeleman's is a syntax-all-the-way-down (word formation-in-syntax) framework.

39. both [Stem1+Stem2] and [Stem2+affix] are non-existent lexemes,

<i>strel</i> + <i>obraz</i> + <i>n</i> – <i>yj</i>	‘arrow-shaped’
arrow + shape + Sud. _A – infle _{MASC/SG/NOM}	
with * <i>strelobraz</i> / * <i>obraznyj</i>	(Russian, Melloni & Bisetto 2010: 206)

On the substantive issue of how parasynthesis is handled in CM, where template unification is employed, a legitimate question will be how, if possible, does one ensure that the output (unified) schema has the right properties and constituent order. For example, in 38, what prevents [un-A]_A from being embedded in [V-able]_A instead of the other way round? An even bigger question will be why, being a non-derivational framework, construction morphologists would not just concentrate on characterizing the structure of the surface form of the complex word. Why can we not say that the so-called unified template exists on its own in the lexicon as a schema for forming the multiply complex words that instantiate it instead of assuming that the unification takes place online every time the pattern is instantiated?

A hint of template unification is found in Goldberg's (2006: 10) observation that “[c]onstructions are combined freely to form actual expressions as long as they are not in conflict”. Regarding this, Bod (2009: 130) asks: “is the combination operation between constructions a concatenation operation, a substitution operation, a unification operation, some integration of these three, or something different?” He goes on to suggest that “at least a notion of substitution is involved if a construction with open slots or variables is combined with another construction.”

Bod's concern is germane to the discussion of template unification in CM. There should a clear definition of the combination operation involved in template

unification. What is the operation? It seems that the main (if not the only) operation is that of substitution, where a schema substitutes for an open slot in a constructional idiom. As template unification is presently formulated in CM, it seems, the only prerequisite for the substitution operation is a matching of the syntactic category of the variable open slot and that of the schema that unifies with it. However, it is clear from the literature (cf. Croft & Cruse 2004; Langacker 1987; Taylor 2002) that elaboration sites impose semantic restrictions on the items that may fill them. In chapter 8 I will discuss various restrictions on items that can fill the open slots in what I have termed the personal attribute nominal construction in Akan.

An important part of generative morphology is the ability to generate an indefinite number of structures by applying recursive rules to formatives of various sorts. Lieber and Scalise (2007) question how this fact is going to be handled in the framework of CM. I am not aware that Booij has addressed this query directly but it is clear that the mechanism of template unification can be employed to handle recursion and by so doing answer the question of generativity. That is, if we assume that template unification makes it possible to combine constructions of varying degrees of complexity and that the only requirement is that the constructions should satisfy some specific constraints, then we have the mechanism for handling recursion.

2.6 Conclusion

In this chapter I have discuss the conceptual basis of the present thesis. I have shown the various approaches to the analysis of complex words – the morpheme-based approaches and the word-based approaches. I have shown that the morpheme-based

approaches fail to account fully for the range of morphological data that we expect to find. Their main weakness is that they assume that every property of the whole can be accounted for in the constituents. I have introduced various constructional approaches to morphology and opted for Booij's model.

The discussion of the Akan data shall be underpinned by the following constructionist assumptions:

- a. The basic unit of organization is a morphological construction – a pairing of form and meaning (including pragmatic meaning).
- b. Constructions are abstractions over sets of related words that share form and meaning/function.
- c. Abstracted general properties are captured in terms of constructional schemas.
- d. Constructional schemas and their instantiations are organized into an inheritance network or hierarchy in the lexicon.
- e. The hierarchical lexicon is primarily an abstraction over the structure of the linguistic knowledge of speakers of a language.
- f. Constructional schemas have a primary function of motivation but may serve a secondary function as patterns for forming new forms of words and may be combined in various ways to form novel multiply complex words. That is, a complex word may inherit properties from one or more constructional schemas.

3 DATA AND METHOD, PRODUCTIVITY

Writing never really got around to providing a regular way of marking accent [...] Punctuation and capitalization serve as a rough guide to some of the rhythmic and intonation contrasts in speech, but much is left out
(Bolinger 1975: 471-472)

3.1 Introduction

The present study is based on a dataset of 1000 CNs in Akan which provides more information than just simple glosses of immediate constituents of the nominals. In this chapter, I discuss how the dataset for the study was built (§3.2). I discuss the data type and the considerations that went in the choice of data (§3.2.1), the sources of the data (§3.2.2), how the data was collected (§3.2.3) and how the data was processed, dealing with parsing and glossing and the related issue of the synchronic relevance of the internal constituent structure of the CNs (3.2.4). It will become clear from the sections mentioned above that the choice of some data was opportunistic whilst the choice of others was more deliberate.

In §3.3, I discuss the presentation of the data in my dataset and in the body of the thesis. In §3.4, I present some basic statistics of the dataset. Some reflections on conceptual framework and the process of data collection are offered in §3.5. In this section, I show that theoretical assumptions are important in the matter of data collection because they ultimately determine what data are collected and retained or discarded. In §3.6, I discuss the productivity as it relates to morphology and conclude the chapter in §3.7.

3.2 The dataset

3.2.1 Data type: choices and consequences

For the kind of data-driven descriptive account of Akan CNs envisaged in this study, we need ample naturally occurring data, spoken or written material produced with the sole aim of meeting genuine communicative goals. Data of this nature are regarded as ‘the best quality and the most authentic [...] data type’ (Schneider 2003: 69) and ‘the most natural kind of data available, illustrating language use with the least possible conscious control’ (Bauer 2007: 84).

Ideally, such data are got by recording speakers in their natural environment, possibly without the speaker’s knowledge so that there will be no inhibition of any sort. However, apart from the unethical nature of the prospect of recording people’s speech without their consent, working with naturally occurring spoken data has other processing difficulties. First, spoken data will have to be recorded (manually or electronically). Handwritten notes may not be completely reliable since the researcher may miss important details. Electronically recorded data are more reliable, but the process of transcribing the data can be extremely time-consuming. Secondly, it is difficult to predict the occurrence of the particular feature required in sufficient numbers and contexts. Therefore, there is usually the need to supplement such naturally occurring data with elicited data.

Although elicited data do not occur naturally, they are first-hand, empirical and unearth relatively large samples of controlled data collected within a relatively short time, allowing the researcher to focus on points of interest and to collect data which

occur rarely in naturally occurring data (Bauer 2007). Elicitation, however, comes with the problem of the *observer's paradox*, the view that the presence of an observer influences the observed event. As (Bauer 2007: 85) puts it, "an observed interaction is not exactly like an unobserved one because it is observed." I did not elicit data but I sought other native speakers' judgement on the acceptability of form and tonal pattern of some nominals which are duly acknowledged in the relevant sections of the thesis.

Regarding the problems of naturally occurring spoken data mentioned above, it is worth noting that the situation may not be particularly different if one chose to use data from written data, since the only step that the analyst gets to skip is the transcription of data. Nevertheless, as I discuss below, I use data from written sources mainly because of the limited time and resources at my disposal and the amount of work that I would have had to do if I used freshly recorded spoken data.

Aside from cutting out transcription time, one advantage of using written data is that they are natural, since they are written purposely to meet genuine communicative needs and not for research purposes. For example, the Universal Declaration on Human Rights (henceforth UDHR) is meant to communicate the ideas of the declaration and not much besides. It is, therefore, an excellent source of naturalistic data. A further advantage is that such data are also cleaned up already and very stable. Thus, the potential of a speaker being influenced by the context (environment) is eliminated completely together with the observer's paradox.

Notwithstanding these advantages, using data from written sources brings with it the problem of not having access to vital prosodic information and, for a tonal language

like Akan, where subtle tonal changes may correlate with semantic differences, relying on written sources only could have implications for the conclusions to be drawn from this study. To remedy this, where tone was absolutely important in making a decision, as in the discussion of the compounds, especially in chapter 6, I relied on my native speaker's intuitions to guide me. I also had the benefit of the judgement of eight other native speakers (six linguists and two non-linguist postgraduate students), when a second opinion was necessary, usually relating to dialectal variation in tone marking. Because I did not seek the judgement of all these consultants on each specific issue, I do not have a basis for reporting on inter-rater reliability. In future work in this area, it would be useful if more attention could be paid to this.

Feldman (2010: 388) says of written text that “[i]t cannot be meaningless because reading text does create broadly predictable effects. The key is that a grammar and the accompanying beliefs and desires describe the cultural conventions of communication and other conventionalized knowledge for an LC [language community]”. This, for me, supports the view that aside from the loss of prosodic information (tone melodies, for Akan, because Akan does not mark tone in the orthography), not much is lost when one utilizes written text for the kind of investigation undertaken in this study.

Finally, the static nature of written texts means that, depending on how old the text is, the analyst is likely to miss recent developments in the language. This, however, is a weakness that any other kind of data source is prone to, with time.

3.2.1.1 Sampling: attaining representativeness

Ordinarily, in the selection of material to include in a database, one would be careful to ensure some degree of representativeness of genre, styles, dialect, etc. As will be shown below, some attempt was made to get data from the three major dialects of Akan and to include data from different sources. However, achieving equal representation of all dialects, genres, styles, etc. was not thought to be absolutely necessary because I do not think that word structure in the language (and probably lexical choice) is sufficiently varied across dialects, (genre or style). I make no definite pronouncement on this matter, however,

Again, it was not my aim to do a corpus-based study because first, my focus is not on the external syntax of CNs for which a real corpus of annotated text would have been an absolute necessity. Rather, my focus is on the internal syntax of CNs (i.e., CNs as morphological constructions). This means that I needed individual CNs, parsed and glossed. For this kind of study, the standard practice seems to be that individual items are collected from grammars. One effect of this is that there can be data-recycling, where some sets of data appear in almost every publication on the subject matter in the language. There is a fair amount of such data recycling in the literature on Akan CNs. To avoid perpetuating this, I sought primary written data from sources which I name below with some reflections on the nature of the data collected.

3.2.2 Data source

The present work is based on a set of 1000 complex nouns collected from a variety of sources – both published and unpublished. The unpublished sources are four PhD

theses – Boadi (1966), Osam (1994a), Abakah (2004), Marfo (2005) – and one MPhil thesis – Appah (2003). These were chosen because they present the subject of Akan CN formation from various perspectives. The data from these works are mostly collected from some of the published sources which I also consult, including Christaller (1875, 1933) and Dolphyne (1988). Other published works that I consult are Balmer and Grant (1929), (Welmers 1946), Warren (1976)³⁵ and Obeng (2009) as well as others that I mention below. It is clear that some of these sources are pretty old. Therefore, one may question the extent to which the data from these sources reflect the contemporary structure of the language. However, as a native speaker, I find that the CNs and the constructions in which they occur do not differ from constructions found in contemporary usage of the language.

3.2.2.1 Specific data sources and data collected

In the second semester of the 1997/98 academic year, I took a course in the morphology and syntax of Akan, at the University of Ghana (UG). Among other assignments, students were asked to collect CNs. The collection later became known as “clausal nouns” because most of them were assumed to be formed from clauses. The lists of 167 clausal nouns form part of the dataset. This list has no English glosses and no information about their morphosyntactic makeup. I relied on my (native speaker’s) intuitions in parsing and glossing them.

I had 368 CNs bearing the human identify suffixes *-n(y)i/-fo(ɔ)* with English glosses. They were collected in 2008 from a printout of the database of the Akan dictionary project, at the Linguistics Department, UG, that is aimed at revising Christaller’s

³⁵ Warren lists about 5,000 words collected from Christaller (1933) as well as data on diseases and medicine which he collected in 1968.

(1933) dictionary of Akan. I also collected 67 CNs from Osam's (1994a) list of Akan noun classes and 67 compound nouns from Marfo's (2004a) chapter on Akan N-A and N-N compounds.

Aside from the data mentioned above which are undifferentiated dialectally, I collected some data that were specifically selected because they were written in one or another of the three main dialects of Akan. They are a short passage written in Fante, found in appendix 1 of Osam's (1994a) PhD thesis and a Fante reader on fishing for standard four students – *Apokɔ ho nyimdzee* ‘the knowledge of fishing’ (Otoo 1946) which I referred to in chapter 1. From the former, I collected 24 CNs and from the latter, I collected 306 CNs.³⁶ I also collected 226 CNs from “Plato anoyi” (Ofosu-Appiah 1977), an Akuapem translation of *Plato’s apology of Socrates*.

Finally, from the Asante translation of the UDHR (accessed, 07 June 2010, from <http://www.ohchr.org/en/udhr/pages/Language.aspx?LangID=ass>) I collected all the 148 CNs. This text shows how the translator had to be innovative in coining forms of words that approximate semantic nuances that otherwise would not be expressed in Akan. For example, the near-synonyms *liberty* and *freedom* are ordinarily expressed in Akan with the same word – *fahodie*. Yet the two English words are used in slightly different ways in the original document. So the translator employs a new form which combines compounding and affixation together with the permutation of the elements of the word *fahodie* to arrive at another form for liberty – *ahofadie*. This attests to the productivity of the relevant noun-forming strategies, as discussed below. Also the

³⁶ This book is about an experienced fisherman teaching school children how fishing is done, what one needs to be a good fisherman, the social structure of fishing communities and the joys and dangers of fishing. I found this material useful because it describes the activity of fishing in various contexts. I expected to find various activities described either with verbs or nouns, giving rise to action nominals.

formation of this word and the context in which it is used shows the extent to which pragmatic considerations may influence the choice of nominalization strategy.

Another notable observation that can be made about the translation of the UDHR, though not germane to our interest, is the confusion that cultural influence on language may cause. As van Nes et al. (2010: 313) observe, “[l]anguage differences may have consequences, because concepts in one language may be understood differently in another language”.

In English, *rights* and *responsibilities* are two different concepts and so when speakers of English want to express the tacit implicational relation between rights and responsibilities, they express it with a sentence like *every right comes with a responsibility*, *With every right comes great responsibility*, *every right implies a responsibility* (or some other variant). In Akan, the two concepts are lexicalized in the word *asedee* ‘right/responsibility’. Thus, when the translator uses this word and one is not aware of the context, a concept like *Everyone has the right to education* (article 26.1) could easily read *Everyone has the responsibility to get education*.

This confirms the fact that some meaning may be lost during translation from one language to another (van Nes et al. 2010). But, what may be lost in translation may be as much a matter of what is readily available in the lexicon for the expression of the intended meaning as it is a matter of the translator’s ability/willingness to exploit the available word formation strategies to form words that capture the intended meaning.

From all the sources mentioned above, I created an initial composite list of 1373 CNs (Table 3), which was trimmed down to 1000. In the next section, I discuss how I went about capturing and processing the data.

Table 3. Sources of data and number of CNs collected from each source

Text	Title	Author/Source	No. of CNs
1	Plato Anoyi	Ofosu-Appiah	226
2	UDHR	UNO	148
3	Apokɔ Ho Nyimzee	S.K. Otoo	306
4	-nyi/-foɔ nominals	Akan dictionary project printout	368
5	Clausal nouns document	L300 Ling students, UG	167
6	Osam 1993	E. Kweku Osam	67
7	Osam 1994 (PhD thesis)	E. Kweku Osam	24
8	Marfo 2006	Charles Marfo	67

It should be obvious by now that I did not collect data directly from some of the sources named above – Christaller (1875, 1933), Balmer and Grant (1929), Welmers (1946), Dolphyne (1988), Abakah (2000, 2004, 2005a), Appah (2003) and Obeng (2009). They are listed because I refer to some specific data from them in some portions of this thesis, where they are duly acknowledged.

3.2.3 Data collection

Approaches to the classification of words are many. A distributional approach is adopted by structuralists and generativists (Aarts 2007; Palmer 1971) whilst cognitive linguists adopt either a semantic (Langacker 1987) or semantic-pragmatic approach (Croft 2001). Psycholinguists, on their part, stress the role of phonological cues in grammatical categorization (cf. Hollmann 2012). These approaches are not without weaknesses. Meaning, for example, is noted to be particularly unreliable as a criterion

for establishing the syntactic category of words because the same meaning may be expressed as a noun in one language and as a verb in another or even in the same language. Therefore, meaning must always be used together with other, usually formal, criteria.

The distributional method seems to be more reliable. The underpinning idea of distributional analysis is that members of a syntactic category do not occur just anywhere in a construction; their occurrence in a construction is relative to the ROLE they fill in the construction. Thus, in distributional analysis, syntactic categories are defined by the occurrence or non-occurrence of their members in different types of utterances (Croft 2001: 11). In other words, in this approach, a category may be posited based on the typical behaviour of its members in syntactic structure, usually supported by semantic evidence. For example, nouns in a language can be posited based on their occurrence in subject/object positions in syntactic construction for a language like English where word order is important in establishing grammatical relations. In another language with free word order, inflection (case/number marking) may be used to establish the nounhood of lexical items.

Some problems have been identified with the distributional analysis which Croft (2001) has grouped into two. First, some of the constructions based on which the syntactic categories are established in one language may not be present in a language that is being worked on. Secondly, the morphological features may not be present in the language. For example, in a morphologically impoverished language like English where consistent case marking is only found in the pronominal system, excepting genitive “s”, it may not always be possible to use morphological properties to

categorize words. Again, we cannot be sure that what a particular criterion picks out in a particular language (L1) may be directly comparable to what exists in another language (L2) (cf. Croft 2001: 30).

The known approach to dealing with these problems has been termed CROSS-LINGUISTIC METHODOLOGICAL OPPORTUNISM (Croft 2001: 30). That is, where language-specific criteria are employed when putative general criteria for establishing word classes do not exist in the language or they fail because they give the “wrong” results according to one’s theory.

Croft clearly shows that the distributional approach to the categorization of words is inadequate in that the constructions based on which the classes are identified tend to be language-specific, leading to the positing of classes that tend to be without cross-linguistic validity. However, in my view, relying on language-specific criteria to determine the class of words is legitimate to the extent that one is not engaged in a typological study or one does not seek to claim that the result of the study in question is scalable to similar related or unrelated languages.

Discussing distribution as a criterion for establishing lexical classes, Hollmann (2012) acknowledges the generative grammar use of the subject slot to define the nouns and observes that the object slot will have the same predictive value since it also performs the role of keeping track of (or setting up a cognitive file for) a referent (Hollmann 2012: 683). I follow Hollmann (2012) in assuming that the nouniness of the complex forms discussed in the present thesis can be assumed to be established if the form in question can occur in a typical subject and/or object slot(s).

hon nye no ko. Mbanyin no wɔdze hon eloa na hon ahodze kakra dze fa po do ko, na mbasiafo no so nantsew anaaso wɔfa lɔre. Afarfo nnto de wɔhye hon mbasiafo fa po do ko **apoye**.

Se wodu a wokotua hon amandze dze ma kurow no mu obien anaaso **apostoleng**; se sika unyi hon ho a nantsew anaaso obi a no ho wo kabea dzi hon egyptianu, ma wɔhye hon da a cmc de wɔdze tua amandze no.

KOBENA: Papa, na amandze ase nye den? Menntse ase.

P. KODWO: Mpanyimfo ayt ne bt de "Se oħċċi soċċi oħċċi wo a, nna oħġi n'adzeadze nyinara abosor wo."

Apoyeo kó ananabea a nna hon siar anaa hon mbusu so kurow no a waakċi mu no mu mba. Wonya nkwa a wonya ma hon; na ndzinoa biara a **ekutomfo** no hon nsa kā no, hon so wonya bi. Se wɔkċi po dem, na se wohyia **ehyakwa** bi a, wobenya mboa efi aħtmabu nkka no a cmc kurow no no mu no ho. Onam de **apoyeo** no hon **kosa** na hon **bata** gyina ċman a wɔgħye fi apoyeo no ho no wɔtoto no dzin **amandze**. Oni nye de **eman dze**.

Ansaana wɔbhejx **apolo** ase no, basia a onye hon kɔree no wɔ de ɔħweħżeż hon a onye hon bedzi **bataboa**, osiande no nko onnkotum ayt nam dodow a **asankifo** no benya no ho edwuma. Nam a onya no kese no oħċi no **eguston**; kumaabi na otum how.

Afei mebékkyere soronko a oħra **apoye** na **spotva** mu. De mbret makā no dada no, se oħye na kurow bi no po mu pra, anaaso de nam fi hon po mu kó a, afarfo kā ahembja kó ketsena beebi a wəda ho nyia nam kotwaa po, oni nye de wɔkċi beebi a nam no da ho wɔ nsu mu anaaso beebi mbret nam no renantsew kó no. Ho na wokedzi beyx abosoom ebiasa. Nam

Figure 6. Sample data source with data highlighted

As noted above, some of the forms were already classified as nouns in the sources from which they were taken. For those ones, they had to conform to our criteria for CNs – that they contain two or more recognizable constituents. For affixed words, it

was usually easy to tell that they are complex words. Identifying compounds was not that straightforward because the linear order of their constituents and even the grammatical relation between them might be shared, *mutatis mutandis* by syntactic constructions (cf. Guevara & Scalise 2009: 104), a situation which engenders debate about whether compounds are morphological objects (i.e., words) or syntactic objects (i.e. phrases). I discuss how compounds and phrases may be distinguished in chapter 4, showing that, for some of the so-called compounds, there is room for debate on their wordhood. This problem is real because we are using written data with no prosodic information.

As far as the CNs got from written texts are concerned, the primary basis for their classification as nouns is the distributional method. From the written texts, I collected all the CNs, by reading the text and underlining CNs on the basis of their forms, context of use and meaning. Figure 6 shows a sample page with CNs highlighted. The first item highlighted in the third paragraph in Figure 6 is *apoyefo* ‘fishers/fishermen’. This is categorized as a noun because it occurs as the subject of the verb *kɔ* ‘to go’. In addition, it bears the human identity suffix *-fo*, which together with its uniquely singular counterpart *-nyi*, occurs on nouns only. I discuss this further below.

3.2.3.1 On the suffixes -n(y)i/-fo(ɔ) as criteria for nounhood

The use of affixes as a way of identifying a particular word class is one of the distributional criteria found in the literature. Crystal (1967) cited in Aarts (2007: 102) provides four criteria for determining nounhood: (i) ability to act as subject, (ii) ability to take number inflection, (iii) ability to co-occur with an article, and (iv) ability to take a nominal affix.

For the application of the first three criteria, it is important to have a corpus of text showing the exact context in which the CNs occurs. As I indicated above, for the nouns that I collected from written text, the context/distribution was the primary consideration for their selection and so that takes care of the first three criteria. Those collected from wordlists and dictionary entries are largely decontextualized and so it is the forth criterion – the presence of nominal suffixes on the complex forms – that we can use. For our purpose, I employ the Akan suffixes *-n(y)i/-fo(ɔ)* which occur on nouns only.

Palmer (1971: 60) observed that when Dionysius Thrax proposed formal definitions of word classes based mainly on morphology, he ended up putting nouns and adjectives in the same class because in Greek, both have the same endings. Palmer, therefore, questions whether morphology should determine word classes at all. For me, using morphology as a criterion for classifying words becomes problematic only where the various word classes cannot be uniquely identified by means of the affixes they bear. Thus, where the uniqueness of the endings for the various classes can be assured, the endings may be legitimately employed to classify the words.

In the case of Akan word classes, it is clear that the suffixes *-n(y)i/-fo(ɔ)* only attach to nominal bases to form personal nouns. Hence, I treat as a noun any word that bears either of these suffixes. I will be employing this criterion extensively in chapters 5-8.

3.2.4 Data processing: parsing and glossing

I noted above that some of the data have English glosses from their original sources. For others I provided the glosses. I parsed and glossed the CNs based on my native

speaker's intuition and what I know about words with similar forms and functions from other languages and the literature on noun formation. I also consulted other native speakers where I was not sure about my judgement. As a further step of quality control (verification/falsification), I consulted Christaller's (1933) dictionary of Akan.

At this stage of the process, I discarded those nouns whose meaning neither I nor any of my consultants knew for certain and so could not be glossed. The decision to jettison such not-easily-glossable nouns was made easy by the fact that I had targeted 1000 nominals. Thus, I could delete as many as I had to until I got the 1000 nominals.

To make the glosses manageable, I manipulated them in another way that has implications for the makeup of the dataset. Akan nominals can be long with one or more CNs embedded in other more complex ones. For example, *adzesuafø* 'student/apprentice' contains the CN *adzesua* 'learning/education', from *sua* 'to learn' and *adze* 'thing'. Where such existing CNs occur as constituents of more complex ones, I glossed the former and kept it as a unit with its meaning in the gloss for the latter. By analogy, where a CN contained other actual or potential complex bases that did not occur elsewhere in the dataset, I extracted them and gave them their own entries with glosses so that they occur in the more complex word with their gloss.

This methodological choice has two advantages. One, the parses of the CNs are shorter than they would be otherwise. Two, duplication of glosses is prevented. It, however, means that some forms which did not occur on their own in the initial dataset of 1373 nominals, made it into the last 1000 CNs because they occurred as constituents of other CNs.

3.2.4.1 Deciding on synchronic relevance of diachronic reality?

In processing the data, I had to make major decisions about what information to consider synchronically relevant. One may sense some affinity between a CN and some other construction in the language. This is how we realize that personal attribute nominals (chapter 8) are motivated by predicate adjective constructions. However, it is not always easy deciding whether what one considers a motivating construction has any synchronic relevance. So whereas I felt that some of the forms could be traced back to some other constructions, it was not always clear whether to present that as part of the synchronic reality of the language. Whose reality was I supposed to represent, the great grandma's or the current teenager's reality?

The issue of synchronic relevance has implications for the related issue of transparency. Competence in a speech community is not uniform. What might appear opaque to some speakers who do not know the etymology of an expression might be clearly transparent to others who are familiar with its etymology. Katamba (1993: 72-3), discussing the semantic opacity of compounds, observes that in some cases delving into history might show that some of the complex words that are synchronically opaque originally had a literal meaning which got superseded by later metaphorical extensions. He exemplifies this with the compound *deadline* which, in the American Civil War, referred to the line around the perimeter fence beyond which soldiers were not allowed to go. If a soldier crossed the *deadline* he risked being shot for desertion. Thus, some forms are considered opaque because their etymological histories are not available to the speakers or analysts.

Wray (2002: 3-4) makes the following observation in discussing formulaic language:

Many personal names have ‘meanings’ which we simply ignore: we do not expect someone called ‘Verity Baker’ to be a truthful bread maker, or someone called ‘Victor Cooper’ to win barrel-making competitions. [...] We also overlook the internal composition of a great many words. Although there is a historical reason why a ladybird is so called, there is no more sense in decomposing the word than there is in falsely breaking down *carpet* into ‘car’ and ‘pet’.

Thus, there may be reason to believe that some complex forms have internal structure with histories. However, speakers tend to ignore them to the extent that they do not impede the use of the complex units. Hence, being pedantic about some putative history of the internal structure of every complex forms may be a distraction. I decided, therefore, to include just as much information as I thought would make sense to me as a synchronic user of the language while maintaining any information (in the glosses) that could be defended with reference to external realities. An example is the word *bo(ɔ)* ‘price’, originally *stone* which occurs in *abooðen* ‘dearness’, which is discussed in chapter 8.

3.2.4.2 On standardizing the data

Given the fact that I collected data from the three major dialects of Akan some level of standardization would be advisable because of the orthographic differences. However, I chose to maintain the data in the various dialectal orthographies, to prevent the loss of interesting morphological features, such as what we call Asante Final Vowel (AFV) described below. Other dialectal differences are phonological and nothing of theoretical significance hinges on them, in the present dissertation.³⁷

³⁷ The dialectal phonological differences are treated extensively elsewhere (cf. *inter alia*, Schachter and Fromkin (1968); Dolphyne (1988); Abakah (2004)).

Where the same noun occurred in more than one of the dialects, I kept only the one that had additional morphological features compared to the others. For example, the Asante word for ‘(the act) of walking’ *nante-e* has a final vowel [-ɛ] which does not occur in the two other dialects, Akuapem and Fante, so if the two versions occurred, I would choose the Asante form and put the other(s) in parenthesis by it. In the examples cited in the body of the thesis, such parenthesized dialectal alternatives are mostly removed to save space and to keep the examples tidy.

3.3 Data presentation

The dataset, as presented in appendix 1 (see a miniaturized version in Table 4) bears marks of its morpheme-based provenance. The second column lists the orthographic form of the nominals, arranged according to their stem-initial sounds – vowel or consonant. The third column presents the morphemic make-up of the word, with every morpheme glossed. Where no conceivable gloss can be given in the relevant context, it is glossed as S(tem) E(xtender) to show that it is a morphemic form. Further research should reveal more about the source of those forms. The fourth column gives the putative underlying constructions and individual words. Where the form that is listed is a sentence, it should not be taken to mean that we claim that the CN is formed from the sentence, but that it illustrates a syntactic construction containing the same sets of constituents that occur in the CN.

The morphosyntactic processes broadly construed to mean any process by which a new CN is formed are named in column five. Lexicalized forms (LEX) are either full phrases or sentences or partially stripped down versions of the same which occur as nouns, probably as a result of univerbation. They have invariant forms, which makes

them different from other CNs. Head-dependent Inversion (HD-Inv) describes the phenomenon whereby the linear order of what is obviously a head and its dependent (argument or modifier) occurring in a CN is the opposite of what obtains in an analogous phrase containing the same set of constituents. The other categories in column five are self-explanatory – Comp = compounding, Aff = affixation, RED = reduplication and tonal alternation.

Table 4. Structure of the dataset

	Derived nominal (lexical forms)	Morphemic Makeup (internal make-up of the nominal)	Base/Source Construction	Morpho-syntactic Proc	Internal constituent structure of every complex form in the nominal	Internal structure of IC	Immediate constituent Structure	Head		Semantic class	Phon_Proc
								Formal	Semantic		
1	àbébéwú	bé-bé-wú palm_tree-FUT-die 'the palm will die (a drunkard)'	àbé bé- wú palm_tree FUT-die 'the palm tree will die'	• LEX	[[N], [be-V] _j] _{IP}	[[N], [V] _j] _{IP}	[N+V]	N/A	N/A		
2	àfòwàsíí	àfòwá-síí sword-half 'penknife'	àfòwá 'sword' síí 'half'	• Comp	[[N], [A] _j] _{NI}	[[N], [A] _j] _{NI}	[N+A]	L	L	Result	
3	àgó(r(ú))	à-gó(r(ú)) NMLZ-to_play 'a play/game'	gó(r(ú)) 'to play'	• Aff	[a- [V] _i] _{Nj}	[a- [V] _i] _{Nj}	[a- [V]]	Pref		Prod	
4	àgòrùkyèréw	àgòrù-kyèréw play-write 'play wrighting'	kyèréw àgórú write play 'to write a play'	• HD-Inv • Comp	[[a- [V] _i] _{Nj} [V] _k] _{Nx}	[[N], [V] _j] _{Nk}	[N+V]	R	N	Act	
5	àgòrùkyèréw!fó	àgòrùkyèréw-fó play_writeing-NMLZ 'playwright'	àgòrùkyèréw 'play writing'	• Aff	[[a- [V] _i] _{Nj} [V] _k] _{Nx} -fó] _{NY}	[[N], -fó] _{Nj}	[[N] -fó]	Suf		Agent	
6	àgó!séím	àgó-/séím play-matter 'sport (joke/jest)'	àgór 'play' àséím 'matter'	• Comp	[[a- [V] _i] _{Nj} [N] _k] _{Nx}	[[N], [N] _j] _{Nk}	[N+N]	R	N	Prod	
7	twùwií	twùw-ii drag-NMLZ 'fishing by dragnet'	twúw 'to drag'	• Aff	[[V] _i -ii] _{Nj}	[[V] _i - I] _{Nj}	[[V] -I]	Suf		Act/Result	
8	wàníní	ɔ-wà-níní SG-snail-male 'a large snail'	wá 'snail' níní 'male'	• Comp	[[N], [A] _j] _{NI}	[[N], [A] _j] _{NI}	[N+A]	L	L		
9	wàréfóó	àwàré-fó-ó marriage-NMLZ-AFV 'couples'	àwàréé 'marriage'	• Aff	[[a- [V] _i] _{Nj} -fó] _{Nk}	[[N], -fó] _{Nj}	[[N] -fó]	Suf			

The nominals whose formation process is listed as tonal alternation are the set of four nominals (Table 5) which have what appear to be mono-morphemic verbal bases and which, without any formal marking of nounhood, occur in contexts where nouns are expected. They have a characteristic H-tone on their monosyllabic stems or a rising tone where the stem is disyllabic.

Table 5. Deverbal Nouns without formal marking of nounhood (Tonal alternations)

	Derived nominal	Base	Morpho/Syntactic Process	Internal CS
1	<i>bṛé</i> ‘effort/suffering’	<i>bṛè</i> ‘to suffer’	Tonal alternation	$[[V]_i]_{Nj}$
2	<i>fé</i> ‘vomit’	<i>fé</i> ‘to throw up’	Tonal alternation	$[[V]_i]_{Nj}$
3	<i>pé</i> ‘will/desire’	<i>pé</i> ‘to like’	Tonal alternation	$[[V]_i]_{Nj}$
4	<i>pırá</i> ‘injury’	<i>pırà</i> ‘to injure’	Tonal alternation	$[[V]_i]_{Nj}$

It is known (Abakah 2000, 2004, 2005a; Christaller 1875; Obeng 2009) that every Akan noun has a nominal prefix that may not be phonetically realized. I suspect, therefore, that they are affix-derived words whose prefixes are dropped. One may argue that they could be cases of conversion or functional shift. However, that would be inaccurate, since that will be denying the role of the tone, even though for now we do not have good enough reason to believe that Akan has a “tonal morpheme.”

3.3.1 Indexation

In the representation of the patterns of nominals in the data, I use indexes to capture the feature-makeup of the CN. An example is $[[N]_i [N]_j]_{Nk}$, for the compound in (1). The indexes signal which constituent of the compound the head is. That is, because the right-hand constituent is co-indexed with the whole, it is the head of the word.

- (1) *agoru ahyiae* → $[[N]_i [N]_j]_{Nk} \leftrightarrow [\text{SEM}_j \text{ with a relation R to SEM}_i]_k$
 play meeting_place
 ‘theatre/drama studio’

As I discuss later in chapter 4, mine is a proposal to extended use of indexation in CM. That is, whereas in the dedicated CM literature (Booij 2002a, 2005b, 2007a, 2007c, 2010d, 2010c) indexes are used to identify lexical items, I give the indexes the additional task of indicating headedness in the CN.

Discussing the theory of co-indexation in lexical semantics, Lieber (2004: 45) observes that the creation of a new complex word, whether derived or compound, always involves the integration of multiple parts into a single referential unit which eventually determines how syntactically active semantic properties of a derived word are assembled. Co-indexation thus ties together the relevant subparts of a word and also shows how they relate to the whole, indicating, for example, how many arguments are projected into the syntax.

Although I do not share Lieber's view on being able to account for all the properties of the whole in the constituents, I agree that some complex forms are compositional in the relevant sense. Lieber's observation, thus, deals effectively with endocentric compounds like (1) and affixed words which are deemed compositional. However, it fails to deal with partially compositional and downright non-compositional complex words.

In the data, the index of the CN indicates whether or not the word has a semantic head among its constituents. If the index of the whole matches any of its constituents, then it means the constituent is the semantic head. If it does not match any of the constituents, then it means the complex is semantically exocentric. This means that if some constituents share headship in the complex, then their indexes should appear on the complex unit.

3.4 Basic statistics

As the forgoing discussions show, the set of CNs in Akan range from nouns which result from the lexicalization of sentences and phrases to those formed through

affixation of a single affix to a simplex base. In this section, I present the dominant patterns in the dataset. Before that I comment on the internal complexity of the nominals.

3.4.1 Patterns by their internal complexity

Working with the view that speakers extract schemas from observed patterns in groups of related words, I attempted to capture the pattern of combination of constituents to find out if the observed patterns also share meaning and other grammatical properties. It turns out that indeed structural patterns also share general semantic properties. For example, whilst compounds of the form [N-V]_N tend to express action or manner of doing the action designated by the verbal constituent (row 4, Table 4), compounds with the same constituents but the opposite linear order, [V-N]_N, express the agent of the action designated by the verb.

Ultimately, almost every Akan CN can be shown to be binary-branching (columns 5 and 6 from the right, Table 4). However, not giving due regard to the internal structure of all constituents obscures the degree of complexity of what is considered a language with a very simple morphology. Grouping the 1000 nominals by their internal constituent structure, with all the sub-constituents parsed, yields 337 different patterns (Column 6 in the dataset). This reduces significantly to 115 patterns, if we consider the internal constituent structure of the immediate constituents only (Column 7 in the dataset). This number again reduces to 101, for example, if we blur some of the minor phonological differences in the surface realization of affixes. By using super categories like PREF and SUFF instead of the particular affixes, we reduce the

differences to 92 patterns. The crucial point here is to show the relatively complex internal structure of Akan CNs as revealed in the degree of embedding.

3.4.2 Patterns by their morphosyntactic process

The identified morphosyntactic processes combine in various ways in the formation of CNs. For the morphosyntactic processes in column 5, Table 25, we find the distribution in Figure 7.

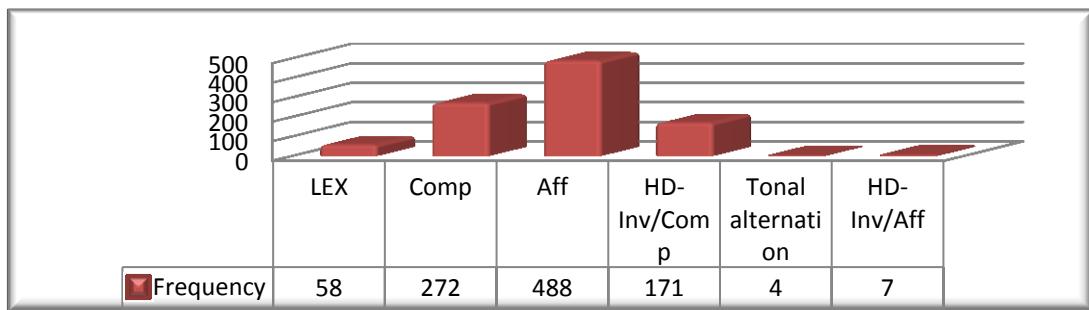


Figure 7. Distribution of CNs by their formation processes

As observed above, it has to be noted that the term “morphosyntactic process”, as used in this section and in the dataset should be broadly construed to mean “formation process” since some of the processes by which the nominals are formed (e.g. lexicalization and tonal alternations) are not morphosyntactic processes.

The nominals also share other kinds of relations which allow them to cluster in finer ways. For example, all those CNs involving HD-Inversion are either simple compounds or affix-derived nominals with compounds bases. Thus, the nominals can be regrouped, yielding the four principal types, as shown in Figure 8.

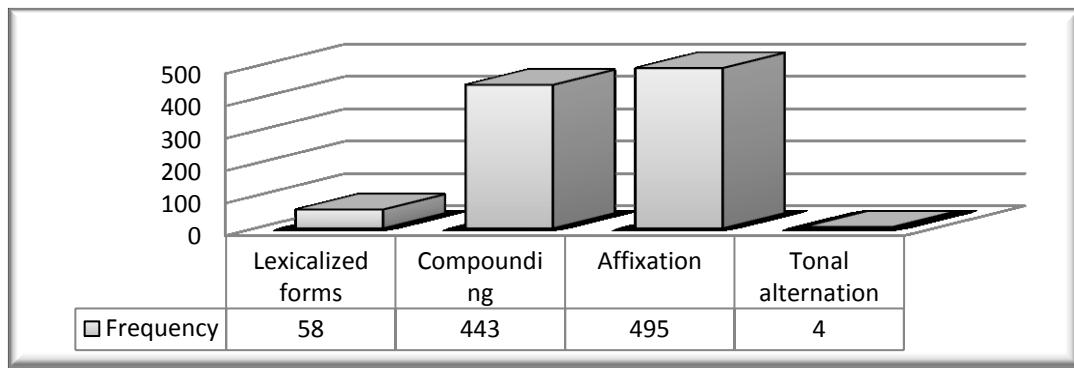


Figure 8. Frequency of nominals formed by the four principal processes

One would have thought that compounding would be the most productive strategy for forming CNs in Akan. However, the data show that affixation is the most productive strategy, with 495 (49.5%) of the 1000 CNs, followed by compounding with 443 (44.3%) of the dataset. A chi-square test reveals that the difference between the two word-formation processes is not statistically significant; $\rho = 0.08953$ ($df = 1$, $\chi^2 = 2.8827$).

This statistics should, however, be taken with some caution for two reasons. One, I have a sample of just 1000 CNs and so one cannot say what a larger sample will reveal. Two, there are some CNs for which it was difficult to tell whether particular prefixes they carried belonged to the first in a complex of two bases, making them compounds, or belonged to the whole complex, making them cases of derivation with compound bases. Where this happened, I mostly opted for the latter, taking into account the meaning and the fact that this option made it possible to group many more nominals. Thus, the sample might be skewed in favour of affix-derived CNs.

It is not possible within the limits of a dissertation to discuss all the identified patterns in the dataset in sufficient detail. I will, therefore, as noted in chapter 1, I will discuss

a well-delineated section, leaving the rest for future work. I will discuss all the compounds (chapters 5 to 7) and a portion of the lexicalized forms – personal attribute nominals (chapter 8). Thus the reason I do not discuss affix-derived words is not because they are not relevant to the argument for CM but because of the need to keep the work within manageable limits given the time and other resources available.

The delineated portion of the dataset for the present dissertation, though formally quite varied, constitutes a coherent whole in a sense: they are all treated as compounds in the relevant Akan literature. Thus, the present dissertation is about forms that have been treated as compounds in Akan. Our purpose is first, to show that not all of the nominals are straightforward compounds as the existing literature seems to suggest and to argue that a constructional approach leads to a more insightful account of the properties of Akan CNs.

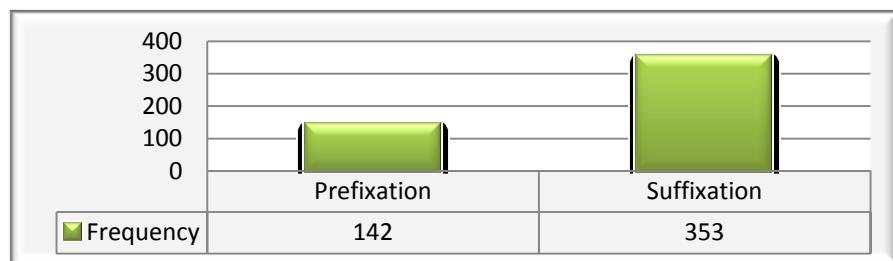


Figure 9. Frequency of affixation types

Because the study concentrates on compounding and lexicalized forms and I have commented on the tonal alternation, a comment on the affixation data will be in order at this point. As Figure 9 shows, suffixation makes up about 71% of the total number of affix-derived CNs in the dataset. This is a highly significant difference $\rho < .0001$ ($df = 1$, $\chi^2 = 96.7149$). This distribution, just like the distribution of headedness in

compounding, discussed in chapter 5, seems to support the observed widespread preference for right-headedness in morphology (Dressler 2006; Williams 1981).

Here again, the distribution should be taken with caution given the fact that I had a huge number of *-nyi/-foɔ* nominals (368, see Table 3) in the initial set of 1373 CNs. Obviously, the number of *-nyi/-foɔ* nominals initially included is more than the set of suffix-derived words in the final dataset. This is because some got deleted because there were just too many of them whilst others were part of internal constituents of compounds and so did not get counted.

3.5 Reflections: conceptual framework and data collection

The process of compiling the data for this dissertation has shown that theoretical assumptions are important in the matter of data collection since they ultimately determines what data are collected and what data are retained or discarded. I started my data collection whilst working with a morpheme-based morphological model – *word syntax*. For the proper operation of this model, a set of pristine, well-behaved (transparent) data is of the essence; every morpheme needs to be “glossable” in some way and its feature-makeup spelled out clearly. This is needed for the operation of the well-formedness mechanism of feature percolation which accounts for the final feature-makeup of the complex word.

For this reason, I discarded those complex words that contained constituents that could not be easily glossed either because they did not occur anywhere else or because, in the relevant word, the known meaning did not seem to apply. From the morpheme-based perspective, discarding the data was the right thing to do as it could

yield a dataset about which useful generalizations could be made since we could tell the contribution of each constituent.

However, that exercise was a hopeless one as it turned out that Akan nominals are not as transparent as usually presented. Thus, if one proceeded along that path diligently, there was going to be very little data left and it will be the “tragic” loss of very interesting data. In other words, discarding words that are not well-behaved in that they contain parts that cannot be easily glossed leads to the loss of potentially very interesting data. In a more encompassing model of morphology like CM, the not-so-well-behaved data turn out to be very interesting, as the discussion in chapter 8 shows.

3.6 On productivity

3.6.1 Definition

On the basis of the structure of existing complex words speakers of a language are able to form and understand new utterances. This property of a language that makes it possible for its speakers to produce and understand utterances in the language that they have not previously encountered is termed *productivity*. It is one of the most used terms in the study of morphology but its exact nature seems not to be really clear. H. Schultink, translated by van Marle (1985: 45) and cited in Dressler (2006: 30) defines it as: “the possibility for language users to coin, unintentionally, a number of formations which are in principle uncountable.” Bauer (2005: 315) observes that “[t]he productivity of a morphological process … has to do with how much (or, in the limiting case, whether) it is used in the creation of forms which are not listed in the lexicon.” Hockett (1958: 307) also characterizes the productivity of any pattern –

derivational, inflectional or syntactical – as “the relative freedom with which speakers coin new grammatical forms by it”.³⁸

It is clear, however, that some processes or means of forming words (e.g. *-th*, in *length* and *wid-th*) are not used at all in the formation of new words whilst others (e.g. *-ness*, in *bounded-ness* and *-ity*, in *human-ity*) are more likely to be used to a greater or lesser extent. Within this class, some processes or formation devices can apply to almost all the potential bases that they can attach to whilst others attach to only a fraction of the potential bases. This raises a number of theoretical questions about the nature of productivity. First, is productivity a quantitative or a qualitative notion? Second, what makes a given rule productive or unproductive? Third, if productivity is a quantitative notion, how can the productivity of a given rule/process be measured?

Viewing productivity as a qualitative notion imposes a binary distinction between productive morphological processes and non-productive processes with no grey areas in-between. Booij (2002b: 10-11), for example argues that “[t]he notion ‘productivity’ is primarily a qualitative notion.” He also argues “[w]hen we call a morphological pattern productive, we mean that this pattern can be extended to new cases, can be used to form new words. When we say that a morphological pattern is unproductive, this means that it is not used for coining new words” (Booij 2007b: 68).

Viewing morphological productivity as a quantitative notion means that it is not an all-or-nothing phenomenon. Rather, it is a cline, a gradual phenomenon whereby a

³⁸ This characterization, according to Bauer (2001b), makes productivity consistent with the design feature called ‘creativity’ (Chomsky 1965: 6), although Bauer observes that it is not clear whether Chomsky’s (1965: 5) use of ‘productivity’ in the observation that syntactic processes can be ‘productive’ is meant to have the same meaning as ‘creativity’.

“morphological process is either more or less productive than others and that completely unproductive or fully productive processes mark only the endpoints of a scale” (Plag 2006: 121). Thus, research in the area of morphological productivity seeks to find the most efficient measure of the degree of productivity of a word-formation pattern³⁹.

Bauer (2001b) captures this two-way distinction between qualitative productivity and quantitative productivity in what he terms *availability* (a process is either available and alive, or it is unavailable and dead) and *profitability* (the extent to which available processes are exploited in language use). A process that is unavailable cannot be profitable. Thus, to measure the productivity of a process is to determine, first of all, that the process is available and then to determine how profitable that process is by some means of determining the number of coinages.⁴⁰

It is, obvious that we cannot determine productivity just by counting the number of complex forms that instantiate a particular morphological pattern in a corpus or dictionary, because that does not tell us the extent to which the relevant pattern has been or can be expanded (Booij 2002b: 12). Thus, there have been ways of measuring productivity going back to Aronoff (1976: 36) who proposed that the index of productivity should be seen as the ratio of actual to possible words, where ‘actual words’ refer to existing established words, and ‘possible words’ refers to all conceivable words which, if they existed, would be morphologically well-formed

³⁹ It is worth noting that productivity is not only used in the context of morphology, but for larger (‘syntactic’) constructions as well. See, for example, Barddal (2008).

⁴⁰ For Bauer (2001b: 41) “[p]roductivity is all about potential. A process is productive if it has the potential to lead to new coinages, or to the extent to which it does lead to new coinages. We are aware of productivity only through the new coinages and the patterns of familiar and unfamiliar words coined by the relevant process.” Therefore, what has to be determined is the potential productivity of a process.

according to the relevant word-formation rule. This is formalized as (2), where V = number of types and S = the population size (the number of forms that the word formation rule could have given rise to (Lieber 1992: 2). For Aronoff, then, productivity is a relationship between possible words and actual words and the higher the index, the higher the productivity of a given rule.

$$(2) \quad I = \frac{V}{S}$$

This approach has a number of weaknesses discussed extensively in the literature. Lieber (1992: 2), for example, observes that Aronoff's ratio is relative rather than absolute. It gives no means of distinguishing between patterns that are totally unproductive from those which are marginally or truly productive. Secondly, it is not clear how to arrive at the S , the number of types that could potentially be formed by means of a given morphological pattern. Williams (1981) observes that certain affixes potentiate others. For example, *-able* potentiates *-ity*. Therefore, the productivity of *-ity*-derived words is affected by the productivity of *-able*-derived words, making it almost impossible to determine the actual productivity of *-ity*. Finally, the index of productivity for very productive affixes vanishes, as Plag describes in the following:

it makes wrong predictions for extremely productive and completely unproductive processes. For example, for highly productive affixes such as *-ness*, the number of potential words is, in principle, infinite, which yields a very low productivity index. Unproductive rules such as *-th* nominalization pose the problem that the ratio of actual to possible words is very hard to calculate. If one considers all actual words with this suffix as possible words, the ratio equals 1, which, counterfactually, would indicate full productivity. Alternatively, if the number of possible words with this suffix is considered zero, the index cannot be computed at all.

(Plag 2006: 122).

An alternative approach which has its source in Baayen (1992), is premised on the understanding that a basic feature of a productive word-formation pattern is that it leads to hapaxes, “new word types that occur only once in a corpus, and clearly do not belong to the set of established words” (Booij 2007b: 69). Here, the degree of productivity P of a morphological pattern (e.g. *-ity*), formalized as (3), is the proportion between the number of hapaxes with a given affix (n_1) and the total number of all tokens N of complex words containing that affix in the sample. Thus, “[t]his ratio represents the probability of finding a hitherto unattested word … among all the words of that category”, so that “[a] large number of hapaxes leads to a high value of P , indicating high productivity. Large numbers of high-frequency items lead to a high value of N and hence to a small value of P , which indicates low productivity” (Plag 2006: 123).

$$(3) \quad P = \frac{n_1}{N}$$

where n_1 is the number of types occurring only once in the item sample of N tokens, called hapaxes (Baayen 1992: 115).

The use of hapaxes as a measure of productivity can also be misleading, however. It is possible that the particular pattern has a relatively large number of hapaxes in the sample of token words only and that it does not really create many new words because the kind of word in question is not very useful, lacking “high pragmatic potential” (Booij 2007b: 70). Therefore, to get a more accurate picture of the pattern’s contribution to the growth of the lexical stock of the language, another measure of productivity – the global productivity P^* is used. This is arrived at by dividing the number of hapaxes of that morphological type in a corpus by the total number of hapax words in that corpus.

Clearly, the foregoing measures of productivity are mostly useful for large corpora. Hence, the small size of my dataset (of 1000 CNs) makes any attempt at a real quantitative assessment of productivity not worthwhile. I will, therefore, assume an intuitive view of productivity, based on the raw frequencies of the types identified in my dataset as a gauge of potential productivity of those types.

Jackendoff (2008: 16) observes that “[a] productive rule [schema] has a variable that can be filled freely by anything that meets its conditions, and so the rules can be applied to novel items.” Mos (2010: 107) holds a similar view of productivity, arguing that “[a] construction is productive if speakers have in their constructicon a (partially abstract representation or template, with at least one element that is not lexically specific.”

I will follow these scholars in operating with the view that a construction is productive if speakers have a schematic representation of it with at least one open slot that can be filled by forms with the appropriate features. I will also assume that speakers have this schematic representation if we can find, for example, a constant element occurring in a particular position in a set of related forms, with all other elements variable and the substitution of elements in the open slots leads to well formed constructions. In other words, to the extent that we can find well-formed instantiations of a particular construction, that is, to the extent that we can add to the instantiating construction by substituting variables in the pattern, I will deem it productive. The exact degree of productivity will mostly not be explored beyond stating what a chi-squared test reveals about the statistical significance of the difference between various frequencies.

This is because the degree of productivity is not the focus of the present study. My primary aim is to describe the identified patterns.

Of course this naturally leads to the question of whether we will deem it necessary, on grounds of economy, to regard certain forms as lexically listed rather than productively formed. However, it seems to me that there will be no non-arbitrary way of naming a threshold of productivity so any constructions with instantiations below that number may be deemed unproductive.

3.6.2 Restrictions on productivity

The productivity of a pattern/process/construction may be restricted. That is, for example, the application of a rule to potential bases or the possibility of new instantiation of a constructional schema may be hindered by several factors. These factors, normally treated under the heading of blocking (Aronoff 1976), may be grouped into phonological, morphological, semantic and aesthetic factors (Katamba 1993: 73-79) or pragmatic factors and structural factors (Plag 2006).

The pragmatic factors (Katamba's aesthetic factors), deal, for example, with the fact that the productivity of a process that is en vogue at a time, may cease to be fashionable with time. For example, *-est* and *-eth* as markers of second and third person singular respectively in English *thou think-est* 'you think' and *s/he think-eth* 's/he thinks' have simply gone out of use. Secondly, how useful the output of a particular process is, its *pragmatic potential* (Booij 2002b), determines its productivity. This is exemplified by the high productivity of diminutives in Italian (Dressler & Merlini Barbaresi 1994). Thirdly, a particular word may have a stylistic

value that makes it unsuitable in certain registers or speech situation. This also restricts its productivity (Booij 2002b: 11).

The structural factors may take the form of specific formal (morphological, phonological or syntactic) constraint(s) imposed by the derivational affix/process or construction. This has the effect of restricting the number of bases that occur as constituents. For example, the English suffix *-en* requires its base to be monosyllabic, terminate in an obstruent and be optionally preceded by a sonorant. If these are not met the word cannot be formed. Hence, *dark-en* is acceptable but not **dry-en* (Halle 1973; Katamba 1993).

Sometimes the occurrence of a particular word is simply blocked by the presence of another form that has the same meaning/function. Here, there has to be a distinction between type-blocking and token-blocking. In type blocking, the use of a morphological process may be impeded by the presence of competing processes. For example the presence of different agentive nominalization strategies (e.g. English *-er*, *-ant/-ent*, *-ist*, *-ian*) somehow restricts the productivity of the individual processes. Thus, because of the form *consultant*, with the suffix *-ant*, a form with the suffix *-er*, as in *consulter* with the same meaning is not possible. Thus, the productivity of *-er*-derived nominals is restricted.

In the case of token-blocking, particular words block the coining of others with the same meaning. This is because languages attempt to avoid perfect synonymy. For example, the presence of *thief* in English blocks the formation of *steal-er*. However,

this kind of blocking is not absolute, as frequency may interfere with it. Less frequent forms are more susceptible to token-blocking than more frequent ones.

For example, because *-ness*-derived words are more frequent than *-ity*-derived ones, the former still occur where the latter get blocked. Aronoff (1976: 44) observes, that where there is a de-adjectival noun ending in *-ous*, it is not possible to form a new noun with *-ity*. However, the existence of established noun does not block the formation of new nouns with *-ness*. This is illustrated by (4) from Katamba (1993: 74).⁴¹

(4)	<u>X + ous</u> <u>(Adjective)</u>	<u>Pre-existing</u> <u>Noun</u>	<u>Noun (-ity)</u>	<u>Noun (-ness)</u>
	acrimonious	acrimony	*acrimoniousity	acrimoniousness
	glorious	glory	*gloriosity	gloriousness
	fallacious	fallacy	*fallacity	fallaciousness
	spacious	space	*spaciocity	spaciousness
	furious	fury	*furiocity	furiousness

Finally, blocking might be occasioned by the existence of competing syntactic alternatives to the morphological pattern. For example, in Dutch, the coinage of A-N compounding as names for items is blocked by the popular pattern of using A-N noun phrases (cf. Booij 2002b: 12).

In chapter 8, I will discuss a number of factors that serve to restrict the productivity of personal attribute nominal constructions. There, I will argue that the productivity of

⁴¹ Booij (2002b: 11) has argued along these lines that Dutch has the equivalent of English *stealer* (*steler*) occurring in the proverb *De heler is niet beter dan de steler* ‘The receiver is as bad as the thief’. It is not clear, though, if this use of *steler* is any different from the English equivalent in the synthetic compound *time-stealer*, bracketed as [[time] [[steal]-er]].

the construction is restricted by the stringent restriction on the syntactic form-class as well as the semantic subclasses of the words that can fill the open slots in the construction as well as competition from N-A compounding.

3.7 Conclusion

In this chapter, I have discussed the dataset for the present thesis. I have dealt with the type of data, the sources of data and the process of gathering and preparing the data. I use data from written sources only, but I have argued that it is still natural because they were originally meant to meet genuine communicative needs and not for research. The only useful information that is lost in using such data is prosodic. However, that is compensated for by my native speaker's intuitions, supplemented by the judgement of other native speakers of Akan, although because of the small number of data and the limited and unbalanced nature of the people I consulted on the acceptability of the relevant Akan complex nominals, I have no basis of reporting on inter-rater reliability.

I have also presented a coarse-grained statistical analysis of the major patterns in the dataset, showing that affixation is the most productive word formation process in Akan followed by compounding. Again Akan is predominantly suffixing. However, as I indicated above, both these statistics will have to be taken with the needed caution because it is very possible that the data is skewed in favour of affix-derived CNs.

4 COMPOUNDING: SURVEY OF GENERAL ISSUES

4.1 Introduction

The point I make in the discussion of Akan compounding in Chapters 5-7 is that some compounds have to be analyzed as *wholes-with-parts*. That is, what we have in those compounds are complex words with information about the forms they contain rather than constituents whose properties determine those of the complex units. This wholes-with-parts approach does not expect the properties of the parts to exhaust the properties of the whole. Therefore, it is able to account for all deviations from strict compositionality that are a source of embarrassment for rule-based approaches. The utility of this approach transcends compounding. That is, by accepting that constructions can have properties that do not emanate from their constituents, we are able to account for non-compositional properties of complex words as well as allow for non-existing but possible words and meaningless bases and affixes (in the case of derivation) to feed complex word formation.

Now, because this approach accounts well for properties of complex words that are otherwise difficult to account for in rule-based models, it seems more efficient to extend it to cover all other compound types, including those that can be accounted for in rule-based models. This is made pretty effortless by the understanding that constructional schemas can be either source-oriented or product-oriented (Zager 1981, 1983), so that compounds with compositional properties are also accounted for. Thus,

the constructionist approach does not deny the existence of perfectly regular complex forms with compositional semantics. Rather, it anticipates “the worst data type”, making it possible to deal with the well-behaved data type.

I begin this chapter with the discussion of general issues in the study of compounding, including definition (§4.2.2.1), headedness (§4.2.2.2), classification (§4.2.3), semantic relation between the constituents of the compound (§4.2.4), recursion (§4.2.5), and criteria for distinguishing between compounds and phrases (§4.2.6).

4.2 Compounding

Compounds are very common in the languages of the world due to their semantic transparency and versatility (Booij 2007b). The process of compounding exploits “the tendency towards multiword constructions such as idioms, collocations, binomial constructions, or the prefabs,” thus fulfilling a communicative purpose that is intrinsically different from that of syntactic expressions (Scalise & Vogel 2010: 4). It has even been suggested that compounding is a language universal (Aikhenvald 2007: 24; Dressler 2006: 23; Fromkin et al. 1996: 54-55; Libben 2006: 2). For example, Bauer (1988: 33) observed that “[i]t seems that no known language is without compounds”. Similarly, Aikhenvald (2007: 24) observed that “compounding is *found in languages of any type*, but is dominant in isolating languages”, whilst Dressler (2006: 23) argued that “compounds are present in *all* languages of the world” [emphasis added, CKIA]. However, Štekauer, Valera, and Körtvélyessy (2012) have shown that some languages don’t have compounding. They include *West Greenlandic* (Eskimo-Aleut, North America/Greenland), *Diola Fogny* (Niger-Congo,

Gambia/Senegal), *Kwakw'ala* (Wakashan, North America) and *Karao* (Austronesian, SE Asia/Oceania).

4.2.1 The study of compounding

Compounding attracts interest from diverse fields of scholarship. It has fascinated grammarians and linguists for a long time, featuring strongly in the work of the Sanskrit grammarians, including Pāṇini (sixth century BC) whose typology of compounding and related terminology is still employed in present day studies. Compounding also featured in the work of structuralist linguists (cf. Bloomfield 1933) and in the early years of the development of transformational generative grammar (Lees 1960; Levi 1978) and the subsequent transition to lexicalist approaches (Allen 1978; Jackendoff 1975; Lieber 1980, 1983; Roeper & Siegel 1978; Scalise 1984; Selkirk 1982). It has also featured in all major relatively recent theoretical traditions in modern linguistics, including cognitive linguistics (Benczes 2005, 2006a, 2006b, 2010; Heyvaert 2009; Pepper 2010) and the related constructionist models (Booij 2005a, 2007a, 2009a, 2010a, 2013; Jackendoff 2009a), and the so-called neo-constructionist models, including Distributed Morphology (Harley 2009).⁴²

The interest compounding courts is well motivated. As grammatical constructs, compounds constitute an anomaly because, although they are words, they exhibit a type of invisible “internal syntax”. Thus, to interpret the compounds in (1) one must

⁴² The very widespread nature of the phenomenon and the interest it engenders mean that views on the subject differ within and across languages and language families and theoretical traditions. So nuanced are the views expressed on the properties of compounds that the emerging “picture of ‘compoundhood’” is deemed comparable to the parable of the blind men and the elephant, where each man developed a theory of ‘elephanthood’ on the basis of their limited perception: “one fellow’s elephant was like a rope, another’s like a broad leaf, a third’s like a tree trunk, and so on” (Lieber & Štekauer 2009: 3).

“add” a syntactic relation between the two constituents (subordination, coordination and modification/attribution).

- (1) a. taxi driver => driver *of a* taxi
- b. poet painter => poet *and* painter
- c. hard ball => a ball *which is* hard

Additionally, the process of compounding can be applied recursively to form even more complex forms to meet our communicative needs, as exemplified by the English examples in (2) which are right-recursive and the Akan examples in (3) which are left-recursive although the compounds are right-headed. I discuss recursion further below in §4.2.5.

- (2) [[student film] society]
 - [[[student film] society] committee]
 - [[[[student film] society] committee] scandal]
- student film society committee scandal inquiry ... (Spencer 1991: 310)

- (3) a. *nkabom kuo*
unity organization
‘union’
- b. [*adwumayɛfɔɔ* [*nkabom kuo*]]
workers unity organization
‘trade union’
- c. [*Britain* [*adwumayɛfɔɔ* [*nkabom kuo*]]]
British workers unity organization
‘British trade union’

Jackendoff (2009a) suggests that compounding could be the relic of “protolanguage” which had a kind of primitive syntax that was capable of creating more complex

structures (e.g. *pickpocket*) by combining morphologically independent units without functional elements.

For the linguist, studying compounding entails engaging with all aspects of the grammar of a language involving several crucial linguistic and extra-linguistic notions which Scalise and Vogel (2010: 2), aptly grouped under three headings (4).

- (4) a. syntagmatic and paradigmatic relationships
b. syntax and morphology⁴³
c. linguistic knowledge and pragmatic knowledge

A syntagmatic relation holds within the compound *àgòr-kyèré* ((5)a), where the noun *agor* ‘drama’ is the notional object of the verb just like what obtains in the VP ((5)b).

(5)	a.	<i>àgòr-kyèré</i>	b.	<i>kyèré àgór</i>
		drama-to_show		show drama
		‘acting’		'to act/perform a play'

Compounding straddles the boundary between morphology and syntax. As Spencer (1991: 309) argues, “[i]n many respects compounding represents the interface between morphology and syntax *par excellence* [...]. Syntax can be thought of as the concatenation of words to form phrases. Compounding, however, is prototypically the concatenation of words to form other words.”

Like underived words, compounds may not ordinarily permit syntactically governed rules of inflection (e.g. number marking) to apply to their individual constituents.

⁴³ Compounds may also be subject to phonological and morphological processes, which may be specific to compounds or may be shared with derived words and/or phrases (Fabb 1998: 66).

However, some types of phrasal units may occur as constituents of compounds in the so-called phrasal compounds (PCs), as illustrated for English in (6) and Akan in (7).⁴⁴

- (6) a. over the fence gossip
b. off the rack dress
c. a floor of a birdcage taste (Lieber 1992: 11)

- (7) a. *bɔ-ko mo-do awar* (Fa.)
come-sit 1SGPOSS-top marriage
'force yourself on me marriage (*lit.* Come and sit on me marriage)
b. *tom_and_jerry awaree* (As./Ak.)
tom and jerry marriage
'Tom and Jerry marriage (*Tom* and *Jerry* are cartoon characters)'

The presence of examples like these has been the grounds for questioning the basis of two well-known constraint on the interaction between syntax and word formation – the No Phrase Constraint (NPC) – which prohibits the occurrence of phrases as constituents of complex words (Botha 1984) and the Lexical Integrity Hypothesis (LIH) (8) which, in its various renditions, serve to constrain the interface between rules of the grammar and the internal structure of complex words.

- (8) *The Lexical Integrity Hypothesis* (Anderson 1992: 84)

"The syntax neither manipulates nor has access to the internal structure of words"

The NPC is clearly false, as some kinds of phrases do function as constituents of complex words, as shown above (Bauer 1988; Lieber 1992). Indeed, the name of the constraint itself is a violation of it because it is a compound with a left-hand phrasal

⁴⁴ I don't discuss PCs because none occurs in my dataset.

constituent [[no phrase]_{NP} condition]_N (cf. Fábregas & Scalise 2012). The LIH does two things as far as the relation between word-internal structure and phrasal rules are concerned: it excludes (i) access to word-internal structure, and (ii) the manipulation of constituents of words. The view from recent assessment of it is that the former cannot be upheld but the latter may be retained with appropriate modification (Booij 2009b; Lieber & Scalise 2007).

The status of compounds as the morphological constructions with the closest affinity to syntactic constructions engenders debate about the component of the grammar responsible for their formation. Compound formation was deemed syntactic (Lees 1960; Levi 1978), being derived through a series of transformations from underlying sentences because compounds were considered “noun-like versions of sentences” (Lees 1960: 54).⁴⁵ This view, like the whole transformational enterprise of that era was criticised extensively for the unrestricted power of the transformational rules to delete virtually any predicate at will (cf. Householder 1962; Matthews 1961; Schachter 1962).

Levi (1978) departed from this by providing a list of nine “recoverably deletable predicates”. The introduction of the lexicon as a separate generative component of the grammar (Chomsky 1970) saw a fruitful period of work on compounding in the lexicalist framework which assumed that compounds were formed in the pre-syntactic lexical component of the grammar (Allen 1978; Lieber 1980, 1983; Mchombo 1978; Roeper & Siegel 1978; Scalise 1984; Selkirk 1982; Toman 1983).⁴⁶ The syntax-only

⁴⁵ In keeping with the times, Boadi (1966) proposed to derive three types of Akan nominal compounds transformationally from underlying VPs.

⁴⁶ Scalise and Vogel (2010) suggest that there is evidence from psycholinguistics and neurolinguistics for a framework in which morphological facts are handled in a morphological (sub)component of the grammar.

approach to compounding was defended again in various forms in the 1980s (cf. Morita 1985) and in the 1990s (cf. Lieber 1992) and recently in Distributed Morphology (cf. Harley 2009).

However, given the fact that the properties of compounds straddle morphology and syntax, it should be clear that accounting fully for the properties of compounds will be problematic in a framework that assumes a strict division between lexicon and grammar. This is because, beyond the fact that phrasal units may occur as constituents of compounds, a speaker must store thousands of lexicalized compounds with semi-idiosyncratic meaning, even if their form is really regular, whilst other compounds being formed on the fly cannot all be assumed to be listed in the lexicon (Jackendoff 2009a). Clearly, the challenge of finding the balance between linguistic representation in the mind (storage) and grammatical processing (computation), and the attendant issues of compositionality and morphological parsing, is a very serious one in the study of compounding. Thus, from the point of view of grammatical theory, the issues involved in the study of compounding speak for a continuum view of the relation between lexicon and grammar as assumed in CM (Booij 2010a).

The challenge of finding the balance between storage and computation is of prime concern to psycholinguists as well, as the papers in Libben and Jarema (2006) show. Libben (2006), for instance, observes that in compounding we find the fundamentals of the human creative capacity for morphological processing and representation. He argues that as complex lexemes consisting of other lexemes, compounds must remain easily segmentable like phrases in the interest of retaining the property of being easily interpretable. On the other hand, being new lexemes, they must also be stored in long-term memory together with their idiosyncratic semantic properties so that they can be

retrieved as single units for production. These issues naturally situate compounding at the heart of the study of the so-called mental lexicon. As Gagné and Spalding (2006: 145) put it “[b]ecause compounding is so prevalent, understanding both the process of compounding and the access and use of familiar compound words is critical to understanding the mental lexicon as a whole.”⁴⁷

4.2.2 Core issues in the study of compounding

The issues in the study of compounding that have attracted the most scholarly attention and engendered lively debates are the definition, headedness and classification of compounds as well as the distinction between compounds and phrases. In this section I discuss these issues, showing, where relevant, how CM handles those issues.

4.2.2.1 Definition of compounding

Booij (2007b: 75) characterises compounding as “the combination of **lexemes** into larger **words**. In simple cases, compounding consists of the combination of **two words**, in which **one word** modifies the meaning of the other, the head.” Lieber (2004: 46) describes root compounds as consisting of “two **stems** combined as one, with the compound as a whole bearing the category of the right-hand stem.” Bauer (1988: 33) defines compounding as “the formation of a new lexeme by adjoining two or more

⁴⁷ For psycholinguists, the questions that the properties of compounding raise include: “[w]hat are the psychological mechanisms that allow such free creation? Are the production and comprehension processes involved the same for both existing lexicalized words and novel combinations? How are these processes related to other lexical and non-lexical processes? When are they acquired? How are they compromised by damage to the brain? How might they differ across languages? What shape might compound processing take among bilinguals?” (Libben 2006: vi).

lexemes”. For Katamba (1993: 291) “a prototypical compound is a word made up of at least two **bases** which can occur elsewhere as independent **words**.⁷

The difficulty with such straightforward characterization of compounding is well-noted and the reasons are not hard to find (cf. Guevara & Scalise 2009; Lieber & Štekauer 2009; Montermini 2010; Scalise & Vogel 2010; Štekauer; Valera & Körtvélyessy 2012). Lieber and Štekauer (2009: 4) categorizes the problems into two, called the “micro question” and the “macro question”. The latter has to do with the difficulty, sometimes, in making a clean distinction between compounds on the one hand and derived words or phrases on the other whilst the former has to do with the status of the compound members: whether they are free-standing words or not.

Compound constituents in some languages are not free-standing words, but rather stems or roots, as some of the definitions show. However, terms like *stem*, *root*, *word*, etc. are not well-delineated concepts either at the language-specific level or at the cross-linguistic level. Thus Montermini (2010: 79) observes that “although everyone, linguists and non-linguists, seems to possess a naïve, pre-theoretic conception of what a compound is, this conception is hard to formalize, without a previous definition of the type of units involved.” Some linguists (e.g. Katamba) avoid the problem of the root-stem distinction by using *bases* (a cover term for stem and roots). But using a cover term only gives the problem a new name since the sub-terms remain largely unexplained.

Donalies (2004) cited in Lieber and Štekauer (2009: 6-7) attempts to supply definitive criteria of compoundhood; see (9), below. However, even a cursory look reveals that even such a long list of properties does not bring us close to an unequivocal definition

of a compound. Whilst some properties ((9) ii-vi) are too language-specific to be cross-linguistically relevant, others are based on generalizations that have been found not to hold. For example, property ((9) vi) recalls Williams' (1981) Right-hand Head Rule (RHR) which claims that the head of a complex morphological structure is the right-hand constituent. However, the RHR cannot be upheld even for English based on which it was initially formulated. I discuss headedness below.

(9) Putative list of defining properties of compounds

- i. are formed without word-formation affixes.
- ii. are spelled together.
- iii. have a specific stress pattern
- iv. include linking elements.
- v. are right-headed.
- vi. are inflected as a whole.
- vii. are syntactically inseparable.
- viii. are syntactico-semantic islands.
- ix. are conceptual units.

Again, it is unclear what kinds of affixes are said to be absent in compound formation ((9) ii). Is the claim that affixed words cannot be constituents of compounds or that compounds cannot undergo further affixation? Either way, counterexamples abound. For example, in the Akan compound in (10), the first constituent bears an affix *-foɔ*. Besides, the base that *-foɔ* attaches to is itself a compound. Thus, ((9)ii) fails completely, and finding counterexamples to the rest will be pretty easy.

(10)	<i>adwuma-ye-fo-ɔ</i>	<i>kuo</i>
	work-do-NMLZ _[person] -AFV	group
	'trade union'	

For Lieber and Štekauer (2009: 14) the way forward is to accept that there is “a cline of more compound-like and less compound-like complexes, with no clear categorical distinct”. It is, however, unclear whether this statement refers to the distinction between compounds and phrases (the macro problem) or to the identification of the status of compound members (the micro problem). If it refers to the former, then I would consider it as a vote for the constructional view defended in the present dissertation. If it refers to the latter, then Aikhenvald’s (2007) admonition that compounds be defined on language-specific basis may be considered. The problem with this approach, though, is that it could potentially “result in *ad hoc*-ness and would not advance the cause of developing a general theory of language” (Francis Katamba, p.c.).

Because constituents of compounds tend to belong to particular lexemes, a definition that stresses the lexemic status of the constituents of compounds is to be preferred. I will, therefore, define compounding as the process by which a new lexeme is formed by combining two or more bases (Katamba 1993), each of which potentially occurs alone elsewhere in the grammar as free forms. In simple cases, they consist of two words in which one modifies the meaning of other, the head (Booij 2007b: 75).

4.2.2.2 Headedness in compounding

The syntactic notion of *head* characterizes the dominant member in an asymmetrical relationship within a construction (cf. Croft 2001: 41ff). It was explicitly applied to all morphological constructs only in the early 1980s by Williams (1981) and Selkirk (1982) and has been defended strongly (cf. Di Sciullo & Williams 1987; Štekauer 2000), but not all linguists share the view that the notion extends naturally to

especially affix-derived words (cf. Bauer 1990; Zwicky 1985). For compounding, however, the notion *head* has existed longer and has had a central role in its study (cf. Scalise & Fábregas 2010). So central is the concept of the head that even the absence of a head constituent is significant enough to warrant a separate class of compounds (exocentrics, *pick pocket*) which contrasts with endocentrics (*primary school*) in which *school* is the head (Bloomfield 1933).

Booij (2007b: 77) observes that “headedness of a compound is not only relevant for its formal properties, but also for its semantic interpretation.” Selkirk (1982: 22) also notes that “the notion of “head” is crucial in characterizing the semantics of compounds”. That is, the head determines **most** properties of the compound through the mechanism of feature percolation (Lieber 1980, 1989, 1992; Selkirk 1982), so that the class of elements denoted by the compound is **usually** a subset of the class of elements that is denoted by the head of the compound. For example, *table mat*, is a hyponym of *mat*, the head. Hence, *mat* can occur where *table mat* is expected to occur without a drastic change in the meaning of the construction, but the same cannot be said of the non-head constituents *table* occurring alone where *table mat* is expected.

Katamba (1993: 304) and Dressler (2006) present the head as the single most important factor in the classification of compounds. Apart from classifying compounds according to the presence of the head, the classification of compounds may be based on the word class of the head (giving noun-noun, verb-verb, verb-noun, etc.) or the position of the head in the compound (yielding four types; left-headed (LF), right-headed (RH), non-headed (NH), and dual-headed (DH) in which both

immediate constituents carry equal weight (Scalise & Fábregas 2010; Scalise & Guevara 2006; Scalise & Vogel 2010)).

In the early years of the discussion of headedness in morphology, it was assumed that the head of a word occurred consistently on the right, leading to the formulation of the Right-hand Head Rule which Williams (1981: 248) formulated as follows: “[i]n morphology, we define the head of a morphologically complex word to be the righthand member of that word.... Call this definition the *Righthand Head Rule* (RHR).”

It was later reformulated, taking on board the idea of a relativized head (position), when it was confronted with data showing that the head can occur on either edge of the word (Di Sciullo & Williams 1987; Selkirk 1982). Again, based on data from the Romance languages where compounds are predominantly left-headed (Scalise 1984), it was suggested that the position of the head is a parameter that has to be set for each language, so that the morphology of a language is either left-headed or right headed, depending on the language (Lieber 1992; Scalise 1992; Selkirk 1982). However, it was shown that in many languages including Mandarin Chinese and Vietnamese there are both left-headed and right-headed compounds (Ceccagno & Basciano 2009; Ceccagno & Scalise 2006). Recently, Pepper (2010) has also shown that in Nizaa (Benue-Congo, Cameroon), there is an almost equal number of right-headed and left-headed N-N compounds.

The data available to me show that Akan endocentric N-N compounds are mostly right-headed, but there are left-headed and dual-headed N-N compounds as well. The same is true of V-V compounds, but all N-A compounds are left-headed.

4.2.2.2.1 Compound heads: categorial, semantic, morphological

The identification of the head of a compound may be based on formal criteria, semantic criteria, or a combination of the two and the constituent that different criteria pick out may not coincide. It is, therefore, noted widely in the literature that in order to put the discussion of headedness in proper perspective, we must distinguish at least between a formal head and a semantic head, which may not necessarily coincide, but may typically coincide in endocentric compounds (cf. Bauer 1983; Guevara & Scalise 2009; Katamba 1993; Scalise; Bisetto & Guevara 2005; Scalise & Guevara 2006).

On the formal level, virtually every compound may be regarded as headed (Katamba 1993), so that in every compounds we find a formal head and a dependent (a modifier or an argument, as the case may be), but this may not be the case at the semantic level. The formal head of a compound is the constituent that percolates its formal properties (including lexical category and subcategorization frame) to the whole compound. Hence the compound usually has the same syntactic category and distribution as its formal head, though some variations are possible.⁴⁸ The semantic head is the constituent which shares its lexical conceptual information with the whole compound, making the whole compound a hyponym of its semantic head (Guevara & Scalise 2009).⁴⁹

⁴⁸ If the immediate constituents of the compound have the same category, it is often possible to determine the formal head by looking at other syntactic features like gender, nominal class, etc. In the Italian compound in (1), both constituents are nouns so the syntactic category alone won't help in determining the formal head. So we have to look beyond the form-class to other finer properties such as gender, then we will be able to tell that the minus-masculine gender of the compound comes from the left-hand constituent, *pizzeria*, so it must be the formal head of the compound.

(1) *pizzeria ristorante* => [N+N]_{N-masc.} (*la pizzeria*_[‐masc.], *il ristorante* _[+masc.])

⁴⁹ The properties of the compound that are assumed to percolate from the head depend on whether it is a semantic or formal head. Again, the function that a formal head may have in a compound depends on whether it is also a semantic head. Thus, if the formal head is also the semantic head, then its meaning

The formal head has sometimes been sub-classified into a syntactic head and a morphological head. Dressler (2006) illustrates this with *pickpocket*, as summed up in (11). Dressler argues that this compound is semantically exocentric because it refers to someone outside of the compound. However, it is morphologically headed by *pocket* which also governs the choice of plural inflection (e.g., [[pick] [[pocket]-s]], **not** *[[[pick]-s] [pocket]]). It is syntactically headed by *pick* whose internal argument is *pocket*.

(11) Compound: *pickpocket*

- a. Semantic head: none
- b. Syntactic head: *pick* [__ *pocket*]
- c. Morphological head: *pocket* [__ PLU]

It must be pointed out, however, that the use of plural marking in this manner to distinguish between a morphological head and a syntactic head can be misleading since the position of a plural marker may be the default pattern in a language. For example, the demands of lexical integrity might prevent an inflectional marker from occurring between the two constituents of a word (Bauer 2009b: 349).

Thus, if a constituent occurs where the plural marker occurs by default and the particular constituent happens to marks plurality the same way as the compound, we may be misled into declaring that constituent the morphological head when indeed, its bearing the plural marker is absolutely fortuitous. In Akan for example, the plural marker in nouns occur as a prefix so that if a noun occurs as the left-hand constituent, it may be mistaken to be a morphological head, when indeed, it bears the plural

becomes part of the computation of the meaning of the compound and, it will also be the most salient element in analogical relations, such as the family-size effect in psycholinguistics (Schreuder & Baayen 1997).

marker because it happens to “be in the right place at the right time”. It seems to me, therefore, that the usefulness of the distinction between syntactic head and morphological head is at best limited and may be dropped. I discuss this issue further when I discuss N-N compounding in §5.5.1.

4.2.2.2.2 On lexical selection

Another distinction proposed in the literature is that between the formal head of the compound and a selecting element. Lexical selection is characterized intuitively as the mechanism by which an array of information associated with a selecting element determines the set of suitable complements or modifiers to that element in a morphologically complex word (cf. Scalise; Bisetto & Guevara 2005). I argued above that a head-dependent relation is usually discernable between the immediate constituents of compounds. This is interpreted to mean that one constituent of an endocentric compound selects the other (Guevara & Scalise 2009; Scalise; Bisetto & Guevara 2005; Scalise & Guevara 2006). The selecting element is the head, so that lexical selection is in fact *head selection*.

In word-syntactic models where affixes are heads, we have *affixal selection* that is different from lexical head selection. Indeed, affixal selection has its roots in Aronoff (1976) who argued that affixes select the base they attach to, so that the difference between *inedible* and *uneatable*, for example, is put down to the fact that *in* and *un* select [+latinate] and [-latinate] bases respectively (cf. Bauer 1990).

Lexical selection is seen in both endocentric and exocentric compounds and is most obvious in synthetic compounds. For instance, in the Akan compound *edziban-dzi*

‘eating’ (12) the verb *dzi* selects and imposes restrictions on the properties of *edziban* – its internal argument. For example, *dzi* will not select *nsu* ‘water’ (**nsudzi*) because its argument must be solid, not liquid.

- (12) *edziban-dzi*
food-eat
‘eating’

Scalise and Guevara (2006) claim that a similar observation about lexical selection can be made regarding compound types without verbal heads. They note that in *wine bottle*, the non-head *wine* is selected on the basis of the lexical conceptual structure of the head *bottle* as a suitable complement for it. It is on this account that **patience bottle* is ruled out. However, it is worth pointing out, as an initial response, that whilst one may not take issue with the idea of lexical selection in both endocentric and exocentric compounds, and the fact that the interpretation of a compound is restricted by the LCS of the head, one cannot leave unquestioned the suggestion that *patience bottle* is ill-formed, since it denies the fact that given appropriate pragmatic context any N-N compound can be interpreted appropriately. I discuss the semantics of compounds in §4.2.4.

With the three way distinction, Scalise and Guevara present the notion of head as a kind of superordinate of three different notions – semantic head, formal head and selecting element, arrived at through various tests, as summed up in (13).

(13) Test for headedness

Formal – Categorial properties (N, V, A, etc), Case, Gender, Number

Semantic – the IS A condition (hyponymy)

Selecting head;element – One that takes the other constituent as its argument

We may expect, however, that a constituent in a binary-branching compound can have all three functions, with varying degrees of overlaps between the three different kinds of heads. For example, in the so-called secondary or verbal nexus compounds, or indeed any type of compound with a verbal head (and also quasi-incorporation) formal and selecting head usually coincide, except in the case of exocentric synthetic compounds (Bauer 2010b).

Scalise and Guevara (2006: 190) argue that the *head* of a compound and the *selecting element* are distinct notions whose exponents may not always coincide in the same constituent. It is necessary, therefore, to keep them apart. However, they do not show in any convincing way that their claim can be sustained and it does not seem to me that there is any need for the distinction they advocate, since it cannot be shown that in any compound there is a selecting element (which I assume to be coterminous with the syntactic head (Dressler 2006)) which is not also the formal head. This is borne out by their own hypothesis that if a subordinate exocentric compound has one formal head it will be coterminous with the selecting element.⁵⁰

⁵⁰ Scalise and Guevara (2006: 192) define an endocentric compound as one in which there is at least one formal head and at least one semantic head. They then argue that “[i]f a compound has only one formal head and only one semantic head, then the two must coincide.” An exocentric compound has one or more formal heads and no semantic head. In the same way, a compound is considered exocentric if it has one or more semantic heads but lacks a formal head. This means that, for them, “neither the notion of formal head, nor semantic head, considered separately, suffices to define a compound as endocentric or exocentric.” Thus we have to distinguish between formal exocentricity and semantic exocentricity.

4.2.2.3 Constructionist approach to headedness in Compounds

As noted in chapter 2, instead of word-formation rules, CM employs constructional schemas which “generalize over set of existing words with a systematic correspondence between form and meaning” (Booij 2007a: 34). In this framework, the notion of head is not as central as it is in rule-based non-constructionist models of morphology where every property in the complex has to be accounted for in the constituent. In non-constructionist models, the recognition of a head constituent with a privileged role in percolating its properties to the complex word is crucial (Lieber 1980, 1989, 1992). Because CM employs constructional schemas which can have properties that do not emanate from the constituents, the head is not the only determinant of the properties of the whole.

The schema for all right-headed nominal compounds may be represented as (14). In this schema, the variable X stands for the major lexical categories (N, V, A, etc.) whilst the lowercase variables – *a* and *b* – represent arbitrary phonological strings, showing that phonological information does not have a restrictive role in the formation of such compounds.

$$(14) <[[a]_{X_i} [b]_{N_j}]_{N_k} \leftrightarrow [\text{SEM}_j \text{ with relation R to } \text{SEM}_i]_k> \quad (\text{Booij 2010c: 17})$$

The lowercase variables *i*, *j* and *k* are lexical indexes on the PHON, SYN and SEM properties of words. The general meaning of this compound type is specified on the right side of the double arrow but the relation R is left unspecified and is to be determined for individual instantiating compounds, on the basis of the meaning of the compound members, encyclopaedic and contextual knowledge (Booij 2010c: 17).

The schema shows that the head constituent and the whole compound have the same lexical category label. The fact that the category of an endocentric compound is determined by that of the head is directly stated as part of the constructional schema, rendering an additional stipulation like the RHR superfluous. In addition to the shared categorial label, we have to show that the head shares other functional features as well with the compound, including gender and declension class, if the language has them. For this, the schema can be elaborated with a functional annotation $[\alpha F]$ which stands for the relevant subclass features as in (15), (cf. Booij 2009a: 204).

$$(15) \quad <[[a]_{X_i} [b]_{N_j}]_{N_k} \leftrightarrow [SEM_j \text{ with relation } R \text{ to } SEM_i]_k>$$

$$\quad \quad \quad | \quad |$$

$$\quad \quad \quad [\alpha F] \quad [\alpha F]$$

In summary, the idea of headedness in compounds is captured directly as part of the constructional schema for the compounds. That is, the co-indexation of one constituent with the whole compound to signal shared syntactic category, together with the functional annotation, means the head is not only the formal head but also the semantic head. This obviates need for an additional separate rule like the RHR to express the relevant generalization (Booij 2010c).

4.2.2.3.1 On extending the use of indexes in CM

With how indexes are currently used in CM, as exemplified above, it is not clear to me that the schemas account for dual headedness or even the other endocentric compounds which are either right-headed or left-headed. Rather, the schemas account for exocentric compounds. That is, typically, the indexes on constituents (*i* & *j*) are different from that on the compound as a whole (*k*), on the formal (left-hand) side of

the double arrow. This is the same index that also occurs on the semantic (right-hand) side of the double arrow and it makes absolute sense because the lexical item pairs the form and the meaning.

But the way the schemas are formulated, the indexes do no more than identify the constituents and the whole as separate lexical items. That is where the problem is, as I see it. If we interpret the indexes as identifying the lexical items which has form and meaning and not just their syntactic category, then the fact that the index borne by the compound is different from each of the constituents could be read to mean that the semantics of the compound is not directly related to that of the constituents which is the definition of exocentricity. There is the real possibility of two constituents contributing equally to the form and meaning of the compounds in which case both the formal and the semantic ends of the double arrow must reflect the state of affairs.

I suspect that it could be argued that the link between the properties of the constituents and the compound as a whole could be captured by the functional annotation, as done in (15). To this we have to respond that that will take away the elegance of the framework as we will need many functional elements to be able to account for all possible shared features. I believe we do not need any additional machinery to account for this. What I propose we need is an extension of the role assigned to the lowercase variables, so that they explicitly go together with the uppercase variables to show exactly which constituent contributes its semantic properties to the semantic makeup of the compound construction. Here, whilst the uppercase variables mark formal properties, the lowercase variables will mark semantic headedness.

This way, if the compound is endocentric, it has to have the same index as the head constituents. If it is exocentric, its index will be different from either constituent. A dual-headed compound will have the indexes of the joint heads, as shown in (16).

- (16) a. $\langle [[a]_{Xi} [b]_{Yj}]_{Yj} \leftrightarrow [\text{SEM}_j \text{ with relation R to SEM}_i]_j \rangle$ right-headed
- b. $\langle [[a]_{Xi} [b]_{Yj}]_{Yi} \leftrightarrow [\text{SEM}_i \text{ with relation R to SEM}_j]_i \rangle$ left-headed
- c. $\langle [[a]_{Xi} [b]_{Yj}]_{Yij} \leftrightarrow [\text{SEM}]_{ij} \rangle$ dual-headed
- d. $\langle [[a]_{Xi} [b]_{Yj}]_{Yk} \leftrightarrow [\text{SEM}_k]_k \rangle$ exocentric

The proposed modification will be crucial to the proper characterization of the properties of compounds in Akan, where compounds are invariably nominals, so that specifying the syntactic category of the compound as a noun alone will not suffice to identify the head of the compounds, especially when both constituents are nominals. It will also be useful for cases where the core semantic content of the constituents is felt to be part of meaning of the compound, but the syntactic category of the compound is different.

My examiners have suggested to me that my proposal is based on a misunderstanding of the use of indexes in CM and that in CM indexes are meant to identify the lexical item only and so they cannot be used to mark semantic headedness, which should be left to the semantic pole of the construction. However, the fact that the current literature on CM allows for functional annotation on what is meant to be the formal pole of the construction (cf. (15) above) weakens the argument that we cannot use the indexes to keep track of headedness in complex words. As I argued above, my proposal to use indexes to indicate semantic headedness in addition to any other function they may also already have in the theory will obviate the use of functional annotation as currently employed in CM.

4.2.3 Classification of compounds

The classification of compounds has been a central issue in the study of compounding since Pānini who used the relations between compound members to group the compounds. One simple way to classify compounds is to use the form-class of the constituents, yielding, N-N, N-A, N-V, etc., or that of the output category of the compound, yielding verbal, nominal, adjectival, etc. compounds. Another prominent approach, as discussed above, uses the presence and position of a head element, distinguishing between compounds which are hyponyms of their head and those which are not, yielding endocentric vs. exocentric compound respectively (Bloomfield 1933). A final approach uses the grammatical and semantic relation between the constituents. In reality, however, we find that most classifications involve more than one of the above parameters, so that we find terms like endocentric N+N coordinates and V+V endocentric compounds (Lieber 2009a: 359).

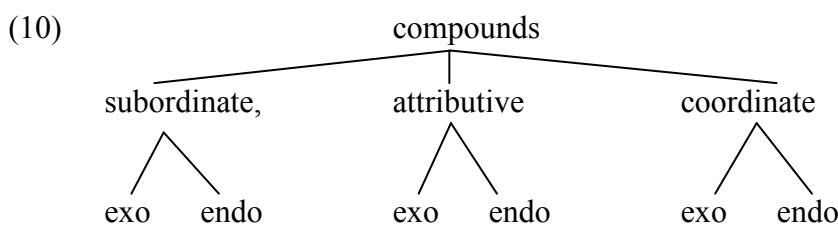
One classificatory framework that has gained currency in the recent literature is that of Bisetto and Scalise (2005), revised in Scalise and Bisetto (2009). They identified three problems with existing systems of classification (Bally 1950; Bauer 2001a; Bloomfield 1933; Booij 2005c; Fabb 1998; Haspelmath 2002; Marchand 1969; Olsen 2001; Spencer 1991), which may be summarized as:

- a. the terminologies used are often too languages-specific to be cross-linguistically relevant;
- b. many studies privilege compounds formed by certain lexical categories (mostly N-N compounds) leaving many others unrepresented; and
- c. the use of inconsistent criteria, making it difficult to compare the various classes posited.

The cumulative effect is a general lack of “interlinguistic homogeneity”, making the traditional classificatory schemes look like “a mere nomenclature of types defined on the basis of heterogeneous criteria” (Scalise & Guevara 2006: 186). I will show below that the current state of classification of Akan compounds fits this description.

4.2.3.1 Scalise and Bisetto’s Classification of compounds

As noted in §4.2.1, compounds have the peculiar property of being word-forms whose constituents are connected by the same grammatical relation that obtains between the constituents of syntactic phrases although the relation is not overtly expressed. Bisetto and Scalise’s (2005) classificatory framework exploits this peculiarity of compounds, making it possible to classify compounds based on hierarchically organized homogenous criteria which take into account the grammatical relations between the constituents, yielding, at a first level, three macro types – *attributive* compounds, *subordinate* compounds and *coordinative* compounds. Each macro-category is subdivided at a second level based on the presence or absence of a head element in the compound, yielding *endocentric* as opposed to *exocentric* compounds; see (10), below. Further division could be along the lines of the class membership of the constituents and the compound as a whole, generally determined by the head, as discussed above. Thus, this classificatory system takes the complex mix of criteria and applies them in a consistent ways.



Scalise and Bisetto (2009: 48-49) argue that the three-way categorization is confirmed by the manner in which the head selects the non-head in each of the three groups. They use a slightly modified version of Lieber's (2004) model for the representation of the lexical semantics, as presented in (11), where the *skeleton* carries syntactically relevant grammatical information and the *body* carries semantic information of encyclopaedic nature.

(11) SELECTION IN COMPOUNDING

a. COORDINATE COMPOUNDS

<i>ACTOR</i>	<i>DIRECTOR</i>
skeleton	
[+ material, dynamic ([i])]	[+ material, dynamic ([i])]
body	
<human, professional>	↔ <human, professional>
<show business>	↔ <show business>
<works in theatres, films, etc.>	↔ <works in theatres, films, etc.>
<receives directions>	↔ <gives directions>
<...>	<...>

b. N+N SUBORDINATE COMPOUNDS

<i>apple</i>	<i>CAKE</i>
skeleton	
[+ material ([i])]	[+ material ([i])]
body	
<physical>	<physical>
<shape>	<shape>
<edible>	↔ <edible>
<can be an ingredient>	↔ <made with ingredients>
<...>	<baked>
	<made for parties>

c. ATTRIBUTIVE COMPOUNDS

<i>snail</i>	<i>MAIL</i>
skeleton	
[+ material ([i])]	[+ material ([i])]
body	
<gastropod>	<institution>
<secretes slime>	<means of communication>
<very slow>	↔ <takes time>
<...>	<...>

They observe that in coordinate compounds, there is a perfect match between the skeletons and a high level of matching in the *body*. In subordinate compounds, it is the encyclopaedic features of the body, rather than the skeleton that matters. At least one of the features of the body of the head must match the encyclopaedic features of the non-head (e.g. *edible*). Like the subordinate compounds, the skeleton does not play any significant role in the attributive compounds. What is required is that the non-head matches at least one of the encyclopaedic features of the head (e.g. very slow ↔ takes time). The matching feature is the only relevant piece of information that the non-head contributes; the rest of the features are ignored.

The idea of these three types of relations characterising compounds predates Scalise and Bisetto's work.⁵¹ Spencer (1991:310) refers to these three types of relations, differing from the former only in terms of terminology, but the basic idea is similar. He observes that “the elements of a compound may have relations to each other which resemble the relations holding between the constituents of a sentence. The three important relations are *head-modifier*, *predicate-argument*, and *apposition*” [emphasis added, CKIA]. It is these three types of relations, also rendered as subordination, modification and coordination which give the three macro types.

In their scheme, endocentric compounds usually exhibit a head-modifier relation. For example, *kuo* ‘organization’ heads the Akan compound in (12) and is modified by the left-hand constituent *nkabom* ‘unity’. In such compounds, the modifying constituent

⁵¹ Indeed, Scalise and Bisetto (2009: 44, fn. 16) credit Bloomfield, Tollemache and Marchand with the idea they develop, as the following shows:

This position is not new. Marchand (1969: 18), for instance, observed that all compounds can be explained on the basis of the syntactic relations that underlie the corresponding sentences. ... see also Tollemache (1945). Bloomfield (1933: 233) in his time had also observed that one of the two lines of classification of compounds concerned the ‘relation between members’.

attributes a property to the head, the same function that an attributive adjective has in a noun phrase, hence the name attributive compound.⁵²

- (12) *nkabom kuo*
 unity organization
 ‘union’

Predicate-argument relation exists in compounds where one constituent selects the other. In (13), the nominal *ɔbotan* ‘rock’ is the external argument of the predicate *tim* ‘to be firm’.⁵³

- (13) *ɔbotan-tim*
 rock-be.firm
 ‘firm/solid rock’

The linear order of constituents with predicate-argument relation may be altered. A lot of compounds in Akan are of the N-V type where the noun is the internal argument of the verb but the linear order of the verb and noun is the reverse of what obtains in the VP where the verb precedes the noun because Akan is a strictly SVO language. See chapter 6 for discussion

- | | |
|---|---|
| (14) a. <i>nyansa-hu</i>
wisdom-know
‘becoming wise/learning’ | b. <i>nyansa-pe</i>
wisdom-to.like/love
‘the search/love for wisdom (philosophy)’ |
|---|---|

Apposition (or Coordination) is the kind of relation that obtains within compounds that involve “a simple conjunction of two elements without any further dependency

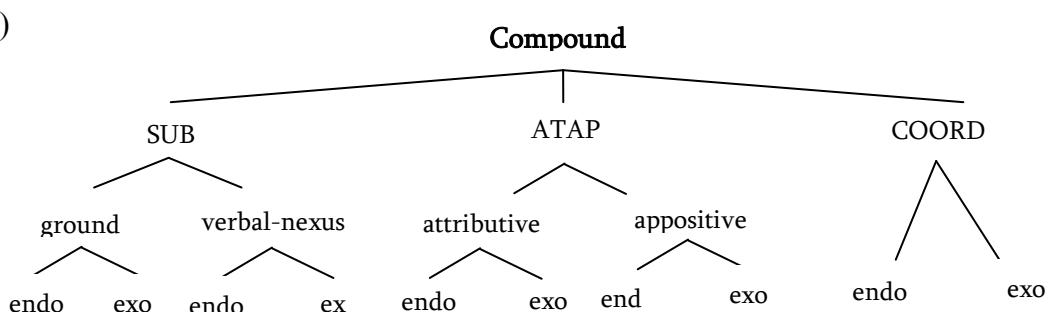
⁵² This parallelism leads some to analyse the first members in right-headed NN compounds as adjectives even though they are nouns (cf. e.g., Marfo 2004b). Spencer (1991) regard this as a sign of inexperience.

⁵³ Synthetic compounds in English and other Germanic languages (e.g., *truck driver*, *youth employment*) have a deverbal nominal second member. They are, therefore, endocentric compounds (*youth employment* is a kind of employment). Yet, these compounds exhibit a predicate argument relation because the left-hand members of the compounds (e.g., *youth*) functions as the internal argument of the base verbs of the right-hand members of the compound, the predicate (i.e. *employ*).

holding between them” (Spencer 1991:311). Compounds of this type are mostly called dvandva compounds. It is generally held that their constituents, (as in *mother-child*, in *mother-child relationship*) are of equal rank; that is, “both members are on an equal footing, and they can be paraphrased with ‘and’” (Haspelmath 2002: 89).

Scalise and Bisetto (2009: 49-53) modify the Bisetto and Scalise (2005) proposal, introducing another level of discrimination which they claim “is needed in order to account for the semantic/interpretive relations that come into place between the constituents of the compound in each class”. Subordinate compounds are divided into *ground* and *verbal-nexus*, a grouping which, they admit, is a return to Bloomfield’s and Marchand’s classification. The class of attributive compounds is redesignated **ATAP**, covering *attributive* and *appositive* compounds, the members of which can be either endocentric or exocentric. Coordinate compounds remains unchanged. The modified classification is diagrammed as follows.

(15)



Bisetto and Scalise’s (2005) classificatory framework has gained some acceptance. However, some issues have been raised in recent times. Recently, Scherer (2009) has questioned the usefulness of Scalise and Bisetto’s classificatory system in the classification of [V-V]_V compounds. She claims that it may only insufficiently account for [V-V]_V compounds. She asks what it will mean for [V-V]_V compounds if the

constituents are supposed to have a subordinate, coordinate or attributive relation. That is, do we expect to find [V-V]_v compounds that exhibit attributive, coordinative or subordinative relation between their constituents?

Another issue that Scherer raises is the need to take into account the distinction between semantic versus syntactic endocentricity or exocentricity. Could it be possible that the same compound may be shown to exhibit different types of relation if the distinction mentioned above is taken into consideration? For example, the compounds *pickpocket* and *cutthroat* are semantically exocentric but syntactically endocentric because the verbs *pick* and *cut* take *pocket* and *throat* respectively as their complements, thus they exhibit subordination. What is the implication for Bisetto and Scalise's framework? Scherer argues that these questions need to be investigated further.

Scherer's concerns are well-founded and need addressing. I believe that the latter concern is the most important and potentially damaging to the elegance of the framework. I would imagine that the problem could be remedied by introducing a layer below the three principal types where two nodes for SYN(tax) and SEM(antics) will be installed, with each dividing into endo(centric) and exo(centric) types.⁵⁴

Jackendoff (2002: 75), in responding to peoples equating Universal Grammar (UG) to language universals compared UG to a toolkit, arguing that “[w]hen you have a toolkit, you are not obliged to use every tool for every job. Thus we might expect that not every grammatical mechanism provided by Universal Grammar appears in every language.” In the same way, although Scherer's first concern may be justified, I

⁵⁴ Pepper (2010) suggests that the 2009 modification takes away the elegance of the original proposal.

believe that one should not expect all compound types to exhibit all three macro types of relations in all languages. Rather, we may expect every compound to fit into one of the macro types. The details of the lower levels of the classification may be based on language-specific considerations. Thus, a language may have nominal compounds that exhibit attribution and coordination, but not subordination. As will be shown below, Akan compounding is a noun-forming process and so we find $[V+V]_N$ but not $[V+V]_V$ compounds. We cannot, however, rule out finding a language with $[V+V]_V$ compounds in which a subordinative relation obtains, but maybe not attributive.

The original Bisetto-Scalise taxonomy, thus, yields six classes of compounds which, if followed, should account for all types of compounds that may be attested in a language. For the purpose of the present thesis, however, I will base the discussion of Akan compounds on the form-class of the constituents and the position of the head constituent, if present. I will show throughout the discussion which of the six subclasses a compound type I discuss belongs to. First, the choice is based on convenience, as the compounds will have shorter names. Thus, instead of *Left-headed subordinate N-N compounds*, we simply have *Left-headed N-N compounds*. More importantly, one has to name the word-class of the constituents to correctly delineate the compound but whether the compound is subordinate or attributive is a secondary matter.

4.2.4 Semantic relations in compounds

Compounds are interesting for their relative semantic transparency. Given any compound, the native speaker can intuitively tell that there is some relation between the constituents, e.g. *doorbell* ‘bell for a door’, *pickpocket* ‘one who picks pockets’

etc. In fact, speakers generally manage to interpret virtually any noun-headed compound, including freshly formed ones, given the appropriate pragmatic context. Usually, “drawing on past experience with similar combinations” (Gagné 2002: 724), speakers tend to give plausible interpretations to novel compounds even where they deviate from the intended meaning (Downing 1977; Gagné 2002). For Booij (2007b), the ease of interpretation is possible because usually the meanings of the constituents are already known, leaving the hearer the simple task of finding the semantic relation obtaining between the constituents.⁵⁵ However, because the semantic relations between heads and dependents are pretty diverse, even suggested to be vague, accounting for them is no trivial matter.

The actual means of accounting for the semantics of compounds depends on the type of compound and, so far, N-N compounds have received the most attention (Downing 1977; Fanselow 1984; Gagné 2002; Gagné & Spalding 2006; Lees 1960; Levi 1978). Bauer (2006: 722) identified four main approaches to accounting for the semantics of compounds and a fifth one which can be a mixture of any of the four approaches. Unsurprisingly, they apply mainly to N-N compounds. The first approach relates the logical link between compound constituents to available prepositions or inflectional classes. Here the difference between *hayfever pill* (a pill to take away hayfever) and *sleeping pill* (a pill meant to induce sleep) is construed to be the result of the constituent being linked by two different prepositions – ‘pill *against* hayfever’ and ‘pill *for* sleep’.

⁵⁵ Jackendoff (2009a: 110) suggests that “[t]he productivity of compounds means that language users must have a set of principles that enables them to interpret new compounds. Lexicalized compounds are for the most part specialized instantiation of these principles.”

The second approach relates the link between the constituents to the syntactic role the elements might play in sentences glossing the link such as *subject-predicate* (in both ‘the pill relieves hayfever’ and ‘the pill induces sleep’) and *subject-adverbial* (in the gloss of *morning-after pill* as ‘the pill is taken on the morning after’).

The third approach relates the logical link to specific predicates that are assumed to be deleted in the course of the syntactic derivation of the compound structure. Thus, for example, the predicates RELIEVE and INDUCE might be assumed to be present at some underlying level of the analysis of *hayfever pill* and *sleeping pill* but not at the surface.

The fourth approach relates the logical link between the constituents of the compound to a limited set of semantically basic predicates that are deleted in the process of derivation. This differs from the third approach since it doesn’t assume language-specific lexemes, but rather, a set of universal Aristotelian categories.

Spencer (2011), on his part, groups the approaches to accounting for the semantic relations between the constituents of N-N compounds into two – *Lees’s solution* and *Downing’s solution*, named after Lees (1960), and Downing (1977) respectively.⁵⁶ Lees’s solution assumes a small(-ish) fixed set of general semantic relations in noun-noun compounds. For this, a set of semantic properties associated with the head noun are enumerated and an appropriate corresponding property in the non-head found so that a paraphrase can be constructed which defines the compound. The set of semantic properties is assumed to be finite, covering broad-based categories like *purpose* (writing desk), *appearance* (catfish), *location* (garden chair), etc. The motivation for Lees’s solution approach as presented by Levi (1978: 75), is that:

⁵⁶ The discussion here draws on Spencer (2011).

[a] careful examination of the semantic relation between head nouns and prenominal modifiers in C[omplex] N[ominal]s reveals not only that these relations are not “endless in number” [...], but that the variety of these relationships is in fact confined within a very limited range of possibilities.

She argues that “the larger part of the semantic relationships that may be associated grammatically with the surface structures of CNs can be expressed by a small set of specifiable predicates that are recoverably deletable in the process of CN formation” (Levi 1978: 75-76). The predicates, nine in all, are: CAUSE, HAVE, MAKE, USE, BE, IN, FOR, FROM, and ABOUT. With this view, *tree house*, as the location of the *house* is possible because a house has to have a location (cf. Spencer 2011: 490).

Aside from the syntax-based approaches (Lees 1960; Levi 1978) there are lexicalist approaches, including Warren (1978) and recently Jackendoff (2009a) which, in my view, can be safely classified as employing less restrictive versions of Lees’s solution approach to the analysis of the semantics of compounds. If we stretched the argument a bit more, we could add to this list Lieber’s (2004, 2009b) lexical semantic approach (and probably Johnston and Busa (1996) & Pustejovsky (1995) which are decompositional in approach and attempt to build word meanings out of clearly defined primitive meaning components, be they grammatical or encyclopaedic). Thus, as I see it, the possible interpretation of the compound is potentially finite, restricted ultimately to the available primitive elements from which the meanings of compounds are composed.⁵⁷

⁵⁷ This might sound outlandish, so I will attempt to unpack it. Among recent frameworks for lexical semantic representation, Lieber’s (2004) model is probably the most explicit about the specific roles of grammatical information (*skeleton*) and encyclopaedic information (*body*) in the determination of the meaning of complex words, as shown in (11). Of course the theories mentioned in the previous paragraph as well as others like the theory of Two-Level-Semantics (Bierwisch 1983, 1988) which is employed by Olsen (2001) in her discussion of compounds, also attempt to account for both grammatical and encyclopaedic information, but Lieber is more explicit. However, the so-called

There are also psycholinguistic studies which attempt to characterize how the non-head may modify the head. They can be said to employ Lees's solution to the extent that they argue for the existence of sets of *stereotypical relations*, or cognitive schemas/templates for working out the meaning of the compound. They dictate how the modification relation between heads and modifiers in N+N compounds should be assessed (Gagné 2002; Gagné & Spalding 2006). By this, proponents are able to differentiate between *teapot* and *coffeepot* which are underpinned by the relation *head noun FOR modifier*, *office pot* with the relation *head noun LOCATED modifier* and *plastic pot* with the relation *head noun MADE OF modifier*.

The view that these linguists employ Lees's solution is shared by Dressler who observes that “[t]his assumption of cognitively-based stereotypical relations, however, leads back to the strategy of Levi (1978) and others to construct certain basic relations applicable to the meaning of compounds” (Dressler 2006: 38).

The attraction of Lees's solution lies in the fact that it works very well for conventionalized/lexicalized compounds which can mostly be paraphrased with a smallish set of concepts. This is true especially for cases where a subcategorized complement or argument of a predicate seems to be obligatorily denoted by a non-head, as in English synthetic compounding.⁵⁸ However, Lees's-solution approach is

encyclopaedic information is listed for each constituent and the meaning of the complex can be computed only from the listed encyclopaedic information. And, that is where the problem emerges. Scalise, Bisetto, and Guevara (2005: 140) employ Lieber's framework in their discussion of lexical selection; see (11) above. They claim that the compounds *birthday cake* and *pancake* are acceptable since *cake* selects each of the modifiers on the basis of the matching features in their respective bodies – <party> and <made for parties> in the former and <used for cooking> and <baked> in the latter. They then claim that “*cake* cannot select a complement such as *velocity* (**velocity cake*) with which no features can be matched unless a plausible context justifies a redefinition of the encyclopaedic information available at the time of creation.”

⁵⁸ According to Spencer (2011), the reason lexicalized expressions tend to exhibit a small fixed set of semantic relations in contradistinction to those formed on-the-fly, is that all compounds are created for

not particularly useful because in reality there is no restriction on the semantic relations that may hold between the constituents of a compound. It is our knowledge of the world that tells us that *flower seller* is one who sells flowers whilst *street seller* is one who sells on the street. All that is required for the interpretation a compound is the establishment of a sensible relation between the constituents of the compound. This is what Downing's solution provides.

Downing's solution (Downing 1977) assumes that the relation between the constituents of compounds is specified pragmatically and hence could, in principle, be any relation at all. Proponents believe, following Allen (1978), that there is some arbitrary, pragmatically and contextually determined relation \mathfrak{R} (or 'R') holding between N-N compound members which may very well be some kind of semantically definable relationship (e.g. '*N₂ is located at N₁*'), as Lees's solution advocates. However, it needs not involve any semantic predicate associated with a lexeme in the compound.

On a given occasion of use, the hearer is expected to construct some plausible (though not necessarily unique or determinate) relation between the modifier and the head. Thus, the *smock man* can denote a *man* with some relation to the notion *smock* (e.g. he *makes* smocks, *sells* smocks, *stole* a smock, *mends* smocks, *wears* smocks habitually, etc.). Again, given an imaginary society where roads are individually owned and disposed of freely, so that people specialize in selling streets, *street seller* could refer to one who literally sells streets. This way, a noun-headed compound can mean

name-worthy entities and they undergo "temporary lexicalization" the moment they are created (Dahl 2004: 256). However, it is those which persist and get embedded in the mental lexica of speakers which tend to denote recurrent semantic relations like *cause* and *location* as found on the checklist provided by Lees's solution.

anything within the appropriate context, limited only by the hearer's artistic imagination.

It may be suggested that the two solutions are perfectly suited to different data types – Downing's solution for nonce forms and Lees's solution for fully lexicalized expressions. Indeed, Downing (1977: 819) observed that “while a newly created compound may be interpretable in a number of ways, most lexicalized compounds come to be consistently associated with a reading based on only one of the relationships which could possibly hold between the members”. Thus, in practice, Downing's solution may be applied in dealing with nonce formations, stressing the primacy of pragmatic context and a Lees's solution which provides a checklist of fixed meanings applied in studying lexicalized expressions.

However, Jones (1983) argues that “[i]t is not in fact possible to maintain a principled distinction between lexicalized and non-lexicalized compounds” whilst Gagné and Spalding (2006: 148) observe that “[i]t is possible that the method used to understand novel compounds might also affect the processing of familiar compounds because all compounds start out as novel combinations.” Consequently, we have reason to jettison the idea of the putative specialization of either approach for particular data types and to assess the extent to which either approach accounts for the available data. To this end, we have to consider productive compound types rather than fossilized ones (Ricca 2010) and then we may be inclined to share the view that “hunting for a finite list of semantic relations is hopelessly misguided” (Spencer 2011: 490). This is

because the range of semantic relations that may obtain between the constituents of compounds is potentially unlimited, whether freshly formed or lexicalized.⁵⁹

The problem with Lees' solution is not so much the laying out of the smallish list of stereotypical relations. Indeed, as Dressler observes, "no comprehensive description of nominal compounds works without relational notions, such as 'consisting/made of, similar to' or metaphor, if compounds such as *potato chips*, *blood orange*, *velvet voice*, *fire-eater* have to be accounted for" (Dressler 2006: 38). The problem is with the attendant claim that the list of relations is exhaustive (cf. Levi 1978: 75). Clearly, that cannot be the case just for compounds that are assumed to be fully lexicalized. Two anecdotal examples will clarify the point.

One, I have encountered English speakers who have never used computers (pretty strange, but true). For such persons *mouse pad* may be novel and so the possibility of such a person giving an interpretation that does not have anything to do with computers is very high. Two, there is a generation that has grown up at a time that the *typewriter* is no longer common. For any member of this generation who has not seen one, the compound *typewriter* will be completely new and so when asked for an interpretation, is likely to give one which has nothing to do with a device for typing. Thus these lexicalized compounds may be subject to interpretation like novel compounds.

⁵⁹ Bauer (2006: 722) makes the same point when he observes that some compounds are notoriously resistant to being categorized in any of the approaches above. He argues, therefore, that "[a] preferable solution may be to see the relationship between the elements not as an ambiguity but as vagueness and to deny that the specific links between the elements of compounds is strictly grammatical at all. Rather, the specificity that speakers read into the meaning of compounds can be seen as the result of the lexicalization process. ... starting with the context of first use and becoming more specific with further use."

The point is that listeners' interpretation of lexicalized compounds (e.g. *bullet hole*) could be as nuanced as the interpretation of non-lexicalized compounds (e.g. *pea-princess*), being subject to the same interpretational process. Therefore, the compounding relations made available in Lees's solution approach should be seen as favoured relations – neither finite nor static – whose appropriateness depends on factors like predictability in context and the semantic class of the head (Downing 1977: 820, 36, 39). This leads back to a process of interpreting compounds which appeals to the pragmatic context – Downing's solution. It must be preferred because the set of accessible interpretations it makes available properly includes those postulated in Lees's solution (Spencer 2011).

It has to be noted that Akan N-N compounds tend not to be as ambiguous as N-N compounds in Germanic languages. However, we still realize that in many cases, the compound can be interpreted in more than one way, depending on the properties of the constituents.

Where one of the constituents of the compound is argument-taking, the interpretations are usually less nuanced. This is consistent with observations about verb-involved compounds. As Katamba (1993: 308) observes, “[...] verbal compounds, stand out from the rest in that [they exhibit] quite consistent semantic readings that match the syntactic characteristics of the compounds.” That is, the interpretation of compounds with argument-taking heads is not free because the argument-taking constituent places restrictions on the other constituent, which is expected to satisfy its AS requirement. In other words, the non-head constituent forming a compound with an argument-

taking verb must qualify as an argument of the latter, unless it is a modifier, or a “semantic argument” (Lieber 1983).

This means that in verb-involved compounds, non-heads receive specific interpretation as arguments of the (de-)verbal heads. This is in sharp contrast to non-verb-involved (attributive) compounds, as discussed above, where the nature of the relation between constituents is not a matter of linguistics knowledge but rather conceptual and factual real-world knowledge.

4.2.4.1 CM approach to the semantics of compounding

CM employs Downing’s approach to the semantics of compounds. It is acknowledged that the range of meanings that a compound may express is so broad as to render any attempt at defining a list of possible meaning relations not worthwhile. The relation between compounds is rendered simply as “R”, to be spelled out differently for each instantiating compound, as shown in the schema in (16), instantiated by our novel compound *smock man*.

(16) *Attributive compound template*

$$\begin{array}{c} < [[a]_{Xi} [b]_{Nj}]_{Nj} \leftrightarrow [\text{SEM}_j \text{ with relation R to SEM}_{i,j}]_j > \\ | \\ < [[\text{smock}]_{Ni} [\text{man}]_{Nj}]_{Nj} \leftrightarrow [\text{MAN}_j \text{ with relation R to SMOCK}_{i,j}]_j > \end{array}$$

The relation R, in keeping with the Downing’s approach, is pragmatically defined, making room for the observed freedom of interpretation that characterizes such compounds. This allows for various interpretations of our nonce form *smock man*, including a man who *makes smocks*, *sells smocks*, *stole a smock*, *mends smocks*, *wears*

smocks habitually, etc. and many more like *the man who made a joke about a smock* or *the man who was teased about wearing a shirt that looked like a badly sown smock*. Further spelling-out of the relation R is possible, being limited only by the imaginative power of the hearer and prevailing pragmatic conditions, with no non-arbitrary way of limiting the number of possible interpretations.⁶⁰

4.2.5 Recursion in Compounding

One property of compounds that is known to aid their productivity is recursion. This is especially the case for N-N compounds. As Booij (2002b: 142) observes, for Dutch, “[t]he productivity of nominal compounding, in particular of N-N compounds is increased by the fact that both constituents can be compounds themselves”. The view is that, for Dutch, there is no structural constraint on the extent of recursivity to the extent that it does not cause processing difficulty.

The data at my disposal show that only nominal constituents of Akan compounds can be recursive.⁶¹ However, it seems that not all nominal constituents of compounds may be complex. In the N-A compounds in my dataset, none of the nominal constituents is complex. In the V-N compounds, none of the nominal constituents is complex – neither derived nor compound. In N-V compounds, the nominal constituents may be recursive, but are mostly not. Of the 158 N-V compounds, only 15 have compound left-hand constituents. Even with N-N compounds, there are subclasses that are hardly recursive. Out of 21 left-headed compounds, only 1 is left-recursive. Out of 42

⁶⁰ The ease of interpretation actually enhances the productivity of such compounds. As Lieber (1983) observes, “a compound type containing an argument-taking stem will never be as productive as compound types containing no argument-taking stems”.

⁶¹ In fact, only nominal constituents of compounds can be complex and this can be explained from the fact that Akan does not form complex forms of other word classes beyond nouns.

exocentric N-N compounds only 4 are left-recursive. Finally, of the 139 right-headed N-N compounds, 36 are only singly left-recursive, 6 are singly right-recursive whilst 8 are both right and left-recursive.

This means that even among the most potentially recursive group of Akan compounds, only 50, representing 35.97% are recursive in either one or both constituents. When we put together all the compounds that exhibit some form of recursion, we get 66 representing 14.9% of the 443 compounds being recursive.

The foregoing shows that when Akan compounds exhibit recursion they are mostly left-recursive and the constituents that can be recursive are nominal constituents. Of the 66 recursive compounds, 60 (90.9%) are left-recursive. These observations are fairly consistent with observations about preferred patterns of recursion in compounds (cf. Dressler 2006; Krott et al. 2004). For instance, in their study of German and Dutch, Krott et al. (2004: 89) observed that there are more left-branching compounds than right-branching compounds, both in German and in Dutch, and that this suggests that left branchingness is the unmarked structure for the triconstituent compounds which they studied.

4.2.6 Compounds versus phrases

As I have noted severally above, compounds have a lot in common with phrases, including having lexemic constituents which pattern linearly like phrases. Thus, the issue of how to distinguish between compounds (morphology) and phrases (syntax) is an important one that must be settled for the present discussion. But doing this requires that we are able to demarcate the proper domains of the two concepts.

Whilst many scholars working on Akan do not discuss the issue directly, they tend to assume that the observed similarity is indicative of the phrasal provenance of some compounds. Indeed, in some studies, the linear order of constituents and position of the head in nominal compounds have been directly linked to their putative phrasal sources. For example, working from a phonology-syntax interface perspective, Marfo (2005: 66) writes: “the order of compound members is a reflection of their order in the syntax. Constituent headedness in the light of the X-bar theory of phrase structure ... is, thus, maintained in the resulting compound (especially, in N-Adjs). The majority of N-N and N-Adj compounds in Akan [...] are headed like syntactic phrases”. He makes an even stronger claim, arguing that “for a compound word to materialize in Akan, the constituents involved should map into one prosodic phrase/domain. Otherwise, there could be no compounding and some phonological changes that occur in a compound could not be realized” (Marfo 2005: 63).⁶²

First, there is a problem with the erroneous entailment that all compounds are formed from underlying phrases, ruling out the possibility of speakers merely concatenating say two nouns to form a compound. However, there is reason to believe that speakers do this to the extent that some relation can be established between the constituents to aid interpretation since sometimes compound members cannot be said to be possible collocants in phrases. For example, we cannot say that *bike* and *girl* will belong together naturally in a phrase. Yet they form a compound *bike girl* which, given the

⁶² Pepper (2010: 42) presents a similar view of nominals compounds in Nizaa (Mambiloid, Cameroon). He observes that the language has no clear preference for either left-headed or right-headed nominal compounds. Pepper argues that right-headed compounds are formed from underlying possessive constructions because the predominant semantic relation in right-headed compounds are *part-whole* and *kinship* which are also the relations that occur predominantly in possessive constructions, together with *ownership* for strict possession. For him, this establishes some forms of commonality between possessive constructions and right-headed compounds. Left-headed compounds on the other hand correspond to NPs and are underpinned by the cognitive function of categorization. The details of his cognitive analysis are irrelevant here.

appropriate pragmatic context, is perfectly interpretable, as extensively discussed in the literature (Downing 1977; Gagné; Marchak & Spalding 2010; Gagné & Spalding 2006; Spencer 2011; Warren 1978).

Secondly, the claim that compounds have phrasal sources suggests that the ability to produce phrases will somehow precede that for compound formation in the development of the child. However, psycholinguistic studies have shown that children learn to produce N-N compounds as early as age 1;8, attaining basic adult patterns by age 3;0 (Clark; Gelman & Lane 1985; Dressler & Lettner 2010), whilst virtually no phrases or argument structure constructions occur before age 2;5 and very few before age 3;0 (Tomasello 2000).

4.2.6.1 Criteria for distinguishing compound from phrases

The criteria for distinguishing between compounds and phrases may be orthographic, phonological, morphological, syntactic, or semantic. In terms of semantics, the traditional approach has been to look for semantic specialization and exocentricity. That is, phrases are by definition compositional. So if a word group is non-compositional (whether exocentric or has institutionalized meaning) or partially compositional then it probably is a compound and not a phrase. Scalise and Guevara (Scalise & Guevara 2006), for example, have claimed that only compounds can be exocentric, but surely that is debatable.

Formal tests look out for signs of resistance to lexical integrity violation. If the construction allows the insertion of external material between its parts and also allows its constituents, especially modifiers, to be referred to or modified on their own, then

it probably is a phrase and not a compound because the modifier in a compound is never referential, so it cannot be referred to or modified. For example, because of the lexical integrity of the compounds, word internal antecedents for anaphoric elements are prohibited. Thus, the example in (17) is unacceptable because *bi* ‘some’ refers to *edziban* ‘food’ which is part of a word. The problem with this is that judgements vary. As a native speaker of Akan I find the example in (18) acceptable and other native speakers I have consulted also find it acceptable, although *bi* refers to *sanku* ‘organ’ which is a constituent of a compound, a word.

- (17) **Kofi pε edziban_i-dzi nso ɔ-n-taa n-nya bi_i n-dzi*
 Kofi like (food)-eating but 3SG-NEG-continue NEG-get some NEG-eat
 ‘Kofi like (food)eating but he often does get some to eat’

- (18) *Aba yε sanku_i-bɔ-fo osiandε ɔ-bɔ bi_i daa*
 Aba be organ-play-NMLZ_[person] because 3SGSUBJ-play some always
 ‘Aba is an organist because she plays some [organ] always’

Dixon and Aikhenvald (2002) have put forward a number of formal criteria for identifying grammatical words. In their model, a unit is a grammatical word (i) if the elements of the unit occur together rather than scattered over the clause in which it occurs (cohesiveness or internal immutability), (ii) if all elements occur in a fixed order and can be moved as a unit (syntagmatic mobility), and (iii) if, as a unit, it has a conventionalised meaning.

Dolphyne (1965: 14-15) actually gave a similar set of criteria for telling that a unit constitutes a word. She writes:

The word as a unit has been institutionalised in written Asante. Such isolate words can be justified, on formal grounds, as legitimate linguistic abstraction, each having a stable internal structure, and therefore not interruptible by other linguistic forms and, as a single unit, capable of free mobility in the sentence. The word is primarily a grammatical unit but since there are certain prosodic elements which may be stated for the word as a whole, the word is considered here as a relevant unit in the phonological analysis. The structure of the word is described in terms of syllables and prosodic elements.

For the purpose of distinguishing between compounds (morphology) and phrases (syntax) I will reckon a unit to be a compound if it meets the criteria for grammatical words (Dixon & Aikhenvald 2002). I will also consider a unit a compound on purely morphological grounds, that is, if, as a unit, it can inflect for number or can undergo further derivation by *-fo* or *nyi*, as discussed in §3.2.3.1. This is because, as noted in the introduction, compounding in Akan is a noun-forming process and the two suffixes attach to only nouns to derive personal nouns as. Thus, any word group in Akan that can undergo derivation by means of these suffixes, in my estimation, has the status of a noun, and for that matter is a compound.

I will also use Constituent order to tell the compoundhood of a unit. As noted in the introduction, Akan is a strictly SVO language. Therefore, if we find a verb and its notional object occurring in an acceptable construction where the object precedes the verb, then the construction has to be interpreted as a compound.

Finally, I will employ the tonal pattern of constructions to tell their compoundhood in Akan. Dolphyne (1988: 120) observed that Akan compounds can be grouped into two based on the tonal melody of the first stem. In the first and most common group, tonal

pattern one (henceforth, TP1), the syllables in the first constituent are all L-toned and in the second, tonal pattern two (henceforth, TP2), the syllables in the first constituents are not L-toned. It is generally accepted that constructions with TP1 are compounds whilst those with TP2 may not necessarily be compounds. The former are regarded as compounds because they tend to be consistently lexicalized and semantically non-transparent. In addition, other complex words that are not compounds like the personal attribute nominal construction discussed in Chapter 8 tend to have the same tonal melody. Thus, we may argue that TP1 only marks the complex forms off as lexical items and not necessarily as compounds. I will discuss them further in chapter 6.⁶³

4.3 Conclusion

In this chapter, I have discussed general issues in the study of compounding. This is meant as a general backdrop against which Akan compounding will be discussed in the next three chapters.

⁶³ There are other phonological changes that are known to characterize compounds such as homorganic nasal assimilation, vowel harmony, loss of vowel and/or syllable, etc. However, these are not particularly useful criteria for distinguishing between compounds and phrases. For example, ATR harmony, by which an advanced vowel causes preceding -ATR vowel(s) to become +ATR will occur in phrases, the same way it does in a compound. In the same way, homorganic nasal assimilation, by which a nasal takes the place of articulation of a following non-nasal consonant, will occur whether the consonants occur within or across word boundary, so we cannot use it to differentiate between phrases and compounds, etc.

5 COMPOUNDING IN AKAN

systematic properties of compounds need not be derived from the head, but can be seen as holistic properties of the compound construction as such
(Booij 2012: 345)

5.1 Introduction

Compounding in Akan has been studied for well over a century going back at least to Christaller (1875). Since then compounds have featured in various studies on Akan including Balmer and Grant (1929), Welmers (1946), Boadi (1966) and Dolphyne (1988, 1996). Recent years have seen a renewed interest in the subject (cf. Abakah 2004, 2006; Appah 2003, 2004, 2005, 2009a, 2009c; Marfo 2004a, 2005; Obeng 2009). However, compared to the enormous literature on compounding cross-linguistically, compounding in Akan is relatively under-researched and most of the available studies focus on the (morpho-)phonology, leaving the grammatical and semantic properties largely unaccounted for. Boadi's (1966) study which focuses on morphosyntax was cast in the mould of Lees (1960).⁶⁴

A consequence of the state of research on Akan compounding is that claims made about the nature/properties Akan of compounds have not been tested, leaving basic questions about the process of compounding, types of compounds, etc. unanswered. It hasn't been established, for example, whether all the compound types posited for

⁶⁴ Thus the CM perspective brought to the analysis of Akan compounds breaks new ground. Indeed, as noted in chapter one, as far as I know, this work is the first on a major aspect of the morphology of an African language in CM. The only other study that applies the tenets of CM to the analysis of data from an African language is Arcodia's (2012b) analysis of the polysemy patterns of the Ewe diminutive morpheme *vi*.

Akan really exist in the language. For instance, upon careful examination, it turns out that the class of A-N compounds posited by Dolphyne (1988) does not exist at all. I discuss this in §5.2.1.

Against this background, I aim to do two things in this and the next two chapters. First, I will present an empirically-based detailed description of compounding in Akan. This is important because it seems to me that some compounds are put in classes they don't belong to and labels have been applied which do not fit. Secondly, I will develop theoretical arguments in favour of CM which is underpinned by the understanding that the properties of Akan compounds may be more than the sum of the properties of their parts. For example, compounding a verb and its internal argument may yield an agentive nominal without any marker of agentivity (e.g. *kòñsúó* 'to fetch water' [lit. go-water] => *kóñsúó* 'one who fetches water'), and two verbs may form a nominal compound ([V+V]_N), so that the form-class of the compound is completely unrelated to those of its immediate constituents. I interpret this to mean that there is a meta-schema for compounding in Akan which imposes a form-class label on the compound, irrespective of the form-classes of the constituents. I discuss this in §5.2.

Such non-compositional properties are challenging for rule-based frameworks (e.g. Lieber 1983, 1992; Selkirk 1982) because their source-oriented rules presuppose that every property of the whole can be accounted for in the constituents.⁶⁵ Of course, some compounds have regular properties which are easily accommodated in rule-

⁶⁵ As noted in §4.2.4, the same may be said of even lexical semantic approaches (Johnston & Busa 1996; Lieber 2004, 2009b; Pustejovsky 1995) because their methodology involves breaking the individual constituents down into their constitutive parts and sifting various pieces of meaning components that may be modified and/or combined in various ways to give the meaning of the complex unit. Of course, these theories may vary in their specific implementation of these ideas but, ultimately, they aim at accounting for ALL the properties of compounds in the constituents.

based frameworks. It is when they are faced with compounds with not-strictly-compositional properties that rule-based models fall short. For example, without introducing an abstract nominalizer, rule-based models cannot account for cases of absolute exocentricity, where the form-class of a nominal compound is not related to those of its constituents. In CM, however, holistic properties of compounds are dealt with naturally because constructional schemas can be either source-oriented or product-oriented (cf. Zager 1981, 1983), allowing for compounds to inherit features, including form-class specification, from dominating constructional schemas. This makes it possible to present a unified account of both regular and irregular forms.

In §5.2, I discuss general issues in the study of Akan compounding. I argue that the semantic properties, phonological properties (esp. tonal pattern) and morphosyntactic properties (esp. the form-classes of the constituents and the compound) provide strong evidence for adopting a constructional view of grammar, as discussed in chapter 2 (§2.2.2). I also show, in this section, that the so-called A-N compounds do not exist in Akan and that the compounds that are put in this class by Dolphyne (1988) and others are N-N compounds. This leaves five out of the six classes of compounds posited by Dolphyne (1988). I present these five compounds types and their relative frequencies in §5.3. I then group the attested compound types into two and discuss them in turn in §5.4 and §5.5. I conclude the chapter in §5.6. The questions I attempt to answer are:

- I. What kinds of compounds occur in Akan?
- II. What is the nature of the semantic relations between constituents of compounds?
- III. In the formation of synthetic compounds which argument gets incorporated (i.e. gets compounded with the verb) and what is its semantic role?
- IV. What does Akan compounding reveal about the nature of the interaction between morphology and syntax?

5.2 Akan compounds

Compounding is very productive in Akan. However, as Figure 10 shows, my dataset reveals that compounding is not the most productive word-formation mechanism. Affixation seems to be more productive. But, as indicated in §3.3.2, the statistics have to be taken with the necessary caution for the reasons stated there. Also, a chi-square test reveals that the difference between the two word-formation processes is not statistically significant; $\rho = 0.08953$ ($df = 1$, $\chi^2 = 2.8827$).

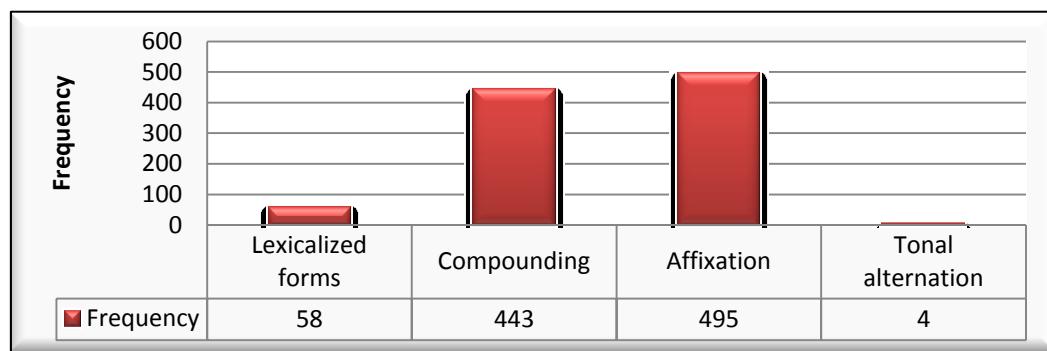


Figure 10. Frequency of noun formation processes

Again, my data show that compounding in Akan is a noun-forming process because even where different word classes are combined, the resultant compounds are invariably nominal, suggesting that compounding in Akan is blind to syntactic category (Jackendoff 2009a: 113). This blindness to syntactic category confirms the view that “systematic properties of compounds need not be derived from the head, but can be seen as holistic properties of the compound construction” (Booij 2012: 345). It also speaks for a framework that allows for the expression of the holistic properties of constructions, including the syntactic category. Thus, the constructional view adopted here is most apt, as it enables us to present a consistent account of the formal and semantic properties of all types of compounds.

We can express the facts about the form-class of compounds by defining a meta-schema like (1), which generalizes over all Akan compounds. Call it the Generalized Akan Compounding Schema. The schema states that given any two lexical items, whether from the same or different form-classes, the compound formed will be a noun and the properties of the compound so formed could be related to either, both or neither of the constituents. This latter specification is expressed through co-indexation on the right edge of the left-hand side of the double arrow.

(1) *Generalized Akan Compounding Schema (GACS)*

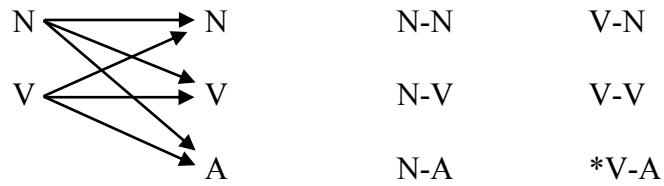
$\langle [[a]_{Xi} [b]_{Yj}]_N \{ij\kappa\} \leftrightarrow [[SEM]_{\{ij\kappa\}} \text{ realizing a relation } R \text{ between } [a] \text{ and } [b]]_{\{ij\kappa\}} \rangle$

The upper-case variables X and Y stand for the major lexical categories ($X = N \& V | Y = N, V \& A$). The lower-case variable a and b stand for arbitrary strings of phonological segments, whilst i , j and k are indexes for the matching properties of the constituents of the compound and the compound as a whole.

I expect that the sceptic may ask at this juncture whether positing this meta-schema is not a fancy way of saying that conversion takes place. The answer is an emphatic no! Conversion presupposes the existence of the non-nominal compounds in the first place. But no such non-nominal compounds are attested in Akan (I discuss this with respect to $[V-V]_N$ compound in chapter 6). Secondly, apart from compounds, we do not find simple bases undergoing conversion in Akan, so it seems to me that the very existence of conversion in Akan is in doubt. Thus, even if we accepted that we could get the same outcome with a conversion account, we still have to deal with the fact that the conservation account will have no foundation at all in this language. This is where the constructionist account is superior.

The schema in (1) suggests the following combinations of lexical categories, predicting the compound types that might be expected to occur in Akan.

(2) \underline{X} \underline{Y} => *Predicted compounds*



All the predicted compounds occur, except *V-A, but that can be explained from the fact that when verbs occur in constructions, they have specific relations with their co-constituents. Verbs usually expect their co-constituents to be able to satisfy their argument structure (AS), failing which the construction becomes ungrammatical, unless the co-constituent qualifies as a semantic argument of the verb, expressing manner, location, instrument, etc. (Lieber 1983). Given this, we are able to predict that V-A compounds will either be rare or not occur at all because an adjective can neither be interpreted as an argument, satisfying the AS of the verb nor as a semantic argument. Of course, English has an example like *diehard* and according Lieber (1983: 256) an example like *appear-productive* is possible. However, many other conceivable examples like *hit-good and *chop-dead seem impossible. Thus, the English examples should be seen as one-offs that must be lexically listed. We can define three immediate subschemas of (1) which unpack, as it were, the issue of the presence and position of a head constituent in the instantiating compound, as in (3).

(3) *Akan Compounding schemas (ACS) 1, 2, &3*

$\langle [[a]_{Xi} [b]_{Yj}]_{N_{\{ij\|k\}}} \leftrightarrow [[SEM]_{\{ij\|k\}} \text{ realizing a relation R between } [SEM]_i \& [SEM]_j]_{\{ij\|k\}} \rangle$

- a. ACS-1 $\langle [[a]_{Xi} [b]_{Yj}]_{Ni} \leftrightarrow [[SEM]_i \text{ with a relation R to } [SEM]_j]_i \rangle$ *Left-headed*
- b. ACS-2 $\langle [[a]_{Xi} [b]_{Yj}]_{Nj} \leftrightarrow [[SEM]_j \text{ with a relation R to } [SEM]_{i;j}]_j \rangle$ *Right-headed*
- c. ACS-3 $\langle [[a]_{Xi} [b]_{Yj}]_{Nk} \leftrightarrow [SEM [[SEM]_i [SEM]_j]]_k \rangle$ *Exocentric*

The first subschema (ACS-1) abstracts over all left-headed compounds and so the compound bears the index of the left-hand constituent. The second subschema (ACS-2) generalizes over right-headed compounds whilst the third (ACS-3) generalizes over exocentric compounds, where the referent is not named in the compound itself (e.g. English *pickpocket*).⁶⁶ Here, the extra-compositional meaning is represented as a semantic operator over the meanings of the constituents. Where the additional meaning is related to a particular constituent, the extra-compositional meaning may be represented as an operator over the meaning of that particular constituent.

None of the subschemas in (3) as yet captures the properties of appositional co-compounds in which the co-constituents are equipollent. ACS-1 and ACS-2 exhibit asymmetrical relations between the constituents in terms of the meaning contribution of the constituents, whilst ACS-3 exhibits no direct relation between the meaning of the compound and those of its constituents. For coordinate compounds, we have to posit a subschema whose index will be a collection of the indexes of the constituents, as in (4), where X stands for nouns and verbs because the only attested coordinate compounds in Akan are N-N and V-V, discussed in §7.3 and §7.4 respectively VI.

(4) Subschema for co-compounding (ACS-4)

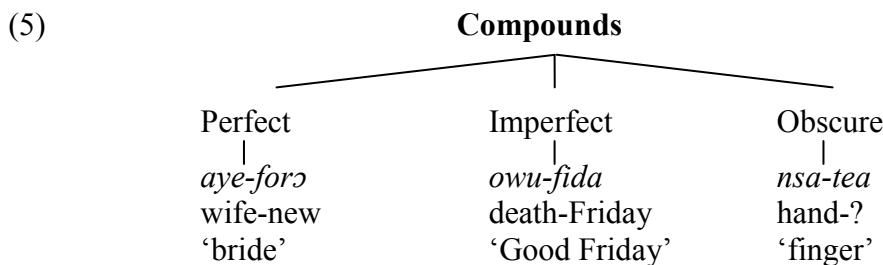
$\langle [[a]_{Xi} [b]_{Xj}]_{Nij} \leftrightarrow [[SEM]_{ij} \text{ realizing an equipollent relation between } [a] \text{ and } [b]]_{ij} \rangle$

With these four constructional schemas, we are able to account for the properties of endocentric and exocentric compounds of any sort.

⁶⁶ R in ACS-3 may be spelt out *metonymically* as suggested for compounds like *redskin* (Booij 2002b: 143).

5.2.1 Types of Akan compounds

Approaches to the classification of Akan compounds vary widely. For example, Christaller (1875: 19) first describes three main types of compounds in Akan: *Perfect compounds*, “consolidated into one morphological unit”; *Imperfect compounds*, “loose combinations, especially of new formations, and some repetitions, connected by a hyphen”; and *Obscure compounds*, “apparent compounds, the single constituents of which have not yet been clearly shown.” See some reformatted examples in (5).



Christaller (1875) further identifies ten classes of compound nouns, exemplified in Table 6.

Table 6. Compounds (Christaller 1933: XXI-XXII)

N-Adj	N-N _{Appo}	N-N _{Att}	N _{Subj} -V	N _{Obj} -V	V _N -V _N	[-OV] _S
<i>ade</i> -bone	<i>ɔba-huhuni</i>	<i>ahen-fî</i>	<i>ani-wu</i>	<i>dwom-to</i>	<i>sɔ -hwε</i>	<i>ɔ-bɔ-adεε</i>
thing-bad	child- worthless	king-house	eye-dying	song-sing	taste-see	he-creates-thing
‘an evil’	‘worthless fellow’	‘palace’	‘shame’	‘singing’	‘examination’	‘creator’

He categorises the ten classes into two – *genuine compounds* and *spurious compounds* (6). A genuine compound is one that has two components – the *fundamental* and the *modifying* components. “The former ... expresses a general notion which is particularised by the latter, so that the compound denotes a particular kind of the thing denoted by the fundamental component”. Spurious compounds are also “made up of

two or more words but none of them expresses the genus of the thing of which the whole compound denotes a species" (1875: 25).

(6) **Compound Nouns**

Genuine <i>aso-twe</i> ear-pull 'punishment'	Spurious <i>ɔ-bɔ-adeɛɛ</i> he-creates-thing 'creator'
---	--

Welmers (1946: 48-50) identifies five types of compounds in the Fante dialect, shown in Table 7, with the spelling slightly modified.

Table 7. Compounds in Fante (Welmers 1946: 48-50)

N+N	N-V	V-N	N-V-N	V-V
<i>nkatse-nkwan</i> peanut-soup 'peanut-soup'	<i>agor-dzi</i> game-partake_of 'playing'	<i>a-gye-nkwa</i> pref-save life 'saviour'	<i>anyi-da-do</i> eye-lie-top 'hope'	<i>wu-dzi-fo</i> die-partake_of-suff 'murderer'

Boadi (1966) discusses three classes of nominal compounds in the context of nominalization – Possessive Compounds, Locative Compounds and Appositional Compounds.

(7) **Nominal Compounds**

Possessive <i>ɔpaniŋ no sika</i> man DEF money 'the man's money'	Locative <i>abibirim nnipa</i> Africa peoples 'peoples of Africa'	Appositional <i>ɔbeɛma ɔhɔhoɔ</i> man stranger 'the man stranger'
---	--	--

Dolphyne (1988) posits six two-word compounds, Noun-Noun, Noun-Adjective, Adjective-Noun, Verb-Verb, Verb-object (V-N) and Object-verb (N-V) all of which seem to have been accepted by scholars working on Akan, without question. See (8).

(8)

Compounds					
N-N	Obj-Verb	Verb-Obj	N-Adj	Adj-N	Verb-Verb
<i>a-him-fie</i> prefking home 'palace'	<i>adi-sua</i> thing-learn 'learning'	<i>nyim-dze-e</i> know-thing-suff 'knowledge'	<i>ti-bɔne</i> head-bad 'bad luck'	<i>a-kese-sem</i> pref-big-matter 'big talk'	<i>gye-di</i> take-eat 'believe'

Recall that in §4.2.6.1, I noted that Dolphyne observed that Akan compounds can be grouped into two based on the tone of the first stem – TP1 in which all the syllables in the first constituent are said on L-tone, and TP2 in which the syllables in the first constituents are not said on L-tone. The former is more common. Dolphyne argues that “there is no evidence that the type of tone pattern a compound has is related to the word classes of stems from which the compound is derived” (Dolphyne 1988: 120).

Marfo (2004a, 2005) works on only two of Dolphyne’s classes, N+N and N+Adj compounds, whilst Abakah (2004, 2006) posits a large number of compounds (see Table 8). Clearly, some of the posited constructions in relatively older classifications, like Christaller’s spurious compounds (6) and the [OV]_S in Table 6, as well as Welmers’ [N-V-N] are nominalized phrases, not compounds (I discuss the N-V-N construction type in Chapter 8). Boadi’s possessive compounds are also not compounds. They are possessive phrases. Hence, the non-head can be definite.

Two features of recent classifications are worth noting: first, there is free mixing of syntactic category and grammatical functions (cf. Abakah 2004, 2006; Dolphyne 1988). For example, referring to N-V compounds as object-verb compounds, leaves out the class of compounds for which the N is the notional subject rather than the notional object and are, therefore, subject-verb compounds. Second, there is

inconsistent application of criteria, leading to the separation of types that should belong together and a considerable variety in the taxonomy and related nomenclature.

Table 8: Abakah's (2006) classification of Akan compounds

Compound Type	Examples	Gloss	Meaning
1 Noun-Noun	<i>sika+mfutuw</i>	gold + dust	'gold dust'
2 Noun-Adj	<i>opanyin+bɔn</i>	adult + bad	'irresponsible adult'
3 Adj-Noun	<i>enyimnyam+hen</i>	glorious + king	'glorious king'
4 Verb-Noun	<i>nyim+dzee</i>	know + thing	'knowledge'
5 Noun-Verb	<i>abra+bɔ</i>	life + make/lead	'life in this world'
6 Verb-Object	<i>agye+nkwa</i>	get + life	'saviour'
7 Object-Verb	<i>nkwa+gye</i>	life + get	'salvation'
8 Verb-Verb	<i>nsɔ+hwe</i>	to try + to see	'temptation'
9 Phrasal Verbs	<i>nkɔm+hye</i>	pass + prophecy	'prophecy'
10 De-verbal Noun+Noun	<i>bradato+nyi</i>	ruse + agentive noun	'con/swindler'
11 Other Types - Nominalization	<i>kantama+nto</i>	<i>ɔka ntam aa ɔnto</i> 's/he doesn't violate an oath'	'he who is above the law'

One wonders, for instance, why Abakah separates Verb-Noun compounds like *nyimdzee* 'knowledge' from Verb-Object compounds like *agyenkwa* 'saviour' (in rows 4 and 6 respectively in Table 8), since both involve verbs and their internal arguments and they behave similarly in every relevant grammatical environment (Appah 2009a). Indeed, Dolphyne categorizes *nyimdzee* as Verb-Object, although Abakah categorizes it as Verb-Noun. Thus, the reason for the proliferation of compound types is not the variety of criteria applied, but their unsystematic application. There is, therefore, a need for standardization in the classification of Akan compounds. For example, if we use the syntactic category consistently, we can put Abakah's Verb-Noun, Verb-Object and Phrasal Verbs compounds under one category (V-N), and, it has been shown (cf. Appah 2003; Essegbe 1999, 2002) that they are nominalized in the same way.

It is not the case that speakers just concatenate any identifiable members of classes of words to form compounds; there must be some observable or imaginable relationship between the elements of the compound, as widely accepted in the literature (cf., inter alia, Allen 1978; Downing 1977; Marchand 1969). Marchand (1969: 11) for example, argues that “[t]he principle of combining two words arises from the natural human tendency to see a thing as identical with another one already existing and at the same time different from it.” Downing (1977: 831), also notes that “any entity to be referred to by means of a compound participates in many relationships which, in absolute terms, may serve as compounding relationships.” Similarly, Selkirk (1982: 22) underscores observable relation as the basis for compound formation, noting that “[t]he compound *apron string* designates a string that is somehow related to an apron, by being attached to one, in the form of one, or whatever.”

Thus, I suggest that the solution to the proliferation of compound types in Akan lies in a classification system that takes into account the grammatical and semantic relations between constituents of compounds but does not mix them unsystematically. This is the framework provided by Bisetto and Scalise (2005) and Scalise and Bisetto (2009) which I discussed above. By this, we may categorize Akan compounds into three macro types – subordinate, attributive and coordinate compounds each of which can be subcategorized along other lines. However, as indicated above, I do not pursue this in this dissertation because the issues involved are not germane to either the descriptive or the theoretical aims of this study. Rather, I use the syntactic categories of the constituents and the presence and position of a head constituent, as discussed above in §4.2.3.1.

5.2.2 Dealing with a myth: the case against A-N compounds in Akan⁶⁷

Before going on to discuss the various classes of compounds identified in the literature, I will attempt to clarify the status of the putative A-N compounds which appear in previous studies. I argue that they don't exist in Akan. First, although A-N compounds are postulated (Dolphyne 1988),⁶⁸ no single study offers more than three examples at any time. This is interesting given the fact that compounding is very productive in Akan. Secondly, in all the examples cited in the literature, as shown in (9), the putative adjective constituents bear prefixes that they do not have in isolation elsewhere in the grammar except under well-defined conditions discussed below.

However, there is no attempt at accounting for the source and/or function of the prefix in the compounds at issue. Indeed, in previous studies the prefixes are not even acknowledged by separating them from the base. This is unexpected since Dolphyne (1988: 78) observes that “adjectives and adverbs in Akan are consonant initial and have no affixes”. That is, since adjectives are consonant-initial, one would have expected that scholars would acknowledge the presence of the vowel prefix that consistently occurs on the A-constituent of the putative A-N compounds.

⁶⁷ The content of the present section has been published as Appah (2013).

⁶⁸ As far as I have been able to ascertain, the only mention of A-N compounding in Akan which predates Dolphyne (1988) is Balmer & Grant (1929: 224). Christaller (1875) and Welmers (1946) do not mention A-N compounds at all. However, the examples that Balmer & Grant give are, by and large, unlike the others cited in the literature and I show in Appah (2013) that they are not A-N compounds.

To maintain that the constructions in (9) are A-N compounds, we have to assume that they are formed from underlying plural NPs like those in (10), where plural-marked adjectives modify plural nouns and that it is the plural-marked adjectives which occur as the left-hand constituent of the A-N compound (Appah 2013). This is because the only other place where Akan adjectives bear the kind of prefixes found in the putative A-N compound is when they occur as modifiers of plural nouns with the prefix as the exponent of the concord between the noun and the modifying adjective.⁶⁹

- | | | |
|---|--|---|
| (10)a. <i>a-dan a-kese</i>
PL-house PL-big
big houses | b. <i>n-tar a-tantan</i>
PL-dress PL-ugly
ugly dresses | c. <i>n-taadee a-fefe</i>
PL-dress PL-nice
nice dresses |
|---|--|---|

Under this assumption, the derivation of the putative A-N compound *a-kese-sem* from the NP *nsem akese* (11) will be like (12).

- | | | |
|--|----|--------------------------|
| (11) <i>n-sem a-kese</i>
PL-matter PL-big
'big issues' | => | ‘magniloquence/big talk’ |
|--|----|--------------------------|

(12) Derivation of A-N compounds with a plural-marked adjective

Input phrase (Base form)	PL-N + PL-A	=>	<i>n-sem a-kese</i>
Head-Dependent Inversion	PL-A + PL-N	=>	<i>a-kese n-sem</i>
Nom-prefix Deletion	PL-A + N	=>	<i>a-kese Ø-sem</i>
Conjoin	PL-A & N	=>	<i>a-kese-sem</i>
Output	[[PL-A] _i [N] _j] _{Nk}	=>	<i>akesesem</i>

This derivation may appear attractive but there is a difficulty which becomes apparent once we look at other nouns that occur in such compounds. Only the singular form of

⁶⁹ The concord is said to be the relic of a defunct noun class system in which both singular and plural adjectives showed concord with the nouns they modified through number-marking prefixes (Osam 1993).

the noun *adze* ‘thing’ occurs in such compounds. The plural form *ndzemba* does not occur in such compounds, as (13) shows. Thus, any argument that *a-kese-sem* is an A-N compound with a plural-marked left-hand adjective constituent collapses, since that argument presupposes the plurality of the right-hand constituent which the adjective modifies.

- (13) **a-kese-ndzema*
 PL-big-PL.thing
 ‘big issues’

My position, as expressed in Appah (2013), is that in the so-called A-N compounds the prefixes nominalize the adjectives which then occur as left-hand nominal constituents in N-N compounds which are predominantly right-headed in Akan (see Figure 13). Real adjective constituents of nominal compounds occur on the right in N-A compounds which are invariably left-headed, as discussed in section 5.5.2 below.

Thus, the morphological make-up and distribution of the constituents support the position that the putative A-N compounds cited in the literature are N-N compounds with de-adjectival quality/property nouns (e.g., *a-kese* ‘bigness’) as left-hand constituents. Further evidence for the nounhood of the left-hand constituents of the putative A-N compound comes from the fact that the putative adjectives take the human identity suffix *-fo(ɔ)* and its distinctly singular counterpart *-n(y)i* which attaches to only nominal bases. *-fo(ɔ)* is unspecified for number so the noun it forms can be either plural or singular.

From a CM perspective, these compounds instantiate the schema in (14) which states that the compound is right-headed (i.e. it is co-indexed with the right-hand constituent), with the vowel prefix and adjective together forming a noun.

(14) < [[*a*- [A]_i]_{Nj} [N]_k]_{Nk} ↔ [SEM_k with property]_j>

Schema (14) also instantiates a more abstract schema (15), which generalizes over all right-headed Akan N-N compounds, and is a subschema of ACS-2 in (3).

(15) < [[*a*]_{Ni} [*b*]_{Nj}]_{Nj} ↔ [SEM_j with relation R to SEM_i]_j>

|

< [[*a*- [A]_i]_{Nj} [N]_k]_{Nk} ↔ [SEM_k with property]_j>

|

[[akese]_{Ni} [sem]_{Nj}]_{Nj} ‘big talk’

The point I have made in this section is that if we consider the adjectives in the putative A-N compounds to be nominalized, then we are able to explain why the putative adjectives occur on the left-hand rather than the right-hand, as real adjectives in Akan compounds do. The explanation is this: the de-adjectival nominals occur in the left-hand non-head position because they are modifiers in right-headed compounds. As N-N compounds, they form part of a very productive compound pattern.

The crucial support for this interpretation of the role of the prefix is that prefix-derived de-adjectival nominals are attested in Akan (Appah 2003; Dolphyne 1988; Osam 1999).

5.3 Akan compound patterns

The foregoing discussions have shown various combinations of the major word classes (verb, noun and adjective) in the formation of Akan compounds. Dolphyne

(1988) posited six classes, one of which, I have shown, does not exist. The remainder are Noun-Noun, Noun-Adjective, Verb-verb, Verb-Object (V-N) and Object-Verb (N-V). To this list I add complex numerals to make up the 443 compounds constituting 44.3% of the dataset of 1000 Akan CNs on which the present dissertation is based, as Figure 11 shows.

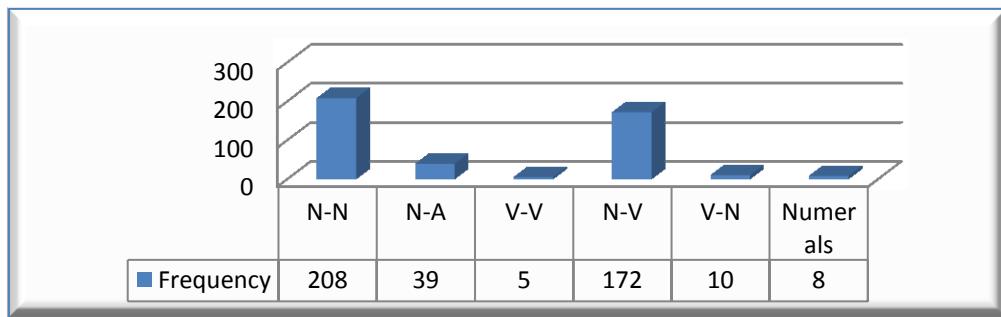


Figure 11. Frequency of compound types in the dataset of 443 Akan compounds

When the parameter of headedness is added, we get various subtypes, each exhibiting unique semantic properties and grammatical relations between the constituents in addition to specific constraints. In the rest of this chapter, I discuss each class, highlighting and dealing with the descriptive and theoretical issues that their properties raise. I will show how adequately their properties have been previously dealt with. I then present my proposed account for them in CM.

5.3.1 The synthetic/root compound distinction

It is almost customary to structure the discussion of compounds around the traditional distinction between synthetic compound, traditionally N-N compounds with deverbal right-hand constituents like *truck-driver*, *housekeeping*, *handwritten*, etc. and root compounds, whose second members are not derived from verbs like *tablecloth*, *bright*

green, freezdry, etc. (cf. Lieber 1983, 1992; Roeper & Siegel 1978; Selkirk 1982).

This approach imposes a natural structure, allowing for the discussion of properties belonging exclusively to either group which then can be compared. However, I do not adopt this approach because it does not seem to me that the dichotomy it imposes is really useful for Akan. Besides, the putative deverbal status of the right-hand constituent is a vexed issue for which evidence in Akan is very minimal, as discussed in chapter 5. Even for English, Lieber (1983: 252, fn 2) thought that the dichotomy was potentially misleading in a number of ways. This position is however, not shared by all (cf. Botha 1984). I group the compounds into two based on the presence of a verbal constituent. I follow Anderson (2013) in referring to compounds with at least one verbal constituent as Verb-Internal compounds, and those without verbal constituents as Non-Verb-Internal compounds.

5.4 Verb-Internal compounds

Three main classes of Verb-internal compounds are attested in Akan. They are [N-V]_N, [V-V]_N and [V-N]_N. I will discuss V-N compounds and right-headed N-V compounds in this section. I discuss the class of N-V compounds which designate action/process/event in chapter 6, where I argue that this class of N-V compounds are exocentric synthetic compounds. Thus, I still use the term synthetic compound but in a different way, not requiring the presence of a deverbal constituent. Instead, a synthetic compound is one which contains an argument-taking predicate whose AS must be satisfied by the other constituent in the compound (Grimshaw 1990). V-V compounds are discussed together with dual-headed N-N compounds in chapter 7, as co-compounds.

Because verbs attempt to satisfy their AS consistently in compounds and phrases, an issue that I address for the various classes of verb-internal compounds is what distinguishes them from VPs, especially when the constituents have the same linear order. I will employ the criteria outlined above in §4.2.6.1 to show why the various constructions discussed here are compounds and not phrases. There are interesting issues pertaining to compound-internal relations such as (a) What is the grammatical relation of the noun that incorporates? (b) What determines which argument gets incorporated? (c) What is the semantic role of the noun that incorporates? (d) How different is *verb-argument compounding* from *verb-adjunct compounding*? (e) Does animacy have any role in the determination of the noun that incorporates? In the present chapter, I will concentrate on answering (a) and (b) and leave the rest for future research.

5.4.1 N-V Compounds

An argument-head relation can usually be discerned between the constituents of N-V compounds and the grammatical and/or semantic properties of both constituents seem to contribute to the determination of the meaning of the compound. However, the class is homogenous only at the highest level of abstraction where only the category and order of constituents are considered. The members may be grouped by different criteria. One is the presence and position of a head element (the criteria I use), giving *left-headed* and *right-headed* subtypes. Another is the semantic role of the constituents, giving subtypes like *agent-action*, *patient-action* and *experiencer-stimulus* (Welmers 1946). A third criterion is the grammatical role of the noun constituent, giving types like *object-verb* and *subject-verb* compounds.

In the majority of N-V compounds that refer to an action/event/process, the noun that incorporates tends to correspond to the notional object of the verb (158 out of 172 N-V compounds (i.e. 92%)). Only in 14 (8%) do the incorporated arguments correspond to the notional subject (see Figure 12) and the verbs involved are either obligatorily intransitive or optionally intransitive. A chi-squared test reveals that this is a highly significant difference $\rho < .0001$ ($df = 1, \chi^2 = 120.5581$).

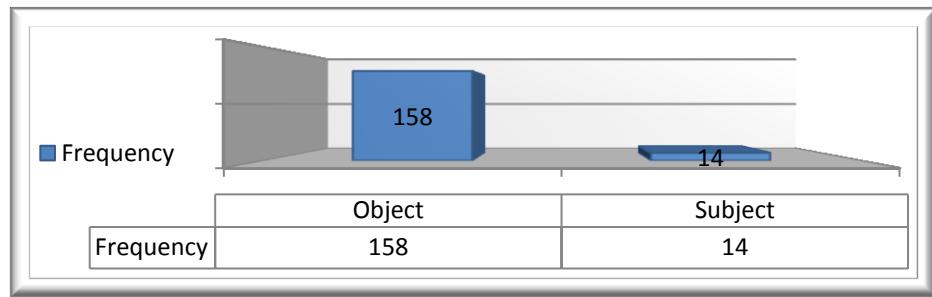


Figure 12. Incorporated arguments in N-V compounds

This is fairly consistent with the structured AS hypothesis of Grimshaw (1990: 16) which predicts “that compounding of an external argument will be impossible when the predicate takes an internal argument in addition to the external”, so that, *Flower-arranging by novices* and *Book-reading by students* are grammatical but **Novice-arranging of flowers* and **Student-reading of books* are not. The point is that in the structured AS, the external argument is always the most prominent argument in AS, hence it must always be satisfied outside the compound. Thus, “[t]he only way for an external argument to occur inside a compound is for *all* of the arguments of the head to be inside the compound, so that the prominence relations can be respected by theta marking” (Grimshaw 1990: 17).

Although both subjects and objects may incorporate, Akanist scholars (Abakah 2004, 2006; Dolphyne 1988) have concentrated mainly on object-verb (N-V) compounding. Indeed, Abakah (2006: 20) argues that “[w]hen a noun and a verb merge to form a compound, ...[w]hat is specific is the fact that it is invariably the object form of the noun that merges with the verb to form a compound”. Obviously, the facts contradict this view.

5.4.1.1 Left-headed N-V Compounds

The verbs in these compounds look formally like regular transitive verbs and the nouns they occur with also look very much like the objects of the verbs in the analogous phrase. However, these compounds differ from other N-V compounds in that, whilst we can discern a head-dependent relation between the verbs and the nouns in the constructions, the verbs seem to be semantically vacuous, so that the core semantic content of the compound is contributed by the noun. The vacuity of the verbs in these compounds is evidenced by the fact that two unrelated verbs *dzi* ‘engage in (*lit. eat*)’ and *twetwe* ‘to pull’ (5 and 11, Table 9), combining with the noun *nkɔmbɔ* ‘conversation’, results in nouns with the same meaning. Thus, in these constructions, the verbs behave like light verbs. As Wechsler (2006: 652) observes “[i]n an actual light verb construction such as *John will do the laundry*, most of the semantic content describing the laundering event is carried by the noun *laundry*”.

Abakah (2006) discusses this compound type, claiming that they are formed from phrasal verbs (PV), defined, following Crystal (1997), as “[a] verb consisting of a lexical element and particle(s).” Abakah argues that “the lexical constituents of the PV in Akan are readily identifiable in terms of word class but some particles (that is the

“invariable word with a grammatical function” (Crystal *ibid.*) appear to be nominals in Akan but in reality they are not” (2006: 27). He continues to argue that “[t]hey are nouns in appearance but they do not function as nouns these noun-like particles do not label anything that has a name in the isolative style” (2006: 27).

Table 9. Left-headed N-V Compounds

	Morphemic Makeup	Internal structure of IC		Morphemic Makeup	Internal structure of IC
1.	<i>a-dae-so</i> PL-dream-ICV 'dreaming'	[[N] _i [V]] _{Ni}	6	<i>atɛm-mu</i> judgement-utter 'the act of judging/judgement'	[[N] _i [V]] _{Ni}
2.	<i>nkɔm-hyε</i> prophecy-utter 'prophesy(ing)'	[[N] _i [V]] _{Ni}	7	<i>atɛn-yi</i> judgement-ICV 'act of expostulation'	[[N] _i [V]] _{Ni}
3.	<i>amumɔ-yε</i> evil-do 'evil/impiety'	[[N] _i [V]] _{Ni}	8	<i>apoo-bɔ</i> intimidation-ICV 'intimidation/extortion'	[[N] _i [V]] _{Ni}
4.	<i>ninkum-twe</i> jealousy-pull 'jealousy'	[[N] _i [V]] _{Ni}	9	<i>atua-tew</i> (<i>atua-tee</i>) rebellion-tear 'rebellion'	[[N] _i [V]] _{Ni}
5.	<i>nkɔmbɔ-dzi</i> chat-eat(engage in) 'conversation'	[[N] _i [V]] _{Ni}	10	<i>a-twe~twe-si</i> NMLZ-RED-mockery-do 'mockery'	[[a- [V] _j] _{Nj} [V] _k] _{Ni}
			=	<i>nkɔmbɔ-twe~twe</i> chat-RED~pull 'conversation'	[[N] _i [RED-V]] _{Ni}

For Abakah, the fact that these so-called particles occur in syntactic phrases, following verbs “in a predicative environment” only leads to the putative particle “putting on the complexion of nouns” but in reality “*they are not nominals* and cannot be said to be nominal objects” (2006: 27; emphasis original). He remarks that because they are not nouns, “the phrases in which they occur cannot be said to be idiomatic expressions. They are merely particles that combine with verbs in that order to form PVs and nothing more” (2006: 27).

Abakah’s arguments for the particle-status of the left-hand constituents of the compounds at issue are not convincing. It appears he does not consider the fact that

the so-called particles bear prefixes like most other Akan nouns and that they could simply be bound nouns. He seems to ignore the fact that the putative particles fit into paradigms with known free forms like *mbara* ‘law’ as well as *ase* ‘bottom/underside’ in (16).

- (16) a. *hyè mbàrá* ‘to pass a law/legislate’
- b. *hyè nkóm* ‘to prophesy’
- c. *hyè bɔ́* ‘to promise’
- d. *hye àsé* ‘to begin’

These nouns seem to be bleached of some of their semantic content or have to be interpreted metaphorically. For instance, one cannot relate *ase* ‘bottom/underside’ to the beginning of an event unless one construes the act of beginning as involving metaphorically getting underneath the task so as to “get it off the ground”. Abakah does not consider the fact that the verbs are also somewhat irregular, not having the same meaning they have when they occur in isolation and that the main semantic content of the compounds comes from the putative particle rather than the verb.

Still on meaning, it is unclear what Abakah means by these constructions not being idiomatic. According to Booij (2010c: 19) “[b]eing idiomatic means for a linguistic construct that it has unpredictable properties that have to be learned and memorized by speakers” and that is exactly what these constructs are. For instance, there is nothing about the words *ninkum* and *twe* (4, Table 9) to suggest that when they combine, the construction should/can mean ‘to be jealous’ in the phrase *twe ninkum* and ‘jealousy’ in the compound *ninkum-twe*. Abakah’s claim that the “noun-like particles do not label anything that has a name in the isolative style” cannot be sustained because, for example, the only word for conversation in Akan is *nkɔmbɔ* and

that is the form that occurs in these compounds and makes the most semantic contribution to the overall meaning of the construction.

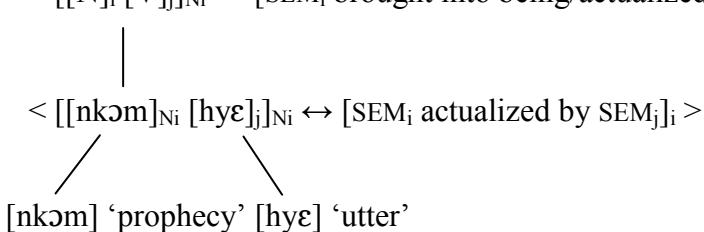
Finally, Abakah does not consider the possibility that the forms he calls particles because of their irregular properties are indeed nouns which have simply ceased to exist as free forms in the language. Downing argues that a lexicalized nominal compound may become less transparent and its appropriateness as a name less obvious to speakers because “one of the elements of the compound may change in meaning or disappear from usage” (1977: 819). Hence, it is possible that what exists in the compounds and the analogous phrases are the remains of once full-fledged nouns, but nouns nonetheless.

We cannot say for certain that the verbs are subcategorized for the putative particles they occur with, but these particles do saturate the argument positions of the verbs so that no other nouns can occur after them. When the English PV *ring up* occurs in a construction, the particle does not saturate the argument position of the verb so that an NP is admissible as an object of the verb (*ring your friend up/ring up your friend*). Matisoff (1991: 387) defines particles as “morphemes with abstract grammatical functions that cannot constitute the head of a phrase.” This means that the particle alone cannot occur where the verb requires an object. But in the Akan constructions at issue, no other noun is permitted after the putative particle. Thus, the fact that these so-called particles occur in syntactic constructions, satisfying the AS of the verbs they occur with, so that the sentences in which they occur are felicitous, should make us consider the possible nounhood of those elements

Clearly, the left-headed N-V construction has a lot of properties which need to be investigated further. It has to be established, for example, why a bound noun occurring in a construction still bears the biggest semantic load in the compound. Such a study is beyond the scope of the present work. For now, I can only speculate that it is a specific property of this subtype of N-V compounds that the core semantic contents should come from the noun constituents and that, to avoid conflict in prominence, the constructions permit only semantically bleached verbs (or LVs) so that the properties of the nouns can stand out, even if they are bound.

Obviously, notwithstanding their idiosyncratic properties, these constructions pattern after regular N-V compounds involving verbs and their arguments. I assume, therefore, that the compounds instantiate the schema in (17) which expresses the fact that the left-hand constituent is the head, carrying the core semantic content of the compound with the non-head verb just signalling the coming into being of the semantic content of the head constituent. This schema instantiates ACS-1 in (3).

(17) $\langle [N]_i [V]_j \rangle_{Ni} \leftrightarrow [SEM_i \text{ brought into being/actualized by } SEM_j]_i \rangle$



We can account for Abakah's particle analysis of the left-hand constituent or the alternative view that they are bound nouns, as we have argued, by positing subschemas for each of the individual nouns with the left-hand constituent pre-specified, as shown in (18). Each subschema will be a constructional idiom, capturing the fact that the pre-specified constituent has no independent existence beyond the existence

of the schema in which it occurs. The verbs just unify with the constructional idiom to express the intended meaning.

- $$\begin{array}{l}
 (18) \quad < [[N]_i [V]_j]_{Ni} \leftrightarrow [\text{SEM}_i \text{ brought into being/actualized by SEM}_j]_i > \\
 \quad \quad \quad | \\
 \quad \quad \quad < [[nkɔm]_{Ni} []_{Vj}]_{Ni} \leftrightarrow [\text{SEM}_i \text{ actualized by SEM}_j]_i > \\
 \quad \quad \quad \backslash \\
 \quad \quad \quad [\text{hye}] \text{ 'utter'}
 \end{array}$$

The verbs are not pre-specified in the constructional idioms because they occur elsewhere with other nouns expressing about the same meanings, and as indicated above, we also find some of the nouns that occur in these constructions (e.g. *nkɔmɔ*) occurring with different verbs and bearing about the same meaning, (5 & 11, Table 9). Thus only the noun constituent may be assumed to be fixed.

5.4.1.2 A minor class of left-headed N-V Compounds

Two additional left-headed N-V compounds occurring in my data are shown in (19) and their general properties captured by the constructional schema in (20). They are different from the others in three significant ways. First, they are real left-headed compounds, being hyponyms of their respective left-hand constituents: a *solid/firm rock* is a *rock* and a *decrepit net* is a *net*.

- $$(19) \quad \begin{array}{ll} \text{a.} & \dot{\imath}bòtàn-tím \\ & \text{rock-be_firm} \\ & \text{'firm/solid rock'} \\ \text{b.} & ébóá gów \\ & \text{net be.weak} \\ & \text{'decrepit net'} \end{array}$$

- $$(20) \quad < [[N]_i [V]_j]_{Ni} \leftrightarrow [\text{SEM}_i \text{ about which SEM}_j \text{ is predicated}]_i > \\
 \quad \quad \quad | \\
 \quad \quad \quad [[\dot{\imath}bòtàn]_{Ni} [tím]_{Vj}]_{Ni} \text{ 'solid rock'}$$

Secondly, the verbs are intransitive. Thus, thirdly, the noun constituents correspond to the notional subjects of the verbs. This means that the constructions have the same linear order of constituents as typical intransitive constructions. However, they are not sentences because the verbs cannot be marked for tense/aspect, which receive obligatory formal marking in the corresponding syntactic construction, unless the verb is in the stative or habitual (Dolphyne 1988; Osam 1994a, 2004, 2008). Additionally, in the analogous intransitive construction, the noun has to be modified in some way (e.g. by the definite determiner), but the modification of the noun in the N-V compounds is prohibited.

Finally, these N-V compounds illustrate the fact that in Akan, property concepts that are expressed in other languages by means of adjectives may be expressed through stative verbs. Even colour concepts, including the three basic colours (*white*, *red* and *black*), may be expressed this way. Balmer and Grant (1929: 84) call them verbal adjectives.

5.4.2 V-N Compounds

This section deals with compounds made up of verbs and nouns that share grammatical relations. Ten V-N compounds found in my dataset are in Table 10, together with the grammatical and semantic relations that the constituents share. These V-N compounds are unlike other verb-internal compounds in that they have the same constituent order as Akan VPs and some of them meet the structural description of VPs, with the noun satisfying the verb's AS. However, for two main reasons, we have to regard them as compounds and not phrases. First, they tend to be non-

compositional (row 1, 2, 3 & 6), whilst phrases tend to be compositional.⁷⁰ Two, some of them bear TP1 like most forms that have been identified as unequivocal compounds in Akan. I discuss these V-N compounds, showing the extent to which their properties are (un)like similarly named compounds in other languages.

Table 10. V-N Exocentric Compounds

	Morphemic Makeup	V	N's denotatum	Semantic relation	Grammatical relation	Compound's denotatum	Constituent structure
—	<i>dà àmòná</i> sleep hole 'an animal which dwells in a hole'	Intr	Locative	Event - Location	Verb-Object _[Loc]	Theme	[[V] [N]] _{Nk}
2	<i>ká-àkyíré</i> remain-behind 'lastborn/youngest family member'	Intr	Locative	Event-Location	Verb-Object _[Loc]	Theme	[[V] [N]] _{Nk}
3	<i>kúnì-kómí</i> kill-hunger 'hunger killer/a species of maize'	Tr	Patient	Action-Patient	Verb-Object _[pat]	Agent	[[V] [N]] _{Nk}
4	<i>sùsú-dú'á</i> measure-stick 'standard/yardstick/measuring rod'	Tr	Instrument	Action-Instrument	Verb-Subject	Instrument	[[V] [N]] _{Nk}
5	<i>tò-béw</i> put-place 'location (where something is put)'	Tr	Locative	Action-Location	Verb-Object _[Loc]	Location	[[V] [N]] _{VP} _{Nk}
6	<i>dà-dùà</i> lie-wood 'imprisonment/incarceration'	Intr	Locative	Event-Location	Verb-Object	State	[[[V] [N]] _{VP}] _{Nk}
7	<i>kyé-péñ</i> share-portion 'portion/lot/allotment'	Tr	Theme	Action-Theme	Verb-Object	Theme	[[V] _i [N]] _{Nk}
8	<i>dí-béá</i> assume-location/place 'position/rank'	Intr	Locative	Event-Location	Verb-Object _[Loc]	State	[[V] _i [N]] _{Nk}
9	<i>tè-béá</i> be-manner/nature 'state/(living) condition'	Intr	Locative	State-Manner	Verb-Object _[Loc]	State	[[V] _i [N]] _{Nk}
10	<i>gyìná-béw</i> stand-place 'position'	Intr	Locative	Event-Locative	Verb-Object _[Loc]	State/Location	[[V] _i [N]] _{Nk}

⁷⁰ I say this being fully aware that there are idiomatic phrases (especially VPs). Thus semantic transparency may not be a reliable means of distinguishing between compounds and phrases.

5.4.2.1 V-N Compounds in the Akan literature

V-N compounds have been described in various ways in the literature on Akan compounding with many compounds included which, I believe, do not belong to the class because they clearly bear affixes that betray them either as derived words with compound bases or as nominalized phrases. That notwithstanding, previous studies have pointed out important features of these compounds which I highlight in the following discussion.

Christaller (1875: 26-27), first places the compounds under a broad category he characterizes as “[c]ompounds of a *noun* with *an attributive noun in the possessive case* before it” and then also under subgroup (b) of this larger class about which he writes: “[t]he qualifying component is a verb; on dissolving such compounds the verb must be rendered by an adjective” (1875: 26). Unfortunately, Christaller’s description and the examples he gives don’t match. Most of his examples (see (21)a-b) bear nominalizing prefixes that show that the left constituents may not be verbs. Indeed example (21)c does not contain a verb at all. The examples which really fit Christaller’s description are those in (22).

- | | | | |
|------|---|---|--|
| (21) | a. <i>a-kye-de</i>
NMLZ-give-thing
'a gift' | b. <i>a-tu-boa</i>
NMLZ-fly-animal
'flies/bird' | c. <i>a-tete-de</i>
NMLZ-ancient-thing
'a thing of the old time' |
|------|---|---|--|

- | | | |
|------|--|--|
| (22) | a. <i>da-bew</i>
sleep-place
'a place' | b. <i>te-bea</i>
live-manner
'state/condition' |
|------|--|--|

Dolphyne (1988: 122, 123) discusses these compounds under the heading *verb plus object compounds* but again, like Christaller, most of the examples she gives bear

affixes that betray them as derived words with compound bases or as lexicalized phrases. Dolphyne observed that one consistent property of this class of compounds is that the tonal pattern of the verb constituent is invariably low, notwithstanding the tonal pattern of the form in isolation. If this were true, it would confirm her original observation, also echoed by Marfo (2004a, 2005), that where tonal changes occur in compounds, it is usually related to the tonal pattern of the first constituent. However, out of just ten examples (in Table 10), seven, including those in (23), either have just low tone on the verb or some combination of low and high tones.

- (23) a. *dà-dùà* b. *sùsú-dù!á* c. *dà* *àmòná*
 lie-wood measure-stick sleep hole
 ‘incarceration’ ‘measuring rod’ ‘an animal which dwells in a hole’

Abakah (2006: 20), who refers to such compounds as *syntactic compounds*, also gives a number of examples including those in (24), the first three of which must be rejected because they are nominalizations of VPs. In each of them, there is either a suffix (a) or a prefix (b-c) nominalizer.

- (24) a. nímú + àdé → nìmdè-é ‘knowledge’ (know + a thing)
 b. pá + ògyá → à-pàgyá ‘a thing for striking fire/matches’ (strike+fire)
 c. kàsà + ànímú → ñ-kàsàànímú ‘rebuke/chiding’ (speak+face)
 d. gyìná + èbèá/èbéw → gyìná béá ‘standing place/status’ (stand + place)

Abakah also observed that irrespective of the tonal pattern of the first constituents in isolation, they are realized on low tone in the compound. However, this cannot be true of actual V-N compounds. Indeed the only real example he gives ((24)d) does not support his assertion. In fact tone may be used to distinguish this class of compounds

from phrases, but the tonal pattern is a bit more nuanced than presented in the literature.

5.4.2.2 Issues in the discussion of V-N compounds

In discussing constructions like these in the literature on compounding, a number of issues come to the fore. One regards the status of the left-hand constituent – whether or not it is first nominalized before it becomes part of the compound. Settling this issue is crucial for delineating the membership of this compound type. Another issue regards where in the grammar such compounds are assumed to be formed – whether in the syntactic or the pre-syntactic lexical component. However, I will argue below that from the theoretical perspective adopted here this is not an interesting question.

Some scholars working on Romance languages, which are noted for V-N compounding, hold the view that the left-hand constituents are nominalized, making the construction an N-N compound (cf. Scalise; Bisetto & Guevara 2005: 140). Others hold the view that it is a verb and the head of a VP which is immediately dominated by an N, giving $[[X\ N]_{VP}]_N$ (Di Sciullo & Williams 1987). Bauer (1980) cited in Fradin (2009: 424) shares the latter view.

For Akan, the question has not been discussed, beyond Christaller's original discussion.⁷¹ However, Christaller's view on the matter lacks clarity. As noted above, he first describes the parent group for these compounds as “[c]ompounds of a *noun* with *an attributive noun in the possessive case* before it”, meaning the left-hand constituent is a *noun in possessive case* (whatever that means), making them N-N

⁷¹ Dolphyne (1988), Abakah (2006) and Anderson (2013) do not discuss the categorial status of the left-hand constituents, but they retain the label V-N compounds. So, they probably regard them as verbs.

compounds. He then notes that “[t]he qualifying component is a verb” which “must be rendered by an adjective” on dissolving such compounds (Christaller 1875: 26). Thus, it is unclear whether Christaller regards the left-hand constituent as a verb (which must be interpreted as an adjective) or as a deverbal noun with attributive function. As noted in §5.4.1.2, Akan indeed has verbs which must be translated into English by adjectives, but the verbs that occur in these compounds do not belong to that class.

I believe that there is no formal or semantic basis for believing that the left-hand constituents of these compounds are deverbal. In fact, left-hand constituents of actual V-N compounds (like those in (23)) do not bear any formal marks of nounhood (NB. nominalized *da* ‘to sleep’ is *n-da* ‘sleeping’) and so to assume that they are deverbal is to claim that they are formed through conversion, which is not attested in Akan. The left-hand constituents of those I have rejected as exemplifying V-N compounds bear affixes which show that they are not verbs.

The point is that the kinds of affixes that occur on these bases, if they appeared on verbs, will be tense/aspect markers, which do not occur on nouns. Appah (2003, 2004), working from a non-constructionist perspective with the understanding that compounds are ultimately formed from phrases and attempting to account for the absence of any trace of tense/aspect marking in the nominal, posited “TAMP Dropping”. This is the process by which all *Tense*, *Aspect*, *Mood* and *Polarity* markers are dropped in the process of forming nominals from phrases. With the observation that negation markers do occur in nominals, it has been revised as TAM dropping.

Given this, we are driven to argue for one of two possible conclusions; one, that the constructions with affixes on their left-hand constituents show that TAM dropping is

wrong or two, that those constructions do not instantiate V-N compounding. I assume the correctness of the latter conclusion because, in actual V-N compounds, the verbs are stripped of all affixes. Thus, constructions with affix-bearing left-hand constituents are either affix-nominalized phrases or N-N compounds with deverbal left-hand constituents.

The question of whether such compounds are formed in the syntax or in the lexicon engenders interesting theoretical debates among morphologists with generative grammar orientation who assume a modular view of grammar, where morphology and syntax are two separate modules and, in the languages of the world, both the syntactic formation and the pre-syntactic formation of similar compounds have been argued for. In Romance languages where V-N compounding is very prominent, scholars have attempted to find ways of determining whether a particular V-N construction is syntactically formed or lexically formed. One test formulated by Corbin (1992: 48-49), cited in Fradin (2009: 422), is whether the constructions can occur in well-formed sentences the way they are without the need for verb. If yes, then there is evidence of syntactic formation. Otherwise, it is lexically formed – they are compounds. There is also the suggestion that if a construction is formed syntactically it cannot be a compound because, for Corbin (1992: 50), units that can be straightforwardly generated by other components of grammar are not the concern of compounding.⁷² Fradin (2009: 417) calls this principle A.

(25) *Principle A*

Compounds may not be built by syntax (they are morphological)

⁷² This view is consistent with Ackema and Neeleman (2001, 2004) claim of competition between the two generative engines for the formation of words.

It is not possible for the Akan V-N compound to occur in a sentence where the verbal constituent is the only verb. Thus, (26) is ungrammatical because *to* ‘to put’, which is part of a word, is the only verb in it. Example (27) is grammatical but it is because there is another verb in the construction which makes it a Serial Verb Construction (SVC) and shows that the verb rather forms a unit with the other verb and so we are not dealing with the same construction. This is confirmed by the fact that the noun has a deictic modifier *ha* ‘here’ and the principle of lexical integrity forbids the independent modification of a word constituent. Finally, note that it is an allomorph of *bew – bea* – which occurs in such syntactic constructions.

- (26) **ɔ-tò-béw* (row 3, Table 10)
 3SG-put-place

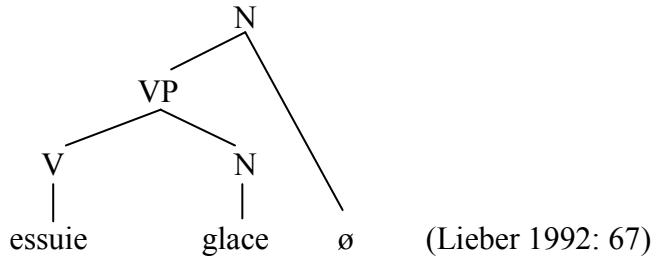
(27) *fá tò bèá há*
 take put place here
 ‘put it here’

Although the test seems to work for the Akan data, it is not clear that it shows whether the compound is formed lexically or syntactically. What it really succeeds in doing, is telling us that we are dealing with a word with lexical integrity which is violated when the verbal constituent is construed as the main verb of the sentence. One serious problem with the approach, however, is that it advocates a firewall between morphology and syntax, an unsustainable position in the present “theoretical universe” (Lieber & Scalise 2007).

Again, for Romance examples, some proponents of syntactic derivation assume that there is an underlying VP (cf. Di Sciullo & Williams 1987) which is thought to be nominalized through zero affixation, as in Lieber's (1992) analysis of French V-N

compounds, as shown in (28) for the compound *essuie-glace* ‘windshield wiper’ (lit. wipe-windshield).

(28)



(Lieber 1992: 67)

The problem with assuming an underlying VP for this compound, however, is that for some of the compounds the noun constituents can only be interpreted as the external argument which, by definition, is outside of the VP. Besides that, some of the nouns are not, strictly speaking, arguments of the verb to the extent that they denote the place of the action rather than the entity affected by the action.

As indicated above, the matter of whether the compounds may be assumed to be formed in the syntax or in the lexicon is an issue for frameworks that assume a modular view of grammar, where morphology and syntax constitutes strictly segregated modules which interact in very restricted ways so that the output of the former module is the input to the latter (Ackema & Neeleman 2001, 2004; Halle 1973). For a framework that assumes a continuum view of the relationship between grammar and lexicon, whether the construction is assumed to be syntactically or morphologically formed will not make any difference. It is acknowledged that lexical items may be formed either way and syntactic constructions, for example, can have naming function just like prototypical words (cf. Booij 2009d).

5.4.2.3 Grammatical/Semantics relations between constituents of V-N

compounds

The grammatical relation between the constituents of V-N compounds is rather nuanced. The noun constituents can be interpreted as either the subject or the object of the verb constituents (rows 4 & 3 respectively in Table 10). However, as noted above, some of the nouns cannot be interpreted as arguments of the verbs. Both intransitive verbs (4 out of the 10 examples) and transitive verbs occur in such compounds, with the transitive verbs tending not to occur with their prototypical internal arguments, but rather interestingly, nouns which refer to the location of the activity or event designated by the verb.

In like manner, the semantics of the V-N compounds is quite diverse. Except for kúmkóm ‘hunger-killer’ (3 in Table 10) where the noun constituent is the patient of the action designated by the verb, the other nouns that occur in these compounds mainly refer to the location of the activity designated by the verb (e.g. rows 1 & 6) or a place where, as a result of the activity designated by the verb, the referent comes to be located (e.g. 2 & 5).

There is a sub-type of the second group where the idea of being located as a result of the activity designated by the verb has to be interpreted metaphorically. For example, rows 8, 9 & 10 name the location in life (social status) of the referent. However, being compounds and for that matter, words, we cannot rule out the possibility of the noun being ambiguous between an actual and the metaphorical reading. The example in cells 8 & 10, for example, could refer to actual positions in a queue in a banking hall. Likewise, the example in cell 9 can refer to an actual sitting place at a meeting, except

that this particular example is blocked by the presence of *tena bea* (*lit.* sit place) with the same meaning.

The high number of such compounds referring to locations seems not to be specific to Akan. Fradin (2009: 426) reports a similar patterns for French. He observes that “[t]he locative type is widely illustrated by place names ... and also by functional objects whose functionality crucially involves location”.

V-N compounds are said to be mostly exocentric. Discussing V-N compounds in Spanish, Kornfeld (2009: 439) points to the fact that “none of the constituents may apparently function as the head” and that this exocentricity is a problem for the analysis of such compounds.” It seems that the same can be said about the Akan examples in (29) in which the word for animal is not explicitly mentioned in the constituents of the compound.

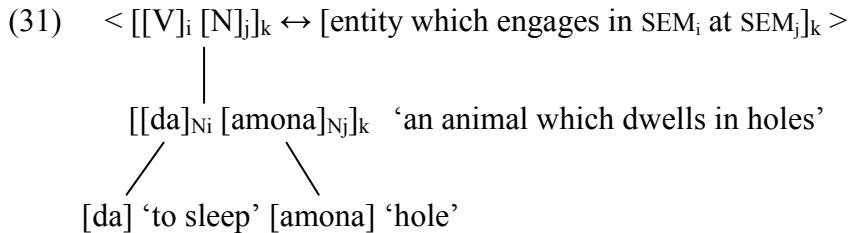
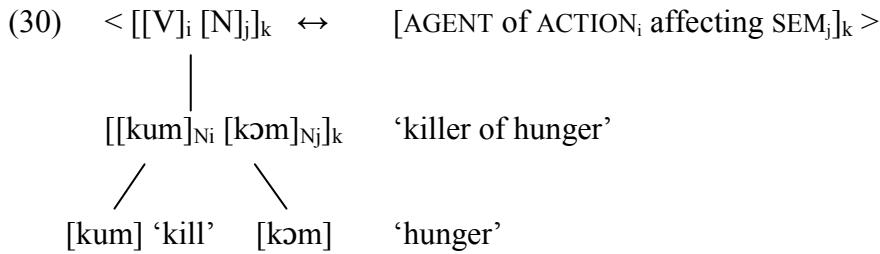
- (29) *dà àmòná*
sleep hole
'an animal which dwells in a hole'

Syntactically, each compound has a verb head and a dependent noun bearing one of the thematic roles associated with the verb – *manner*, *instrument*, *location*, etc., and, because every activity takes place within time and space, we can almost always establish a head-dependent relation between the constituents of such compounds. For example, the event of sleeping (29) has to occur somewhere, and so even though *da* 'sleep' doesn't take an object, we can still establish a relation between it and the noun which names the place where the sleeping occurs.

It is not clear that these compounds can be described as being similar to the English compounds such as *redskin* which Booij (2002b: 143) regards as not being exocentric but as belonging to a specific type of compounds whose interpretation is based on metonymy, where a part of an entity is used to refer to the whole. However, what we have here is a case of characteristic activity being used to refer to the entity involved in the activity. In this sense, these compounds are like the Italian *lavatiati* ‘dishwasher’ type of compound which is generally regarded as being exocentric (cf. Bauer 2010b).

This leads to the question of how to account for the properties of these compounds, especially the form-class affiliation of the compound. This has not been addressed for Akan, as noted above. Elsewhere (e.g., Lieber (1992) for French V-N compounds), the practice is to posit a nominalizer, since it is obvious that the nominal form-class does not emanate from either constituent. In CM, the form-class problem is solved by treating it as a property that is inherited from the constructional schema. This approach is strongly supported by the fact that Akan compounding is a noun-forming process as discussed in §5.2.

Unlike other compound types, no single meaning can be specified for all the instances of V-N compounding. Rather, each one has a specific meaning. The structure and meaning of *kúm-kóm* (row 3) may be represented as (30) and that of the example in (29) represented as (31). Both of them are exocentric because in (30), there is no agentive marker, although the compound refers to the agent of the event designated by the verbal base, and in (29) “animal” is not specifically named in the compound.



5.4.2.4 Summary

In this section, I have discussed Akan V-N compounds, showing that their properties do not differ seriously from similar compounds in other languages, mostly the Romance languages. I have shown that some of the compounds cited in the literature do not exemplify V-N compounds because they are mainly affix-nominalized phrases. I have argued that the left-hand constituents of these compounds are indeed verbs and that whether the constructions are formed syntactically or lexically is not a challenge for a constructionist framework like CM which does not assume a firewall between the lexicon and grammar but accepts that lexical item may be formed either syntactically or lexically. The membership of this small class (10 out of 443 compounds) is quite diverse in their formal and semantic properties. But, all the nuances in their formal and semantic properties and their reported exocentricity (Kornfeld 2009) are accommodated straightforwardly in CM.

5.4.3 Conclusion: verb-internal compounds

In the discussion of Akan N-V compounds, I have shown that in about 92% of all attested cases, the noun constituents correspond to the internal argument or object of the verb. The external argument or the subject may also form compounds with the verb. However, in almost all cases, the verb that forms the compound with the subject is either obligatorily or optionally intransitive.

I have also discussed V-N compounds. Here, the nouns that form the compounds with the verb usually refer to the location of the event designated by the verb. With this, I argued that it is the semantics of the verb that determines the properties of any construction in which it occurs.⁷³ I indicated above that this is consistent with the structured AS hypothesis of Grimshaw (1990: 16).

I grouped the compounds based on the presence and position of a head constituent. However, it turned out that some compounds are not hyponyms of their so-called heads, as in the case of the left-headed N-V compounds (§5.4.1.1). This means that the notion head has to be understood broadly as the constituent which either characterizes or determines the properties of the complex forms. In the majority of left-headed N-V compounds, the left-hand constituent is considered the head because it determines the properties of the compounds, with the verb only signalling the actualization of the meaning of the left-hand constituent.

⁷³ This may sound like a contradiction since I have argued that compounds inherit properties from the dominating schemas. But, that is not the case. In CM, it is assumed that individual constituents retain their properties unless they unify with constructional schemas that do not permit the expression of those properties.

5.5 Non-verb-Internal

In this section, I discuss compounds whose immediate constituents do not include verbs. These are noun-headed compounds because adjectives, the only other lexical category that occurs in these compounds, only occur as modifiers. I first deal with N-N compounds and then N-A compounds. Of interest here will be the proper characterization of the semantic relation between the constituents of the compound. As discussed above, the interpretation of such compounds is pretty flexible. This is what differentiates them from verb-involved compounds in which the non-head receives a specific interpretation (Booij 2002b; Lieber 1983).

5.5.1 N-N compounds

N-N compounding, the simple concatenation of any two nouns to form a third noun (Downing 1977: 810), is the most productive compound type in Akan. Of the 443 compounds in my dataset, 208 (47%) are N-N compounds (see Figure 11). This level of productivity is consistent with crosslinguistic patterns of productivity in N-N compounding (cf. Bauer 2009a; Booij 2002b; Dressler 2006; Gagné & Spalding 2006) and is related to the flexibility of the relationship between the head and the modifier and the ease of interpretation. As discussed above, the semantic relation between the constituents of such compounds is usually underspecified, characterized simply as **R** and spelled out differently depending on the pragmatic context – Downing’s solution (Spencer 2011). The non-head constituents are assigned various interpretations, evoking new meanings for the head constituent. This enhances the productivity of N-N compounds and strengthens the general usefulness of compounding as a pattern of word-formation (Booij 2002b: 152).

5.5.1.1 Headedness and N-N compounds

Various sub-types of N-N compounds may be identified, based on the presence and position of a head element. 42 (20.6%) of the 208 N-N compounds are exocentric and 166 (79.8%) are endocentric. This difference is statistically significant; $p < .0001$ ($df = 1$, $\chi^2 = 73.9231$). The endocentric N-N compounds are distributed as follows: 139 (83.7%) are right-headed, 21 (10.1%) are left-headed, 6 (2.9%) are dual-headed. See Figure 13.

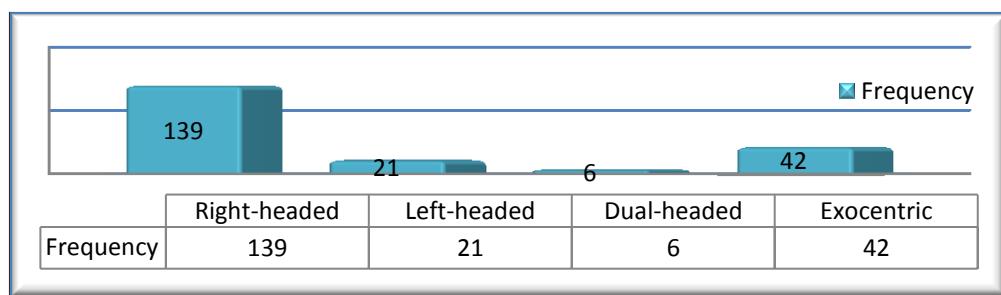


Figure 13. *N-N compound types*

I noted above that in the late 1970s and the 1980s, the position of the head constituent drove the debates on morphological headedness. The RHR (Williams 1981) was rejected and so was the idea that the head position is a parameter to be set for a language once and for all (Lieber 1992; Scalise 1984; Selkirk 1982) because studies (Ceccagno & Basciano 2009; Ceccagno & Scalise 2006; Hoeksema 1992; Pepper 2010) have shown that languages may have heads occurring on either end of the word.

This section shows that Akan also exhibits an appreciable amount of left-headedness in nominal compounds. Thus the discussion in this chapter confirms the view (cf. Hoeksema 1992) that the RHR (Williams 1981) is not a universal rule. However, it

does confirm a general preference for right-headedness which Bauer (2009b: 349) suggests “could be related to the fact that left-headed compounds with inflection marked on their heads will have internal inflection”. Dressler (2006) seems to share this view. However, the Akan data do not support this view.

I have indicated in several places that compounding in Akan is essentially a noun-forming strategy and the only inflectional marking on Akan nouns are number markers which are all prefixes. Therefore, if the preference for right-headedness is indeed to avoid word-internal inflection, then Akan would not need to be right-headed at all, because right-headedness leads to the plural marker coming between the head and the non-head, the same situation other languages allegedly seek to avoid by preferring right-headedness. The point is that languages have default positions in constructions for inflectional marking which just happens to coincide with the position of the head in Germanic languages. In Akan the default position for inflectional marking in the noun is the left edge of the construction, but the head of complex words may be either left or right, but is predominantly on the right edge of the word.

I discuss the subtypes of N-N compounds below, except dual-headed N-N compounds which I discuss together with V-V nominal compounds as coordinate compounds in Chapter 7. The formal properties of N-N compounds are not problematic. Therefore, I do not discuss formal properties in detail, unless there are properties worth highlighting. I give examples of the subtypes, pointing out the nature of the semantic relation obtaining between the constituents and the compound. I then present a CM account of the properties.

5.5.1.2 Right-headed N-N compounds

Right-headed N-N compounds are regular, mostly compositional and the commonest subtype of N-N compounds (Figure 13). They are exemplified in Table 11. The data show that both constituents in these compounds can be broadly recursive. That is, a constituent may itself be a compound but not necessarily an N-N compound. We find N-V compounds as left-hand constituents (rows 2 & 3, Table 11).

The form-meaning correspondence amongst the compounds may be represented as (32), which is a subschema (– ACS-2 in (3)) of the meta-schema for Akan compounds in (1), but the actual interpretation of each compound depends on the constituents and the encyclopaedic knowledge one brings to the interpretation process, as discussed extensively in §4.2.4. In keeping with this, **R** is spelled out separately for each instantiating compound as shown in (33) with *asomdwoeε kuo* (row 9).

$$(32) \quad < [[a]_{Xi} [b]_{Yj}]_{Nj} \leftrightarrow [\text{SEM}_j \text{ with relation R to SEM}_i]_j >$$

$$\begin{array}{c}
 (33) \quad < [[a]_{Xi} [b]_{Yj}]_{Nj} \leftrightarrow [\text{SEM}_j \text{ with relation R to SEM}_i]_j > \\
 | \\
 < [[N]_{Ni} [N]_{Nj}]_{Nj} \leftrightarrow [\text{SEM}_j \text{ meant for SEM}_i]_j > \\
 | \\
 [[\text{asomdwoeε}]_{Ni} [\text{kuo}]_{Nj}]_{Nj} \quad \text{‘The Peace and Security Council (UN)’} \\
 / \qquad \backslash \\
 [\text{asomdwoeε}] \text{ ‘peace’} \quad [\text{kuo}] \text{ ‘organization’}
 \end{array}$$

Table 11. Right-headed N-N Compounds

	Morphemic Makeup	Internal structure of complex form	Constructional representation
-	<i>àgòrù àhyiàdé</i> play meeting place 'theatre/sport stadium'	$[[a\text{-}[V]_i]_{Nj} [[a\text{-}[V]_k]_{Nx} -e]_{Ny}]_{Ny}$	$[[N]_i [N]_j]_{Nk} \leftrightarrow [\text{SEM}_j \text{for SEM}_i]_k / [\text{SEM}_j \text{ of SEM}_i]_k$
-	<i>ànòdi-'sém</i> contract-matter 'declaration/contents of an agreement'	$[[[N]_i [V]_j]_{Nk} [N]_x]_{Nx}$	$[[N]_i [N]_j]_{Nk} \leftrightarrow [\text{SEM}_j \text{ result of SEM}_i]_k$
-	<i>àníbéré-sém</i> seriousness-matter 'serious matter'	$[[[N]_i [V]_j]_{Nk} [N]_x]_{Nx}$	$[[N]_i [N]_j]_{Nk} \leftrightarrow [\text{SEM}_j \text{ causes SEM}_i]_k$
4	<i>ànímìgùàsé -de</i> shame-thing 'disgraceful thing/act'	$[[[N]_i [[V]_j [N]_k]_{VP}]_{Nx} [N]_y]_{Ny}$	$[[N]_i [N]_j]_{Nk} \leftrightarrow [\text{SEM}_j \text{ causes SEM}_i]_k$
5	<i>apaa m-boa</i> Apam PL-net 'fishing net (from Apam)'	$[[N]_i [PL-N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nk} \leftrightarrow [\text{SEM}_j \text{ made in SEM}_i]_k$
6	<i>asaase-mfoni</i> earth-photo 'a map (photo of the earth)'	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nk} \leftrightarrow [\text{SEM}_j \text{ of SEM}_i]_k$
7	<i>asetena-m ahiadee</i> down-sit-in need 'basic necessities of life'	$[[[[N]_i [V]_j]_{Nk} [N]_x]_{Ny} [a [[V]_z [N]_s]_{VP}]_{Nr}]_{Nr}$	$[[N]_i [N]_j]_{Nk} \leftrightarrow [\text{SEM}_j \text{ pertaining to SEM}_i]_k / [\text{SEM}_j \text{ found in SEM}_i]_k$
8	<i>aso-m-aade</i> ear-in-thing 'earring'	$[[N]_i [N]_j]_{Nk} [N]_x]_{Nx}$	$[[N]_i [N]_j]_{Nk} \leftrightarrow [\text{SEM}_j \text{ meant for SEM}_i]_k / [\text{SEM}_j \text{ found in SEM}_i]_k$
9	<i>asomdwoee kuo</i> peace organization 'The Peace Council (UN)'	$[[[[N]_i [N]_j]_{Nk} [V]_x]_{Ny} -e]_{Nz} [N]_r]_{Nr}$	$[[N]_i [N]_j]_{Nk} \leftrightarrow [\text{SEM}_j \text{ meant for SEM}_i]_k / [\text{SEM}_j \text{ brings about SEM}_i]_k / [\text{SEM}_j \text{ that enforces SEM}_i]_k$
10	<i>ayefor nda-awɔtwe</i> wedding day-eight '8 th day after wedding'	$[[a\text{-}[[N]_i [A]_j]_{NP}]_{Nk} [[N]_x [Num]_y]_{Nz}]_{Nz}$	$[[N]_i [N]_j]_{Nk} \leftrightarrow [\text{SEM}_j \text{ after SEM}_i]_k$
-	<i>ɔ-baa-tan</i> SG-woman-parent 'mother'	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nk} \leftrightarrow [\text{SEM}_j \text{ who is SEM}_i]_k$
12	<i>bɔn-fa-kye</i> sin-take-give_as_a_gift 'forgiveness (of sin)'	$[[N]_i [[V]_j [V]_k]_{Nx}]_{Ny}$	$[[N]_i [N]_j]_{Nk} \leftrightarrow [\text{SEM}_j \text{ of SEM}_i]_k$
13	<i>báguáfó átrádé</i> councillors seat 'seat of councillors/councils'	$[[[N]_i -fo]_{Nj} [[a\text{-}[V]_k]_{Nx} -e]_{Ny}]_{Ny}$	$[[N]_i [N]_j]_{Nk} \leftrightarrow [\text{SEM}_j \text{ for SEM}_i]_k$
14	<i>bàká ènífó</i> lagoon stirers 'those who fish in lagoons'	$[[N]_i [[e\text{-}[V]_j]_{Nk} -fo]_{Nx}]_{Nx}$	$[[N]_i [N]_j]_{Nk} \leftrightarrow [\text{Agent}_j \text{ of affecting SEM}_i]_k$
15	<i>bàká-nám</i> lagoon-fish 'fish caught in a lagoon'	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nk} \leftrightarrow [\text{SEM}_j \text{ found in SEM}_i]_k$
16	<i>bàká-ñsú</i> lagoon-water 'lagoon water'	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nk} \leftrightarrow [\text{SEM}_j \text{ of a SEM}_i]_k$
17	<i>twuwii nam</i> fishing_by_drapnet fish 'fishes caught by dragnet'	$[[[V]_i -ii]_{Nj} [N]_k]_{Nx}$	$[[N]_i [N]_j]_{Nk} \leftrightarrow [\text{SEM}_j \text{ caught by SEM}_i]_k$

5.5.1.3 Left-headed Noun-noun compounds

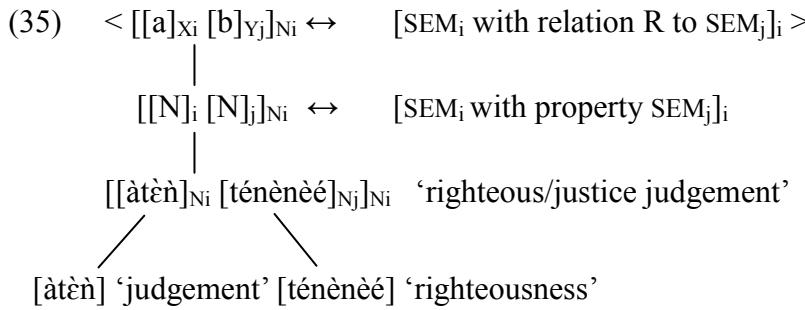
There are 21 (10.1%) of the N-N compounds for which the whole is a hyponym of the left-hand constituent (see Table 12 and Table 13). These compounds pattern after Akan N-A compounds (discussed below) in terms of the distribution of the head and the modifier, and unsurprisingly nouns of the type that occur as the right-hand constituents in these compounds (e.g., *tenenee* ‘righteousness’, row 2; *tsinstimii* ‘printed’, row 5; and *fonee* ‘muddied X’, row 11) have been treated as adjectives (cf. Osam 1999). That, however, is not right; they are nouns that express property concepts whose meanings are realized by adjectives in other languages, and that is the closest they come to being adjective-like.

Table 12. Left-Headed N-N Compounds

Examples of Left-headed N-N compounds			
1 <i>àsèn-trénèé</i> saying-righteousness 'a just saying'	‘ <i>mìfɔnyiń ñ-tìñ~tsìmí-î</i> picture NMLZ-RED~print-NMLZ 'drawing'	‘ <i>à-pòfò-m-bá</i> PL-fishermen-PL-member '(group of) fishermen'	
2 <i>àtèn- ténènèé</i> judgement-righteousness 'righteous justice'	‘ <i>máń-táń</i> nation-parent 'region of a country'	‘ <i>àséń-tów</i> matter-compact 'sentence'	
3 <i>àsòrèkyé-m-bá</i> waves-PL-child 'little/minor waves'	‘ <i>m-mèrè-sántéń</i> PL-time-line 'eternity'	‘ <i>ñsù fòn-èé</i> water make_muddy-NMLZ 'muddying water/muddied water'	
4 <i>ò-bó-táń</i> SG-stone-parent 'rock'	‘ <i>nám mí-bá</i> fish PL-child 'fingerlings'		

These compounds instantiate the schema in (34) which states that the compound is a subtype of the left-hand constituent, and has some kind of modifying relation with the right-hand constituent. The relation **R** is spelled out for each individual compound, as illustrated in (35) with the compounds *àtèn- ténènèé* (row 2, Table 12).

$$(34) \quad < [[a]_{X_i} [b]_{Y_j}]_{N_i} \leftrightarrow [\text{SEM}_i \text{ with relation R to SEM}_j]_i >$$



The second group of left-headed N-N compounds (Table 13) have numeral right-hand constituents. Thus, they may be characterized as Noun-Numeral (N-Num) compounds. Note, however, that the categorial status of numerals is a contested issue (cf., *inter alia*, Corbett 1978; Corver & Zwarts 2006; Hurford 1987; von Mengden 2010). Four positions have been variously argued for: one, numerals are adjectives; two, numerals are nouns; three, lower numerals are adjectives whilst higher numerals are nouns. This third position straddles positions one and two. The fourth position regards numerals as constituting a separate syntactic category.

Table 13. Left-Headed N-N Compounds with numeral right-hand constituents

Left-Headed N-N Compounds with numeral right-hand constituents				
12 <i>òwù-prè-nù</i> death-time-two 'double death'	15 <i>ìn-dà áwòtwé</i> PL-day eight 'one week (8 th day)'		18 <i>ìn-dòñ-nán</i> PL-watch-four 'four o'clock'	
13 <i>ìn-dá-á!náń</i> PL-day-four 'four days'	16 <i>ìn-dá-énúm</i> PL-day-five 'five days'		19 <i>ìn-dòñ-núm</i> PL-watch-five 'the five o'clock'	
14 <i>ìn-dà-àñsá</i> PL-days-three 'three days'	17 <i>ìn-dóñ-ébiásá</i> PL-watch-three 'three o'clock'		20 <i>dà-dú</i> day-ten '10 th day'	

I assume position two and I argue for it in Appah (in prep.). I work with a naïve understanding of the notion NOUN, defined as the NAME of a thing, place, person,

etc. By this, I regard numerals as a type of nouns because they are NUMBER NAMES (Brainerd 1966; Brandt Corstius 1968).⁷⁴

I assume that the compounds instantiate the constructional schema in (36) in which the right-hand constituent is a numeral, a subschema of the schema for left-headed N-N compounds which also instantiates schema (34).

$$(36) \quad < [[a]_{Ni} [Num]_j]_{Ni} \leftrightarrow [SEM_i \text{ which occurs } SEM_j \text{ times}]_i >$$

The relation **R** is realized as “number (of times)/frequency of”, showing that the right-hand constituents express the number or frequency of occurrence of the concept expressed by the left-hand constituents. The structure of *nda-anan* (cell 14, Table 13) may be represented as (37).

$$(37) \quad < [[N]_i [N]_j]_{Ni} \leftrightarrow [SEM_i \text{ with relation R to } SEM_j]_i >$$

$$|$$

$$< [[N]_{Ni} [Num]_j]_{Ni} \leftrightarrow [SEM_i \text{ which occurs } SEM_j \text{ times}]_i >$$

$$|$$

$$[[nda]_{Ni} [anan]_{Numj}]_{Ni} \text{ ‘four days’}$$

5.5.1.4 Exocentric N-N compounds

What I call exocentric N-N compounds violate the IS A condition (Allen 1978). For examples, the constituents of *anokorɔ* (cell 1, Table 14) are *ano* ‘mouth’ and *kor(ɔ)* ‘one’, but the idiomatic meaning of the compounds is ‘unity’ which is neither a type

⁷⁴ Langacker (1987: 189) defines NOUN as a linguistic unit which profiles a thing, where a thing is defined as a “region in some domain” and *region* is characterized in terms of the interconnectedness of entities within a domain. Here, spatial domain is not given any priority. Hence, *red* can be seen as profiling a region in the domain of colour, *week* as profiling of a region in the domain of time and *C-sharp* as profiling a region in the domain of pitch. With Langacker’s idea of a noun profiling a region at the back of our minds, we can claim that numerals or number names are nouns in the sense that they profile specific regions in the domain of number. This view finds support in Wiese (2003, 2007). Wiese argues that numerals refer to specific positions or items (e.g. with cardinality) in the domain of number. Profiling a region in the domain of number is what Wiese terms *number assignment*.

of *mouth* nor a type of *one*. Again, the literal meaning of *akɔm* ‘fetish.dance’ and *ase* ‘under/bottom’ (cell 10) is ‘under the fetish dance’, but the compound refers to the location rather than the “underside/bottom” of the dance. Thus, the compounds are exocentric.

I assume that these compounds instantiate the schema in (38), a stripped down version of ACS-3, in (3), where meaning is specified simply as $[SEM]_k$, and meant to be spelled out individually for each instantiating compound because the meanings of the compounds are varied and not necessarily related to each other.

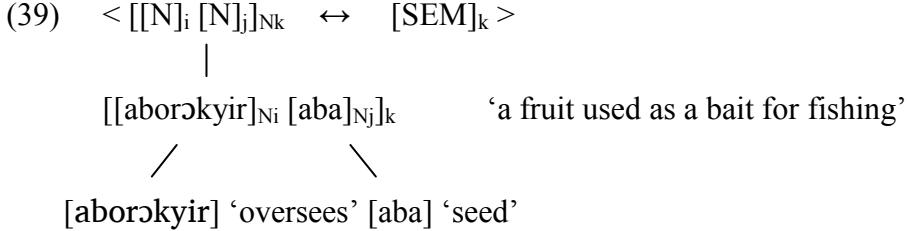
$$(38) \quad <[[N]_i [N]_j]_{Nk} \leftrightarrow [SEM]_k>$$

Table 14. Exocentric N-N compounds

Examples of Exocentric N-N Compounds		
1.	<i>ano-korɔ</i> mouth-one 'unity'	<i>a-fi-ase</i> PL-house-under 'prison'
2.	<i>mboadua</i> <i>do</i> a.place.for.keeping.fishing.nets top 'the location of "mboadua"'	<i>honam-ase</i> skin-under 'feelings/condition in the flesh/self'
3.	<i>aborɔkyir-aba</i> oversees-seed 'a fruit used as a bait for fishing'	<i>akɔm-ase</i> fetish.dance-under 'location of a fetish dance'
4.	<i>dua-se</i> tree-under 'name of a town'	<i>m-mofra-ase</i> PL-child-under 'childhood (time)'
5.	<i>enyi-kam</i> eye-mark 'earmark (lit. eyemark)'	<i>wim-dé</i> sky-thing 'esoteric/abstract matters'

The extra-compositional meaning may be seen as an idiosyncratic property of the subschema. This way we take care of cases where the meaning of the compound cannot be shown to be related to the meaning of either constituent or to their combined meaning. An example of this scenario is *aborɔkyir-aba* (cell 3), represented as (39). $[SEM]_k$ is spelled out as the idiomatic meaning of the construction, but no

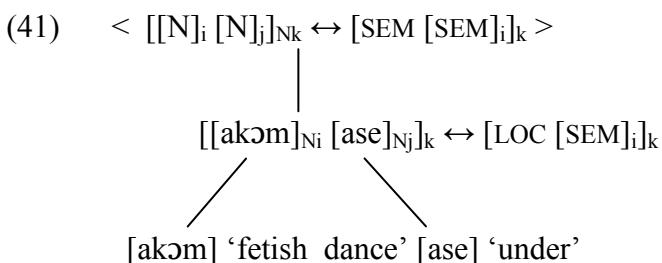
direct link can be established between the idiomatic meaning and the meanings of the constituents, so that, there is no way to tell that the two constituents combined will/can refer to a particular fruit used as a bait during fishing.



Where the meaning of the compound can be related to the meaning of either constituent or to their combined meaning but the meanings of the constituents do not exhaust the meaning of the compound, the extra-compositional meaning may be represented as a semantic operator (the unindexed SEM) on the meaning of the compound, or the meaning of the relevant constituent, as in (40).

$$(40) \quad < [[N]_i [N]_j]_{Nk} \leftrightarrow [SEM [SEM]_i]_k >$$

I argued above that LOCATION is not directly coded in either constituent of *akɔm-ase*. Hence, it has to be treated as a constructional property. This meaning will be represented as an operator over the meaning of *akɔm* the head of the construction, shown in (41).



The alternative to positing the constructional meaning contribution would be to claim that *ase* somehow has this LOCATION meaning when it occurs in compounds with deverbal nouns like *akɔm* derived from *kɔm* ‘to perform the fetish dance’ (cell 8, Table 14). If that worked, we would have accounted for the source of the ‘location’ meaning as well as explained the difference between compounds like *akɔm ase* with deverbal constituents and others like *mbɔfrase* ‘childhood’ and *honam ase* ‘condition of health’ (cells 9 & 7, Table 14) without deverbal nouns. The problem with this analysis, however, is that *ase* occurs in other compounds like *dua ase* ‘name of a town’ and *afiase* ‘prison’ (cells 4 & 6, Table 14) which have no deverbal constituents but still carry the ‘locations’ meaning, albeit indirectly.

I believe that ascribing the extra-compositional meaning to the constructions offers the best approach to accounting for the properties of exocentric N-N compounds. The alternative approach forces us to posit meanings for compound constituents that are otherwise unmotivated.

5.5.1.5 Summary

In this section I have discussed the properties of N-N compounds in Akan and presented CM accounts of those properties. The section shows that although N-N compounds are largely regular, they may also exhibit some idiosyncratic properties for which there is no motivation for linking them to those of their constituents. I have argued that such properties should be regarded as constructional properties.

The three classes of N-N compounds discussed here were distinguished based on the presence and position of a head constituent and I have argued that the presence of left-

headed compounds confirms the non-universality of the RHR as noted in the literature (Booij 2010c; Hoeksema 1992). Referring to Scalise's (1988) conclusion that in Italian, the head is not positionally defined, Hoeksema (1992: 128) argued that since the position of the head is not free either, there is also the possibility of concluding that “[t]here is no headedness parameter for compounding”. However, he argues that such a conclusion can be avoided “if we suppose that the head position is not fixed for all compounds (or all compounds of a certain type, e.g. N+N compounds) in a language, but per compounding system ...” (Hoeksema 1992: 128). This is the same position that the discussion of Akan N-N compounds, and the others discussed above, brings us to.

One may wonder whether it will not be profitable to treat left-headed compounds as exceptions, and to posit subschemas of the right-headed compounds with a restricted number of left-hand constituents as heads, as suggested in the CM literature for certain Romance languages (cf. Booij 2009a). I believe there is no need for that. Right-headedness is only the preferred option among many. The number of left-headed N-N compounds in Akan (10.1%) is significant enough to make it unprofitable to treat all left-headed compounds as constructional idioms. Beyond N-N compounds, there are compounds types like N-A compounds which are systematically left-headed. Crucially, if we treat right-headedness as the default, it is not clear that we will be able to deal with dual-headed and exocentric compounds by positing constructional idioms for them.

5.5.2 N-A compounds

There are 39 Noun-Adjective (N-A) compounds making 8.8% of the 443 compounds in my dataset. As noted in §4.2.5, in this compound neither constituent is recursive. The noun can be a derived complex noun (cells 8c & 10b, Table 15), but not a compound. On the other hand, none of the adjectives is complex, but that can be explained: we do not find either derived or compound adjectives in N-A compounds because Akan has no means of forming such adjectives.⁷⁵

Osam (1999) lists a number of forms that he calls derived adjectives, but in my view, they are all nouns denoting property concepts.⁷⁶ Adjectives may be reduplicated, but reduplication in Akan adjectives is never derivational.⁷⁷ Given this, we can add a condition to the constructional schema, stating that neither constituent is recursive.

N-A compounds are all left-headed, patterning like NPs in which attributive adjectives modify head nouns because, in Akan, attributive modification is done to the right of the modified element (cf. Saah 2004). This formal similarity to NPs, means that

⁷⁵ Note that the position assumed here which, no doubt, is shared by many working on Akan (cf. Osam 1999) is contrary to Boadi's view on the matter. Boadi (1965: 40-41) writes:

"[a]djectives are derived from a subclass of nouns some of whose members are òtuntum 'black, black one', òkɔkɔó 'red, red one', òfefeé 'beautiful, beautiful one'. The corresponding adjectives are tùmm 'black', koo 'red', fe 'beautiful'. The nouns have a low tone-bearing prefix. [...] the derived adjectives, on the other hand, have no tone-bearing prefix. Morphologically, then, there is some justification for distinguishing between the two classes.

Indeed, there is justification in morphology for distinguishing between nouns and adjectives, as Boadi observes. However, his reading of the direction of derivation (nouns → adjective) is completely counterintuitive. First, there is overwhelming evidence that Akan forms nouns from other word classes but none, to the best of my knowledge, to show that other word classes are formed from nouns or any other word class for that matter. Second, by this, Boadi introduces truncation as a morphological process into Akan which is unattested, and I dare say, unmotivated. Third, and more importantly, the putative derived adjectives include basic colour terms which cross-linguistically are underived. Given these objections, Boadi's position cannot be sustained.

⁷⁶ A discussion of Osam's views is beyond the scope of this chapter.

⁷⁷ This view contrasts with the view expressed in Dolphyne (1988) and Abakah (2004) where reduplication in various word classes is regarded as a type of compound formation and, by reasonable extension, derivational in nature. This is true of verbs only.

although the constructions discussed in this section have been called compounds, there is room for debate as to whether they may not be treated as lexicalized phrases.⁷⁸

Table 15. Akan N-A Compounds

	<i>A</i>	<i>B</i>	<i>c</i>
1	àfòwà-síń sword-half 'penknife'	nàñ-kèsé fish-big 'big fish'	àdwèm-pá mind-good 'good intensions/discretion'
2	àsààsè-bóníń earth-barren 'infertile land'	nàñtwi-níń cow-male 'bull'	àdwènè-háré mind-fast/light 'light-mindedness/perceptiveness'
3	àdànsè-kúrúń witness-crooked 'false witness'	òhèm-póń king-great 'paramount chief'	àsèm-pá news-good 'goodnews (the Gospel)'
4	bàsà-fá arm-half 'half of a arm-length'	ñhwírómà-tséń whistle-straight 'sweet whistles'	ñ-nè-bòné PL-thing-bad 'evil deeds'
5	àbásà-mú arm-whole 'full-arm length'	ñ-kɔ́ts pá PL-crab good 'type of crab'	ñsù-kánkán water-fetid 'smelling water'
6	dùà-síń tree-fraction 'stump'	ɔ-wà-níń SG-snail-male 'a large snail'	àkwàñ dzén paddling hard 'strong paddling (of a canoe)'
7	ɔ-bà-nyíń SG-child-male 'man (male child)'	èkwàm-mòné way-bad 'evil means/way'	àsèn-kèsé matter-big 'big issue'
8	tèkyérémà-níń tongue-male 'a sharp tongued'	ñsùò-nwínú water-cold 'cold water'	ɔ-sɔ́-fò-pànyíń NMLZ-worship-NMLZ _[person] -elder 'chief priest/senior minister'
9	ñ-dù-póń PL-tree-great 'huge trees'	dìm-mòné name-bad 'name name'	ñ-sèm-húnú PL-matter-useless 'useless/senseless matter/talk'
10	bádwá késéé assembly big 'General Assembly (UN)'	à-kwàñ-tséń NMLZ-way-straight 'highway/road'	nà-pànyíń mother-senior 'mothers elder sister'
11	à-kwáń-síń PL-way-fraction 'mile/kilometre'	kyè-húnú arrest-vain 'arbitrary arrest'	ñtéń-kyéw judgement-crooked 'skewed judgment/miscarriage of justice'
12	ɔ-báá-pànyíń SG-woman-elder 'elderly woman'	ɔ-báá-búnú SG-woman-unripe 'virgin'	máń-síń nation-fraction/half 'a district in a political system'
13	àkókó-níń fowl-male 'cock, rooter'	nà-kúmá mother-younger younger mother (Uncle's wife, mother's younger sister)	

⁷⁸ If, indeed, they were lexicalized phrases, then, Booij (2002b, 2009a) suggests that the left-headedness of such constructions is no real exception to the RHR.

In fact, the issue of the phrasal provenance of these compounds has been broached (Abakah 2004, 2006; Marfo 2004a, 2005). Marfo, for example, argues that the linear order of elements in phrases is retained in compounds and that “for a compound word to materialize in Akan, the constituents involved should map into one prosodic phrase/domain” (Marfo 2005: 63).

The problem with these views, as indicated above, is the suggestion that all compounds are formed from underlying phrases. I argued above that there are cases where even words like *bike* and *girl* which are not likely co-constituents of phrases, still combine to form clearly interpretable compounds. This shows that we cannot assume that all compounds are formed from underlying phrases. Notwithstanding this, and given the formal similarity between N-A phrase and N-A compounds, we have to know how to differentiate between the compounds and the phrases. For this, we can refer to the criteria set out in chapter 4, including the (im)possibility of modifying individual constituents of the compounds, ability of the complex form to serve as base for words derived by *-foo* and *-n(y)i*, and tonal pattern.

I indicated above that Akan has two compounds tonal patterns – TP1 & TP2. In compounds with TP1, all the syllables in the first constituent are L-toned whilst the other constituent retains its basic tonal pattern. In compounds with TP2, both constituents retain their basic tones (Dolphyne 1988). Constructions with TP1 are regarded as compounds without question, whilst those with TP2 may not be treated straightforwardly as compounds because, as far as tone is concerned, there is very little to choose between them and phrases. It is in this that we find our first evidence for the compoundhood of the constructions at issue. 27 (69%) of the 39 N-A compounds have TP1, as the cells in rows 1-9 (Table 15) show. Thus, by TP1, ((42)a)

is a compound and its compoundhood is confirmed by the examples in ((42)b-c). That is, because it is a compound, it becomes ungrammatical when the modifier *nyunu* ‘cold’ is itself modified (b), or is conjoined with another adjective (c), in line with the expectation that a modifier in a compound will not act “by and for itself” (Ralli & Stavrou 1998: 244).

- (42) a. *ñṣùò-nwúinú* b. **ñṣùò nwúinú kàkrá* c. **ñṣùò nwúinú nà fí*
 water-cold water cold little water cold CONJ dirty
 ‘cold water’ ‘a little cold water’ ‘cold and dirty water’

Since N-A constructs do not have the TP1 that will show unequivocally that they are compounds, we need other criteria for this purpose. One criterion is their semantics. N-A compounds, compared to the corresponding N-A phrase, tend to be only partially compositional. For example, the compounds in cells 1a, 6a, 11a, and 12c (Table 15) refer literally to portions of the entities named by the left-hand constituent, but the idiomatic meanings are different. For instance, it is not just any portion of a knife (cell 1a) or even any small knife that will pass for a *penknife*. Again, there is no reason why the combination *tèkyèrèmá níní* ‘male tongue’ (cell 8a) should mean *sharp tongue*. In a phrase, the combination can only mean a *male tongue* which will be meaningless. In like manner, the link between *òbáá-búnú* lit. ‘unripe woman’ (cells 12b) and its idiomatic meaning *virgin* is indirect, arrived at though metaphorical extension of UNRIPENESS to VIRGINITY. Finally, observe that although the adjective *níní* ‘male’ occurs in a number of these constructions (cells 2b, 6b, 8a and 13a) the referents are not always *male*, and where the referents are definitely male (cells 2b and 13a) there is usually the additional meaning ADULT that is not overtly coded in the construct.

Thus, the meaning of Akan N-A compounds, unlike the analogous N-A phrases, are relatively not transparent; the adjectives do not usually have the same meaning they have in isolation. This is consistent with the observed behaviour of adjectives in compounds crosslinguistically which differ from adjectives in NPs, in that the latter usually refer to actual properties of the head nouns they modify (Bauer 2009a; Spencer 2011). Bauer (2009a: 403), for example, observes that in Germanic A-N compounds (e.g., German *Rot-wein* ‘red wine’), the adjective has a classifying function rather than the function of a genuine attributive modifier. That is why the compound *rot-wein* can be the name of a kind of wine no matter the colour.

Commenting on this, Spencer (2011: 501) argues that we have to conclude that A-N compounds in Germanic languages are semantically opaque. That is to say that RED is not really in the compound *red wine* because it does not contain its meaning. This is similar to the English compound *blackbird* for which stating that *X is a blackbird* does not entail that the bird in question is *black*. A direct Akan equivalent of such compounds is *sikà kókò́* ‘gold (lit. money red)’ whose referent is obviously not red. Thus, the nature of adjectival modification in compounds portrays such compounds as serving to identify culturally institutionalized entities in a way that the corresponding phrases do not, unless they are lexicalized.

The foregoing discussion underscores the fact that even regular complex nominals can have extra-compositional meanings that we can assume to be properties of the constructions themselves. I assume that Akan N-A compounds instantiate the constructional schema in (42) which, being left-headed, also instantiates a more abstract schema (ACS-1 in (3)), as in (43).

(42) $\langle [[N]_i [A]_j]_{Ni} \leftrightarrow [\text{SEM}_i \text{ which is SEM}_j]_k \rangle$

(43) $\langle [[a]_{Xi} [b]_{Yj}]_{Ni} \leftrightarrow [\text{SEM}_i \text{ with a relation R SEM}_j]_i \rangle$
 |
 $\langle [[N]_i [A]_j]_{Ni} \leftrightarrow [\text{SEM}_i \text{ which is SEM}_j]_i \rangle$
 |
 [[àkókɔ́]_{Ni} [níní]_{Aj}]_{Ni} 'rooter (lit. fowl male)'
 / \
 [àkókɔ́] 'fowl' [níní] 'male'

As noted above, where a meaning component that does not come from either constituent, it may be presented as a semantic operator over the meaning of the construction, as in (44).

(44) $\langle [[N]_i [A]_j]_{Ni} \leftrightarrow [\text{SEM} [\text{SEM}_i \text{ which is SEM}_j]]_i \rangle$

In this section, I have discussed N-A compounds. I have shown that they are different from phrases and that they have properties that do not emanate from either constituent, thus confirming that even regular constructs can have constructional properties.

5.6 Conclusion

My aim in this chapter was to present an adequate account of the types and properties of Akan compounds. I have shown that some of the forms posited in the literature are not compounds at all. I have also shown, through extensive discussion, that one of the classes of compounds, A-N, posited by Dolphyne does not exist and that the constructions put in that class are N-N compounds. Thus, only five of the six classes of compounds posited by Dolphyne are left. I have discussed these compound types,

showing the complex mix of regular and irregular properties that characterize them. I have argued throughout this chapter that the properties of the compounds are adequately accounted for in a constructionist model, even where rule-based models fail.

One may argue that the distribution of the compounds, especially the skewing of the data in favour of right-headed N-N compounds which are generally compositional, means that rule-based models may be adequate to account for the properties of compounds, so that the data discussed in the present chapter may not be seen as providing any real evidence for a constructionist account of Akan compounds. That may very well be the case, but only when we take N-N compounds into account. Right-headed N-N compounds constitute 31% of the overall number of 443 compounds in my dataset. There is the 69% which are not as regular as the right-headed compounds. It is this latter set that provides us with the strongest evidence for preferring a constructionist account to a rule-based one. The point is that whilst the constructionist model accounts well for the irregular properties, it is able to handle the regular properties as well. It is, therefore, more beneficial to adopt a constructionist approach to accounting for all the properties of compounds – regular and irregular.

In the next two chapters I discuss two classes of Akan compounds that will provide the strongest evidence yet for the superiority of the constructionist model.

6 N-V COMPOUNDS: THE EXOCENTRIC SYNTHETIC VIEW

The essential difference between root and synthetic compounds, then, is in the argument-taking properties of their heads. The characteristic differences between the two kinds of compounds follow from this difference (Grimshaw 1990: 70).

6.1 Introduction: setting the stage

In this chapter I discuss a class of Akan compounds which Dolphyne (1988) characterizes as N-V compounds but have subsequently been analyzed as N-N compounds with deverbal nominal right-hand constituents (Anderson 2013; Anyidoho 1990), thus making them *synthetic compounds* (Anderson 2013). The main evidence for Anyidoho's and Anderson's position is a pattern of downstepping observed on the first syllable of the second constituents of the compounds, as shown in ((1)b). The claim is that it is the floating L-tone of a deleted nominalizing prefix which causes the downstepping, pointing to the fact that Akan nouns (complex or simplex) usually have L-toned nominal prefixes.

(1)	a.	<i>àdùànè-nòá</i> food-cook 'cooking'	b.	<i>àsó-'twe⁷⁹</i> ear-pull 'punishment'
-----	----	---	----	--

A cursory look gives the impression that the proposed N-V compound analysis accounts well for this class of compounds. At least, that is the impression Anderson

⁷⁹ I indicate downstepping with (') before the syllable bearing the downstepped H-tone.

gives. The explanation is that in ((1)a), the conditioning L-tone is present but because all the preceding tones are low, the condition for the downstep is not met (Anderson 2013). However, a careful search returns two kinds of data that systematically defy the prediction that tonal perturbation shows that the second constituent of the compound is nominalized. In the first, the compounds meet the structural conditions but fail to show the predicted downstep. In the second, there is downstepping where no overt or floating L-tone occurs.

In the present chapter I do two things: I discuss and reject competing analyses of Akan N-V compound in the literature which are all rule-based and then I develop a theoretical argument in favour of CM. The analysis presented here combines the best part of the observations made in the literature on the properties of this class of compounds. I argue that the argument for the nominal status of the right-hand constituents based on tonal melody alone which then motivates the synthetic compound analysis is weak and unsustainable. However, we can maintain the synthetic compounds analysis without committing to defending the view that the right-hand constituent is nominalized. This is the EXOCENTRIC SYNTHETIC COMPOUNDING VIEW.

Synthetic compounds are traditionally regarded as endocentric compounds in which a deverbal nominal head (marked in English by a suffix like *-er* which refers to the external argument of the verb) inherits the internal argument of the underlying verb (Booij 1988; Lieber 1992). The presence of the deverbal constituent is traditionally seen as a defining feature of synthetic compounds and one which distinguishes them from root compounds. Katamba (1993: 308), for example, lists the following as the characteristics of a verbal compound:

- (i) a complex head adjective or noun, which is derived from a verb;
- (ii) the nonhead constituents is interpreted as a syntactic argument of the deverbal noun or adjective head;
- (iii) the θ-role of the nonhead is that of agent, patient, etc.;
- (iv) the meaning of the compound is transparent

However, other scholars (Grimshaw 1990; Selkirk 1982) stress the relation between the constituents – the need for a nominal constituent which satisfies the AS of the underlying verb of the deverbal nominal. Grimshaw argues that the real distinction between root compounds and synthetic or verbal compounds is not necessarily the presence of a deverbal constituent in synthetic compounds, but the fact that they contain an argument-taking heads whose AS requirement must be satisfied by the non-head constituent. Thus, the fact that in most commonly discussed cases of synthetic compounds the argument-taking constituent is either deverbal or deadjectival follows from the fact that these form-classes have AS (Grimshaw 1990: 14).

I argue in the present chapter that the constructions at issue are ACTION NOMINAL EXOCENTRIC SYNTHETIC COMPOUNDS. Crucially, my definition of synthetic compound, following Grimshaw (1990), is not a compound with a deverbal second constituent. Rather a synthetic compound, in contradistinction to a root compound, is one in which one of the constituents takes an argument which must be satisfied in the compound in response to the demands of the locality principle (cf. Selkirk 1982).

Again, as noted above, traditionally, synthetic compounds are regarded as endocentric constructions mainly because of the presence of the deverbal nominal constituent. However, Bauer (2010b) has recently distinguished different classes of exocentric compounds, one being EXOCENTRIC SYNTHETIC COMPOUND. Bauer has shown that

synthetic compounds need not be endocentric, and that we can have exocentric synthetic compounds as well. Therefore, given the definition of synthetic compounding above, we can maintain the synthetic compound label for the class of compounds at issue without committing ourselves to the presumed entailment that one of the constituents of the compound is deverbal. What we have in Akan are EXOCENTRIC SYNTHETIC COMPOUNDS made up of verbs and their arguments, both internal and external, depending on the specific type.

Another point that I make, which I have made several times already in previous chapters, is that morphological constructions can have holistic properties. I observe that the tonal pattern of the compounds at issue may be rightly designated as a constructional property not dependent on the tonal pattern of the individual compound members, much in agreement with Dolphyne (1988). The same has to be said for the syntactic category of the compound. The output-orientedness of constructional schemas makes it possible to account for such holistic properties of constructions that would otherwise be difficult, if not impossible, to account for in a source-oriented rule-based model, once we rule out the deverbal status of the right-hand constituent.

The rest of the chapter is organized as follows: in §6.2 I present Dolphyne's (1988) observation that Akan compounds can be grouped into two based on their basic tonal melodies. This tonal pattern is given a constructionist interpretation in §6.4.4.1. In §6.3 I discuss the Endocentric synthetic compound account of Anyidoho (1990) and Anderson (in Prep.). In §6.4 I discuss the argument for the Exocentric Synthetic Compounding hypothesis. In that section, I show why a derivational approach fails to account for the properties of Akan N-V compounds and then go on to present the constructionist account of the properties of N-V compounds. In §6.5, I show that the

constructionist account extends naturally to similar data in Sranan, a creole language with Akan substrate. §6.6 concludes the chapter.

6.2 Basic Tonal Pattern of Akan Compounds

For a proper understanding of the issues I deal with this chapter, I illustrate what Dolphyne (1988) regards as the two basic tonal patterns of Akan compound, as already touched on in §4.2.6.1 and §5.5.2. Dolphyne (1988) observed that Akan compounds can be grouped into two classes, based on their surface tonal melodies. In the first group, all the syllables in the first constituent are L-toned (Table 16). In the second, the immediate constituents seem to maintain their tonal pattern. See the data in (Table 17).

Table 16. Akan N-V compounds with tonal pattern 1 (TP1)

Akan Compounds with L-tone on all TBUs in the first constituents			
1.	<i>ànò-bàà~bá'é</i> mouth-RED~open 'verbal exchanges'	6	<i>dɔ̄n-hwér</i> bell-spend 'hour (spent bell)'
2.	<i>àsè-kyéré àsé-kyéré</i> meaning-show 'interpretation/explanation'	7	<i>àdè-séé</i> thing-destroy 'wastefulness'
3.	<i>bàkà-nú</i> lagoon-stirring 'fishing in a lagoon'	8	<i>àdè-sòá àdésóá</i> thing-carry 'load carrying burden'
4.	<i>àbà-sò-bó</i> shoulder-on-hit 'commendation/promotion'	9	<i>àdè-suá</i> thing-learn 'education, learning/lesson'
5.	<i>àbùsùà-bó</i> family-join 'becoming a family member'	10	<i>àdè-tó àdé-tó</i> thing-buy 'act of buying'

Dolphyne observed further that where tonal changes are recorded in compounds, the changes are "related to the tones of the first stem in the compound, and there is no evidence that the type of tone pattern a compound has is related to the word classes of

the stems from which the compound is derived” (Dolphyne 1988: 120). This observation is crucial for the arguments presented in this chapter.

Table 17. Akan N-V compounds with tonal pattern 2 (TP2)

Akan Compounds in which the first constituents retain their underlying tonal melody			
1.	ànó-!yî mouth-remove 'response/answer/reply'	5	ñtàmá-!sî cloth-wash 'laundry'
2.	àbá-!tów ballot-cast 'election/voting'	6	bá-!hyé promise-give 'promise'
3.	àsó-!twé ear-pull 'punishment/penalty'	7	ò-bó-!sóm SG-stone-serve 'a god/'
4.	àsú-!bá water-apply.to 'baptism'	8	àdé-!dî-é thing-assume-AFV 'succession'

Anyidoho (1990: 6) shares the view that the tonal melody of compounds has nothing to do with the form classes of their constituents. She writes: “[t]he first group consist of those in which the syllables of the initial stem(s) bear low tone while those of the last stem usually retain the tone they bear when they are pronounced in isolation. *This consistency is observed irrespective of the form classes of the stem involved*” [emphasis added, CKIA].

Abakah (2004, 2006), however, does not share this view. He claims that it is possible to predict the total pattern of compounds from those of their constituents. To drive home this idea, he postulates six classes of nouns and three classes of verbs whose tonal patterns undergo various rules to derive the surface tonal melody of the compounds they occur in.

Marfo (2004a, 2005) also seems to believe that the tonal pattern of the constituents determine that of the whole compound, but for him it is the tonal pattern of the first

constituent alone that is of any relevance. For the second constituent, it is only its morphophonological makeup (whatever that means) that is of any consequence for the composition of the compound.

My aim is not to discuss either the classes that Abakah posits⁸⁰ or his and Marfo's view on the tonal pattern of which constituent matters for working out the tonal melody of the whole compound. My aim is to show that there are issues in the matter of the relationship between the tonal pattern of compounds and those of their constituents. I will now proceed to discuss our main concern in this chapter.

6.3 The endocentric synthetic N-N compound hypothesis

Dolphyne (1988: 123) gave the data in (2) to illustrate the class of compounds she calls object-verb (i.e. N-V) compounds with TP2 (Table 17) – those that have downstepped H-tone on the first syllable of the second constituent.

(2)	<i>òsé-'bó</i>	'jubilation'	<i>from</i>	<i>òsé</i>	'outry'	<i>bó</i>	'make'
	<i>àhá-'yó</i>	'hunting'	"	<i>èhá</i>	'hunting'	<i>yé/yó</i>	'do'
	<i>ñtém-'pé</i>	'haste'	"	<i>ñtém</i>	'quickly'	<i>pé</i>	'want'

⁸⁰ The following is a sample of the various classes of nouns set up by Abakah (2004).

- (a) **Class I Nouns :** The nouns have a LH melody
síká 'money' *ò-nyàmé* 'God'
- (b) **Class II Nouns:** The nouns have HL'H tone pattern.
nyán'sá 'wisdom' *sá'mán* 'ghost'
- (c) **Class III Nouns:** The nouns are L-toned; "all the TBUs ... are characterized by the L" (p.280).
àmàndzé 'trouble' *nyààtwòm* 'hypocrisy'
- (d) **Class IV Nouns:** The nouns are all H-toned and are relatively few in number.
nyémá 'things' *kótókóróbá* 'a hooked drum stick' *nyéná* 'fire wood'
- (e) **Class V Nouns:** The nouns have an initial H-toned [+Low] vowel, á, followed by Hs some of which may be downstepped H.
ámó'tó 'a type of seed'
- (f) **Class VI Nouns:** The nouns, which are all from Fante, have a HLH melody.
ádóròmá 'fig plant' *ápétépírów* 'a species of bird'

Following Dolphyne's observation, some scholars have sought to provide the motivation for what appears to be a puzzling tonal pattern, where a H-tone borne by the second constituent in isolation becomes downstepped when it occurs in the compound. For example, Anyidoho (1990) and recently, Anderson (2013) have interpreted the observed pattern of downstepping to mean that the verb is first nominalized, and that it is the floating L-tone of the deleted nominal(zing) prefix which causes the lowering of the pitch of the succeeding H-tone. The absence of downstepping in some such compounds, those with TP1, (see also (1) above) is put down to the fact that they do not have the conditioning H-tone on the final syllable of the first constituents to generate the needed contrast in pitch levels when the putative L-toned nominalizing prefix (the floating tone) occurs.

To make the point about the nominal status of the right-hand constituents, both Anyidoho and Anderson present evidence in the form of the process of nominalization through prefixation, arguing that we find nominalized verbs occurring in isolation. Anyidoho (1990), for instance, lists the examples in (3) to show the contrast between verbs and their nominalized counterparts and then goes on to give the two constructions in (4) to show the use of such putative deverbal nouns.

(3)	Verb	Noun
	bó 'hit'	èbó 'hitting'
	yó 'do'	èyó 'doing'
	twá 'cut'	ètwá 'cutting'
	dáń 'demand'	èdáń 'demanding'
	sú 'cry'	èsú 'crying'

- (4) a. *Esú ara na ò-re-sú.*
 crying only is he-pre.-cry
 'He is crying a lot'

b. <i>edan</i>	<i>na</i>	<i>ɔ-re-dan</i>	<i>no</i>	<i>ka</i>	
demanding	is	he-pre.-demand	his	debt	
‘He is only asking for his money’					(Anyidoho 1990: 8)

I do not discuss affixation, but suffice it to say that some of the so-called examples of nominalized verbs either do not exist in the language or are only marginally acceptable.

Before continuing, it is worth pointing out that this prior nominalization view, the view that the right-hand constituents in these compounds are deverbal, is not new at all. Christaller (1875, 1933) regarded all verbal constituents of compounds he discussed as nominalized, calling them, in several places, “verbal nouns” which form composites with their subjects or objects. Boadi (1966) in dealing with the nominal in (5), referred to the prefix *ɛ-* as a nominalizing prefix which is “represented in the transcription ... where they may otherwise not appear in the orthography” (Boadi 1966: 88, fn. 1), making the same claim that Anyidoho would make a quarter century later. In other words, Boadi regards all such right-hand constituents of compounds as nominalized, even if they do not bear overt prefixes and that his representing them overtly is an aberration enough to warrant an explanation.

(5) <i>aduane ɛ-noa</i> ⁸¹		(from <i>obi noa aduane</i>)	
(food cooking)		(Someone cooks food)	(Boadi 1966: 88)

Thus, the idea of a nominalizing affix occurring on the right-hand constituents of what is otherwise regarded as a N-V compound is not new. But Dolphyne (1988) does not

⁸¹ The question to ask will be whether *ɛ-noa* is a well-formed nominal. If it is, then there is solid evidence for the nominalization. However, it would be worth noting that *enoa* as a noun meaning cooking does not exist. When *noa* ‘to cook’ is nominalized, it does so together with its internal argument and that prefix cannot under any circumstance appear. If it did, it would mean that the verb can be nominalized without its internal argument.

report it and so Anyidoho's observation comes across as a novel explanation for a puzzling pattern of downstepping. The real novelty in the account offered by Anyidoho (and latter Anderson) is the observation that the tonal pattern of the compounds actually supports the view that the right-hand constituents are nominal.

A corollary of the view that the right-hand constituent is first nominalized is that the so-called N-V compounds are actually N-N compounds and for that matter, synthetic compounds – traditionally analyzed as N-N compounds in which the second (or head) constituent is deverbal and the non-head constituent is an argument of the verb underlying the deverbal head noun. I call this the ENDOCENTRIC SYNTHETIC N-N COMPOUND HYPOTHESIS (henceforth, Endo-N-N).

Anderson takes this logical next step, arguing that the structure and derivation of the compounds in Akan is analogous to that of English synthetic compounds. The right-hand constituent is a nominalized form of the verb much like the pattern of synthetic compound formation in English (Lieber 1983; Roeper & Siegel 1978; Selkirk 1982). However, whilst in English the derivation of the right-hand constituent is apparent (marked by overt suffixes like *-er*, *-ation*, *-al*, *-ure*, *-ment*, and *-ing*), in Akan the putative nominalization and subsequent deletion of the nominalizing prefix are only felt through the downstepping occasioned by the floating L-tone (Anderson 2013: 12). He illustrates his conception of the derivation of the synthetic compound in (6).

- (6) Derivation of Akan synthetic Compounds
- | | |
|-----------------------|--------------|
| UR | /è-tíré bó/ |
| Nominalization | è-tíré à-bó |
| Vowel Prefix Deletion | è-tíré-'bó |
| PR | [è-tíré-'bó] |
- ‘the act of hair braiding’ (Anderson 2013: 18)

For compounds which do not have the downstep in the second syllable, Anderson suggests the derivation in (7), exemplified by *m̄m̄irikàtúó* ‘the act of running’.

- (7) Derivation of Akan synthetic Compounds without Downstep
- | | |
|-----------------------|---|
| UR | /m̄m̄irikà + tú / |
| Nominalization | m̄m̄irikà àtúó |
| Vowel Prefix Deletion | m̄m̄irikàtúó |
| PR | [m̄m̄irikàtúó]
‘the act of running’ (Anderson 2013: 20). |

It should be noted that there is no grammatical evidence for the intermediate stages posited. That is, there are no instances in the language where any of the posited intermediate stages surfaces.

6.3.1 Preliminary objections to the Endo-N-N

As noted above, some of the so-called examples of nominalized verbs either do not exist in the language at all or are only marginally acceptable. The alleged nouns *èbá* ‘hitting’ and *èyá* ‘doing’ (3), for example, are pretty odd. Again, these marginally admissible nominals may be so severely restricted in forms and distribution that one may question the profitability of positing such forms and basing judgement on the status of a very productive compounding pattern on it.

Crucially, Anderson and Anyidoho fail to observe that transitive verbs in Akan seem not to permit nominalization exclusively through affixation without their internal arguments. Indeed they seem to assume that all transitive verbs in Akan can be nominalized without their arguments. This is not true. The fact seems to be that transitive verbs obligatorily incorporate their objects when they undergo

nominalization (Appah 2003, 2009b). For example, even though the citation form of the verb in *ɛyɔ́*, cited in (3), is *yé*, nominalizing this form through the prefixation of *ɛ-* without its internal argument, as in *ɛye*, seems not to be allowed. In fact, in the Akyem dialect from which Anyidoho draws her data, the form *yɔ́* occurs as an alternative to *yé*, but it seems when *yɔ́* occurs, it is usually without an object. This gives us the inkling that it is the intransitive use of the verb that permits the nominalization through prefixation.

I assume that where a transitive verb appears to be able to undergo nominalization without its internal argument, it would be because there is an operation at the level of lexical conceptual structure (LCS) that renders the event designated by the verb atelic and for that matter optionally transitive (Booij 2002b). What this means is that those compounds that fail to observe the tonal pattern alleged to be indicative of the presence of a nominalizing prefix have not undergone this process at LCS and thus remain telic. For example, in Fante, the verb *ye* has a form which is nominalized entirely through affixation, as in (8).

- (8) *yé* ‘do’ > *ṇ-yɛ-é* ‘acts/actions’

As (8) shows, without the internal argument, the nominal bears another nominalizer besides the L-toned nasal prefix. Here again, it seems to me that it is the intransitive use of this verb that permits nominalization without the internal argument. In other words, as noted above, the event expressed by the verb in this instance is atelic making it optionally transitive.

At this point some commentary on Anyidoho’s illustrative sentences in (4) will be in order. Those sentences are meant to illustrate the use of the deverbal noun without the

notional object of the underlying verb. But there are problems with this view. In the first place, the supposed nominal *edan* ‘demanding’ cannot be used in a construction where the notional object does not occur as well. Thus, ((9)b) is ungrammatical but ((9)a) with an intransitive verb nominalized through affixation is grammatical. This shows that, just as the verb and its internal argument combine to express the concept of demanding/collecting a debt owed, so must they combine to express the same concept in the nominal.⁸²

Even if the foregoing objections to Endo-N-N do not necessarily deal a fatal blow to the claim that the verb is nominalized through affixation, prior to forming the compound with its object, it does make us want to question the basis of the argument.

Closely related to the view that the verb is nominalized independently, prior to becoming part of the compound, is the view that the nominal inherits the argument of the verb (Booij 1988; Hoekstra 1986; Lieber 1992). However, it is not clear whether, for Akan, this is not an unnecessary complication that is introduced only because of the assumption that the verb is nominalized without its internal argument. If we

⁸² In the same way when Akan speakers hear the form *ètwá* ‘cutting’ in (3) which is supposed to be the affix-nominalized form of *twá* ‘to cut’ (Anyidoho 1990), the meaning that first comes to mind is not *cutting* but the meaning of a homophonous form *ètwá* ‘epilepsy’ formed from *twá* ‘to be epileptic’. This interpretation will be due primarily to the absence of the patient argument which is interpreted to mean that the subject is the undergoer of the event designated by the verb (this is the case for most change of state verbs (Osam 2003, 2004). This, for me, shows that nominalizing a transitive verb without its internal argument does not come naturally to the native speaker of Akan.

assumed that the verb is nominalized together with the internal argument then the need for a separate mechanism of argument inheritance disappears because the presence of the internal argument in the nominal is already explained – the verb and the internal argument together expressed the concept in the VP and must together express the same concept in the analogous nominal. The fact that intransitive verbs are not so constrained to occur in compounds with possible objects, when they are nominalized, should be seen as evidence for the position assumed here.

Adopting Endo-N-N leads to some further theoretical challenges, including issues with the violation of lexical integrity (Anderson 1992; Bresnan & Mchombo 1995; Chomsky 1970; Di Sciullo & Williams 1987; Selkirk 1982). One of the defining characteristics of a word is that its constituents occur together rather than scattered over the construction (Aikhenvald 2007; Dixon & Aikhenvald 2002; Lyons 1968). As Booij (2009b: 97) puts it “[t]he main reason why we consider a sequence of morphemes a word is that that sequence behaves as a cohesive unit with respect to syntactic processes [...] cohesiveness is the defining criterion for canonical wordhood.”

Thus, if indeed verbs cannot occur without the internal argument with which they form compounds (i.e. words), but somehow we find the putative nominalized verbs (the constituents of compounds) occurring alone somewhere, albeit in the same construction (as (4)b seems to suggest), then the lexical integrity of the compound is violated. Put another way, the possibility of displacement is against the very character of compoundhood because the two constituents of the compound are not grammatically independent of each other.

If Anyidoho's position on a nominalized transitive verb occurring alone in the construction can be upheld, then we have a serious challenge to the Lexical Integrity Principle. This is because Anyidoho's analysis shows a part of a word being displaced (occurring elsewhere in the construction, away from its other obligatory part), unless we reject the view that transitive verbs must be nominalized together with their internal arguments. However, it seems Anyidoho's view cannot be sustained since ((9)b) shows that the construction becomes ungrammatical when the internal argument of the base verb is absent.

Finally two related trivial questions may be asked: Which prefix? Is there a default nominalizing prefix that goes on each verb? That is, given (10), which of the set of putative affix-derived nominals (*ε-yε*, *a-yε*, *ɔ-yε*, *n-yε*) should one choose? Again, is the prefix in (11) *a-*, (as in *àgyé*) or *ɔ-*, (as in *ɔgyé*)? If it is the former, it does not exist. If it is the latter, it exists but its meaning is different from what occurs in the compound. The point here is that if we assume the prior nominalization of the verb, we probably also have to worry about the nature of the nominal(izing) affix.

(10)	<i>àyi-'</i> yé	<	<i>yɛ</i>	<i>àyi'</i>
	funeral-perform			'perform funeral'
	'funeral ceremony'			

(11)	<i>àwó-'</i> gyé	<	<i>gyɛ</i>	<i>àwó</i>
	<i>birth-deliver</i>			<i>receive birth</i>
	'midwifery'			'to deliver X of a baby'

In the following discussion, I will maintain the view that a transitive verb cannot be nominalized without its internal argument and attempt to account for the properties of the N-V compound.

6.3.2 Accounting for the data: the adequacy of the Endo-N-N

The preliminary objections aside, the important question to ask is whether we are able to account for all the compounds at issue, by assuming the Endo-N-N. A cursory look gives the impression that this hypothesis makes it possible to account for all the compounds in this group. However, there are problems that become apparent once we pay more attention to the data. A careful search returns compounds which systematically defy the view that the tonal pattern can be relied upon to show that the second constituent is nominalized, as predicted by Endo-N-N. For example, some compounds which meet the structural conditions fail to show the predicted downstepping, whilst others show downstepping in places where no (floating) L-tone occurs to condition it.

The compounds in (12) and Table 18 defy the view that the downstepping observed in the N-V compounds is caused by a nominalizing L-toned prefix that occurs on the second constituent, intervening between the two constituents and occasioning the lowering of the pitch of the H-tone on the first syllable of the verbal base.⁸³

- | | | |
|---|---|--|
| (12)a. <i>kúm</i> <i>m-bòfrá</i>
‘kill’ ‘PL-children’
‘to kill children’ | > | <i>m-bòfrà kúm</i>
‘PL-children’ ‘to kill’
‘infanticide’ |
| b. <i>yè</i> <i>èdwúmá</i>
do work
‘to work’ | > | <i>èdwúmá-yé</i>
‘(act of) working’ |
| c. <i>bù</i> <i>òmáń</i>
rule nation
‘to rule a nation’ | > | <i>à-máń-mú-ó</i>
PL-nation-rule-AFV
‘governance’ |

⁸³ Note that I am not suggesting that the compounds are formed from underlying phrases. Rather the left column is meant to show the tonal melody of the constituents when they occur in the analogous phrases.

- d. *kyèrè àsé* > *àsè-kyèré | àsé-kyéré*
 show meaning
 ‘to explain/interpret/translate’ meaning-show
 ‘interpretation/explanation’
- e. *tènà àsè* > *àsé-téná*
 sit down
 ‘to live’ down-sit
 ‘life/livelihood/standard of living’

In these examples, the expected downstepping does not occur although the conditions for its manifestation are met. That is, the tonal pattern of the individual constituents in isolation (and in the phrase) is such that when they occur in the compound, the conditions should be met for the downstepping on the first syllable of the second constituent, if indeed the verb is nominalized by means of an L-toned prefix.

Table 18. *àní/ènyí-based compounds without downstepped H-tone on second constituent*

	Morphemic Makeup	Base/Source Construction
1.	<i>àní-béré</i> (<i>enyi-bere</i>) eye-ripen/redden ‘anger/seriousness’	<i>X àní á-béré</i> X eye PERF-ripe ‘X is serious (lit. X’ eye has ripened)’
2.	<i>àní-bué</i> eye-open ‘civilization (lit. opening of the eye)’	<i>X àní á-bué</i> X eye PERF-open ‘X is civilized (lit. X’s eyes are open)’
3.	<i>àní-háw</i> eye-be_wearried ‘laziness’	<i>X àní á-háw</i> X eye PERF-wearry ‘X is feeling lazy’
4.	<i>àní-iéw</i> eye-tear ‘cunningness’	<i>X ani a-tew</i> X eye PERF-tear ‘X is cunning’
5.	<i>àní-wú</i> eye-die ‘shame’	<i>X ani a-wu</i> X eye PERF-die ‘X is ashamed’
6.	<i>ènyí-só</i> eye-please ‘pleasing/respectful/respectable’	<i>só enyi</i> please eye ‘be pleasing (to the eye)’
7.	<i>àní-gyé-é</i> eye-get-AFV ‘happiness’	<i>gyé àní</i> get eye ‘be happy’
8.	<i>àsé-téná</i> down-sit ‘livelihood/standard of living’	<i>tènà àsè</i> sit down ‘to live’

For example, in ((12)a), the first constituent *mòbòfrá* terminates in an H-toned final syllable, whilst the second constituents *kúm* has H-tones only. Thus if it is the case

that the verb is prefix-nominalized and that with the deletion of the TBU the L-tone floats, then there should be an HLH tonal melody which will automatically result in an HL¹H melody because of the intervening L. However, we don't find that happening. That is the case for all the examples in (12) and in Table 18.

Somehow, some of the compounds that fail to pattern as predicted by Endo-N-N constitute well-defined/definable groups. For example, all the compounds that refer to abstract concepts related to human attitude/disposition, which contain the noun *àní* /ènyí ‘eye’ and in which the noun is the notional subject rather than the object systematically do not have the downstepping of the H-tone on the initial syllable of the second constituents of the compound, as shown by examples 1-6 (Table 18).⁸⁴

One may be tempted to think that these compounds fail to pattern as predicted because the noun is the external argument rather than the internal argument of the verb. But, that is not the case. In example 7 (Table 18) the noun *àní* is actually the internal argument of the verb.

Secondly, it appears whether the compound will have TP1 (Table 16) or TP2 (Table 17) depends, in some instances, on whether or not the compounds is lexicalized and thus not so transparent. That is, lexicalized compounds tend to have TP1 where all the syllables in the first stem are L-toned, as in (13).⁸⁵

- | | |
|-------------------------|--------------------------|
| (13) a. àníbùé | ‘civilization’ |
| b. àní ¹ búé | ‘act of opening the eye’ |

⁸⁴ The verbs involved are either inherently intransitive (1, 3 & 5) or optionally intransitive (1&4).

⁸⁵ As noted in Chapter 5, it looks like Akan either has or is developing a compound tonal melody with L-tone on all the TBUs in the first constituent. Thus, to the extent that speakers regard a sequence of bases as constituting a compound, they apply that tonal melody to it notwithstanding their underlying tonal melody.

I noted above that there are cases where downstepping occurs in the absence of a conditioning L-tone. This is exemplified in (14). In this example, the last two syllables of the verb, which are L-toned in isolation and in the corresponding phrase, bear H-tones in the compound and the last H-tone is downstepped, although there is no L-tone between the two H-tones.

(14)	<i>ànò-bàà~bá'é</i>	<	<i>bàà~bàè ànó</i>
	mouth-RED~open		RED~open mouth
	'verbal exchanges'		'open the mouth'

Two non-N-V compound examples are in (15), where, in the *a* example, the H-tone on the final syllable of the adjective *bòné* 'bad' is downstepped when the adjective occurs in the compound, even though there is no L-tone in the environment to condition the lowering of the pitch of the final H-toned syllable. Also, the penultimate syllable which was L-toned is now H-toned.

(15) a.	<i>àbòfrâbó'né</i>	b.	<i>àníbéré-sém</i>
	child-bad		seriousness-matter
	'bad child (non-adult)'		'serious matter'

Clearly, although attempts have been made to show that downstepping in Akan is systematic (Abakah 2000), the process can be erratic, occurring where one does not expect it to occur and failing to occur where one expects it to occur. This means the occurrence of downstepping alone cannot constitute strong enough evidence for making conclusions about the form-class membership of a compound constituent. More specifically, we cannot take the observed downstep in the second constituents of the compounds we are concerned with as evidence enough for the nounhood of the

right constituent and for that matter, the presence of a floating L-tone nominalizing prefix, as suggested in the literature (cf. Anderson 2013; Anyidoho 1990).

In this section, I have attempted to show that even if the endocentric synthetic compound perspective on Dolphyne's object-verb compounds makes it possible to account for a good number of the compounds, it fails to account for all N-V compounds based on their tonal melodies. There are N-V compounds which meet the structural description but fail to exhibit the downstepping alleged to be occasioned by a floating L-tone. It also fails to account for the other tonal properties in such compounds because it focuses mainly on the tonal perturbation at the boundary between the two constituents. For example, the Endo-N-N says nothing about the fact that all the compounds seem to terminate in H-tone, no matter the tonal melody of the individual constituents in isolation.

In the next section I present an analysis that maintains that what we have are indeed synthetic compounds but they are not endocentric. I also argue that the tonal pattern of the compound does not depend on the tonal melody or syntactic category of the constituent of the compound. Rather, the tonal melody and the syntactic category are holistic constructional properties of the compound.

6.4 The exocentric synthetic N-V compound hypothesis

The claim I make in this section is that the compounds we are concerned with are N-V compounds, as originally proposed by Dolphyne (1988). However, they are not all object-verb compounds, because they include compounds in which the N constituent is the subject rather than the object (cf. Table 18). Maintaining that they are N-V

compounds amounts to claiming that they are exocentric constructions. This is the *exocentric synthetic N-V compound hypothesis* (Exo-N-V) in contradistinction to the *endocentric synthetic N-N compound hypothesis* (Endo-N-N) discussed in the previous section.

6.4.1 Exocentricity: the case of N-V compounds

In mainstream generative morphology it is assumed that the head of the complex percolates its properties, including the form-class, to the whole compound (Booij 2000; Lieber 1980, 1983, 1989; Selkirk 1982; Williams 1981). This way, the compound as a whole is a subtype of the head constituent, as predicted by the hyponymy test or “IS A” condition (Allen 1978: 11). Given this assumption, we would expect the form-class of the [N-V]_N compound to percolate from the head. However, the possible head-constituent in the compound, the right-hand constituents, has the “wrong” form-class because it is a verb whilst the compound is a noun. Therefore, the nominal category of the compound cannot be said to come from the possible head. It is also clear that the form-class does not come from the left-hand nominal constituent because, whilst the CNs are invariably abstract (e.g. *atar-hye* ‘act of dressing [lit. dress-wear]’), the left-hand nominal constituents usually name concrete entities (e.g. *atar* ‘dress’). These compounds are, therefore, exocentric.

Bauer (2010b: 167) posits a number of ways in which exocentrics can fail the hyponymy test:

- (16) a. they can fail to display a head element;
- b. they can function as a member of a word-class which is not the word-class of their head element;

- c. they can have a head element of the correct word-class but with apparently the wrong denotation.

So, in what sense are the Akan N-V compounds exocentric? It is clear that Akan N-V compounds are exocentric because they fail the hyponymy test in the sense of (b); the possible head is a verb whilst the compound is a noun. Thus, in a sense, they are like the English compound *pickpocket* which is a noun, but the noun constituent is not the head because the compound is not a hyponym of the noun constituent.

6.4.2 Percolation-based account of Akan N-V compounds

In a framework that assumes strict compositionality of complex morphological constructions, accounting for the situation described above will be a problem because the compound as a whole has properties that cannot be accounted for in the constituents. I will present a scenario in which all properties of the compound emanate from the constituents by allowing properties of the non-head constituent to percolate, if any property is not specified in the head constituent. I will then show that the approach comes with its own difficulties that render it unfit for our purposes.

One could think of circumventing the problem of accounting for the extra-compositional properties of the compounds at issue by appealing to the concept of deconstructed head which makes it possible to distinguish between a semantic head, a formal head, morphological heads, etc. (Di Sciullo & Williams 1987; Guevara & Scalise 2009; Scalise; Bisetto & Guevara 2005; Scalise & Fábregas 2010; Scalise & Guevara 2006). This means the head can be reached by means of a *category test* (the constituent which has the same form-class as the compound is the formal or syntactic head); or *semantic test* (the constituent of which the whole compound is a subclass is

the semantic head); or even a *morphological test* (the constituent which shares its morphological features (e.g. number and gender) with the whole compound is the morphological head). Proceeding on the understanding that the constituent picked out by the various tests may not necessarily coincide, we may arrive at different heads in a single complex word (Dressler 2006; Scalise; Bisetto & Guevara 2005; Scalise & Fábregas 2010).

We could employ the idea of a deconstructed head to provide an account of how the compounds at issue come to possess the properties they have. That is, we could assume that the feature makeup of the whole is a summary of the features of the constituents. This way, we could claim that there is an ordered process of percolation (Lieber 1989, 1992) where the properties of the semantic head (the verb) percolate first and then those of the categorial head, in a manner akin to the two-step process which Lieber (1992: 92) calls head percolation (HP) and backup percolation (BP), as quoted in (17).

(17) a. Head Percolation (HP)

Morphosyntactic features are passed from a head morpheme to the node dominating the head. Head Percolation propagates the categorial signature.⁸⁶

b. Back-up Percolation (BP)

If the node dominating the head remains unmarked for a given feature after Head Percolation, then a value for that feature is percolated from the closest nonhead branch marked for that feature. Backup Percolation propagates only values for unmarked features.

In this particular case, the left-hand constituent is only a non-head with respect to the semantics of the complex but a head with respect to the categorial features. Thus, BP

⁸⁶ The set of information that percolates from the head to the complex is termed the categorial signature (Lieber 1989, 1992).

will be characterized as a process by which a feature from a secondary (categorial) head percolates to the compound after features from the primary (semantic) head have percolated, in case the semantic and categorial heads do not coincide.

This approach might make it possible to explain how the properties of the supposed separate heads end up in the compound whilst preserving strict compositionality. However, it comes at some cost. First the approach amounts to a redefinition, if not an abuse, of BP. It is ordinarily required that the feature be present in the complex, but with the wrong value or no value at all so that BP can percolate the right value. That is what Lieber means by “Backup Percolation propagates only values for unmarked features” (Lieber 1992: 92).

Secondly, contra Bauer’s criteria for exocentricity, the present approach invites us to rule out calling a compound exocentric to the extent that one of the constituents has the same syntactic category as the compound. That is, we are virtually forced to link every property in the complex unit to some similar property in a constituent no matter how indirect or unmotivated the link may be. Thus, such an approach would be no more than a convenient ad hoc measure meant to save the strict compositionality assumed in the source-oriented representational frameworks of rule-based approaches to morphology.

6.4.3 CM account of Akan N-V compounds

In CM, the ad hocness associated with the effort to make what is otherwise exocentric appear endocentric, and thus, amenable to analysis in a strictly source-oriented, rule-based framework is not necessary because constructionist accounts are underpinned

by the understanding that the systematic properties of compounds must not necessarily come from the head (Booij 2012). In other words, it is acknowledged that constructions can have holistic properties. Such holistic constructional properties could include form-class specification, for which evidence abounds. It is on this basis that I indicated in §6.4 that I share the view that N-V compounds are synthetic compounds but not endocentric. Rather, they are exocentric syntactic compounds, and these two views are completely compatible (cf. Bauer 2010b), although the traditional view of synthetic compounds is that they are endocentric N-N compounds, as discussed in the introduction (cf. Katamba 1993; Lieber 1983; Roeper & Siegel 1978; Selkirk 1982).

I indicated above that Akan compounds are invariably nominal and that they instantiate the schema in (18). I also indicated that this means, for two classes of compounds, that we have to assume that their form-class specification is a constructional property. They are compounds for which the items that substitute for the uppercase variable X and Y in (18) are not Ns, and compounds with noun constituents whose properties do not match those of the compound. Such compounds are formally/categorially exocentric and they fit the description of exocentricity *b* and *c* respectively, in (16).

(18) $\langle [a]_{X_i} [b]_{Y_j} \rangle_{N\{i|j|k\}} \leftrightarrow [[SEM]_{N\{i|j|k\}} \text{ realizing a relation } R \text{ between } [a]_i \& [b]_j \rangle_{\{i|j|k\}}$

Going by this understanding and our rejection of the Endo-N-N, we have to assume that the N-V compounds are categorially/formally exocentric because their nominal properties cannot be said to emanate from their nominal constituents. That is, as noted above, these compounds fail the hyponymy test in the sense described in ((16)b).

From a constructionist point of view, I will say that the foregoing means that the exocentric N-V compound constitutes a separate construction with, as part of its holistic properties, a specification of a categorial label – N – which it inherits from the constructional schema together with a particular tonal pattern, to be discussed below. This is consistent with Goldberg's (1995, 2006) argument that a construction may be posited to the extent that some property of the whole cannot be said to emanate from the constituents. An abstract schema generalizing over the shared properties of the exocentric N-V compounds together with a general meaning, rendered as “[Event [V]_j involving [N]_i]_k”, is represented in (19).

$$(19) \quad <[[N]_i [V]_j]_{Nk} \leftrightarrow [\text{Event } [V]_j \text{ involving/affecting } [N]_i]_k >$$

All exocentric N-V compound constructions instantiate this schema which in turn instantiates the general schema for compounding in Akan (18) from which it inherits its non-unique properties by default. The individual N-V compounds also have a part of relation with the compound members as (20) shows.

$$(20) <[[a]_{Xi} [b]_{Yj}]_{N\{ij\|k\}} \leftrightarrow [[SEM]_{N\{ij\|k\}} \text{ realizing a relation R between } [a] \& [b]]_{\{ij\|k\}} >$$

$$\quad \quad \quad |$$

$$\quad \quad \quad <[[N]_i [V]_j]_{Nk} \leftrightarrow [\text{Event } [V]_j \text{ involving/affecting } [N]_i]_k >$$

$$\quad \quad \quad |$$

$$\quad \quad \quad [[atar]_i [hye]_j]_{Nk} \leftrightarrow \text{'act of dressing'}$$

$$\quad \quad \quad / \quad \quad \quad \backslash$$

$$\quad \quad \quad [atar] \text{ 'dress'} \quad [hye] \text{ 'to wear'}$$

6.4.3.1 On the semantics of Akan N-V compounds

There is a need to account for the observation that in such compounds the N_i is an argument of V_j. This is done straightforwardly by assuming that the individual

constituents have their own specific lexical semantic properties which are not necessarily overridden by the construction, but rather unify with the construction through the part-of relation. Where lexical items unifying with constructional schemas have specific requirements that have to be met in the construction in which they occur, they will ordinarily be met, unless some construction-specific constraint overrides this.

One such requirement of a specific lexical item that must be assumed to be met in the construction is the generally accepted view that a lexical item which is argument-taking must have its argument realized in the smallest word-level or phrase-level construction in which it occurs. That is, if any of the constituents of a compound is argument-taking, that constituent is expected to satisfy the argument requirement with the other constituent in the compound, unless the other constituent is a semantic argument of the compound (Lieber 1983). This is the effect of the so-called locality condition which regulates the interpretation of compounds in which one constituent has AS. It is realized variously as:

(21) *The First Order Projection Condition* (FOPC)

All non-SUBJ[ect] arguments of a lexical category X_i must be satisfied within the first order projection of X_i (Selkirk 1982: 37).

(22) *First Sister (FS) Principle* (FSP)

All verbal compounds are formed by incorporation of a word in first sister position of the verb (Roeper & Siegel 1978: 208).

By accepting that certain properties of the individual constituents of a morphological constructions are not necessarily overridden by the construction, we are able to show

that, the semantic structure of a construction may properly include that of the base (Booij 2002b). For example, it is obvious that the semantic structure of a compound with a (de-)verbal constituent encompasses that of the base verb, including the AS which is a “projection” from the LCS of the verb. That is why the semantics of the compound may be rendered as “[Event/Action/Process [V]_j involving [N]_i]_k”, as shown in schema (19) which is repeated here as (23).

$$(23) \quad <[[N]_i [V]_j]_{Nk} \leftrightarrow [\text{Event/Action/Process } [V]_j \text{ involving } [N]_i]_k>$$

Obviously, finer distinctions can be made, as far as the semantics of the compounds are concerned. As the literature shows, complex nominals involving verb can be ambiguous, especially between the process and result readings (Alexiadou & Grimshaw 2008; Grimshaw 1990; Melloni 2007). The various finer meaning distinctions can be represented as sub-schemas which inherit their non-unique properties from the abstract construction schemas, each paired with a particular specific meaning.

6.4.4 Accounting for the tonal pattern of Akan N-V compounds

An important part of the analysis presented here has been the rejection of Anyidoho’s and Anderson’s approach to the analysis of the properties of N-V compounds based on an observed pattern of downstepping which they interpret to mean that the right-hand constituent is nominalized prior to becoming part of the compound. That position meant that the compounds at issue are endocentric N-N compounds, what I have called Endo-N-N. I have argued that many cases of such compounds systematically defy the prediction made by the Endo-N-N hypothesis.

Proponents of Endo-N-N have argued that tweaking the basic tones of the individual constituents could lead us to account for the tonal pattern of the compounds. However, this approach has meant postulating a battery of rules, including *tone deletion* (e.g., H-deletion), *tone insertions* (e.g. H-insertion), *tone spreading*, etc. (Abakah 2000, 2004, 2006; Marfo 2004a, 2005). But there is no agreement on the number of rules and which constituent's tone should be taken into consideration. As noted above, Abakah thinks that changes may occur in the tonal pattern of both constituents of a compound, with the specifics depending on the form-class (and the subclass) as well as whether the constituent is the first element (E_1) or the second (E_2).

Marfo, for his part, claims that it is the tonal pattern of the first constituent that matters, much in agreement with Dolphyne's (1988) observation that where tonal changes are recorded, the changes seem to be "related to the tones of the first stem in the compound, and there is no evidence that the type of tone pattern a compound has is related to the word classes of the stems from which the compound is derived" (Dolphyne 1988: 120).

These accounts of compound tone melody paint a rather confusing picture and also fail to account fully for the tonal pattern of Akan compounds. For example, somehow, Dolphyne fails to report the fact that the final syllable of the N-V compound is invariably H-toned (it could be downstepped) notwithstanding the tonal pattern of the individual constituents. I believe a more pragmatic approach to the matter of the tonal melody of the compound will be to treat the tonal pattern as holistic properties of the compounds, an approach which is simple and affords uniformity of account, and thus is to be preferred. I show how this may be done presently.

6.4.4.1 The CM account of the tonal pattern of N-V compounds

The thrust of the constructional account of the tonal pattern of these compounds is that the schema that N-V compounds instantiate has a pre-specified tonal melody as part of its formal properties and that the constituents of the compound are simply mapped on to the pre-specified tonal pattern which may be called a CONSTRUCTIONAL TONE. For this constructional account of the tonal pattern of N-V compounds, I assume the correctness of Dolphyne's (1988) original observation that Akan compounds can be grouped into two, based on their basic tonal patterns. Whilst in the first group all the syllables in the first constituent are L-toned (Table 16), in the second, the constituents seem to maintain their tonal pattern (Table 17). In other words, this is a constructionist interpretation of Dolphyne's (1988) observation about the tonal melodies of compounds which, as I have argued above, sometimes correlates with the extent of lexicalization.

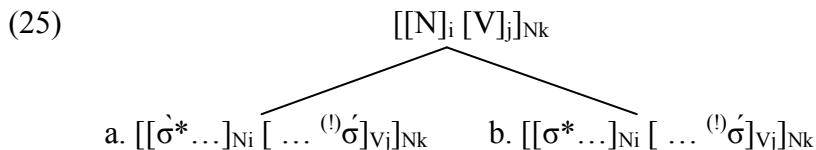
I assume that these two tonal patterns define two subtypes of constructional schemas and that notwithstanding the tonal pattern of the constituents, we can predict that the tonal pattern of the compound that instantiate this schema will bear one or the other of the two constructional tonal patterns, both of which terminate in high tones, as shown in (24). I assume that the tonal pattern simply unifies with the instantiating schema, so that the tonal pattern is borne by the individual construction and not that we will have schemas within schemas.

- (24) a. $[[\overset{\circ}{\sigma}^* \dots]_{N_i} [\dots \overset{(1)}{\overset{\circ}{\sigma}}]_{V_j}]_{N_k}$ ⁸⁷
- b. $[[\sigma^* \dots]_{N_i} [\dots \overset{(1)}{\overset{\circ}{\sigma}}]_{V_j}]_{N_k}$

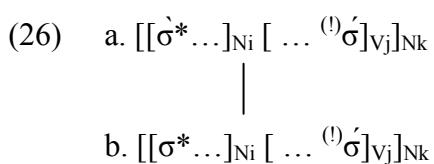
⁸⁷ The symbol ⁽¹⁾ indicates that the final syllable could be downstepped.

Schema (24)a, states that the first constituent has L-tone syllables throughout and that there could potentially be more than one syllable, indicated by the star (*). The other constant tonal feature is the last syllable of the second constituent which is stipulated to be H-toned. Schema (24)b, on the other hand, only states that there can be more than one syllable in the first constituent, but that part of the constructional schema is not tone-marked and so by default, the tonal pattern of the individual constituent will be inherited through the part-of relation holding between constructions and their constituents. This directly accounts for the observation that the first constituents of such compounds which do not bear what may be called the default constructional L-tone on the first syllable seems to retain the tonal pattern of the lexical item in isolation.

These two tonal melodies unify with the constructional schema yielding two subschemas of the constructional schema for the compound, as shown in (25).



An alternative approach will be to posit just one constructional schema with tone pattern (24)a) pre-specified. This way, ((24)b) will only exist as an instantiation of ((24)a) in which the tonal pattern of the individual noun overrides the constructional tonal pattern as a function of the default inheritance assumed in CM, as shown in (26).



On the surface, either view will work fine for the data, with no qualitative difference between the two. It could even be argued that the former (25) employs a bit more machinery than the latter, making the latter preferable. A further argument could be that the latter (26) has the added advantage of illustrating the possibility of using subschemas to express various nuances in the form and meaning of constructions, which in turn gives credence to the idea of a hierarchical lexicon (i.e. a hierarchical network of grammatical knowledge) in which constructions of varying degrees of abstraction populate the constructional space – a network of constructions, called the constructicon (Jurafsky 1992: 8).

However, such an approach reduces the second schema in (25) to the level of a mere exception to the first schema. But this is not right because compounds with the second tonal pattern are also very productive and, for that matter, on equal footing with the compounds which instantiate the first schema. Thus, we have reason to choose (24) over (26).

6.4.5 Concluding the constructional approach to exocentric N-V compounds

In this section (§6.4), I have discussed the properties of N-V compounds in Akan, showing that a better picture of the properties of these compounds emerge and receive adequate characterization if we adopt a constructionist perspective where the N-V compound constitutes a construction some of whose properties – including the form class and tonal patterns – are holistic constructional properties.

In the next section I show that the constructional account presented here can be extended to other languages with similar structures. I apply the analysis to a portion of Sranan, morphology presented in Braun and Plag (2003: 89-90).

6.5 Extending the analysis: N-V compounds in Sranan

Braun and Plag (2003: 89-90) discuss a pattern of compounding in Sranan, (27) which is pretty similar to what obtains in Akan. Sranan is a creole language believed to have a West African substrate, being related to languages like Akan and Ewe. I show that the analysis presented above for Akan N-V compounds, extends naturally to the Sranan data, which, unlike Akan, does not have the additional complication of tone.

(27)	<i>belle-hati</i>	'stomach-ache'	<i>belle</i> (N)	'belly'	<i>hati</i> (V)	'to hurt'
	<i>vool-kweki</i>	'chicken-breeding'	<i>vool</i> (N)	'chicken'	<i>kweki</i> (V)	'to breed'
	<i>grunn sheik</i>	'earthquake'	<i>grunn</i> (N)	'earth'	<i>sheki</i> (V)	'to shake'
	<i>hattibronn</i>	'anger/wrath'	<i>hatti</i> (N)	'heart'	<i>bronn</i> (V)	'to burn'
	<i>tappobari</i>	'thunder'	<i>tappo</i> (N)	'heaven'	<i>bari</i> (V)	'to cry'

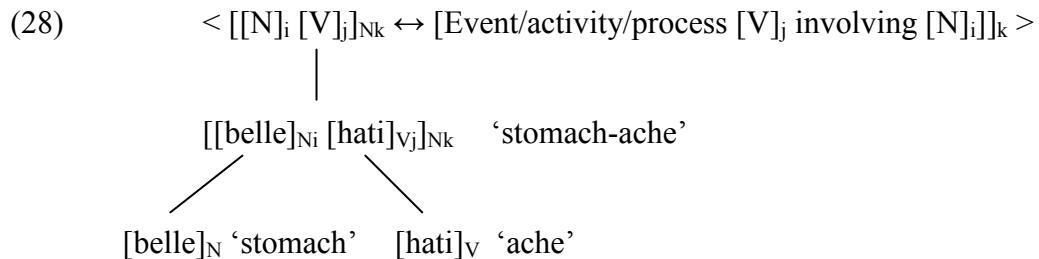
(Braun & Plag 2003: 89)

Braun and Plag argue that analyzing the right constituent as a verb creates problems regarding headedness. This is because Sranan compounds are standardly right-headed and so being a verb, the right element will have the wrong set of categorial properties to pass on to the whole compound.

The solution they offer which is similar to that suggested for Akan (Anderson 2013; Anyidoho 1990) is that we can assume that the second constituent in such compounds are not verbs but deverbal nouns. This will make such compounds straightforward endocentric compounds of the form $[N_i + N_j]_{N_j}$. This way, an example like *belle-hati*

may be paraphrased as ‘belly hurting’ making them resemble English compounds like *fox-hunting*, *truck-driving*, etc. Thus, the sense of aberration that is associated with this compound type is taken care of.

As I have argued, for Akan, there is no need to suppose that the right-constituents in these compounds are nominalized. The sense of aberration exists only because of the assumption of strict compositionality, expecting to be able to link every feature in the compound to one in the constituents of the compound including the syntactic category. In the last section, I argued that the Akan equivalent of these compounds should be regarded as exocentric synthetic compounds. This analysis easily extends to the Sranan compounds. If we assumed that these compounds, as morphological constructions, can have properties which do not emanate compositionally from their constituents, we can account for the properties of these Sranan compounds without having to argue that the verbs are first nominalized before compounding takes place. We will regard the compounds as instantiating an output-oriented schema that has, as one of its holistic properties, the categorial label – N – and two constituents – *noun* and *verb* – where the former is an argument of the latter. The general meaning, as in the Akan case, could be rendered as “[Event/activity/process [V]_j] involving [N]_i]]” as shown in (28), again showing that the properties of the individual constituents are not necessarily overridden when they occur as part of constructions.



6.6 Conclusion

Because of an observed pattern of downstepping on the first syllable of the second constituent of N-V compounds in Akan in which the first constituent terminates in a high-toned syllable, the N-V compounds have been analyzed as N-N compounds with a prior nominalization of the right-hand constituent (Anderson 2013; Anyidoho 1990). I have argued that this hypothesis, referred to here as Endo-N-N, does not account for all the compounds in this group. Even limiting the data to be accounted for to the tonal pattern, we realized that Endo-N-N is inadequate because it only accounts for the tonal behaviour at the boundary between the first and the second bases. It fails to show, for example, that in these compounds the final syllables are invariably H-toned notwithstanding the nature of the tone in the individual constituents in isolation.

The alternative constructional view presented here is that these compounds are indeed N-V compounds and that they are exocentric synthetic compounds – Exo-N-V. I have argued that the head of this nominal compound is a verb and not a noun. Thus, the noun category is to be interpreted as a constructional property which does not emanate from either constituent of the compound. The tonal pattern is also analyzed as a constructional property. The point is that with the understanding that constructions can have holistic properties, including tone and form-class, we are not forced to claim that the right-hand constituent is nominalized so that it can be regarded as the source of the nominal category of the compound. I have shown that this analysis of the Akan N-V compound construction extends naturally to the analysis of similar constructions in Sranan, a creole language that is distantly related to Akan.

7 COORDINATE-COMPOUNDS IN AKAN

7.1 Introduction

In this chapter, I discuss coordinate compounds of the type $[N-N]_N$ and $[V-V]_N$. I deal with their individual properties, showing that analysing the properties of the former is quite straightforward because almost every bit of information in the compound can be related to some feature in a constituent. Analysing the latter is, however, not so straightforward because the constructions have properties, including the form-class, that cannot be related to the form-class of the constituents of the compound. I argue, as in chapters 5 and 6, that both the regular and the idiosyncratic properties of these compounds can be accounted for straightforwardly in the constructionist framework of CM. Before the constructionist account, I discuss and reject previous rule-based analyses which, given the fact that the constituents are two verbs, have to posit an abstract nominalizer as the source of the nominal form-class of the compound.

I begin in §7.2 with a brief review of the literature on coordinate compounds, focusing on their definition, formal properties, semantic properties and classification. I also draw attention to a special class of coordinate compounds called co-compounds (Wälchli 2005). For this class of compounds, it is required that there be NATURAL COORDINATION between the constituents and that the referent be a single ontologically coherent individual. In the brief discussion of the relevant literature, I argue that this criterion is overly restrictive. Instead, I propose that the requirement for co-compoundhood should include what may be called DELIBERATE COORDINATION of

entities with a plausible construed conceptual basis for their coordination. I leave the development of this idea for future research since this type of coordinate compound is not attested in my dataset.

In §7.3 I discuss N-N coordinate-compounds, showing that there are only two classes attested in my dataset – the *appositional* type, in which the co-constituents express two separate aspects of the same entity, and the *compromise* type in which both constituents are equally represented in the compound but the referent is neither. In the CM representation, I argue that the compromise types may be treated like exocentric compounds, bearing an index that is different from either of its constituents, but the index on the appositional type must be an assembly of the indexes of both constituents to show that they are equally present in the compounds.

In §7.4, I discuss V-V coordinate-compounds, stressing the fact that they exhibit absolute formal exocentricity and suppression of the AS of the constituent verbs.

In the discussion of the Akan data, it will become clear that the number of examples is small indeed – a combined number of 11, making about 2.5% of the total of 443 compounds in my dataset. One may, therefore, question the wisdom in writing a whole chapter based on such a paucity of data. However, the properties of such compounds are noteworthy, given the claim that coordinate compounding is universally dispreferred (Dressler 2006) and also the claim in recent literature (Bauer 2009b; Wälchli 2005) that the special class of co-compounds are rare in Africa. I have a small number of coordinate-compounds because I chose not to look beyond my dataset. Thus, the present chapter may be properly construed as a pilot study on coordinate compounding in Akan. There will be a need for a follow up study to reveal

the full extent of the attested pattern of coordinate compounds in Akan, needless to say that I have no basis for refuting the claim that co-compounds are rare in Africa.

7.2 Coordinate-compounds

The compounds discussed in this chapter go by many different names, including *dvandva* compounds, *copulative* compounds, *coordinative* compounds, *co-compounds* and *pair words* (cf. Bauer 2006, 2008, 2009b; Bloomfield 1933; Dressler 2006; Wälchli 2005).⁸⁸ I use the more general term – coordinate compounds. The Old Indian grammarians in their descriptions of Vedic and Sanskrit, identified three principal types of compounds one, of which was the coordinate compound, named *dvandva* ‘two-by-two/pair’, a name probably inspired by their binary nature (Wälchli 2005: 17). Recent characterizations of coordinate compounds include the following:

[...] compounds where there is some reason to think of both words as equally sharing head-like characteristics, as in *student-prince* (both a student and a prince); [...] can be a combination of synonyms [...] Haitian: toro-bèf (*bull-cow*) ‘male cow’, a combination of antonyms [...] French: *aigre-doux* (*sour-sweet*) or a combination of parallel things [...] Malayalam: acchanammamaār̥ə (*father-mother-pl.*) ‘parent’ (Fabb 1998: 67)

[...] compounds that have more than one semantic head [...], both members are on an equal footing, and they can be paraphrased with ‘and’ (Haspelmath 2002: 89)

These are word-like units consisting of two or more parts which express NATURAL COORDINATION. Natural coordination [...] implies, among other things, that the parts express semantically closely associated concepts, such as ‘brother and sister’, ‘hands and feet’, ‘eat and drink’, ‘knife and fork’, etc., which

⁸⁸ As noted above, Wälchli’s (2005) co-compounds is a special type of coordinate compounds.

are on the same hierarchical level, and that the whole meaning ('siblings', 'limbs', etc.) is more general than the meaning of the parts (Wälchli 2005: 1)

The universally dispreferred alternative of coordinate compounds has two or more semantic and syntactic heads (Dressler 2006: 34)⁸⁹

Co-compounds [...] are compounds whose elements are of equivalent status and which can be glossed as having coordinated meaning (usually linked by *and* but occasionally, in some languages, by *or*) (Bauer 2010a: 201)

The common thread in the foregoing sample is that the compounds at issue usually have two constituents coupled or conjoined which are equipollent, i.e. neither constituent is subordinate to the other. This distinguishes this class of compounds from subordinate compounds in which the relationship between the constituents is asymmetrical.⁹⁰

In this section I discuss general semantic and formal properties of coordinate compounds before going on to discuss two compound types in Akan that fit the description of coordinate compounds. I must note from the start that the discussion of coordinate compounds presented here only touches on core issues of relevance. For a comprehensive discussion, the interested reader may consult Wälchli (2005) and Laurie Bauer's work cited in the present chapter.

⁸⁹ I have not come across any explanation for the limited number of such compounds in languages of the world but it seems to me that it has to do with the avoidance of redundancy in communication. In some cases, the constituents characterise different aspect of the same superordinate concept, therefore, I believe, unless it is absolutely needed, using just one of the constituents may suffice to convey the intended message, thus rendering the activation of another aspect of the same concept superfluous. Note that this explanation won't work for some other types including the compromise type.

⁹⁰ They also differ from subordinate or determinative compounds, in that their meanings are less specific than those of their constituents. In subordinate compounds, the determinant (non-head constituent) serves to make the determinee (head constituent) more specific, with the effect that the whole compound is more specific than the determinee (Wälchli 2005).

7.2.1 Meaning of Coordinate compounds

The meaning of coordinate compounds is said to be pretty diverse but consistent cross-linguistically. For example whilst in Sanskrit coordinate compounds (*dvandva*) always referred to groups, in Germanic languages, coordinate compounds cannot refer to sets of individuals but only to one individual which unifies the two predicates named in the compounds. That is, in coordinate compounds, a complex nominal stem establishes the identity of one ontologically coherent individual (Olsen 2001).

For the special class of co-compounds (esp. Wälchli 2005) insists on there being NATURAL COORDINATION between the constituents before the construction can be regarded as a co-compound. Wälchli (2005: 5) argues that the basic function of co-compounds is to express natural coordination – “coordination of items which are expected to co-occur,⁹¹ which are closely related in meaning [e.g. father and mother, husband and wife, hands and feet, read and write, etc.] and which form conceptual units” such as ‘family’, ‘parents’, ‘cloths’, ‘male members of a family’, etc. These are in a superordinate relationship to the meaning of the parts (e.g. mother + father > parents), and thus less specific than the meanings of the constituents. This contrasts with ACCIDENTAL COORDINATION – coordination of items which are not expected to co-occur, and which do not have a close semantic relationship (Wälchli 2005: 5).

The relationship between natural coordination and accidental coordination is underpinned by the distinction between INHERENCE and ESTABLISHMENTS (Seiler 1972) cited in Wälchli (2005: 5) which is also employed for the discussion of

⁹¹ I argue below that it should be about items which come together to express a logically coherent concept, even if the constituents are not naturally expected to occur together and may not be necessarily related in meaning.

alienable and inalienable possession (Nichols 1992: 116-123). For inalienable possession (e.g., family/blood relations, body-parts, etc.) the possessive relation is inherent and so need not be established. However, for alienable possessions (e.g. a building, a car, etc.), the possessive relation has to be established first before it is mentioned. The difference between the two may be reflected in the nature of the constructions that are used to express them. The claim is that coordination is inherent in natural coordination but has to be established in accidental coordination. For example, whilst it is natural that *hands* and *feet* go together, it cannot be taken for granted that a *man* and a *snake* belong together (Wälchli 2005: 5).⁹²

Table 19 Semantic types of co-compounds (Wälchli 2005: 138)

Semantic type	Example
Additive co-compound	Georgian <i>xel-p' exi</i> 'hand-foot'
Generalizing co-compound	Khalkhala <i>ödör schönö.güj</i> 'day night.without > day and night'
Collective co-compound	Chuvash <i>sět-su</i> 'milk-butter> dairy products'
Synonymic co-compound	Uzbek <i>qadr-qimmat</i> 'value-dignity > dignity'
Ornamental co-compound	Erza Mordvin (epic) <i>vel'e-s'ado</i> 'village-hundred'
Imitative co-compound	Khasi <i>krpaatk rpon</i> 'pray IMI[TATIVE] >worship'
Figurative co-compound	Vietnamese <i>giang hồ</i> 'river lake > adventurous'
Alternative co-compound	Erza Mordvin <i>vest'-kavskt</i> 'once-twice > once or twice'
Approximate co-compound	White Hmong <i>ob peb</i> 'two three > some'
Scalar co-compound	Old Uyghur <i>ulug.i kičig.i</i> 'big.its little.its > size'

Based on the semantic parameters of natural coordination, Wälchli identifies the compound types in Table 19 as exemplifying co-compounds and those in Table 20 as not constituting co-compounds, although they share some properties with co-

⁹² Wälchli (2005: 5-6) observes that natural coordination has characteristic semantic properties on different meronomic (part-whole) levels described as follows:

- PART–PART: There is a coordinating relationship between the parts and the parts are very closely related in meaning. Both parts are on the same taxonomic level. There is inherent coordination between the parts.
- PARTS–WHOLE: There is a close semantic relationship between the meanings of the parts and the whole. The whole expresses a superordinate concept in relation to the parts.
- WHOLE: The whole expresses a conceptual unit, which is a superordinate rather than a basic level concept.

compounds. It seems to me, however, that Wälchli's set of criteria is overly restrictive. It has the potential of excluding constructions that would otherwise pass for co-compounds.

Table 20. Forms which share properties with but are not co-compounds (Wälchli 2005: 161-170)

Semantic type	Example
Appositional compounds	French <i>wagon-restaurant</i> 'carriage-restaurant > restaurant car/dining car'
Intermediate denoting	English compounds <i>blue-green</i>
Comparative compounds	French <i>chou-fleur</i> 'cabbage-flower > cauliflower'
Ideophone compounds	English ding-dong
Reduplication	Mordvin <i>kolmo.ń -kolmo.ń</i> 'three.GEN-three.GEN > three each'
Echo words	Kannada <i>hallu-gillu</i> 'teeth and the like'
Affirmative-negative	Latin compounds <i>nolens-volens</i>

I believe that the defining properties of the co-compound should not necessarily be the expression of “natural coordination” (Wälchli 2005), but rather that the constituents be equipollent and that the compound as a whole express a conceptually unitary idea which may be the result, for example, of conceptual blending (Fauconnier 2001; Fauconnier & Turner 1998a; Tunner & Fauconnier 1995). Such emergent conceptual units may not fit comfortably into our ontological system of objects (Olsen 2001) but may be credible candidates for ontological status.

What this means, in practice, is that instead of referring to cases where there is no natural coordination relation between the constituents as “ACCIDENTAL COORDINATION”, with the attendant potentially negative connotation, we might want to call it “DELIBERATE COORDINATION.” This will cover cases where speakers consciously coordinate items that do not form natural classes, possibly as part of being creative in language use (cf. Benczes 2006b). This way, co-compounds may be

defined as word-like units consisting of two or more parts which express NATURAL or DELIBERATE COORDINATION. For instance, *poet* and *painter* do not form a natural or conceptual unit, but may be deliberately coordinated, to form a compound, to the extent that the two correctly or truthfully⁹³ express equipollent properties of the same entity.

I dare say that we can find a conceptual basis for almost all such combinations if we stretch our imagination wide enough. For example, on the face of it, there is no conceptual basis for coordinating *lawyer* and *musician* in the compound, *musician-lawyer* in the construction in (1). However, we can find some basis for the formation of the compound.

- (1) Many of the illustrations were drawn from the world of classical music, and as a *musician/lawyer*,⁹⁴ I found them particularly relevant (Bauer 2010a: 206).

The basis of the formation of such a compound could be explained in this manner: a mature human being ordinarily has an occupation or a characteristic activity that the person engages in and by which the person may be identified. Typically, there is only one such activity/occupation. Thus, if one person happens to be identified by more than one and neither is in any way subordinate to the other, then the signifiers for the two activities/occupations may be DELIBERATELY (i.e. consciously) coordinated to form a composite term for the person. Thus, the typical function/occupation is the conceptual basis for the formation of the co-compound. In fact, one could suggest that for some compounds, it is a matter of construal whether they will receive coordinate

⁹³ Of course, we cannot rule out misleading deliberate coordination.

⁹⁴ The slash ‘/’ in this example should not be read as disjunction, but as coordination.

or determinative reading. I will illustrate this when I discuss Akan N-N coordinate compounds in §7.3.

We find evidence for the function-motivated formation of co-compounds in *washer-dryer* (Olsen 2001: 94). Clearly, the difference between *washer-dryer* and *musician-lawyer* is the natural coordination in the former and deliberate coordination in the latter, but both are based on the associated functions of the referents.⁹⁵

It must be noted that Wälchli (2005: 7) does not regard compounds of the type *washer-dryer* as co-compounds even if there appears to be natural coordination, for example, between the activities of *washing* and *drying* whose associated instruments the compound refers to. His reason is that such compounds violate the requirement that the compound expresses a superordinate concept. However, in my view, this amounts to not making room for gradience in co-compounds. This is because some conditions for co-compoundhood are met; the constituents have equipollent status and are deliberately coordinated (my criterion) to express the function of the referent which encompasses the meaning of both constituents.

7.2.2 Form of coordinate compounds

Scholars seem to agree that formally coordinate compounds are far from uniform cross-linguistically (Bauer 2009b, 2010a; Renner 2008; Wälchli 2005). Coordinate compounds may take a number of forms both within and across languages, ranging from pure juxtaposition of the two elements, to cases where there is overt inflectional

⁹⁵ The referent of the compound formed by natural coordination has the added property of not being able to opt out of the associated function. That is, a *musician-lawyer* may cease being a musician and take on another job, but that option is not available to a *washer-dryer*; as long as it remains in use, it can only *wash* and *dry* and this doesn't depend on the fact that it is non-volitional.

marking on either one or both elements. For example, concerning co-compounds, Wälchli argues that, where they occur, they may be characterized by specific formal features which may not necessarily distinguish them from other classes of constructions in the same language like SVCs. Thus, the formal properties of coordinate compounds in one language may not be assumed to occur in others. As Wälchli puts it, where a language shows clear idiosyncratic properties for co-compounds, not much of that “can be generalized for a cross-linguistic description of the form of co-compounds” (Wälchli 2005: 4).

Related to this is the issue of whether coordinate compounds are words or phrases. Wälchli (2005) regards co-compounds as being intermediate between words and phrases.⁹⁶ For Olsen (2001: 97), “copulative compounds in English are genuine morphological structures.” However, the fact that there could be no specific formal marking for coordinate compounds means that it is not an easy task distinguishing between coordinate compounds and other constructions and telling whether they should be regarded as words or as phrases.

Olsen (2001: 88) attempts to differentiate between coordination in coordinate compounds and related syntactic constructions and argues that the syntactic coordination of referential determiner phrases (DPs) generally results in plural formation because it involves a group of individuals, as shown in ((2)a). But

⁹⁶ Wälchli refers to evidence to the effect that in Mordvin co-compounds are not typical syntactic phrases but they are also not simply words because each constituent has a typical word stress and may inflect separately, even though inflection is not as free as it is in syntactic phrases. It is possible for the two constituents to have the same inflection with the same phonological ending (inflectional harmony). Thus, in this language the parallel word stress and parallel inflection mark co-compounds off as a class of forms. The situation in Morden Greek is different; there is only one word stress, the first part has a stem that is typically followed by a linking -o-. In this language, co-compounds differ from subordinate compounds only to the extent that co-compounds don't have to have the same gender and/or the same ending as the second part would have as an independent word. In Georgian, co-compounds have single final inflection which makes them appear word-like.

coordination at the morphological level “suberves word formation; it forms a new lexical stem as a means of denoting a single, complex concept” (2001: 88), as in ((2)b). However, she also observes, in the syntactic constructions called “coordinative appositions” constructions, as in (3), the referents are singular as well. Thus having a singular individual referent is not a unique defining criterion of coordinate compoundhood per se; other constructions share it.

- (2) a. *The poet and (the) translator were present at the lecture.*
- b. *The poet-translator was present at the lecture.*

- (3) a. *The poet and (the) translator was present at the lecture.*
- b. *Austin Thomas, (the) poet and (the) translator, was present at the lecture.*

In Akan there is no specific formal marker for coordinate compounds and so formally there is no unequivocal means of distinguishing coordinate compounds from other compounds and/or phrases. Where the constituents of coordinate compounds are verbs, it is virtually impossible to find a formal means of distinguishing between them and SVCs, for example. However, we can find other means of showing that the constructions in question are words. Crucially, as discussed in §7.4.5, in the interest of preserving lexical integrity, these compounds resist the insertion of extraneous materials that may otherwise be accepted if they were syntactic constructions. This is evidence of wordhood (cf. Booij 2009b).

In chapter 4, I listed a number of criteria by which the compoundhood of a form might be established. One was tonal pattern. I indicated that where all the syllables on the first constituent are L-toned, notwithstanding the tonal pattern of the constituent in isolation, the construction is without doubt a compound. I also indicated in chapter 6

that this tonal pattern might be associated with the degree of lexicalization. We find this attested in the compound in column *b* of Table 23, where a proper name formed from two verbs has this tonal pattern. This shows that we are dealing with a compound and for that matter a word. Unfortunately, beyond this example, this criterion will not help to distinguish between coordinate compounds and phrases or other words, because the tonal patterns of most constituents of coordinate compounds are the same as in phrases and in SVCs.

7.2.3 Headedness in coordinate compounds

There is no agreement on whether coordinate compounds are headed or not. I take the view that some coordinate compounds like the appositional type *composer-arranger* are *dual-headed* compounds. I assume that, unlike the exocentric type, these coordinate compounds are not opaque. Rather, the constituents enjoy parity in terms of their importance in the compound and share head-like properties – formal and/or semantic. However, this view is not generally shared. Haspelmath (2002: 89), for example, regards coordinate compounds as exocentric constructions, reasoning that if there are two heads, then there probably is no head at all. Lieber (2009a: 366-367) argues that for such compounds (N-N compounds in English), it is possible to argue that they are dual-headed, or that they have no head. For her, this is the case because there is little empirical basis for distinguishing the proposals; given the fact that nouns in English do not display grammatical gender, no argument can be made from the gender of the compounds as a whole and inflection will not help because “it is possible to argue that plural or possessive marking goes on the compound as a whole ([[*producer director*]s]), as opposed to the right-hand constituents.”

Katamba (1993: 319-322) discusses copulative compounds under headless compounds, arguing that neither of the coupled elements is regarded as the head that dominates the entire word and that such compounds “are not semantically opaque. Rather, each element characterizes a separate aspect of the meaning of the entire compounds” (1993: 321). It is not clear why Katamba does not regard the two parts characterizing separate aspects of the entire compound as co-heads. Indeed, looking at some of the examples he gives, like Urbana-Champaign (in Illinois, US) and Harper-Collins (the company) it shouldn’t be difficult to suggest that some copulative compounds are semantically dual-headed since the immediate constituents are equally important in the semantic make-up of the compounds. Bauer (2010b: 72) share this view, arguing that “if they are coordinated, they should have the same status with regards to headedness”.

Again, Katamba (1993: 321) argues that “from a syntactic point of view, copulative compounds are headed”, and that examples like *boyfriend* and *worker-priest* are right-headed because plural inflection occurs on the right constituent, as in *boyfriends* and *worker-priests*. However, it is unclear whether, on the basis of inflectional marking, we can say for certain that all copulative compounds are syntactically headed since marking inflection on the right-hand constituent in English is merely the default; consider examples like *trade-offs*, *pickpockets*, *model Ts* and *mother-in-laws*. Clearly, in these compounds, the constituents that bear the inflectional marker are not the heads but they happen to be in the right place. Thus, the strict association of headship with inflectional marking leads to the wrong analysis and may lead us to awkward distinctions such as Dressler’s (2006) distinction between syntactic head *pick* and morphological head *pocket* in *pickpockets* as discussed in chapter 4, because it is *pockets* that bears the plural inflectional marker.

The foregoing discussion confirms our view that the right-hand position of the plural marker is merely the default. Hence, the absence of inflectional marking on the left-hand constituent in English might not be meant to avoid word-internal inflection so as not to compromise its lexical integrity, as Bauer (2009b: 349) suggests. I have indicated above that this idea won't work for a language like Akan, where nominal plural markers are prefixal. Finally, it is unclear whether in a copulative compound like *northwest* we can indeed designate one constituent as a syntactic head.

Dressler believes that coordinate compounds can be endocentric, as in *speaker-hearer* or exocentric, as in *morphology-syntax interface* where the two constituents, according to him, "have their semantic heads outside: it coincides with *interface*, the syntactic head of the whole noun-phrase" (Dressler 2006: 34). It seems to me, however, that Dressler throws in an extraneous material – *interface*. The part of the construction that is relevant as far as the coordinate compound analysis is concerned is *morphology-syntax*. When *interface* is added, it becomes a subordinate compound headed by *interface*; *morphology-syntax* on its own is a well-formed coordinate compound with the meaning 'pertaining to *morphology* and *syntax*'. Bringing in *interface* only highlights the modifying role of the coordinate compound in another compound in which it is a non-head constituent. Bauer makes a similar observation about the mainly modifying function of such co-participant compounds. He notes that they "occur mainly as modifiers in larger compounds" (Bauer 2008: 6). I believe that we have to accept that coordinate compounds, like other compounds types, may be semantically and/or syntactically headed. This is what the Akan data discussed below shows.

7.2.4 Typology of coordinate compounds

Various proposals for the classification of coordinate compounds exist in the literature (cf. Bauer 2008, 2009b, 2010a; Renner 2008; Wälchli 2005). I showed the classes of compounds that Wälchli includes in (Table 19) and excludes from (Table 20) the class of co-compounds. Renner (2008) identifies three broad semantic types of N-N co-compounds in English, as shown in (4) as well as some others involving other word classes.

- (4) a. multifunctional (an X.Y is an X which is also a Y) – *owner-occupier, student-athlete*
b. additional (an X.Y is an X plus a Y) – *fridge-freezer, penny-farthing*
c. hybrid (an X.Y is midway between or a mixture of (an) X and (a) Y) – *wolf-dog, ape-man*

Bauer (2008) also presents a classification of coordinate compounds which overlaps substantially with Wälchli's (2005) classification. Based on the two classifications, Bauer (2009b: 352) presents a composite classification, as shown in Table 21. He argues that although these types of coordinate compounds may be instantiated as nouns, verbs, or adjectives, none of them seems to be freely distributed across the languages of the world. He observes (2009b: 351), following Wälchli (2005), that they are common in Eastern and Southern Asia but limited in Europe and rare in Africa, the Americas and Australia. Where they are attested, specific types are identified with particular areas.

In the rest of this chapter, I discuss two classes of coordinate compounds – N-N (dual-headed) and V-V (exocentric) coordinate compounds. Because of the small number of Akan examples available to me, I do not go into the details of the typology of

coordinate compounds in Akan. I only note which semantic class(es) of coordinate compounds the Akan examples belong to.

Table 21 Types of coordinative compounds (Bauer 2009b: 352)

Type	Subtype	Sub-subtype	Language	Example	Translation
Translative			French	[vol] Paris-Rome 'P-R [flight]	'Rome – Rome flight'
Co-participant			German	russisch-türkischer [Krieg]	'Russo-Turkish'
Appositional			Dutch	eigenaar-directeur 'owner-director'	
Compromise			English	blue-green	
Generalizing			Mordvin	T'ese-toso 'here there.'	'everywhere'
<i>Dvandva</i>					
Additive					
	Family ties	Mlabri		mꝫ?mꝫm	'Parents'
	Proper names	Hungarian			'mother father'
	Others	Sanskrit		ajāváyah 'sheep goats'	'sheep and goats'
Co-hyponymic		Vietnamese		ăn-uống 'eat drink'	'get nourishment'
Co-synonymic		Mandarin		Měi-li 'beautiful beautiful'	'beautiful'
Approximate		Hmong		ob peb 'two three'	'some, a few'
Exocentric		Khmer		kh៥h trᅥw 'wrong right'	'morality'

7.3 Akan noun-noun ([N-N]_N) coordinate-compounds

In the Akan data at my disposal, out of the list of 1000 complex nominals in Akan, only six N-N nominal compounds can be properly construed as coordinate

compounds. They are represented in Table 22. The limited number of occurrences of these coordinate compounds seems to be consistent with Dressler's (2006: 34) description of this type of compound as "universally dispreferred" and the observation that they are rare in Africa (Bauer 2009b; Wälchli 2005). However, given the limited sample size overall, any emphatic statement about the degree of productivity of this compound type has to await a future study with a larger sample.

Table 22. N-N coordinate compounds in Akan

<i>a</i>	<i>B</i>	<i>c</i>	<i>d</i>	<i>e</i>	<i>f</i>
ànéè-sóṛ west-up 'north-west'	ànéè-dàádzé west-down 'south-west'	bòká-dàádzé east-down 'south-east'	ò-hém-máá sg-king-woman 'queen (mother)'	ònyàmè-béá deity-woman 'goddess'	nùà-bářímá sibling-male 'brother'

Of the six examples listed in Table 22, the three in columns *a*, *b*, and *c*, are coordinate compounds exemplifying the *compromise* type which Bauer (2008: 10) characterizes as the type "where the compound as a whole denotes not the sum of the two parts but a compromise between the two parts, a half-way point between them, as it were". The example Bauer gives is *northwest*.

The status of the other three as coordinate compounds is not straightforward. This is where I think that, for some compounds, it is a matter of construal (cf. Croft & Cruse 2004; Langacker 1987) whether they will receive a determinative or coordinative reading. That is to say that it depends on the perspective of the language user. As Dirven and Ruiz de Mendoza Ibáñez (2010: 20) observe, "[c]onstrual is determined by the perspective that speakers impose on the scene [concept] to be described." The coordinate compound reading is premised on the understanding that, for example, *ɔhem-maa* 'queen' is both *ɔhen* 'king' and *ɔbaa* 'woman' (and the same can be said for the other two). With this understanding, these three compounds may be classified

as coordinate compounds of the appositional type in which the two constituents are referentially intersective. That is, the two constituents refer to the same entity (Wälchli 2005).

In the determinative reading, the compounds are seen as left-headed N-N compounds. In this sense, the compounds in columns *d*, *e*, and *f* may be seen as contrasting with those in *a*, *b* and *c* respectively in (5). The contrast may seem apparent because two of the compounds, *a* and *b*, in (5) are nonexistent. However, having a possible-but-non-existent constituent poses no challenge to the analysis. Being possible is good enough for our purposes because cases of words with possible but non-existent constituents abound, including the synthetic compound *steel eyed* where *eyed* on its own is non-existent.

(5) a. ?ò-hérm-béá	b. ?ònyàmè-béá	c. nùà- bárí'má
SG-king-female 'queen (mother)'	deity-female 'goddess'	sibling-male 'brother'

Given that both the coordinative and determinative readings of these compounds are possible, we are led back to the criterion for inclusion of compounds in the class of co-compounds discussed above. We can reiterate that Wälchli's insistence on there being natural coordination between the constituents for the compound to qualify overly restricts the class of co-compounds. To accommodate the matter of construal that underpins the reading of compounds, we must take seriously the suggested modification that a compound should qualify to be called co-compound to the extent that there is either NATURAL or DELIBERATE coordination between the constituents of the compound.

7.3.1 Formal properties of Akan N-N co-compounds

As discussed above, an issue that Wälchli raises about co-compounds is their status – whether they are words or phrases. He argues that co-compounds are not words, but they cannot also be said to be syntactic constructions. Rather he regards them as lexical types that are intermediate between words and phrases (Wälchli 2005: 105-107). The properties of the Akan N-N coordinate compounds discussed here appear to suggest that the same position may be taken on their wordhood.

As noted above, Akan coordinate compounds have features that show that they are not syntactic phrases. For example, they do not allow the insertion of material between the two constituents of the compound. This is also true of V-V coordinate compounds, discussed below. However, there is reason to believe that the N-N coordinate compounds do not behave altogether as words with respect to number inflection. Those whose constituents can be marked for plural do get plural marking individually and, because Akan number marking in nouns is mostly prefixal, it means that we find inflectional markers occurring between the two constituents of the compound. This is what we find in the examples in (6), where the two constituents of the compound are each marked for number individually.

(6) <i>Singular forms</i>		<i>Plural forms</i>
a. <i>ɔ-hém-máá</i>	(As.)	<i>a-hem-(m)-maa</i> ⁹⁷ (As.)
SG-king-female ‘queen (mother)’		PL-king-PL-female ‘queen(s) (mother(s))’

(6) <i>Singular forms</i>		<i>Plural forms</i>
b. <i>o-nua-barima</i>	(As.)	<i>n-nua-m-marima</i> (As.)
SG-sibling-male ‘brother’		PL-sibling-PL-male ‘brothers’

⁹⁷ One native speaker realizes this plural form as *ahemaa* without the plural marking on the right-hand constituent. Her explanation is that it is a reflection of the extent to which the constituents are fused. I think it is economy of effort that is responsible for this. Consider that even one of the nasals in the singular is deleted.

c.	<i>o-nyame-bea</i>	(Ak.)	<i>a-nyame-m-meā</i>	(Ak.)
	SG-god-female		PL-god-PL-female	
	‘goddess’		‘goddesses’	

This pattern of inflectional marking appears to support the view that coordinate compounds are intermediate between words and phrases. But that cannot be the whole story. This assumption denies the fact that wordhood is a gradient concept. Thus, the double marking of inflection may not be a prototypical feature of wordhood in Akan but it does not rule the relevant constructions out as words. I believe that the dual inflectional marking simply confirms the coordinate reading of the compounds and the equipollent status of its constituents because we know that modifying constituents do not normally permit independent inflectional marking (Bauer 2006: 720).

7.3.2 CM representation of Akan N-N coordinate-compounds

For the CM representation of appositional co-compounds which denote an entity, action or quality that is a hyponym of its constituents, like *actor-singer*, Arcodia (2012a: 387) has proposed the schema in (7). For those that have hyperonymic relations with their constituents, such as Punjabi *candrādityāu* ‘the moon and the sun’ or Mandarin *fūmǔ* ‘father and mother (=parents)’, he suggests the schema in (8). These two schemas capture the important criterion of the word class identity between the compounds and their constituents.

$$(7) \quad [[a]_{Xk} [b]_{Xi}]_{Xj} \leftrightarrow [\text{an entity, quality or action which is both SEM}_k \text{ and SEM}_i]_j \\ \qquad \qquad \qquad | \\ \qquad \qquad \qquad [[\text{actor}]_{Nk} [\text{singer}]_{Ni}]_{Nj}$$

$$(8) \quad [[a]_{Xk} [b]_{Xi}]_{Xj} \leftrightarrow [\text{entity/quality/action which is the ‘sum’ of SEM}_k \text{ and SEM}_i]_j \\ \qquad \qquad \qquad | \\ \qquad \qquad \qquad [[\text{fū}]_{Xk} [\text{mǔ}]_{Xi}]_{Xj} \quad \text{‘father and mother, parents’}$$

Based on (7) we can posit the schema in (9) as a generalization over the properties of the compounds in columns *d*, *e*, and *f* of Table 22, illustrated with the compound *onyamebea* ‘goddess’.

$$(9) \quad < [[a]_{Ni} [b]_{Nj}]_{Nk} \leftrightarrow [\text{an entity which is both SEM}_i \text{ and SEM}_j]_k >$$

$$[[\text{nyame}]_{Ni} [\text{bea}]_{Nj}]_{Nk} \text{ ‘goddess’}$$

However, as discussed in chapters 4 and 5, I believe that giving the outer bracket (i.e. the compound) a completely different index from those of the constituents does not give the right interpretation of the semantic makeup of the compound, if co-indexation, as I interpret it, is meant to capture the relation between the constituent and the complex unit. It fails to capture the fact that the properties of both constituents are equally represented in the compound, as discussed in chapter 5. To correctly represent this, the index of the compound should be a collection of the indexes of the constituents as posited for chapter 4. Thus, (9) may be modified as (10).

$$(10) \quad < [[a]_{Ni} [b]_{Nj}]_{Nij} \leftrightarrow [\text{an entity which is both SEM}_i \text{ and SEM}_j]_{ij} >$$

$$[[\text{nyame}]_{Ni} [\text{bea}]_{Nj}]_{Nij} \text{ ‘goddess’}$$

This schema, however, fails to account for the compromise or intersective type of co-compounds (columns *a*, *b*, and *c*, Table 22), in which, as noted above, the referent of the compound is different from either constituent. It is a compromise between the two. I assume that such coordinate compounds instantiate the schema in (11). The formal end of the constructional schema (the left-hand side of the double arrow) is the same as that for exocentric compounds, underscoring the fact that the referent of the compound is related to both constituents but is equivalent to neither.

- (11) < [[*a*]_{Ni} [*b*]_{Nj}]_{Nk} ↔ [an entity that is intermediate between SEM_i and SEM_j]_k >
 |
 [[*boka*]_{Ni} [*daadze*]_{Nj}]_{Nk} ‘southwest’

In this section, I have discussed N-N coordinate compounds, identifying the two types in the Akan data at my disposal – the intersective type and the appositional type. Accounting for their properties in the constructional framework of CM is quite uncomplicated. But, following my proposal in chapters 4 and 5, I have argued that for an accurate representation of the properties of the appositional type, the standard CM schema for compounds where the compound bears a completely different index from the constituents will not work. Rather, the index of the compound should be a collection of the indexes of the constituents to capture the fact that the properties of both constituents come together to refer to a single ontologically coherent entity (Olsen 2001). For the intersective type, the index of the compound is different from the index of either constituent because, whilst the properties of the referent straddle the properties of both, it refers to neither constituent. In the next section I discuss V-V coordinate compounds in Akan.

7.4 Akan verb-verb ([V-V]_N) coordinate-compounds

The class of compounds that I discuss in this section is yet another class that epitomizes the observation that a morphological construction can have holistic properties. The [V-V]_N compounds exhibit extreme formal/categorial exocentricity where the compounding of two lexical items of the same form-class (V+V) yields a compound with a completely different form-class (N). This is one reason for claiming that compounding in Akan is essentially a noun forming process. It must be pointed

out, though, that there are no definite formal criteria for ruling out this class of compounds as being verbal. Therefore, one shouldn't be surprised if someone argued that they are verbal, as was indeed the position in Appah (2009a). In my view, three pieces of evidence settle the case in favour of analysing these compounds as nominal (i) the consistent absence of verbal inflectional marking, (ii) the fact that the compounds in this class may serve as bases for words derived by means of the human identity suffixes *-n(y)i* and *-fɔɔ*, which, as noted in previous chapters, attach to only nominal bases, and (iii) in Asante, the presence of the final mid vowel (AFV), which occurs on nouns only.

The case for a [V-V]_V compound analysis (Appah 2009a) included the fact that the constituents have the same order as the same verbs occurring in an analogous SVC. Appah also points to the same fact about the V-V combination undergoing further derivation by means of the human identity suffix (*-fɔɔ*) but argued that there is a nominalizing vowel prefix that occurs first before the suffix. The last fact, however, is not general. Many of the examples either do not accept the prefix at all or only admit it when the suffix is also available. Thus, the prefix is not nominalizing per se.

To end the discussion of the issue of the form class of Akan [V-V]_N coordinate compounds, I must indicate that I am aware that it will be very revealing to look at the semantic and pragmatic properties of these compounds in discourse as a way of confirming their form class membership. However, the nature of my dataset (the fact that these CNs came from wordlists) will not support such an enterprise. I will, therefore, leave that for future research.⁹⁸

⁹⁸ I must add quickly, though that my native speaker knowledge of the use of these compounds confirms their nouniness.

Five [V-V]_N compounds, constituting 1.1% of the 443 compounds, occur in my dataset (see Table 23) and the pattern doesn't seem to be productive although there are other [V-V]_N compounds cited in the literature on Akan compounding. Obeng (2009: 106) lists 14 putative examples of [V-V]_N compounds which include three of the five examples in Table 23. However, some of them bear nominalizing prefixes and so are slightly different from the ones discussed here. Also, Dolphyne (1988: 124) lists five supposed examples of [V-V]_N compounds of which two must be ruled out because they are nominalized phrases. Finally, Abakah (2006: 25-26) lists eight putative [V-V]_N compounds, three of which occur with obligatory prefixes, making them different from the particular compounds we are interested in.

Table 23. Akan V-V coordinate compounds

A	B	C	D	E
<i>bàtá-bóá</i> cling-help 'mutual help'	<i>břè-nyá</i> suffer-gain 'suffer to gain (a surname)'	<i>fá-kyé</i> take-give_as_a_gift 'forgiveness'	<i>gyí-dí-é</i> take-eat-AFV 'faith'	<i>ká-má</i> say-give 'advocacy/intercession'

Clearly, [V-V]_N compounding is not productive in Akan. Be that as it may, I devote a section to them, first, for completeness and second because their properties are noteworthy, providing a clear motivation for positing constructions to account for the properties of Akan compounds.

7.4.1 Form-class of Akan [V-V]_N coordinate-compounds

The first note-worthy property of [V-V]_N compounds is that the syntactic category of the compound is different from that of the constituents; a nominal is formed from two verbs. Formally, this makes [V-V]_N compounds extremely exocentric. Anderson (2013) makes the same observation, opening his account of [V-V]_N compounds with the observation that “[n]ominal compounds made with two verbs pose two problems

for the analysis of compounds in Akan.” The first is that although he claimed that all Akan compounds are right-headed and that where the right-hand constituent is verbal, it is nominalized, which nominalization “is apparent due to downstep”, the putative nominalization-signalling downstep fails to occur as predicted. The second problem he identifies is that such [V-V]_N compounds “have exocentric meanings, thus, the head cannot be determined based on the meaning of the whole compound” (Anderson 2013: 16). In this sense, these compounds exemplify *transpositional exocentric compounds* (TEC) – compounds whose meaning can be deduced from the meanings of constituents “but the word-class of the finished compound [...] is not overt” (Bauer 2010b: 171).

7.4.2 The semantic properties of [V-V]_N coordinate-compounds

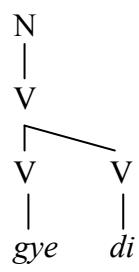
Before attempting to account for the properties of the *Akan Transpositional Exocentric Compounds* (ATEC)), I will briefly discuss their semantics. Although the compounds are formally exocentric, the meanings are not completely unrelated to the meanings of the constituents; it is possible to deduce the meaning of the compound from the meanings of the constituents. Generally, the meanings of the constituents may be related to the meanings of the compounds metaphorically. For example, the meaning of *gye-di* ‘faith/belief’ (lit. take-eat’), column *d* of Table 23, can be explained from the fact that for one to believe, one has to metaphorically “take” the message and “eat” it. Regarding this, Balmer and Grant (1929: 115) argue that “[i]t embodies the thought that, when a thing is accepted and eaten, trust and confidence is implied.” In the same way, another example which is not in my dataset, the compound, *yi-ma* ‘to betray/betray’ (lit. remove-give), is conceived as consisting of two stages, viz. the act of removing and the act of giving (away).

For Balmer and Grant (1929: 115), such compounds, like the analogous SVCs, exist due partly “(a) to the tendency of the language [speakers] to use vivid figurative expressions and partly (b) to the habit of analysing an action into its component parts.” This, for me, really underscores the equipollence of the constituents and the coordinate compound status of the constructions itself. Thus, in the representation to follow, I will consider being METAPHORICALLY RELATED to the constituents an important part of the semantic characterization of the compound.

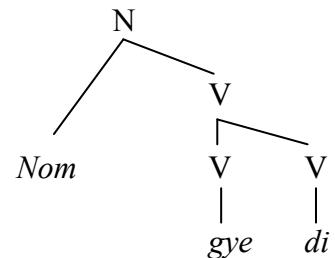
7.4.3 Non-constructionist accounts of $[V-V]_N$ coordinate compounds

To account for the form-class of the $[V-V]_N$ compounds, one of two non-constructionist approaches may be assumed. In the first, there is an initial verbal compounding and a subsequent conversion from verb to noun, with no overt marking of the process, because conversion is not regarded as an affixation process, as shown in (12) with the compound *gyedi* ‘faith’ (column d, Table 23). In the second approach, the same initial verbal compounding occurs, but this time, it is an abstract nominalizer which turns the putative verbal compound into a noun. This is shown for the same example in (13).

(12)



(13)



Both these approaches have been proposed in the literature by Obeng (2009) and Anderson (2013: 17) who represents the example in (13) as (14). However, the

problem with the first approach is that Akan is not noted to employ conversion at all. Therefore, that may be ruled out, leaving only the second approach.

(14)	gyé +	dí	→	Ø-gyé-dí
	get	eat		Nom-get-eat
	'to get'	'to eat'		'faith'

Anderson (2013: 17) makes the following remarks in concluding his discussion:

Since the above compounds are nominal, the head of the compound must also be nominal, although, there is no overt sign of a deverbal head. However, it can be assumed that the second stem is nominalized and that downstepping does not occur. [...]. The second stem must nominalize and then delete the nominal affixes according to the compounding rules of Akan. For exocentric compounds, the L tone is deleted along with the vowel, whereas it remains in endocentric compounds. These compounds could also be analyzed as receiving the zero prefix nominal marker, in which case the verb is nominalized and there are no overt phonological or morphological markings of nominalization. The same outcome would happen if they were derived with a zero prefix.

I am not sure that Anderson's explanation advances our understanding of the form-class of these compounds. First of all, there is an obvious inconsistency in Anderson's argumentation that has to be pointed out. He argues in the quote above that:

Since the above compounds are nominal, the head of the compound must also be nominal, although, there is no overt sign of a deverbal head. However, it can be assumed that the second stem is nominalized and that downstepping does not occur.

If this is right, it obviates the need to posit the extra prefixal nominalizer in (14) because the source of the nominal form-class will be obvious. This needs explaining, but it seems possible to trace where the problem comes from.

In the previous chapter I referred to Anderson's and Anyidoho's argument that a certain pattern of downstepping in what Dolphyne (1988) calls the N-V compound should be seen as showing that the right-hand constituent is nominalized. They argue that the downstep occurs because a putative L-toned nominalizing prefix was deleted leaving a floating L-tone which caused the lowering of the pitch of the H-tone in the first syllable of the verbal constituent.

One of the arguments put forward against this view was that certain compounds met the structural conditions but failed to show the predicted tone melody. All the compounds in Table 23, except the one in column *b* support this argument. The two verbs in *gyé-dí* are both said on H-tone. Thus, if it is the case that the second verb is nominalized with an L-toned prefix, then we will have an H₁-L-H₂ tonal melody which will result in the downstepping in H₂, giving H₁-L-¹H₂ melody. This doesn't happen, showing that either the right-hand constituent is not nominalized at all, or that the argument for the nominalization of right-hand constituents based on the tonal melody is wrong.⁹⁹

Anderson's argument above leaves us wondering why it is that endocentric compounds can have floating tones after the putative nominalizing prefix is deleted but exocentric compounds cannot have such a floating tone. Is it not the same putative floating tone that will make the compound endocentric by making one of the constituents the head and source of the nominal class label of the compound?

⁹⁹ This lends further support to the view expressed in chapter 6 that the observed downstepping cannot be taken as a conclusive argument for the nounhood of the right-hand constituent of the N-V compound in Akan.

By his pattern of argumentation, Anderson seems to suggest the interfacing of morphophonology and semantics in a way that vitiates the phenomenon of (*tone*) *stability* (Goldsmith 1976: 53) also called *persistence under deletion* (McCarthy 2001: 11393), which is one of the core pillars of autosegmental phonology. Thus, if Anderson's analysis is right, it would constitute an interesting issue meriting the attention of autosegmental phonologists. However, Anderson does not provide reason enough to believe that he is right.

Another major issue with Anderson's analysis is that there is no independent motivation for positing the abstract/zero nominalizer in (14) except the desire to make the compound fit a regular pattern of endocentric compounding by which all the properties of the whole are assumed to be present in the parts. Again, the putative [V-V]_V compound base required in this approach is unattested in Akan, since compounding is a noun-forming strategy in Akan.

Finally, even if we find enough motivation for positing the abstract nominalizer, we come face-to-face with the fact that the final process becomes affixation and not compounding. In other words, the formation of the nominal will involve an initial V-V compounding and a subsequent affixation. This also leaves us with yet another minor problem – the question of whether the abstract nominalizer is a prefix or a suffix. I present the putative abstract nominalizer as a prefix, in (13) but, if it exists, there is no reason why it cannot be a suffix since Akan has both prefixal and suffixal nominalizers.

7.4.4 CM representation of Akan [V-V]_N co-compounds

In the constructionist approach, the problems identified with Anderson's analysis do not arise because, as noted several times already, it is understood that constructions can have holistic properties and so the form-class of these compounds may be assumed to be a holistic property of the compound itself. That is, the compound inherits the form-class from the dominating constructional schema.

I assume that the compound *gyedi* instantiates the constructional schema in (15). This schema also inherits its non-unique properties from the schema for coordinate compounds which is a subschema of the generalized Akan compounds schema which is pre-specified for an output form-class (N), as shown in (16).

(15) < [[V]_i [V]_j]_{Nk} ↔ [CONCEPT metaphorically related to both SEM_i and SEM_j]_k>

(16) < [[a]_{Xi} [b]_{Xj}]_{N{ij|k}} ↔ [SEM_{ij|k} realizing a relation R between [a] & [b]]_{ij|k} >
 |
 < [[a]_{Xi} [b]_{Xj}]_{Nk} ↔ [SEM_k with equipollent relation to [a] and [b]]_k >
 |
 < [[V]_i [V]_j]_{Nk} ↔ [CONCEPT metaphorically related to both SEM_i and SEM_j]_k>
 |
 [[gye]_i [di]_j]_{Nk} ‘faith/belief’

That is, the items that substitute for the variables *a* and *b* in the generalized schema are verbs but the schema is pre-specified as nominal and the schemas inheriting from it do not override the pre-specified N form-class.

7.4.5 Akan [V-V]_N coordinate compounds and AS suppression

Another noteworthy property of this compound may be called *argument structure suppression*. As discussed above, the locality principle (Selkirk 1982), requires argument-taking lexical items to occur in constructions, morphological or syntactic, where they can satisfy their ASs. Given this, it would be expected that the argument-taking verbs in the compound at issue would have suitably qualified constituents in the construction to satisfy their AS requirement. Typically, in the analogous SVCs, the verbs satisfy their ASs (Osam 1994a, 1994b, 1997). However, in the compounds, that does not happen. That is, although at least one constituent in each of the compounds in Table 23 is argument-taking, in none of the compounds is an argument normally permitted. Hence, the ill-formedness of the compounds in (17) is due to the presence of the possible internal argument of the argument-taking constituents.

(17)	<i>*bata-nyimpa-boa</i> cling-person-help 'mutual help'	<i>*bre-sika-nya</i> suffer-money-gain 'suffer to gain money'	<i>*ka-asem-ma</i> say-matter-give 'advocacy/intercession'
------	---	---	--

The examples in (18) seem well-formed, but that is because they constitute a completely different class of nouns only interpretable as personal names. They also bear affixes and have tonal patterns that show that they are different constructions from [V-V]_N compounds.

(18)	<i>ð-gyé-àsém-'<i>dí</i>-é</i> NMLZ-take-matter-eat-AFV 'a gullible person/belief'	<i>ð-ká-àsém-'<i>má</i></i> NMLZ-say-matter-give 'an advocate/intercessor'	<i>fâ-àsém-kyé</i> take-matter-give_as_a_gift 'one who forgives easily'
------	--	--	---

So, as far as the Akan [V-V]_N compounds are concerned, it is not possible to express any argument of either verb in the compound. I interpret this to mean that the

argument-taking potential of the verbs in these compounds is suppressed, so that the verbs occur without their internal arguments, by default.

Surely this property of the ATECs deviates from the expectation that an argument-taking predicate will only occur in a construction where it can satisfy its AS requirement. Now, because there is no overt operation which can be said to be responsible for the non-realization of the arguments of the constituent verbs, I will consider it a gestalt property of this particular construction that it suppresses the argument structure of the constituent verbs.

Lieber (1983) discusses a similar pattern of V-V compounding in English. The initial hypothesis she makes is that in such V-V compounds the second argument-taking stem will supply the compound as a whole with its AS and so it will have to be satisfied outside of the compound. However, according to Lieber's own argument linking principle, the first argument-taking stem will have to satisfy its AS within the compound, which will mean taking the other stem as its argument. But this is impossible with these compounds because the other constituent is also a verb and cannot be interpreted as an argument of the first constituent, and so it is free.

By this, Lieber can predict the occurrence of compounds like *fly-drive*, *slip-slide* and *fall-float*. However, her account is helpless in accounting for others in which the first constituents require internal arguments like *freeze-dry*, *drop-kick*, *stir-fry*, etc. Lieber suggests that one explanation might be that because in the examples above both constituents are transitive, they have the same AS, which they somehow satisfy with the same noun outside the compound.

Lieber's proposal doesn't sound convincing for English and will surely fail to work for the Akan data unless we treat the V-V sequence like complex predicates so that they can share arguments, much like SVCs, for which argument sharing is one of the defining properties (Aikhenvald 1999; Appah 2009d; Osam 1994b). Even if Lieber's idea of a shared AS which is satisfied by the same noun outside the compound worked for some compounds, the proposal will fail to work for others. They include cases where the constituents have different ASs, like the pairing of a transitive/intransitive verb with a ditransitive verb. An example is Akan *ka-ma* [say-give] 'intercession' (column *e*, Table 23) where the second verb is ditransitive.

I believe that the way to account for such compounds is to regard the absence of arguments as a constructional property, as argued above. That is, we have to assume that in these compounds AS is suppressed, because we do not find any reason to believe that there is an operation at the level of LCS that curtails the overt expression of the AS of the verb.

Accounting for this will not be problematic for a constructionist framework where constructions can have holistic properties. We account for this quite straightforwardly by assuming that the construction has the specific property of not allowing the expression of the AS of its argument-taking constituents. I call this AS suppression – the overriding of the AS of a lexical item as a construction-specific restriction. Put another way, the construction makes available slots for only two bare verbal bases.

I argued in chapter 6 that the AS of a lexical item is retained unless it is overridden by a constructions-specific requirement. Based on these observations we may define an AS suppression principle as follows:

(19) *AS suppression principle*

If a lexical item in a construction has AS, it retains and satisfies it in every construction in which it occurs unless, as a result of its unifying with a schema that does not permit the expression of the AS, it loses the ability to satisfy the AS.

The point about the suppression of the AS of verbs in these compounds finds immediate support in the fact that elsewhere, similar combinations of verbs with similar meanings may occur with nouns that qualify to be their internal arguments. This is exemplified in (19) where *fa-kye* ‘forgiveness’ combines with a specific nominal, *bɔn* ‘sin’, which is the argument of both verbs in the corresponding SVC in (21) where *bɔn*, as a shared argument of the self-same verbs, occurs between them.

- (20) *bɔn-fá-kyé*
sin-take-give_as_a_gift
'forgiveness of sin'

- (21) *fá bóń kyé*
take sin give_as_a_gift
'to forgive sin'

7.4.5.1 CM and issues related to argument suppression

We could think of example (21) as a special type of this construction with right-recursion and the shared argument pre-specified. This will be a constructional idiom which inherits, by default, the properties of the dominating node but then overrides the AS suppression, as shown in (22).

- (22)
- $$\begin{array}{l}
 < [[a]_{X_i} [b]_{X_j}]_{N_k} \leftrightarrow [\text{SEM}_k \text{ with equipollent relation to } [a] \text{ and } [b]]_k > \\
 | \\
 < [[V]_i [V]_j]_{N_k} \leftrightarrow [\text{Act of SEM}_k]_k > \\
 | \\
 < [[bɔn]_{N_y} [[V]_i [V]_j]_{N_q}]_{N_q} \leftrightarrow [\text{SEM}_k \text{ pertaining to SEM}_y]_q >
 \end{array}$$

An alternative analysis which I believe to be more accurate will be to regard *bɔn-fakyɛ* as an N-N compound made up an exocentric nominal compound *fa-kyɛ* and a non-head nominal, pre-specified as *bɔn* ‘sin’, as in $[[bɔn]_{Ni} [fakyɛ]_{Nj}]_{Nk}$. This will be treated as a special type of N-N compound which results from the unification of the schema for $[V-V]_N$ compounds and right-headed N-N compounds as in (23).

$$(23) \quad [[a]_{Ni} [b]_{Nj}]_{Nj} \quad + \quad [[V]_i [V]_j]_{Nk}$$

$$[[a]_{Ni} [[V]_j [V]_k]_{Nq}]_{Nq}$$

The two constituents of this compound seem to have the status of an *encoding idiom* (Makkai 1972), because it is the conventionalized way of expressing *forgiveness of sin* in Akan and the constituents must occur in this particular order.¹⁰⁰

7.5 Conclusion

In this chapter, I have discussed two classes of coordinate compounds in Akan – $[N-N]_N$ and $[V-V]_N$. Accounting for the properties of the former is relatively straightforward because the properties are quite regular. The same cannot be said for the latter whose properties are not so regular, being made up to two verbs which yield a noun.

¹⁰⁰ The other way of expressing *forgiveness* has a slight variation where instead of *kyɛ* ‘give_as_a_gift’, the word *fir* ‘to sell/buy on credit’ is used, as in *bɔn-fa-fir* ‘forgiveness of sin’. Here too the constituents must occur in this order, failing which the construction becomes ill-formed.

The properties of these two classes of compounds are consistent with the constructional view which holds that there is a cline of grammatical phenomena from the totally general to the totally idiosyncratic (Goldberg & Jackendoff 2004: 532). I have shown that the properties of these compounds including the non-compositional ones like the unmotivated form-class and suppression of AS receive a straightforward natural account in the constructionist framework of CM where other source-oriented frameworks struggle or fail to account for them. Again our treatment of these coordinate compounds is consistent with the view that everything on the cline of grammatical constructions is to be stated in a common format (Goldberg & Jackendoff 2004: 532).

Regarding the CM formalism, I have again given motivation for my proposal that the indexes on the appositional coordinate compounds should be a collection of those of their constituents in order to capture the fact that the meanings of the constituents are equally represented in the compounds because they share headship in the compound.

8 PERSONAL ATTRIBUTE NOMINAL CONSTRUCTIONS

'linguistic structure' is ambiguous: it can refer to hypothesized structure derived by the analyst from observation of linguistic data, with no expectation that such structures are cognitively instantiated; or alternatively, to structures posited by the analyst as a claim about mental structure and operation
(Kemmer & Barlow 2000: viii)

8.1 Introduction

In this chapter, I discuss a group of Akan nominals formed from predicate adjective constructions that have been previously analysed as compounds. I show that the straightforward compounding analysis fails to do justice to their properties, because it masks (i) the degree of complexity and (ii) the formal and semantic/pragmatic constraints on the constituents of the construction. In its stead, I posit a construction termed *Personal Attribute Nominal Construction* (henceforth, PANC). In positing this construction, I operate with the view that a distinct construction is deemed to exist if it can be shown that one or more of its formal and/or semantic properties are not strictly predictable from those of its constituents or other constructions in the language, as the following quotes shows:

C is a CONSTRUCTION iff_{def} C is a form-meaning pair $\langle F_i, S_i \rangle$ such that some aspect of F_i or some aspect of S_i is not strictly predictable from C's component parts or from other previously established constructions.

(Goldberg 1995: 4)

Constructions are so to speak grammatical patterns treated as lexical items: more or less schematic entities that should be treated as symbolic units in their own right, with properties that cannot just be compositionally derived.

(Geeraerts 2006: 175)

I argue that PANCs inherit their formal structure from other constructions, including a copular construction in Akan. Thus, some of their properties are motivated by other already existing constructions in the language – lexical and syntactic, although their properties are not entirely predictable from those other constructions. The present account, therefore, differs from previous accounts not just in the constructionist perspective adopted, but also in showing that the constructions in question are not islands. Rather, they are related in various ways to other constructions in the language, confirming the observation that “a given language is [...] not an idiosyncratic list of factoids” but a system with impressive internal regularities (Goldberg & van der Auwera 2012: 110).

One theoretical point I make is that, because of their generally partial compositionality, their meanings must be listed as holistic properties of the morphological constructions.

This chapter is one of the main contributions of the present thesis. As the review of the literature will show, no previous study of these Akan nominals goes beyond asserting their existence and giving indications of how they are formed. Thus the originality of the content of this chapter resides both in the constructional perspective assumed and the fact that it is the first detailed analysis of the properties of this class of nominals, dealing with the morphosyntactic and semantic restrictions on their constituents.

The data discussed here is meant to help answer the questions about the nature of CNs in Akan (RQ1). The discussion shows clearly that beyond compounds and derived words, there are larger units with specific form(s) and function(s) for which the term construction seems most apt. Another question I seek to answer in this chapter is: what

does the presence of such constructions mean for our conception of the nature of the interaction between morphology and syntax and of the architecture of the grammar. I will argue that the fact that the properties of these constructions can be handled effortlessly in a constructional framework is evidence for the robustness of the constructional view of the grammar adopted here.

The rest of the chapter is organized as follows: in §8.2 I review the literature on the compounding (+affixation) view of PANCs. In §8.3 I discuss the general set of properties of PANC as a way of motivating the proposed constructional account in §8.4. In §8.5, I discuss the productivity of PANCs and how it is restricted by three factors: (i) only a restricted set of items can fill the open slots in the construction – body-parts and physical property adjectives, (ii) not all members of the permitted items can occur in PANCs, and (iii) the constructional idiom is in competition with the $[N\text{-}A]_N$ compounding schema. In §8.6 I discuss the significance of the existence of PANCs-type constructions for our conception of the relation between morphology and syntax (or the two ends of the lexicon-grammar continuum) and of the architecture of the grammar. In §8.7 I present a tentative semantic classification of PANCs. §8.8 is the conclusion.

8.2 PANCs in the literature on Akan

Even though what I call PANCs have been noted to exist in Akan for a long time (cf. Christaller 1875), very few studies of it exist and even those largely fail to account fully for the nominals' set of properties, with some (e.g., Balmer & Grant 1929; Dolphyne 1996) only citing examples and not commenting on their properties. Three examples of this class of nominals cited in Christaller (1875: 19, 27) are: *ahooden*

‘strength’, *asoɔden* ‘disobedience’ and *abooɔden* ‘dearness, high price’. See the internal structure in (1).

Christaller (1875: 19) treats this group of nouns as compounds formed from “two or more words, with the exclusion of, and in contradistinction from, its prefix”. It is the fourth of the ten classes of Akan compounds that he identifies and he characterises them as “compound nouns of quality, made from the *subject* and the predicative adjective”, where the latter is nominalized and the former functions as a qualifying *attribute in the possessive case* (Christaller 1875: 27).

(1) a. <i>a-ho-ɔ-den</i>	b. <i>aso-ɔ-den</i>	c. <i>a-bo-ɔ-den</i>
Pref-self-be-hard	ear-be-hard	Pref-price-be-hard
‘strength’	‘disobedience’	‘dearness, high price’

The examples in (1) show clearly that Christaller fails to account fully for all the constituents of the words. He mentions the *subject* and the *predicate adjective* but not the vowel which links the two, although he tacitly acknowledges it as the verb in the sentence whose subject and predicate adjective are “compounded”. Christaller also fails to account for the prefix that occurs on the nominals in (3a&c), even though he argues that the subject and the predicate adjective constitute a compound “with the exclusion of, and in contradistinction from, its prefix” (Christaller 1875: 19). Aside from not accounting for all the constituents of the nominal, Christaller’s claim that the predicate adjective forms a nominal on its own lacks any foundation. One does not find any formal or semantic basis for the claim since the adjective occurs in a basic form with no nominalizing affixes or any other marker that will suggest that it is nominalized. Finally, Christaller does not say anything about how the meaning of the nominal comes about.

Dolphyne (1988: 79-80) regards the nominals as exemplifying words with compound stems made up of three independent stems (p.79), citing, for illustration, *anieden* ‘haughtiness’ which has the stems *ani* ‘eye’, *yε* ‘to be’ and *den* ‘hard’. Dolphyne also discusses these nominals under the heading of compounds which have got “a vowel affix that occurs between the two stems of the compound” (1988: 80). This is an interesting twist but she observes later that what looks like an affix that occurs between the first and the last stems of the compound is “analysable as the copula verb *yε* ‘to be’ which is reduced to a vowel that takes the lip rounding position of the preceding vowel”, as shown in *anieden* ‘haughtiness’ and *ahooʃfe* ‘beauty’ (2).

(2)	a.	<i>ani-ε-den</i>	b.	<i>a-ho-ɔ-fε</i>
		eye-be-hard		Pref-self-be-nice
		‘haughtiness’		‘beauty’

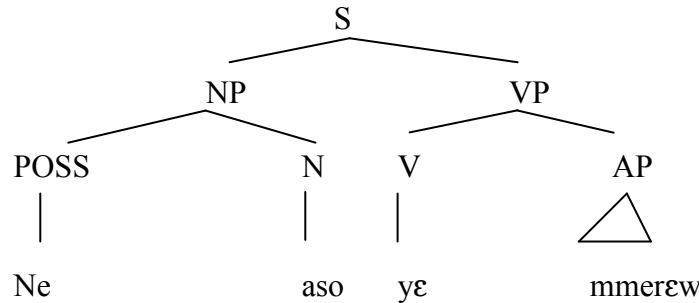
Aside from the potential confusion that comes with referring to the intervening vowel as an affix and her ignoring the vowel prefix in ((2)b), Dolphyne (1988) accounts for the major constituents of the nominals, showing that the nominals ultimately derive from sentences and that it is the verbs in the sentences that are realized as linking vowels in the nominals. Dolphyne, however, does not go beyond indicating the source of the vowel that links the two other constituents. In the present study, I argue that the vowel is a constructional property, the only constant feature of the *constructional idiom* underpinning the formation of PANCs.

Appah (2003: 105-108), like Christaller, argues that personal attribute nominals are formed from predicate adjective constructions like ((3)a-d), through compounding and affixation. Appah argues that, in forming the nominal, all the constituents of the

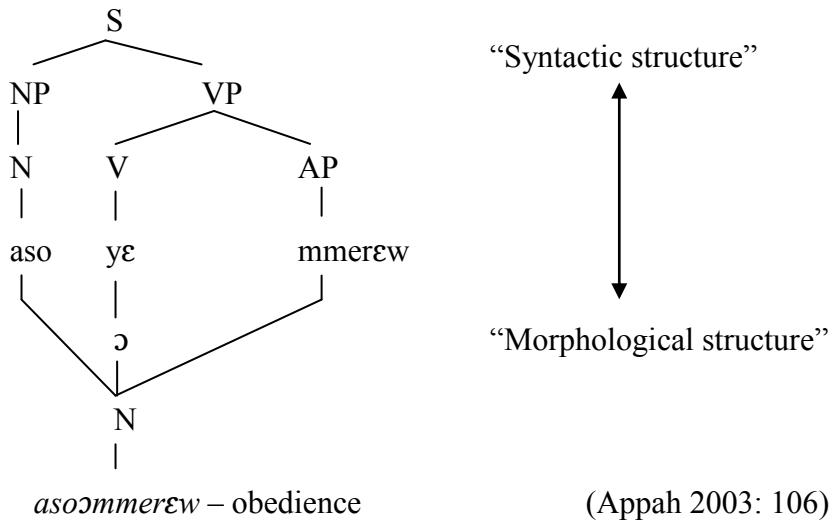
construction, except the possessive are compounded and the copular is also reduced to [ɔ/ɛ], as the diagram in (5) shows.

- (3) a. *Ne bo ye dzen* > *aboodzen* ‘dearness’
 3SGPOSS price be hard
 ‘It’s expensive (Its price is hard)’
- b. *Ne aso ye den* > *asoɔden* ‘stubbornness’
 3SGPOSS ear be hard
 ‘s/he is stubborn (His/her ear is hard)’
- c. *Ne aso ye mmerew* > *asooɔmmerew* ‘obedience’
 3SGPOSS ear be soft
 ‘S/he is obedient (his/her ear is soft)’
- d. *Ne tiri mu ye den* > *atirimuɔden* ‘wickedness’
 3SGPOSS head in be hard
 ‘S/he is wicked (the inside of his/her head is hard)’

(4)



(5)



(Appah 2003: 106)

Crucially, Appah (2003) argues that the constituents of the predicate adjective constructions which become part of the nominal are necessary not just for the formal makeup of the nominals, but their individual meanings are also central to the semantic makeup of the nominal. However, this implicit assumption of direct compositionality cannot be sustained given the fact that literally, the predicate adjective expresses a physical property predicated of the body-part¹⁰¹ in subject position, but the meaning of the nominal is that of an attribute of the possessor of the body-part who is external to the construction. Again, it is not clear what semantic contribution the reduced form of the verb is purported to make to the meaning of the whole construction. Finally, even though Appah notes that the formation of the nominals involves affixation, the diagram in (5) does not show where the prefix features in the derivation.

The foregoing review gives the impression that in general PANCs are formally and semantically transparent, and they are to an extent. However, there are a number of quirky things about them that escape accounting for in a framework that assumes symbolic word formation rules and expects strict compositionality. For example, what looks like a linking vowel occurring between the two prominent constituents of what scholars have tended to classify as compounds does not contribute to the meaning of the nominal. Thus, the morphotactics, and by extension, semantic transparency of the nominals are compromised by the presence of a formal unit which does not contribute to the overall meaning of the construction. The meaning of the construction is thus at best only partially compositional and may be regarded as a holistic property of the construction. This is a challenge for the simple view of compositionality (Jackendoff 1997a: 48).

¹⁰¹ The only exception known to me is the price of a commodity which may be said to have a similar kind of inalienable relation to the item as the body part to the human possessor. I discuss this in §8.5.1

In addition to the above, only a restricted class of words with stringent restrictions on their individual properties can occur in the construction as constituents, restricting the productivity of the construction. The productivity of the construction is further restricted by the idiosyncratic properties of the limited number of items that occur as constituents in the construction. These properties make these nominals prime candidates for constructional status in the sense of Goldberg (1995, 2006), Jackendoff (1997b, 2008), Booij (2002a, 2007a, 2010d), Fillmore, Kay, and O'connor (1988).

In the next section I explore the features of PANCs further and argue that given the set of properties of the nominals, positing a separate construction is necessary for an insightful account of those properties. That is, whereas a rule-based framework employing feature percolation to account for the morphosyntactic make-up and semantic properties of the construction may fail because there is a formal material that does not contribute to the overall feature make-up of the construction, adopting the constructional view of grammar makes it easy to offer a consistent and elegant account of the properties of PANCs. This is because with the constructional view, meaning is not expected to be fully compositional, so that the presence of an additional bit of formal material that does not contribute to the meaning of the construction is not a problem to the extent that it can be shown to be a gestalt property.

8.3 The general properties of PANCs

Before I present the proposed constructional account of PANCs (§8.4), I discuss some properties of the nominals that make them prime candidates for constructional status. We encountered some of the properties in the previous sections. Discussing the specific restrictions on the properties of individual constituents of the constructions is

important. This is because the constructional approach to morphosyntactic analyses might often appear to be avoiding dealing with the internal structure of posited constructions and the specific constraints on their individual constituents. This might be due to the ABSTRACTIVIST or top-down perspective (Blevins 2006) together with the near-*antidecompositionalist*, “opposed to the view that the meanings of words can be broken down into parts” (Aronoff 2007: 56), approach.

I believe that sometimes breaking constructions down into some putative constituent parts may be pointless, especially when the resultant structure has no synchronic value/relevance in the language; recall Wray’s (2002: 3-4) observation cited in chapter 3. However, when there is clear evidence of constituent-specific restrictions that have implications for the form and meaning of the construction, this must be dealt with, and that is what I hope to do in this section. I discuss the distribution (§8.3.1), the formal make-up (§8.3.2) and the semantics/pragmatic properties (§8.3.3) of PANCs.

8.3.1 The distribution and categorial status of PANCs

As the review in §8.2 reveals, PANCs are regarded as nouns. But is there any reason for that? Why will we regard them as lexical items at all? What types of syntactic environments do they occur in? This section shows that these forms are indeed nouns in all relevant respects, although they retain significant features of their syntactic provenance. I illustrate their distribution with *ahooʃe*, beauty in (6).

- (6) a. **Subject of the verb**

<u>Ahoɔʃe</u>	<i>bɛ-ba</i>	<i>ha</i>	<i>ɔkyena</i>
Beauty	FUT-come	here	tomorrow
‘Beauty (the beautiful one) will come here tomorrow’			

b. **Predicate nominal**

i. *E-yε ahoɔfε*

it-be beauty

'It is beauty'

ii. *Me din de Ahooɔfε*

My name be.call beauty

'My name is beauty (the beautiful one)'

c. **Object of the verb**

Araba wɔ ahoɔfε

A. be_in_posseion_of beauty

'Araba has beauty/Araba is beautiful'

d. **Possessed element in a possessive Construction**

Amma ne ahoɔfε da edzi

A. 3SGPOSS beauty lie open

'Amma's beauty is evident'

e. **Focused element in a focus construction**

Ahoɔfε na ɔ-wɔ

beauty FM 3SG-have

'It is beauty s/he has'

I indicated above that the nominal refers to an attribute of the possessor of the body-part in subject position. However, the nominal may be used as a proper name without a change in form (probably, a case of zero derivation), and may undergo further derivation by suffixation, yielding nominals that refer to the possessor of the attribute rather than the attribute. For example, the nominal *Ahoɔfε* 'beauty' in ((6)a & (6)bii) is the name of a person. *Ahoɔfε* in (((6)c), ((6)d) and ((6)e)) definitely refers to an attribute, but in ((6)bi), *ahoɔfε* could refer to an attribute or the possessor of the attribute. This might be seen as a metonymic extension of an attribute to refer to the possessor of the attribute. However, if we created a context in which ((6)bi) followed from ((6)a), then, given the fact that the referent in ((6)a) is engaged in some movement, the "possessor_of_the_attribute" interpretation would be favoured.

The examples in (6) do not bear any derivational affixes. In (7), however, the nominal undergoes further derivation by means of the human identity suffix (*-fɔɔ*) so that the resultant nominal just refers to the human possessor of the attribute designated by the base *aħooħfe*. I have argued in previous chapters that the Akan nominal suffix [-*fɔɔ*] and its singular counterpart -*nyi* attach to only nominal bases to form human nouns and so any form that serves as a base for -*fɔɔ*-derived nouns may be assumed to be a noun. Thus, the fact that PANCs can form the base for noun in [-*fɔɔ*] is the clearest sign of their nominal status in Akan as I have previously argued for forms that serve as bases for -*fɔɔ*-derived nominals.

- (7) a. *Araba ye o-hooħfe-fɔɔ*
 Araba be SG-beauty-NMLZ_[person]
 'Araba has beauty (beautiful person)'
- b. *o-hooħfe-fɔɔ no re-ba*
 SG-beauty-NMLZ_[person] DEF PROG-come
 'The beautiful person is coming'

Note that the prefix changes to *o-* which marks singularity. Because the prefix *a-* derives/marks abstract nominals in Akan, this change in the prefix signals a change in the semantic class of the nominal from an abstract noun to a concrete noun. The presence of the human identity suffix calls for this particular prefix in the singular. For this reason, some scholars, principally Abakah (2004), have analyzed the *o- ... -fɔɔ* sequence as a circumfix. However, that cannot be right because if they formed a circumfix (a single affix) we would expect the two to occur together all the time. But this is not what we find. Either affix may occur alone or in combination with other affixes. Indeed, the plural of *oħooħfefɔɔ* (7) is *a-hooħfefɔɔ*, where plurality is marked by the prefix *a-* but the suffix remains the same. Note that this plural *a-* is different from

the abstract nominal marking *a-* prefix in *a-hɔɔfɛ* ‘beauty’ in (6).

A plausible scenario from a grammaticalization perspective for the circumfix argument could be that a circumfix has grammaticalized from a prefix and a suffix, with these two affixes lingering on independently as well. The problem, however, is that no such grammaticalization perspective has been brought to the debate and I do not think that there is a motivation for even the grammaticalization line of argumentation unless we want to claim that the suffix *-fɔɔ* forms part of two separate but related circumfixes – *ɔ-...-fɔɔ* for singular nouns and *a-...-fɔɔ* for plural nouns. Thus, the circumfix analysis is unsustainable.

8.3.2 Formal properties of PANCs

As the discussion in §8.1 shows, in their unreduced form, PANCs have a completely regular and transparent syntax; they instantiate predicate adjective constructions in Akan (Appah 2003: 105; Christaller 1875: 19). Predicate adjective constructions are constructions in which the main semantic content is embodied in the adjective because the verb is semantically vacuous (cf. Payne 1997). In the case of the class of constructions we are concerned with, the verb (*yε* ‘to be’) simply specifies the relationship between the subject and the predicate adjective.¹⁰²

In the nominal (the PANC), it is a phonetically reduced form of the copula *yε*, realized as *[-ɔ/-ε]*¹⁰³ which occurs, linking what may be characterized as two open slots. The

¹⁰² Payne (1997) describes predicate adjective constructions as “attributive” clauses. I believe this supports our “personal attribute” characterization of the nominals formed from such constructions.

¹⁰³ The realization of the copular is subject to the vowel harmony rules of Akan. Thus, where the nearest preceding vowel is [-round], *-ε* is chosen and where the nearest preceding vowel is [+round], *-ɔ* is chosen. However, where the preceding vowel is [+round, +ATR], *-o* is chosen, instead of *-ɔ*.

first open slot is filled by the subject noun (or NP), which in this case is a *body-part* naming noun. The second open slot is filled by a predicate adjective which expresses a physical attribute of the noun it modifies such as *hard, soft, heavy, wet, rough, strong, clean, hot, sour*, etc. called *physical property adjectives* (Dixon 2004: 4). The parts of the nominal may be summed up informally as (8).

(8) [body part] + [TO_BE]_v + [physical property adjective]

Thus the nouns are schematic, with variables in the schema that can be substituted by specific words of the appropriate categorial and semantic description. As I discuss in §8.5, the open slots signal the potential productivity of the construction.

In terms of the phonology, the only element that has a reduced form in the nominal compared to the same form in isolation or in the predicate adjective construction is the copular which surfaces in the PANC as a morphological linker between the two phonologically unreduced elements – the noun and the adjective in the first and second open slots respectively.¹⁰⁴ Again, in terms of the phonology, PANCs have typical lexical tone melody (what we called TP1 in chapter 4), where all the TBUs preceding the adjective are L-toned whilst the syllables in the adjective are H-tone (cf. Dolphyne 1988: 120-123).

In previous analyses of these constructions, the tonal melody has been accounted for by a battery of rules, including tone deletion and tone spreading, as well as other word-edge phenomena (cf. Abakah 2005a; Abakah 2005b, 2006; Marfo 2004a). In the present chapter, I assume a constructional view of the tonal pattern of PANCs, as I

¹⁰⁴ It is not yet clear to me what trigger the reduction the form of the verb.

have done for compounds in previous chapters. I assume that the construction is unified with a schema that is specified for the tonal pattern in (9) which states that there is a Low-High tonal melody, and that there can be any number of TBUs with L-tones in the PANC, and that there can be any number of constituents in the construction, including the reduced form of the copular, all of which must be L-toned but the syllable(s) in the final constituent of the construction (the adjective) must be H-toned.

(9) $[[\sigma^*]^* \dots [\sigma^*]]$

The selection of nominals in (10) exemplifies the structure and tonal pattern of PANCs. The middle column shows the internal structure of each nominal whilst the schemas in the rightmost column attempt to abstract away from the individual nouns and adjectives that occur in the specific examples, showing only the category of the constituents together with the phonologically reduced form of the copular. These schemas will be refined later.

- | | | |
|--------|---|---|
| (10)a. | <i>à-kòkò-jà-dúró</i>
NMLZ-chest-SE-heavy
'courage/bravery' | $[a- [koko]_N [\circ] [duro]_A]_N > [[N] [\circ] [A]]_N$ |
| b. | <i>àní-è-déń</i>
eye-SE-hard
'haughtiness' | $[[ani]_N [\varepsilon] [den]_A]_N > [[N] [\varepsilon] [A]]_N$ |
| c | <i>è-tsìr-ì-m-à-dzéń</i>
NMLZ-head-in-SE-hard
'wickedness' | $[e- [[tsir]_N [mu]_N]_{N(P)} [\circ] [dzen]_A]_N > [[N(P)] [\circ] [A]]_N$ |
| d. | <i>àní-sò-jà-hyéń</i>
eye-top-be-hot
'intrepidness' | $[[ani]_N [so]_N]_{N(P)} [\circ] [dzen]_A]_N > [[N(P)] [\circ] [A]]_N$ |

- f. *àsò-ò-déń* $[[\text{aso}]_{\text{N}} [\text{o}] [\text{den}]_{\text{A}}]_{\text{N}}$ $> [[\text{N}] [\text{o}] [\text{A}]]_{\text{N}}$
 ear-SE-hard
 ‘stubbornness’
- g. *à-hò-ò-háŕ* $[a- [\text{ho}]_{\text{N}} [\text{o}] [\text{har}]_{\text{A}}]_{\text{N}}$ $> [[\text{N}] [\text{o}] [\text{A}]]_{\text{N}}$
 NMLZ-self-SE-swift
 ‘swiftness’
- h. *à-hò-ò-déń* $[a- [\text{ho}]_{\text{N}} [\text{o}] [\text{den}]_{\text{A}}]_{\text{N}}$ $> [[\text{N}] [\text{o}] [\text{A}]]_{\text{N}}$
 NMLZ-self-SE-hard
 ‘strength’

8.3.3 Semantic and pragmatic properties of PANCs

The meanings and other semantic properties of the individual nouns and adjectives that occur in the predicate adjective construction as well as the meanings of the complex nominals are noteworthy. As observed in §8.3.2, the noun that fills the first variable slot must name a body-part. Crucially, this noun cannot be modified by an adjective. Hence, even though the construction in ((11)a) is acceptable on its literal reading, it is completely ill-formed if it is meant as the construction underlying the formation of the nominal *etsirmuɔdzen* ‘wickedness’. The construction in ((11)b) is, however, ill-formed on every count.

- (11) a. *Itsir kese mu ye dzen* \Rightarrow $\grave{\text{e}}\text{-tsìr}\grave{\text{m}}\text{-ò-dzéń}$
 head big in be hard NMLZ-head-in-SE-hard
 ?‘inside the big head is hard’ ‘wickedness’
- b. **Itsir mu kese ye dzen*
 head in big be hard

Secondly, the noun cannot be definite. Hence, the marginally acceptable sentence in ((12)a) cannot be said to underlie the formation of the nominal that occurs to the right of the arrow. The same can be said for sentence ((12)b), although that is acceptable.

It seems a definite noun makes the construction lose the sense of idiomticity. If that is right, then it shows that PANCS are actually formed from underlying idiomatic expressions. In other words, PANCS are the nominalized versions of idiomatic predicate adjective constructions. This is consistent with Mensah's (2003) treatment of them as body-part idioms. The problem with arguing that the presence of the definite determiner makes the construction lose its idiomatic feel is that definite nouns do occur in idioms in other languages. An example is English *kick the bucket* 'die' in which the definite determiner must occur in the idiom, so that **kick bucket* is ill-formed as an idiom. We may say, however, that it is an idiosyncratic property of this particular class of nouns that they do not admit the definite determiner.

Thirdly, the predicate adjective, as indicated above, has to express a physical property that is predicated of the body-part noun that is the subject of the predicate adjective construction. If any other semantic class of adjectives (e.g., colour, value, dimension, etc. (Dixon 2004)) fills the second slot, the sentence would be felicitous but no corresponding PANC can result from it. Hence, the nominals in ((14)a-b) which have dimension and colour adjectives respectively in the second slot are ill-formed, although those in ((15)a-b) which sport the same constituents but exclude the phonologically reduced copular, are well-formed, because they are simple cases of N-A compounding. I will argue below that the presence of this alternative means of nominalizing nouns and adjective restricts the productivity of PANCs.

The data in (14) and (15) show that PANCs are not compounds *sensu stricto*. Indeed the properties discussed so far make the constructions look like encoding idioms (Makkai 1969, 1972), idioms whose meaning the speaker can work out on hearing it, even though the speaker may not be able to predict its conventionality (Evans & Green 2006: 644). They are also like idioms of encoding in the restrictions they impose on the types/classes of words that can occur in them and the strict order in which they can occur in the construction (Booij 2010d, 2010c).

Fourthly, even though the compositional meaning of the predicate adjective construction is that of a part of the body about which a certain physical property is predicated, the complex nominal expresses an attribute of the possessor of the body-part noun that occurs as the subject of the predicate adjective construction. That is, the meaning of the nominal is that of a property of a human referent who is the possessor of the body-part named in the construction. Thus, the referent of the PANC has only an indirect link to one of its constituents. Again, although the body-part noun in the first slot is a concrete noun, the PANC is an abstract noun.

What I am driving at is that the meaning of the construction is definitely not a strictly compositional function of the constituents. Outside of this construction, the words *koko* ‘chest’ and *dur(u)* ‘heavy’, when collocated, will express a physical property predicated of that body-part – the chest. Thus, because the aggregate meaning of the words, *koko*, *ye* and *dur(u)* in (12) is different from the meaning of the PANC, we may say that these words do not necessarily contribute directly to the meaning of *akokoo duro* ‘bravery’ since no part of the meaning is localized in any of the words that make up the construction.

These facts make the meaning of the nominal relatively independent of the particular nouns and adjectives that fill the variable slots in the construction. Hence, the meaning has to be stated as a holistic property of the construction. This confirms the view that morphological constructions can and do have holistic properties, one of the main tenets of CM (cf. Booij 2007a; Booij 2009c, 2010d, 2010c).

In terms of pragmatics, it is worth noting that the PANC is a highly conventionalized construction type in Akan and may be used to express either negative or positive evaluation of the entity that possesses the attribute expressed by the nominal. For instance, the word *anieden* ((10)b) which has undergone further derivation in (16) could be interpreted as *haughtiness* or *bravery* depending on the context of usage.

- | | |
|---|--|
| (16) a. <i>abofra anieden-fo</i>
child bravery-NMLZ _[person]
‘a brave child’ | b. <i>abofra anieden-fo</i>
child haughtiness-NMLZ _[person]
‘a haughty child’ |
|---|--|

Thus the two different meanings of the expression in (16) are felicitous renditions of the same combination of base and affix depending on whether the attribute leads to the

child in question fighting off an attack on his/her parents ((16)a) or exhibiting insubordination/insolence toward the parents ((16)b).

Finally, it is worth noting that whatever property the construction expresses is expected to be true of the entity at the time of utterance. It could be an inherent property or one that develops over time. If the latter is the case, the development should have been over at the time of utterance.

8.4 The place of PANCs in the lexicon and grammar

The discussions in the preceding sections have been geared towards spelling out the basis for positing a separate construction for the class of nominals we are concerned with. The argument has been that these nominals may be regarded as constructions, conventionalized form-meaning pairs, primarily on the grounds that they display peculiarities of form and meaning. Their meanings are relatively independent of the meanings of the particular nouns and adjectives that fill the variable slots in the constructions because they do not follow compositionally from the meanings of those constituents. Hence, the personal attribute semantics is aptly construed as a holistic property of the construction. I have also observed that the nominals are potentially productive because of the variable slots. However, their productivity is restricted because of the stringent restrictions on the types of elements that can fill the open slots. I discuss the issue of productivity further below.

Cognizant of the constellation of regular and idiosyncratic properties that PANCs exhibit, the question I attempt to answer in this section is this: how does the grammar

encode our knowledge of PANCs? Jackendoff (2008: 14) has observed that the difficulty in dealing with constructions of this nature is the constructions' complex interweaving of regular and irregular properties. One could argue that if they are as idiosyncratic as claimed, then they rightly belong in the lexicon. That is right. But, what should the lexical entry contain and how should they be represented in the lexicon? If we just list the individual examples in the lexicon, we miss the facts about their shared properties.

For this we need a theory of grammar that “(i) recognizes meaningful constructions as theoretical entities; (ii) recognizes a continuum of regularity between words and rules [schemas]” (Jackendoff 2008: 8). This is the constructional view of grammar in which the lexicon includes specified syntactic structures matched with meaning. Goldberg and Jackendoff (2004: 532) argue that everything on the cline of grammatical phenomena from the totally general to the totally idiosyncratic “is to be stated in a common format, from the most particular, such as individual words, to the most general, such as principles for verb position, with many sub-regularities in between.” This way, there cannot be any principled divide between ‘lexicon’ and ‘grammar’.

In the rest of this section, I show that adopting this constructional view and positing a construction makes for an easy and insightful account of the properties of PANCs. The nominals “come alive”, as it were, because the constructionist perspective helps to reveal interesting properties that are specific to the nominals and their constituents that are left unaccounted for in a straightforward compounding analysis.

8.4.1 The proposed constructional account

As observed above, taking the three main constituents of the predicate adjective constructions into account, the internal structure of PANCs may be represented as (8), repeated here as (17), for convenience.

- (17) [[body part] + [TO_BE]_V + [physical property adjective]]

Again, based on the examples in (10), the internal structure of the individual instantiating nominals can be schematized simply as (18), which shows that the only constant element of the construction is the phonologically reduced form of the copular *yε*, realized as [-ɔ/-ɛ]. The other slots are variable.

- (18) a. [a- [koko]_N [ɔ] [duru]_A]_N ↔ ‘bravery’
 b. [[ani]_N [ɛ] [den]_A]_N ↔ ‘haughtiness’
 c. [a- [ho]_N [ɔ] [har]_A]_N ↔ ‘swiftness’
 d. [[aso]_N [ɔ] [den]_A]_N ↔ ‘stubbornness’
 e. [a- [ho]_N [ɔ] [den]_A]_N ↔ ‘strength’

To account for these properties of the construction, I posit a constructional schema with only the phonologically reduced form of the copular pre-specified, as in (19). This schema is an abstraction over the observed similarities among individual instances of the construction; a course-grained image of the set of structures it generalizes over.

- (19) [[N]ⁱ_{BODY PART} [ɔ/ɛ]^j [A]^k_{PHYSICAL PROPERTY}]_q¹⁰⁵

¹⁰⁵ I use a superscripted index where a subscripted semantic specification is likely to mask a subscript.

The schema in (19) is paired with a specification of the general meaning of the construction, as in (20), which states that whatever meaning is given to the whole construction (SEM^q) is true of the entity which possesses the body-part named by the constituent indexed ('i'). It could also be true of any entity that possesses a body-part like the one named in the first open slot. In other words, as noted above, the meanings of the nominals are attributes (e.g., *stubbornness*, *swiftness*, *strength*, etc.) and I assume that they are predicated of the possessor of the body-part in the first open slot. However, we cannot rule out the possibility of the nominal referring to any other entity in the universe of discourse, including non-human things, as we find with the price of commodities. See further §8.5.1.

(20) $<[[N]^i_{\text{BODY_PART}} [\sigma/\varepsilon]^j [A]^k_{\text{PHYS_PRPTY}}]^q \leftrightarrow [\text{SEM}^q \text{ predicated of possessor of } \text{SEM}^i]^q >$

The argument for such constructional schemas, as discussed in chapter 2, is that as speakers encounter utterances of a particular type over a period the pattern becomes engraved in their long term memory, so that units that share a structural pattern give rise to a schematic representation of that structure. Thus, constructional schemas are extracted from actual linguistic structures which coexist with the schema. For this reason, “the only difference between a schema and its instantiations lies in degrees of specificity” (Lampert & Lampert 2010: 38). This contrasts with symbolic word formation rules which only serve as instructions for the formation of words, some of which do not actually exist (cf. Barlow & Kemmer 2000: xxiii; Dąbrowska 2000; Evans & Green 2006: 546).

Schema (20) captures the essential shared properties of all the individual constructions, but not the prefix occurring before the noun in the first open slot in

some of the constructions. Those nouns that do not seem to have the vowel prefix do have initial vowel sounds of the same quality as the vowel prefix(es). To account for the prefix, I assume that each construction in (10) bears a vowel prefix that is realized as zero (or deleted) when the noun in the first open slot has an initial vowel that is identical in quality to the vowel prefix. This deletion under phonological identity is a case of haplology, “the eliminatory reduction of two identical sound sequences to one” (Hurch 2006: 720).

We have to revise (17) as (21) which states that each PANC has a prefix (realized as $\{a-/e-, \emptyset-\}$), a body-part noun, a phonologically reduced form of the copular ‘ye’ and a physical property adjective.

- (21) [prefix + [[body part] +[TO_BE_v] + [physical property adjective]]]

The constructional schema in (19) has to be modified accordingly to capture the prefixation, as described above. The modification will yield a new constructional schema that results from the *unification* of the schema in (19) and a prefixation schema, as shown in (22).

- (22)
$$\begin{array}{c} [\{a-/e-, \emptyset-\} [x]_N]_N \qquad \qquad [[N]_{\text{BODY PART}} [\emptyset/\varepsilon] [A]_{\text{PHYSICAL PROPERTY}}]_N \\ \diagdown \qquad \qquad \diagup \\ [\{a-/e-, \emptyset-\} [[N]_{\text{BODY PART}} [\emptyset/\varepsilon] [A]_{\text{PHYSICAL PROPERTY}}]_N]_N \end{array}$$

The mechanism at work in (22) is *template unification* (TU) which makes it possible to combine constructions into increasingly larger constructions (cf. Booij 2005a, 2007a, 2010d, 2010c). TU was introduced to account for the simultaneous application of two affixation processes, skipping any intermediate step(s), so that two independent

processes, none of which seems to be able to occur on its own, can apply simultaneously to form a multiply complex construction that can be said to have started a life of its own.¹⁰⁶

I assume that TU occurs freely to the extent that the properties of the unifying schemas do not conflict and is enhanced when one schema has an open slot, the constraints on which can be satisfied by the properties of the other schema. For example, in (22) the prefixation schema on the left has an open slot (or *elaboration site*, (Taylor 2002)) that is supposed to be filled by a noun, whilst the schema on the right-hand is specified to be a noun. Hence, in unifying them, the right-hand schema simply fills the open slot in the left-hand schema. The possibility of unifying constructions freely to form actual expressions, as long as they do not conflict, coupled with the existence of constructions with open slots makes it possible to capture Chomsky's (1957, 1965) intuitions about the creative potential of language.¹⁰⁷ The schema for PANCs (23) is a *constructional idiom*, a multi-word expression that is idiomatic in nature but not completely fixed since at least one position in the schema is lexically filled whilst other positions are left open (Jackendoff 1997a, 2002).

$$(23) <[\left\{ \begin{matrix} a \\ e \\ \emptyset \end{matrix} \right\} [[N]^i_{\text{BODY PART}} [\sigma/\varepsilon] [A]^j_{\text{PHYS_PRPTY}}]_{Nk}]_{Nq} \leftrightarrow [\text{SEM}^q \text{ predictd of poss. of SEM}^i]_q >$$

Taylor (2003: 224) observes that constructional idioms are similar to idioms like *by and large* which exhibit unusual syntax and therefore cannot be generated by regular

¹⁰⁶ TU also accounts for what Booij calls embedded productivity – the situation where verbal compounds of the type N-V in Germanic languages, although not productive on their own, gain considerably in productivity when they serve as the base of the rather productive process of synthetic compound formation (Booij 2005a: 128-129).

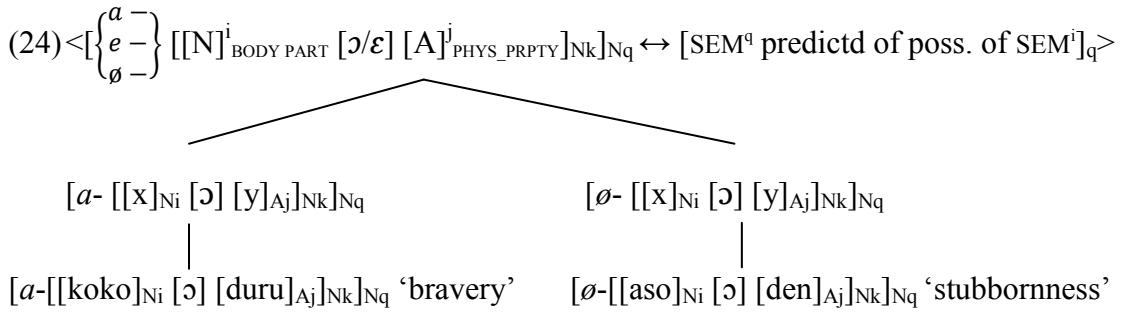
¹⁰⁷ As discussed in chapter 2, Booij has argued that TU does not lead to a complication of the grammar because the new template or schema is motivated by independently needed constructions in the language. However, it is clear that we cannot rule out the possibility of the new schema getting entrenched and serving as the only known schema to some speakers for forming the relevant instantiating construction.

phrase structure rules. He observes further that constructional idioms are productive, because different items can fill their open slots. In the case of PANCs, the lexically fixed position is filled by the phonologically reduced form of the copular (realized as [-ɔ/-ɛ]). The first of two available open slots is filled by a body-part noun and the second by a physical property adjective. These properties of the constructional idiom underscore the conventionality and potential productivity of the PANC. However, as will be shown below, the productivity of PANCs is restricted by a number of factors.

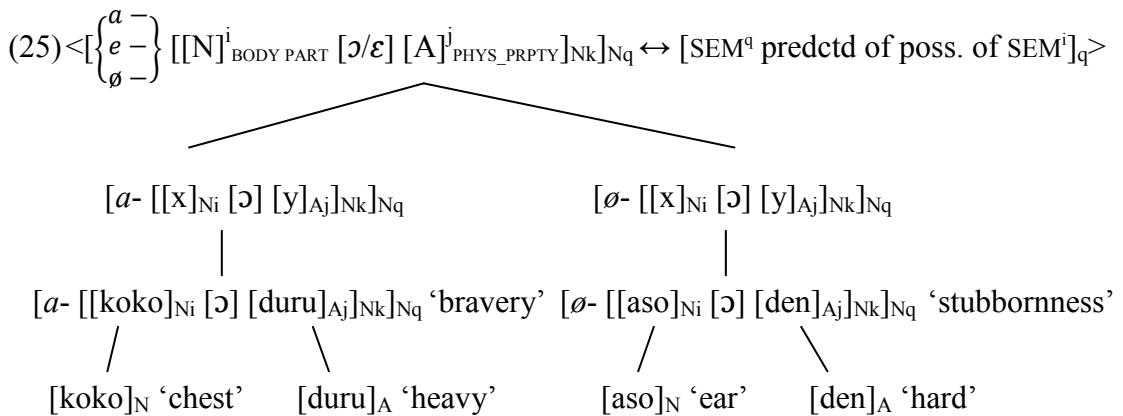
The relationship between the constructional idiom and the individual instantiating constructions is captured elegantly in the hierarchical lexicon assumed in CM. As discussed in chapter 2, the idea of a hierarchical lexicon suggests that there can be “intermediate schemas in between the individual words and the most abstract word formation schemas, which express generalizations about subsets of complex words of a certain type” (Booij 2007a: 24). In the hierarchical lexicon, “properties of the higher nodes are percolated to lower nodes, unless the lower node has a contradictory specification for the relevant property” (Booij 2009a: 206). This is the mechanism of default inheritance, by which the specific properties of the instantiating constructions override those of the dominating construction. Thus, the constructions inherit only their non-unique features from the dominating node.¹⁰⁸

I assume that two intermediate sub-schemas may be defined for the constructional idiom in (23). The prefix is overtly realized in one and realized as *ø* in the other. These two subschemas are instantiated by fully specified examples, as illustrated in (24) with the nominals *akokoduro* ‘bravery’ and *asoɔden* ‘stubbornness’.

¹⁰⁸ Discussing this issue relative to argument structure constructions, Goldberg (2006: 19-20) observes that “when considering instances of the same surface pattern involving different words, similarities should be attributed to the surface pattern and differences to the verbs and arguments involved.”



I observed in previous chapters that in CM, constructions are assumed to inherit properties from their constituents, as illustrated in (25) by means of a “part of” relation existing between constructions and constituents. The tree in (25) is, therefore, a *multiple inheritance* tree in which two types of relations obtain – ‘instantiation’, and ‘part of’. The nominals *akokoɔduro* and *asoɔden* are “instantiations” of the constructional idiom at the top of the tree whilst the lexemes *koko* & *duru* and *aso* & *den* form “part of” the nominals *akokoɔduro* and *asoɔden* respectively.



The question, however, is what kinds of properties do constructions inherit from their constituents? In discussing verb-internal compounds in chapters 5-7, I argued that the AS of the verb is retained in the nominal unless it is curtailed through the process I called AS suppression (chapter 7). Here, because the meaning of the construction is relatively independent of the meanings of their constituents, and the same can be said

about the tonal pattern of the construction, I assume that the construction mainly inherits the phonological string that fills the respective open slots in the construction.

8.5 On the productivity of PANCs

The discussion of the properties of PANCs in (§8.3 & 8.4) shows that they exhibit both productivity and conventionality. Their potential productivity stems from the fact that there are two open slots that may be filled by lexical items of the appropriate type and as I indicated above, I regard a construction as being productive, if it has open slots to be filled by constituents of the appropriate type. However, this productivity is also potentially restricted for a number of reasons.

The first reason is the restrictedness of the classes of words that can fill the open slots. As noted above, the noun that fills the first open slot must name a body-part whilst the second open slot must be filled by a physical property adjective. However, both classes of words are somewhat limited in number. For example, Dixon (2004: 4) observes that cross-linguistically the class of physical property adjectives is a small one. Akan is no exception.

In like manner, human body parts are potentially restricted first, because they are not infinite in number and second, because even the distinctions that are made in the categorization of the human body-parts are subject to culture-specific construal of relevance. As Evans and Levinson (2009: 431) observe, “[...] semantic systems may carve the world at quite different joints”. The literature on lexical typology shows this clearly (cf. Koptjevskaja-Tamm 2008; Koptjevskaja-Tamm; Vanhove & Koch 2007). For instance, whilst some languages distinguish between ‘arm’, ‘hand’ and ‘finger’

and have different lexical items for them, others do not make such distinctions. In Lavukaleve (Terrill 2006), there is only one term *fe* for leg/arm and no separate term for hand. Also, in Jahai (Burenhult 2006), considerable attention is paid to fine anatomical details but there is a conspicuous lack of labels for ‘higher-level’ categories. For example, there are terms like ‘*bliŋ* ‘upper arm’, *kayɔŋ* ‘elbow’ and *prber* ‘lower arm’, but none for *arm*. Again, there are terms like *blt?* ‘upper leg’, *kaltoŋ* ‘knee’, *laŋɔt* ‘hollow of the knee’ and *gor* ‘lower leg’, but none for *leg*. Table 24 shows inventories of some body-part terms in nine languages. The first six columns are from Koptjevskaja-Tamm (2008: 14). I give Akan examples below.

Table 24. Hand vs. arm, foot vs. leg, finger vs. toe in various languages

English	Italian	Rumanian	Estonian	Japanese	Russian	Jahai	Lao ¹⁰⁹	Lavukaleve
Hand	<i>mano</i>	<i>Mină</i>	<i>käsi</i>	<i>Te</i>	<i>ruka</i>	<i>Cyas</i>	<i>mùù2</i>	
Arm	<i>braccio</i>	<i>brat,</i>	<i>käsi(vars)</i>	<i>Ude</i>			<i>kheèn3</i>	<i>fe</i>
Foot	<i>piede</i>	<i>Picior</i>	<i>jalg</i>	<i>Ashi</i>	<i>noga</i>	<i>Can</i>	<i>tiin3</i>	<i>fe</i>
Leg	<i>gamba</i>						<i>khaa3</i>	<i>fe</i>
finger	<i>ditto</i>	<i>Deget</i>	<i>sōrm</i>	<i>Yubi</i>	<i>palec</i>	<i>Jari?</i>	<i>niew4</i>	<i>soka</i>
Toe			<i>varvas</i>				<i>niw4</i>	<i>soka</i>

The point here is that the productivity of PANCs is directly linked to the lexical distinctions that are made in the categorization of body-parts in Akan, as well as the sheer number of physical property adjectives available to fill the open slots in the constructional idiom. Thus, PANCs can only be as productive as the number of eligible body-parts and physical property adjectives in Akan.

The second reason for the restricted-productivity of PANCs is that within the restricted classes of words that may fill the open slots in the constructional idiom, not every member can/does occur, thus restricting the productivity of the construction further. Discussing constructional idioms like *One more beer and I'm leaving, Another*

¹⁰⁹ See Enfield (2006)

botch-up like that and you're fired, etc., Taylor (2003: 224) observes that “[i]n principle, any lexical material which is compatible with the semantics of the construction can be inserted into it”. This free insertion of semantically compatible lexical items into constructional idioms does not occur in the case of PANCs. As noted above, not all body-parts can/do occur as constituents of PANCs, hence there are numerous accidental/systematic gaps in this class of nominals, as shown in (26).

(26) <i>We can have :</i>		<i>but not:</i>	
a.	<i>ahɔɔfε</i>	‘beauty’	<i>ahɔɔtan</i> ‘ugliness’
b.	<i>anisoɔhyew</i>	‘intrepidness’	<i>anisoɔnyunu</i> ?
c.	<i>asoɔhyew</i>	‘being in trouble’	<i>asoɔnyunu</i> ?
d.	<i>anoɔden</i>	‘loudmouthed’	<i>anoɔmmerɛw</i> ?
e.	<i>animuohare</i>	‘flippancy’	<i>animuodu(ro)</i> ?
f.	<i>ahɔɔhare</i>	‘swiftness’	<i>ahɔɔnyaa/ahɔɔnwaa</i> ¹¹⁰ ‘slowness’

There is no reason why these nominals should not exist, but similar gaps are found in constructions in other languages as well. For example, as Jackendoff (2008) observes, the English *N by N* construction with the meaning ‘succession’ is instantiated by *little by little*, but the expected parallel – *more by more* – does not exist. Instead, English has *more and more*. The natural interpretation of this state of affairs will be that the latter blocks the former. I will argue below that there is a similar kind of blocking that restricts the productivity of PANCs.

Apart from those body-parts that can occur in PANCs but do exhibit accidental gaps, there are body-parts, including those listed in (27), which never occur in PANCs.

¹¹⁰ This noun seems to be type-blocked by *nwaa* ‘slow’. In fact, *nwaa* does not occur in a predicate adjective construction where the subject a body part. Thus, technically we may not expect the formation of a PANC with *nwaa* in it.

(27)	<i>afon</i>	'cheek'	<i>ehwen</i>	'nose'	<i>akoma</i>	'heart',
	<i>n̩sa</i>	'hand'	<i>abɔdwe</i>	'chin'	<i>anofamfa</i>	'lip'
	<i>nan</i>	'foot'	<i>ntw̩r</i>	'leg'	<i>t̩kyerema</i>	'tongue'

(Balmer & Grant 1929: 51)

Here again, English exhibits similar gaps. The *N to N* construction expresses juxtaposition of similar (body-)parts, e.g., *hand to hand*, *face to face*, *cheek to cheek*, etc. Yet, certain body-parts do not seem to fit into the construction at all or only do so grudgingly, as the examples in (28) show. These are unattested but not necessarily unacceptable.

(28) <i>We have :</i>	<i>but not:</i>
toe to toe	<i>foot to foot</i>
hand to hand	<i>finger to finger</i>
shoulder to shoulder	<i>arm to arm</i>
back to back	<i>front to front</i>
cheek to cheek	<i>lip to lip</i>

The foregoing gives the impression that the selection of body-part nouns that occur in PANCs is arbitrary. However, that is not wholly true. Whereas the absence of certain nouns from PANCs may be accidental, the selection of those nouns that occur in PANCs seems very well-motivated. It seems to me that the body-parts that occur in PANCs tend to have specific functions or are deemed salient in the mix of organs of the body needed to perform particular bodily functions (auditory, visual and haptic). For example, the part of the body which occurs in the construction that expresses '(dis)obedience' ((10)f) is *aso(wa)* 'ear'. This seems well-motivated because the entity about which the attribute named by the construction is predicated must first receive the message (traditionally, through hearing) before it can be acted upon, in being

(dis)obeyed, as the case may be. This is discussed further in §8.7.1.

8.5.1 The case of commodity prices that instantiate PANCs

One good measure of productivity of a process is the extent to which it applies to different “inputs” (cf. Aronoff 1976). As the discussion so far shows, the nouns that fill the first open slot are human body-parts and the constructions generally refer to properties of human entities. Therefore, when one hears *asoɔden* ‘disobedience /stubbornness’ the first inclination will be to interpret it as referring to a human being. However, we observe a minimal extension of the constructional schema to the formation of nouns that refer to the properties of non-human entities, so that nouns which do not name body-parts may occur in the first open slot. The value of commodities (dear or otherwise) is expressed using this construction, where instead of a body-part the noun that unifies with the first open slot refers to price of the item on sale. Consider the formation of the nouns *aboođen*, ‘dearness’ and *aboommere* ‘inexpensiveness’ in (29) and the constructional representation in (30).

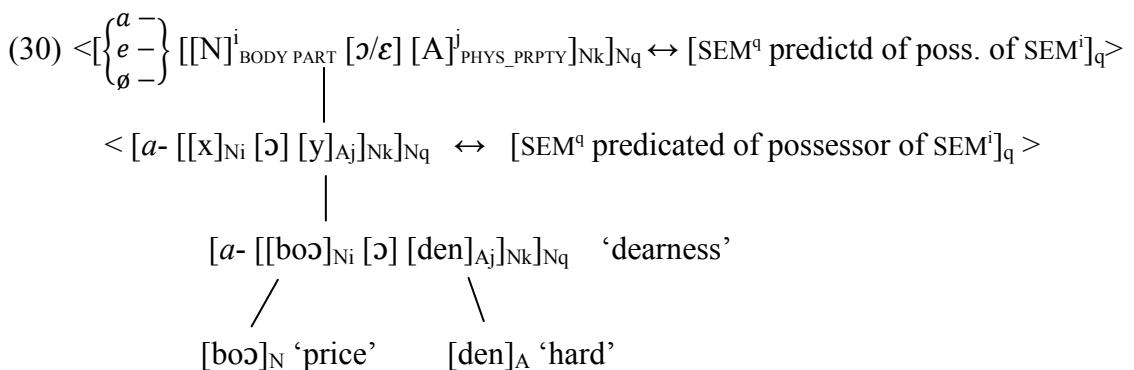
- (29) a. *Ne bo¹¹¹ ye den* => *aboođen*
3SGPOSS price/stone be hard
'It is expensive (lit. its price/stone is hard)'
- b. *Ne bo ye mmere* => *aboommere*
3SGPOSS price/stone be soft
'It is inexpensive (lit. its price/stone is soft).'¹¹²

The occurrence of the non-body-part noun in the first open slot in (29) could be seen as a case of coercion. This may be understood as the altering of the lexical semantic

¹¹¹ This word has its roots in the weights that vendors put at one end of a scale as a standard for measuring commodities. So the *stone* became a metaphor for the *value* (the price) of the commodity.

¹¹² It seems the conceptual metaphor HARDNESS IS DEARNESS underpins the meaning of this pair of nouns.

properties of an item (e.g., through the interpolation of an extra meaning component (Jackendoff 1997a)), to enrich its semantics, so that it can function in a particular syntactic context (Clark & Karmiloff-Smith 1993). The absence of any formal change in the noun could be explained by the fact that, according to De Swart (1998 360), coercion is syntactically and morphologically invisible because “it is governed by implicit contextual reinterpretation mechanisms triggered by the need to resolve conflicts”. Thus, *bo* ‘price (of an item)’ may be thought of as being reinterpreted as a “body part” (cf. Pustejovsky 1991).



The alternative constructional view would be that the meaning of the word in that context is a construction-specific property. In other words, any part of the construction has whatever meaning it has as a result of its being part of that construction, since the individual constituent may not ordinarily occur with that meaning outside of the construction.

Riehemann (2001) discusses this constructional view in relation to the meaning of idiomatic constructions. She argues that words within idioms do not have an existence with the particular idiom-specific meaning outside of the idiomatic construction. Her arguments can be summed up this way: (a) words have meanings, (b) words may have specific meanings (idiomatic meanings) only when they occur in particular

configurations; outside of the idiomatic construction, the word cannot mean anything beyond its denotative meaning. For example, *beans* can mean secret only in the context of the idiom *spill the beans*. This special meaning is not specified in the lexical entry because it is not a property of *beans* but that of the construction in which it occurs. If the idiomatic meaning of the word is made part of its lexical entry, nothing will stop that meaning from showing up in other non-idiomatic expressions.

In other words, an element may occur in a construction either on account of its inherent properties or on account of it being licensed by the construction itself. I believe that in this particular case, the construction coerces a conceptualization of the relation between the commodity and its price as being of the same inalienable nature as that between a body-part and the possessor of the body-part.

8.5.2 On productivity and the status of the constructional idiom

Given the fact that PANCs have very restricted productivity, as the foregoing discussion shows, one may question the usefulness of positing a constructional schema for them. Mos (2010), for example, argues that a constructional schema may be posited only when it can be used productively for the formation of other constructions. However, positing the constructional schema can be justified first, on the basis of the view of productivity assumed here. I observed in Chapter 3 that I will consider a construction to be productive to the extent that it has at least one variable open slot that can be filled by items with matching features. This productivity is confirmed if we find well-formed instantiations of the schemas. By this stance, therefore, positing the constructional schema for PANCs is justified because both conditions are met.

Secondly, positing the constructional schema can be justified on the basis of the nature and function of such schemas. In chapter two, I discussed the fact that schemas are either source-oriented or product-oriented (Bybee & Moder 1983; Bybee & Slobin 1982; Zager 1980). Source-oriented schemas are generalizations over pairs of basic and derived forms. They are, therefore, like generative rules which take a base and either apply a rule or attach another morpheme to derive a complex unit.

Product-oriented schemas on the other hand are generalizations over sets of complex forms that show the shared features of such classes of complex words without stipulating the operation involved in their formation. Thus, product-oriented schemas are like output conditions in phonology which may occur within a specific domain and not necessarily be applicable beyond it (cf. Katamba 1977). Membership of the class of complex words that instantiate product-oriented schemas is based purely on family resemblance. As Bybee puts it, “[s]ets of words having similar patterns of semantic and phonological connections reinforce one another and create emergent generalizations described as schemas” (2007: 171).

In terms of function, schemas primarily serve to indicate what the shared properties of a group of related complex units are, and only secondarily serve as a pattern for forming new constructions (Booij 2002a, 2010d, 2010c). These are the sanctioning and the enabling functions of schemas (cf. Taylor 2002).

I regard the constructional schema for PANCs (23) as serving primarily to show what the shared properties of the group of constructions are and only secondarily, as a model for forming new forms. Thus, the fact that only a limited number of PANCs occur in my dataset does not undermine the thinking behind my positing the

constructional schema.

I believe that the restricted productivity of PANCs, is a property to be explained and I have given two reasons above which are consistent with Bybee's (2007: 171) observation that the likelihood of a schema being extended to the formation of new items is directly dependent upon two factors – the defining properties of the schema and the strength of the schema.

Regarding the defining properties of the schema, Bybee argues that a pattern cannot attain full productivity if there are restrictions – phonological, semantic or morphological on its applicability. In other words, the productivity of a schema is directly linked with its openness, so that the fewer restrictions there are on the schema, the more open the schema is. The strength of the schemas derives from the number of items which reinforce it and reinforcement also depends on the number of structures that instantiate the schema. Thus, frequency is a major determinant of productivity (cf. Bybee 2007: 173).

Given the restrictions on the classes of nouns and adjectives that can fill the open slots in the schema and the fact that not every member of the restricted class of words does occur in the open slot, as discussed in §8.5, we have found the factors responsible for the restricted productivity of PANC.

However, it seems in addition to the two factors, the productivity of the postulated constructional idiom is restricted by competition from another constructional schema (N-A nominal compounding schema (31)) which seems to be winning the competition because of its relative transparency. As discussed in §5.5.2, out of the collection of the

1,000 complex nominals, 39 (3.9%) are N-A compounds, while only 14 (1.4%) are PANCs. Statistically, this is a highly significant difference as shown by the chi-squared test; $p = 0.0005947$ ($df = 1$, $\chi^2 = 11.7925$).

$$(31) \quad [[N]_i [A]_j]_{Ni} \leftrightarrow [\text{SEM}_i \text{ with a relation R to SEM}_j]_i$$

There are two pieces of evidence for the claim that competition from N-A compounding seems to restrict the productivity of PANCs. First, there are many predicate adjective constructions which when nominalized come out as N-A compounds rather than PANCs because the phonologically reduced form of the copula does not occur between the noun and the adjective. In discussing the difference between (14) and (15) which is repeated here as (32) and (33), for convenience, I indicated that when any other type of adjective, colour or dimension, occurs in a predicate adjective construction, compounding seems to be the only means of forming a nominal out on them. Thus, N-A compounding is a more general pattern and definitely preferred nominalization strategy because of its relative transparency.

(32)	a.	<i>*itsir-ɔ-kɛse</i> head-SE-big 'big head'	b.	<i>*enyim-ɔ-sakoo</i> face-SE-pale 'pale face'
(33)	a.	<i>itsir-kɛse</i> head-big 'big head'	b.	<i>enyim-sakoo</i> face-pale 'pale face'

Second, there are cases where predicate adjective constructions that fits the structural description of nominals that instantiate PANCs yield either PANCs or simple N-A compounds. Hence, for some predicate adjective constructions, the Asante and Akuapem dialects have PANCs formed but the Fante dialect has N-A compounds

instead or switches between PANCs and N-A compounds. This is illustrated in (34).

(34)	Asante/Akuapem	Fante
a.	<i>a-koko-ɔ-dur(o)</i> NMLZ-chest-SE-heavy 'bravery/courage'	<i>a-koko-dur</i> NMLZ-chest-heavy 'bravery/courage'
b.	<i>anu-o-nyam</i> face-SE-glory 'glory'	<i>enyim-nyam</i> face-glory 'glory'

In this section I have explained the restricted productivity of PANCs. I have shown that PANCs are not very productive because of the restrictions on the elements that can occur as its constituents. This is consistent with Bybee's (2007: 171) observation that "[i]f the defining properties of the schema are very specific, the schema will be restricted in its application to new forms and result in lower productivity. If the schema is very open, placing few restrictions on the items to which it can apply, its productivity will be greater." I also showed that the productivity is affected negatively by competition from [N-A]_N, a more transparent noun-forming schema.

8.6 PANCs and the architecture of the grammar

As noted above, one of our concerns in the present dissertation is the nature of the architecture of the grammar. As noted in chapter 2, for many years, from the middle of the 1950s (cf. Chomsky 1957, 1965, 1981) the view that held sway was that the components of the grammar are encapsulated in modules that are strictly ordered in such a way that they only interact at some well-defined designated points in the grammar. That is, the output of one component (the lexicon) serves as the input to the other (the grammar/syntax). From the 1980s (cf. Fillmore; Kay & O'Connor 1988;

Kay & Fillmore 1999; Lakoff 1987; Langacker 1987) a new view (the constructional view) that rejects this rigid modularization of the grammar has become very popular. In between these two and developing alongside them are many other views including LFG (Bresnan 1982, 2001) which accept multiple structures for the grammar with each coding only some aspect of the properties of grammar and Head-driven Phrase Structure Grammar – HPSG (Pollard & Sag 1994; Sag & Wasow 1999). In this section, I will discuss how the properties of PANCs lead us naturally to adopt the constructional view of the grammar. Before then, I will briefly discuss two alternative views to the constructional view and how they might treat PANCs.

8.6.1 Considering alternatives to the constructional account

The discussions above have shown that PANCs are motivated by the properties of both a syntactic construction and an affixation pattern. This means that the constructions straddle morphology and syntax. This pattern of interaction between morphology and syntax in the formation of linguistic constructs is quite common. We find similar patterns in the formation of the so-called phrasal compounds in which a phrase serves as the non-head constituent of a compound. For such compounds, it is acknowledged that the most efficient way of accounting for them, especially in a modular view of the architecture of the grammar, is to derive them in a single module of the grammar – lexicon or syntax. Hence, phrasal compounds served as one of the illustrative examples for Lieber's (1992) strictly syntactic approach to word-formation in which morphology simply does not exist.

Citing examples like *Charles and Di syndrome*, and *pipe and slipper husband*, and the challenge they pose to the strongest version of the lexicalist hypothesis (Di Sciullo &

Williams 1987; Lieber 1980; Selkirk 1982; Williams 1981), Lieber (1992: 14) argued that:

“phrasal compounds call into question the strict separation of components countenanced by the lexicalist theories of morphology ... any theory which acknowledges that compounds such as those [...] above] can be generated productively must allow for some degree of interaction between morphology and syntax. Rules of word formation must at least be allowed to refer to phrasal categories which are presumably generated as part of the syntax.”

Somehow, whilst arguing against the strict version of the lexicalist hypothesis, Lieber defends an approach to word formation that does away completely with morphology. She calls it “a theory of word formation based on the premise that there is no separate component of morphology in the grammar” (Lieber 1992: 1). She also argues that “[a] truly simple theory of morphology would be one in which nothing at all needed to be added to the theory of syntax in order to account for the construction of words”

Faced with the same phrasal compounds, Bresnan and Mchombo (1995: 192ff), working from a purely lexicalist view of word formation, agreed with Spencer (1991: 414-417), in assuming the prior lexicalization of the phrasal constituents of phrasal compounds. In other words, lexicalists argue that the phrasal constituents of such compounds are lexicalized and, thus, no longer transparent and its internal structure inconsequential.

Deriving constructions like PANCs solely in the syntax means that we have to assume that an affixation process occurs in the syntax and that an affix is able to occur on its own in the syntax (Nikitina 2008). The problem is that there does not seem to me any motivation for positing a syntactic affix since affixation is a purely lexical process.

The strictly lexicalist approach will also not work for PANCs because the internal structure must be sufficiently “active” for the verb to be recognized and realized as a vowel and for us to be able to tell the entity about which the meaning of the PANC is predicted. This is accessible only via its relationship to the noun in the subject position.

Again, dealing with the semantics of PANCs in either approach will not be straightforward. If we followed Lieber’s approach in accounting for the formation of PANCs, we will also have to assume that the construction began with regular compositional semantics. This way, the present partial compositional semantics of the nominal could be said to be the result of subsequent semantic drift or the operation of some meaning extension mechanism like metaphor, metonymy or inference.

For the lexicalist approach (Bresnan & Mchombo 1995), where the construction will be assumed to be lexicalized, each instantiation could be seen as listed together with its meaning. However, listing each construction as a separate lexicalized form with a meaning that is unrelated to the others will miss the fact that all the constructions share the property that their referent is not named in the construction itself, but has a specific relation with the constituent in subject position. This meaning cannot be derived compositionally from those of the constituents.

We could assume that it is the pattern – [[N]_{BODY-PART} [V]_{TO_BE} [A]_{A PHYSICAL-PROPERTY}]_N itself which has lexicalized or grammaticalized (or better still, *constructionalized*) because of the specialized meaning. But, that assumption brings us right where we started; that the nominals should be recognized as constituting constructions on their own – particular forms matched with particular meanings.

My view is that the main problem with the non-constructional alternatives is the fact that they are embedded in a view of the grammar in which derivations are done either entirely syntactically or entirely pre-syntactically. However, the properties of PANCs, as described in the present chapter, portray a completely different picture of what the conception of the architecture of the grammar should be, if we are to properly situate such constructions – the constructional view.

8.6.2 The constructional account

Before I continue, it is worth recalling that according to Jackendoff (2008: 16) the constructional view:

- (i) allows, in addition to individual words and their meanings, the lexical listing of pieces of syntax with matching meanings called the constructions of the language;
- (ii) makes no principled distinction between words and rules, so that a lexical entry is more word-like to the extent that it is fully specified and more rule-like to the extent that it contains variables that have to be filled in by other items (e.g., $V \rightarrow V-NP$), and
- (iii) lexical entries are arranged in an inheritance hierarchy, so that commonalities or redundancy among words and constructions are captured by entries at a higher level in the hierarchy

Given this, the question we need to ask is: how does the nature of PANCs lead us to adopt the constructional view of the architecture of the grammar? First, the fact that typical morphological and syntactic constructions formally co-motivate PANCs means that they straddle morphology and syntax, and so, the most economical way of dealing with them, is to consider them as belonging together in one “component” of the

grammar. However, not in the sense of the modular view, where all constructions are portrayed as belonging in the lexicon, narrowly construed, with the predicate adjective construction regarded as lexicalized (Bresnan & Mchombo 1995; Spencer 1991) or as derived syntactically, including the affixation patterns (Lieber 1992).

The way to go is to acknowledge that the motivating constructions belong together somehow, in a way that makes combining them to form more complex structure effortless. That is, they belong together in the lexicon but not as narrowly conceived in the modular view of grammar. Rather, it is the lexicon broadly construed – the constructicon (Jurafsky 1992) – the repository not only of irregular and idiosyncratic forms, but also of regular patterns, to the extent that they are frequent or assumed to be part of the knowledge of competent speakers of the language (cf. Bybee 2007; Goldberg 2006; Jackendoff 2009b; Langacker 1987).

Thus, the properties of PANCs need a view of the grammar which assumes a continuum of grammatical constructions: morphological, syntactic, regular, irregular or sub-regular, and allows the lexical licensing of forms larger than X^0 , allowing into the lexicon all sorts of fixed expressions – verb-particle constructions, idioms, clichés and quotations (Jackendoff 1997a: 163). This listing of word-sized, sub-word-sized, and larger-than-word-sized structures in the lexicon blurs the boundary between “lexicon” and “rules of grammar”. This means that the constructions as well as their constituents will occur together in one “component”, sharing various kinds of relations, at the very least, instantiation and part-of as assumed in CM. This allows for constructions to be combined effortlessly into progressively more complex constructions. This is what calls for the constructional view.

Secondly, the partial-compositional semantics of PANCs suggests that they have to be assumed to be listed in the lexicon. Jackendoff (1997a: 163) observes that in productive syntactic composition, the meaning of a phrase is a rule-governed function of the meanings of its parts. However, when a syntactic phrase is lexically listed, there is no need to build it up semantically from its parts because the meaning is already listed as well. Thus, just by accepting the constructional view that the lexicon can contain structures of all kinds of internal complexity, we deal with the challenge of accounting for the largely partial compositional semantics of PANC by simply specifying the known/extra-compositional meaning of the construction in the lexicon. We do not have to deny that the internal structure of the construct is still active, contra the lexicalist position (Bresnan & Mchombo 1995).

Thirdly, Jackendoff (1997a: 132) observes that for semi-productive morphology which predicts the possibility but not the existence of forms (and need not completely predict their meaning), it is better to account for them by lexical rules than by principles of free combination. I interpret “semi-productive” to mean *not-fully-productive* and “lexical rules” to mean *schema* which shows how new constructs may be formed but does not necessarily predict the existing of the form. Thus, aside from their quirky semantics, and their morphosyntactic makeup, PANCs have to be assumed to be listed in the lexicon because of their restricted productivity, as discussed above. This is another reason for adopting the constructional view.

At this point we may answer the questions of what the properties of PANCs reveal about the interaction between morphology and syntax. I have shown above that the properties of PANCs straddle morphology and syntax. This means that the properties of PANCs speak for a view of the grammar in which morphological and syntactic

constructs interact freely and combine freely in various ways to form more complex constructions. This is contrary to the modular view of the grammar which obtains in mainstream generative grammar in its various incarnations, from *syntactic structure* (Chomsky 1957) to the *minimalist programme* (Chomsky 1993, 1995), with its strict ordering of the modules of the grammar (Jackendoff 1997a).

8.7 A tentative semantic classification of PANCs

Nominals may be classified based on diverse criteria and PANCs are no exception. Based on their semantic properties, PANCs may be grouped into four tentative classes – two major classes and two minor ones, one of which is a one-member class, containing a lexical orphan. The first ((35)a) expresses the physical attribute of the possessor. The second ((35)b) expresses attitude or human propensity. The third expresses value ((35)c), while the outlier in the forth class ((35)d) expresses emotional disposition.

(35) a. Physical attribute (appearance)

- i. *ahoo̡fe* ‘beauty’
- ii. *ahoo̡den* ‘strength’
- iii. *ahoo̡har* ‘swiftness (e.g., of movement)
- iv. *animuonyam* ‘glory’

b. Attitude/habit (Human propensity)

- i. *asoɔden* ‘stubbornness/disobedience’
- ii. *asoɔmmerew* ‘flexibility/pliability/malleability’
- iii. *anieden* ‘haughtiness’
- iv. *atirimuɔden* ‘wickedness’
- v. *anisoshhyew* ‘intrepidness’
- vi. *akokooduro* ‘boldness/courage’
- vii. *animuɔhare* ‘flippancy/frivolity’

c. Value

- v. *abooden* ‘dearness’
- vi. *aboomerew* ‘cheap (not expensive)’

d. Emotional disposition

- i. *asoshyew* ‘emotional strain’

It is not totally clear to me at this stage whether these classes exhibit any more internal semantic coherence (shown by shared semantic properties) beyond the broad categories (physical property, attitude or human propensity, value and emotional disposition) under which the nominals are placed. It is again not clear to me whether members of the various classes will have particular syntactic preferences in terms of adjacency or restriction on what morphological operations they may undergo. For example, even though I mentioned above (§8.3.1) that PANCs may undergo further derivation by the suffixation of *-fɔɔ*, yet this is true of the members of the two major classes of PANCs in ((35)a-b) but not the two other classes of PANCs in ((35)c-d). Further research should reveal any additional class-specific properties.

I observed above that the productivity of PANCs is linked to the number and kinds of distinctions that are thought to be relevant in the categorization of body-parts and that it is subject to construal. I will explain that presently. For now, it is worth noting that the body-part nouns involved in the formation of the nouns in the two main classes ((35)a&b) seem to be associated with particular sections of the body. In other words, the nouns in the two classes profile slightly different parts of the body with the base or domains of the profiled body-part changing for members of different classes. For example, for the nouns in the physical attribute class, the body-part nouns involved tend to refer to broad areas of the exterior of the human frame, including *ho* ‘skin/exterior’ and *anim* ‘face’.

I classify these profiled areas of the body as broad because they also have other organs situated thereon. For example, the profiled body-part *anim* ‘face’ in *animuonyam* ‘glory’ carries other body-parts like *ano* ‘mouth’ and *ani* ‘eye’, which may also form part of PANCs on their own. The body-part nouns involved in the formation of the nominals that are classified as attitude/habit (human propensity) generally profile specific parts of the body, such as *ani* ‘eye’ as against *anim* ‘face’, *tiri-mu* ‘inside the head’ (lit. head-in) as against *tiri* ‘head’.

8.7.1 Construal perspectives on the classes of PANCs

A basic claim of cognitive linguistics is that semantics is conceptualization. As Croft and Cruse (2004: 40) put it, “[a]ll aspects of grammatical expression of a situation involve conceptualization in one way or another”. This is the “conceptual” or “ideational” view of language (Chafe 1970), and is premised on the view that meaning is a mental phenomenon which must be described with reference to cognitive processing (Langacker 1987: 97). Thus, Cognitive linguists hold the view that the language system in its synchronic form and the diachronic processes that has brought it about is fundamentally determined by the language user’s cognitive abilities (Heyvaert 2009: 234).¹¹³

In other words, meaning and the organization of the grammar depends to a large extent, on the subjective viewpoints that people bring to the conversation about the world around them and how it influences the way they carve out and present aspects of the world to themselves and their experience of the world to their interlocutors. Taylor (2003: xii) observes that “language is an object of categorization” but, the

¹¹³ Of course, it has to be pointed out that language-internal factors (e.g. co-articulation) and sociolinguistic factors (e.g. language contact) also influence language change.

categories we end up with depends on the “perspective” or “point of view” of the person doing the categorization. This is called construal and it refers to the fact that there are different ways of viewing particular events (Verhagen 2007: 48) or, as Langacker (2007: 435) puts it, “[c]onstrual is our multifaceted capacity to conceive and portray the same situation in alternate ways.”

Construal operations were originally categorized into three: *selection*, *perspective* and *abstraction* (Langacker 1987: 116-137) and latter reclassified into four: *specificity*, *prominence*, *perspective* and *dynamicity* (Langacker 2007: 435). Verhagen (2007: 53-54) characterizes them as follows: *specificity* (previously, *abstraction*) “relates to our ability to establish commonalities between distinct phenomena and abstracting away from differences, and thus to organize concepts into categories”. *Prominence* comprises figure/ground phenomena which used to be part of perspective and *selection* which “concerns language users’ capacity to selectively attend to some facets of a conceptualization and ignoring others”. *Perspective* deals with linguistic manifestations of the position from which a situation is viewed, and is divided into three subtypes: (i) Viewpoint, (ii) Deixis, and (iii) Subjectivity/Objectivity. Finally, *dynamicity* “concerns the development of a conceptualization through processing time (rather than through conceived time)”.¹¹⁴

I would like to claim that the situation where a specific part of the body is focused on (i.e., profiled), either in broad terms or in specific detail, is a matter of construal and the relevant construal operation here is prominence, specifically, selection. That is,

¹¹⁴ Dynamicity is assumed to be connected to the inherent temporal nature of linguistic utterances, so that, presenting elements of a conceptualization in a different order results in differences of meaning. However, “a dynamic, sequential conceptualization may also result from the application of a dynamic concept to an object of conceptualization that is not inherently dynamic itself (as in The road winds through the valley)” (Verhagen 2007: 54).

specific parts of the body are profiled depending on their perceived usefulness to the expression of the intended meaning, even if its specific meaning does not become part of the meaning of the whole. In other words different facets of the body are brought into perspective on occasion and it seems to me that clear motivation can be found for the choice of focus in the selection of the body-part that forms the basis for the idiomatic expression that underpins the formation of the nominal.

Thus, as argued above (§8.5), those specific body-parts focused on are assumed to be the seat of some specific emotions or bodily function that is important for or in bringing about the particular attribute. For example, *tiri mu* ‘inside the head’ which occurs in the formation of the word *atirimuoden* ‘wickedness’ may be seen as the location of evil scheming that potentially results in *wickedness*. The body part may also be construed as the location of a particular organ of the body that is important in bringing about some activity. For example, *akoko* ‘chest’, which occurs in *akokoduro* ‘boldness/courage’ may be construed as the covering (metaphor) for the heart which is deemed salient to the mix of activities and emotions that underpin the attitude – *boldness/courage*.

It is generally accepted that most concepts presuppose other concepts and cannot be adequately defined without making either implicit or explicit reference to the presupposed concept (cf. Langacker 1987: 147). For example, it is not possible to talk about the concept KNUCKLE without making reference to the finger. Hence, the meanings of linguistic expressions are said to be context-dependent. A context for the characterization of a semantic unit is called its domain. These domains are cognitive entities, including mental expression of representational spaces, concepts or conceptual complexes (cf. Croft & Cruse 2004; Langacker 1987).

We can say that the two main classes of PANCs have different body-parts as their domains. But there are nouns in the two classes that have the same body-part as their domain, differing only in perspective (and the adjective that fills the second open slot). The fact that the same base supports different profiled concepts is taken to be a defining property of domains; Croft and Cruse's (2004: 15) definition of a domain as a semantic structure that functions as the base for at least one concept profile.

Again, the two classes support the view that a profiled concept can also serve as the base for another profiled concept. This is a well-known property of language which results from human conceptualization. As Taylor (1989: 84) notes, " [i]n principle, any conceptualization or knowledge configuration, no matter how simple or complex, can serve as the cognitive domain for the characterization of meanings". This shows that what is profiled and what is taken to be the domain is a construal operation (Croft & Cruse 2004; Langacker 1987; Verhagen 2007).

8.8 Conclusion

In this chapter, I have introduced and discussed a class of nominals in Akan that had previously been treated as simple compounds. I have shown that the nominals have properties, including their non-transparency that make them well suited to constructional analysis. I posited a constructional idiom in which the reduced form of the copular, realized as [ɔ/ɛ], is pre-specified as a constructional property.

Before presenting the constructional account, I discussed the properties of the individual constituents as a way of motivating the constructional analysis and showed that the construction we are concerned with is not an island because it is motivated by

other independently needed constructions in the language – predicate adjective construction and a prefixation construction. This, I argued, is consistent with Goldberg and van der Auwera's (2012) observation that cases of constructions motivating other constructions is indicative of the fact that a given language is a system and not an idiosyncratic list of factoids.

I have shown that PANCs have restricted productivity for three main reasons: (i) the limited number of candidates for the open slot, (ii) the fact that not all elements in the set of possible constituents do occur and (iii) the fact that there is competition between PANCs and N-A compounding for nominalizing the same set of constituent.

Finally, I have attempted a very course-grained classification of PANCs and discussed what I believe to be the cognitive considerations that underpin the selection of nominals to occur as constituents in the two major classes of PANCs. I believe that with a larger sample we will be able to see more significant patterns so as to refine the tentative classification of PANCs.

9 SUMMARY AND CONCLUSION

9.1 Introduction

The principal motivation for the present study was to find out the full range of attested CNs in Akan, to investigate their structure and formation and to find out what their structure and formation revealed about the proper characterization of the interaction between morphology and syntax and the architecture of the grammar. In this chapter I summarize the main points of the various chapters, present what we have achieved and suggest areas for future work.

9.2 Summary of the chapters

In chapter one, I introduced the subject matter, drawing attention to the fact that Akan CNs exhibit regular, sub-regular and downright irregular properties. These are properties which usually do not fit comfortably with morpheme-based approaches to morphology. Yet previous accounts of the properties of Akan CNs have been morpheme-based, assuming that all the properties of a CN can be derived from the properties of its constituents. Thus, I argued that to account fully for the range of CNs in Akan, we need a framework that allows for the expression of holistic properties of CNs.

In chapter two, I presented the conceptual framework for this study – CM. Before that I presented a quick survey of the concept of construction and other key notions of

CxG. I also discussed various models of morphology. I showed that morpheme-based models require form-meaning biuniqueness. However, there are many deviations from the expected biuniqueness which make the morpheme-based model ill-suited to the kind of data we need to account for in the present study. I also discuss non-morpheme-based models of which the constructional approach forms a part. Zeroing in on the constructional approaches, I showed that all of them allow for the expression of holistic properties of morphological constructs and so any of them could be adopted for our present purposes. However, I opted for Booij's version (e.g. Booij 2010) because it employs the most accessible formalism.

In chapter three I discussed how I compiled the dataset for the present study. I showed that the 1000 CNs in the dataset could be grouped into four based on the morphosyntactic processes employed. Doing that showed that affix-derived CNs had the highest frequency followed by compounds. I grouped the compounds based on the form class of the constituents and the presence and position of a head element. This yielded many different classes which are discussed in chapters five to seven.

Because the majority of the analysis chapters are on compounding, in chapter four, I discuss general issues in the study of compounding. I discussed definition, classification, headedness and meaning which receives the most attention. I show that there are two competing views on how to account for the meaning of the compounds. They are Lees's solution and Downing's solution (Spencer 2011). The former makes available a smallish set of predicates which mediate between the constituents of the compound and underlie their interpretation. The latter argues that there is only an underspecified relation between the constituents of the compounds represented simply as **R**. The actual interpretation depends on the activation of appropriate pragmatic

context. It may be argued that Lee's solution is suitable for lexicalized forms and Downing's solution for novel compounds. However, I argued that this view is unsustainable because even lexicalized compounds can have context-specific interpretation. For this reason the meaning of the compounds should be represented simply as **R** which will be spelled out in context (Downing 1977).

In chapter 5 which is the first of three analysis chapters on compounding, I analyse all the identified compound types in my dataset except three (N-N, V-V and N-V) which are discussed in the following two chapters. For each compound discussed in this chapter, I first spelled out their properties. I then compare how the compound has been handled in the literature, showing in what ways previous accounts fail to do justice to the properties of the compounds. Where possible and useful, I also compare the treatment of the Akan data to how similar compounds in other languages have been dealt with. I argue that there is widespread non-compositionality in Akan nominal compounds. The form-class of compounds, for example, is a constructional property because, no matter the form-class(es) of the constituents, the compound comes out as a noun. This is the clearest evidence yet of the fact that Akan compounds have gestalt properties. I show that this cannot be handled in a morpheme-based framework without introducing abstract nominalizers to account for the form-class, where there is no nominal constituent. This argument recurs in the other chapters on compounding (chapters 6-7).

In chapter 6, I discuss N-V compounds which express action, process or manner. Previous accounts have assumed that the V constituent is first nominalized before forming the compound with the other constituents. This makes the compound an N-N endocentric synthetic compound. I argue that the evidence for such an approach is

weak. In its stead, I proposed that the compounds should be regarded as exocentric synthetic compounds. This view does not interfere with the expected argument inheritance that goes with the synthetic N-N compound analysis. My definition of synthetic compounds, following Grimshaw (1990) is that it has an argument-taking constituents whose AS requirement must be satisfied within the compound with the other constituent unless the other constituent is a semantic argument of the construction (Lieber 1983). In this chapter, I also show that even the tonal pattern of a compound may be construed as a constructional property.

In chapter 7, I discuss coordinate compounds – one N-N compound type and V-V compounds. This chapter is independent in many respects. In it I review the literature on the subject of coordinate compounds and show how coordinate compounds in Akan are formed. I argue that for the class of N-N compounds, it is a matter of construal whether they will receive coordinate compound reading or attributive compound reading. In V-V compounds, we find the best support for the view that Akan compounding is a noun-forming process as well as the view that compounds can have holistic properties. It also provides evidence for the wholes-with-parts approach where the construction makes a number of slots available with specific restrictions which must be filled by constituents with the appropriate matching features. I argue that the V-V coordinate compound construction makes available slots for two bare verbal constituents. Thus unlike other compound types, the verbs which occur in the coordinate compounds cannot have their internal arguments. I called this AS suppression since verbs ordinarily satisfy their AS requirement in the construction in which they occur. This is a distinctly constructional property.

Chapter 8 is one of the main contributions of the present thesis. I discuss a construction type that had been previously analyzed as a compound. I show that the instantiating constructions exhibit a constellation of formal and semantic properties that cannot be distributed to their constituents. Their extra-compositional properties qualify them as constructions. Formally the constructions inherit their structure from a typical syntactic construction (predicate adjective construction) and a prefixation schema. In other words, this construction type is motivated by independently needed constructions in the language; they result from the unification of a morphological schema and a syntactic schema. I argued, therefore, that the present construction confirms the fact that language is a network (Goldberg & van der Auwera 2012; Hudson 2007; Langacker 1987) and also shows that morphology and syntax interact in a way that makes it unprofitable to assume that they are assigned to separate modules, as the view is in mainstream generative grammar.

The data calls for a view of the grammar that makes it possible for both morphological and syntactic constructs to occur together so that unifying them into complex constructions, like we have here, will be straightforward. That is, morphology cannot be assumed to belong in a pre-syntactic component of grammar whose only point of interaction with syntax is where the output of morphology (words) feed syntax. It is clear that syntactic constructions of various sorts feed word formation. Thus, the present construction leads us to adopt the constructional view of the architecture of the grammar (Goldberg & Jackendoff 2004).

9.3 Main Contribution

This thesis has offered new analysis of data. The intended impact can be grouped in terms of contribution to linguistics and contribution to the Akan linguistics in particular which are the two main research goals. I will begin with the latter.

In terms of contribution to the study of Akan linguistics, the present study is the first work on complex nominals in Akan that asks basic questions about the nature of CNs, and seeks to deal with the structure without any preconceived ideas about what should exist. Following from this approach, this study has presented structures that had not received systematic account because previous studies, being morpheme-based, either overlooked them because they do not behave in canonical ways or grouped them with others and their unique properties got hidden and unaccounted for. The study, therefore, has shown that: (a) Akan nouns can and do have properties that do not emanate from those of their constituents, and (b) Akan nouns tend not to be transparent because they contain forms which do not contribute to the meaning of the word. The constructional approach, therefore, helps to give a complete account of the range of nouns that are attested in Akan.

The present thesis contributes to many fresh and on-going debates in two main areas of contemporary Linguistics – constructional approaches to the study of language and morphology, and it is worthy of note that the theoretical framework straddles both these areas in name and in substance. To construction grammar and CM in particular this thesis has extended their empirical scope, showing that its tenets can be applied to other languages apart from the Indo-European languages which is still the focus of most work carried out within this framework. As I have noted in the body of the thesis, the CM account breaks new ground in that, to the best of my knowledge, the

present thesis is the first study of a significant part of an African language using this framework.

To morphology generally, the present thesis contributes to the under-researched issue of exocentricity (Bauer 2010b; Scalise & Guevara 2006), especially in the chapters on compounding where I show that because Akan compounding is ultimately a noun-forming strategy, any compound which does not contain a nominal constituent is *prima facie* exocentric. To the study of AS, I have made the claim that AS of a verb may be suppressed by the construction in which it occurs. This is different from cases where as a result of an operation at the level of LCS, the verb becomes atelic and optionally intransitive. I have made claims about what the proper characterization of the relation between morphology and syntax may be. I have supported a continuum view, arguing that it makes it easier to form more complex structure motivated by both morphological and syntactic constructions. Finally, the present study contributes to the study of compounding in general and in Akan in particular.

9.4 Points for future research

Because of the rather small size of the sample based on which the present thesis is written, not all the properties of the attested complex nominal could be discussed in detail. What the present thesis has shown is that Akan nominal morphology still needs a lot of research attention. A number of areas come to mind as needing immediate attention.

First, I did not analyse derivation at all. However, the data shows that it is an area with interesting patterns that will potentially confirm the continuum view of the interaction

between morphology and syntax and the constructional view of grammar. This is because, as the formation of PANCs show, derivation may take phrasal units as bases and it is not clear that all such phrasal bases are pre-lexicalized. Therefore, they cannot be assumed to be possible bases because they are lexicalized and so a traditional lexicalist approach (Bresnan & Mchombo 1995) will suffice as an approach to accounting for their properties. They also cannot be said to be derived in a traditional syntax-only approach (Lieber 1992) without positing that an affix occurs all by itself in the syntax. The only hope of accounting for this property then will be to assume a continuum view where morphological and syntactic constructions occur together as a single unit, the constructicon.

Secondly, for coordinate compounds, the sample was too small for any meaningful argument to be made about their properties, but recent research (Bauer 2008, 2009b; Wälchli 2005) shows that they have interesting formal and semantic properties and so we need to know the full extent of the attested types and what their properties are. The gaps that exist in the classification need to be filled if possible. It is suggested that “[c]o-compounds are most frequent in continental East and South East Asia, their frequency diminishing as one moves westward” (Wälchli 2005: 196), and that they are rare in Africa, the Americas and Australia (Bauer 2009b: 351). We need to find out the extent to which they are attested in Akan and neighbouring languages.

Another line of research for the future is the nature of argument suppression in V-V compounds. I have proposed that it is the construction that imposes this restriction. It will be interesting to find out from a larger sample and also from neighbouring languages of Akan whether AS suppression is supported.

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APPENDIX: DATASET¹¹⁵

Table 25. AKAN COMPLEX NOMINALS

	CN (lexical forms)	Morphemic Makeup (internal make-up of the nominal)	Base/Source Construction ("putative" morphemic or constructional source of the nominal)	Morpho/Syntactic Proc	Internal constituent structure of every complex form in the nominal (with indices)	Internal structure of IC (with indices)	Immediate constituent Structure	Head	Formal Semant.	Semantic class
1	àbébékú	àbé-bé-wú palm_tree-FUT-die 'the palm will die (a drunkard)'	àbé bé- wú palm_tree FUT-die 'the palm tree will die'	• LEX	[[N] _i [be-V] _j] _{IP}	[[N] _i [V] _j] _{IP}	[N+V]	N/A	N/A	
2	àfòwàsíń	àfòwá-síń sword-half 'penknife'	àfòwá 'sword' síń 'half'	• Comp	[[N] _i [A] _j] _{Ni}	[[N] _i [A] _j] _{Ni}	[N+A]	L	L	Result
3	ago(r(u))	à-gó(r(ú)) NMLZ-to_play 'a play/game'	gó(r(ú)) 'to play'	• Aff	[a- [V] _i] _{Nj}	[a- [V] _i] _{Nj}	[a- [V]]	Pre f		Prod
4	àgòrù àhyiàé	àgòrù àhyiàé play meeting_place 'theatre/drama studio/sport stadium'	àgór(ú) 'to play' àhyiàé 'meeting place'	• Comp	[[a- [V] _i] _{Nj} [[a- [V] _k] _{Nx} -e] _{Ny}] _{Ny}	[[N] _i [N] _j] _{Nj}	[N+N]	R	R	Loc
5	àgòrùkyè ré	àgòrù-kyéré play-to_show 'acting'	kyérè àgórú show play 'to act/perform a play'	• HD- Inv • Comp	[[a- [V] _i] _{Nj} [V] _k] _{Nx}	[[N] _i [V] _j] _{Nk}	[N+V]	R	N	Act
6	àgòrùkyè ré!fó	àgòrùkyèré-!fó acting-NMLZ[person] 'an actor'	àgòrùkyèré 'acting'	• Aff	[[a- [V] _i] _{Nj} [V] _k] _{Nx} -fó] _{Ny}	[[N] _i -fó] _{Nj}	[[N] -fó]	Suf		Agent

¹¹⁵ The abbreviations used in the data are: Aff = affixation; AFV = Asante Final Vowel (a high-tone mid-vowel nominal suffix which occurs on nouns in the Asante dialect of Akan only when the noun terminates in a high vowel. Its actual segmental realization, [e, ε, ɔ, o], depends on the phonetic properties of the final vowel in the base.); Comp = compounding; DIM = diminutive; HD-Inv = Head-Dependent Inversion; Lex = lexicalization of a clause; NMLZ = nominalizer; PL = plural; SG = singular; SE = stem extender; RS = Rank Shifting (of a clause);

7	àgòrùkyè réw	àgòrù-kyèréw play-write 'play wrighting'	kyèrèw àgóru write play 'to write a play'	• HD- Inv • Comp	$[[a- [V]_i]_{Nj} [V]_k]_{Nx}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
8	àgòrùkyè réw!fó	àgòrùkyèréw!fó play_writeing-NMLZ[person] 'playwright'	àgòrùkyèréw 'play writing'	• Aff	$[[a- [V]_i]_{Nj} [V]_k]_{Nx} \neg fó]_{Ny}$	$[[N]_i \neg fó]_{Nj}$	$[[N] \neg fó]$	Suf	Agen	t
9	àgó!sém	àgó-!sém play-matter 'sport (joke/jest)'	àgór 'play' àsém 'matter'	• Comp	$[[a- [V]_i]_{Nj} [N]_k]_{Nx}$	$[[N]_i [N]_j]_{Nk}$	[N+N]	R	N	Prod
10	ànéèdàád zé	ànéè-dàádzé west-down 'south-west'	ànéè 'west' dàádzé 'down/ground'	• Comp	$[[N]_i [N]_j]_{Nij}$	$[[N]_i [N]_j]_{Nij}$	[N+N]	L	B	Loc
11	ànéèsór	ànéè-sór west-up 'north-west'	ànéè 'west' sór 'up'	• Comp	$[[N]_i [N]_j]_{Nij}$	$[[N]_i [N]_j]_{Nij}$	[N+N]	L	B	Loc
12	àníbéré	àní-béré (enyi-bere) eye-ripen/redden 'anger/seriousness'	X àní á-béré X eye PERF-ripe 'X is serious (lit. X' eye has ripened)	• Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Resu lt
13	àníbéréà ñsó!gyá	àní-béré-à-ñ-só-'gyá eye-ripen-SE-NEG-catch-fire 'name of a cloth'	àní béré á è-ñ-só gyá eye ripe COND 3SG-NEG-light fire 'when the eye reddens, it doesn't catch fire'	• LEX	$[[[N] [V]]_{IP} a [[NEG-V] [N]]_{VP}]_{IP}$	$[[[N] [V]]_{IP} a [[V] [N]]_{VP}]_{IP}$	$[[N+V] a [V+N]]$	N/ A	N/ A	Resu lt
14	aniberese m/nyiber sem	àníbéré-sém (enyibere-sem) seriousness-matter 'serious matter'	àníbéré 'seriousness' àsém 'matter'	• Comp	$[[[N]_i [V]_j]_{Nk} [N]_x]_{Nx}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Resu lt
15	anibue	àní-bué eye-open 'civilization (lit. opening of the eye)'	X àní á-bué X eye PERF-open 'X is civilized (lit. X's eyes are open)'	• Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Resu lt
16	anidasoo	àní-dà-só-ú eye-fix-top-AFV 'hope/expectation'	X àní dà Y só X eye fix Y top 'X hopes for Y (X's eye is fixed on Y)'	• LEX	$[[N]_i [[V]_j [N]_k]_{VP}]_{IP}$	$[[N]_i [[V]_j [N]_k]_{VP}]_{IP}$	[N+[V+N]]	N/ A	N/ A	Resu lt
17	anieden (anuoden)	àní-è-dén eye-be-hard 'haughtiness'	X àní-yé-dén X eye-be-hard 'X is haughty (X's eye is hard)'	• Comp	$[[N]_i \varepsilon [A]_j]_{Nk}$	$[[N]_i O [A]_j]_{Nk}$	$[[N] O [A]]$	N/ A	N/ A	Prop erty

18	anigyeε	<i>àní-gyé-é</i> eye-get-AFV 'happiness'	<i>gyè àní</i> get eye 'be happy'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Resu lt
19	anigyetras oo	<i>ànígyé-trà-só-́</i> happiness-go_over-top-AFV 'over excitement/excessive happiness'	<i>ànígyé</i> 'happiness' <i>trà</i> 'to go over' <i>só</i> 'top' ($[[N+V]_N [V+N]_{VP}]_N$)	• Comp	$[[N]_i [V]_j]_{Nk} [[V]_x [N]_y]_{VP}]_{Nz}$	$[[N]_i [V]_j [N]_k]_{VP}]_{Ni}$	[N+[V+N]]	L	L	Resu lt
20	anihaw	<i>àní-háw</i> eye-be_wearried 'laziness'	<i>X àní á-hàw</i> X eye PERF-wearry 'X is feeling lazy'	• Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Resu lt
21	animguase	<i>àním-gù-àsé</i> face-fall-under (ground) 'shame'	<i>X àním á-gù ásé</i> X face PERF-fall under 'X's face has fallen'	• LEX	$[[N]_i [[V]_j [N]_k]_{VP}]_P$	$[[N]_i [[V]_j [N]_k]_{VP}]_P$	[N+[V+N]]	N/ A	N/ A	Resu lt
22	animguase de	<i>ànímgùásé -de</i> shame-thing 'disgraceful thing/act'	<i>ànímgùásé</i> 'shame <i>àdé</i> 'thing'	• Comp	$[[N]_i [[V]_j [N]_k]_{VP}]_{Nx} [N]_y]_{Ny}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Resu lt
23	animtiaa	<i>àním-tiá-á</i> face-step-AFV 'disdain/scornfulness'	<i>tíà àní!m</i> step face 'to show disdain (to step on the face)'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Resu lt
24	animudi	<i>ànímù-dí</i> front-assume 'leadership/leading'	<i>dí ànímú</i> assume front 'to lead'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
25	animudifo	<i>ànímùdi-/fó</i> leadership-NMLZ[person] 'leader(s)'	<i>ànímùdi</i> 'leadership'	• Aff	$[[N]_i [V]_j]_{Nk} -fó]_{Nx}$	$[[N]_i -fó]_{Nj}$	$[[N] -fó]$	Suf		Agent
26	animuony am	<i>ànímù-ò-nyám</i> face-be-splendour 'glory'	<i>ànímú yé nyàm</i> face be splendor 'glory (splendor of the face)'	• LEX	$[[N]_i o [A]_j]_{Nk}$	$[[N]_i O [A]_j]_{Nk}$	$[[N] O [A]]$	N/ A	N/ A	Resu lt
27	anisoohye w	<i>àni-sò-ð-hyéw</i> eye-top-be-hot 'intrepid'	<i>X ani so ye hyew</i> X eye top be hot 'X is hot-headed'	• LEX	$[[N]_i [N]_j]_{Nk} ð [A]_x]_{Ny}$	$[[N]_i O [A]_j]_{Nk}$	$[[N] O [A]]$	N/ A	N/ A	Resu lt
28	anitan	<i>àní-tán</i> eye-hate 'tyranny/oppression/hatred'	<i>tan ani</i> hate eye 'to oppress'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Resu lt

29	anitew	<i>àní-téw'</i> eye-tear 'cunningness'	<i>X ani a-tew</i> X eye PERF-tear 'X is cunning'	• Comp	$[[[N]_i [V]_j]_{Nk}}$	$[[N]_i [V]_j]_{IP}$	[N+V]	R	N
30	anitewfo (anitefo)	<i>ànítéw-!fó</i> cunningness-NMLZ[person] 'intelligent/cunning people'	<i>anitew</i> 'cunning people'	• Aff	$[[[N]_i [V]_j]_{Nk} \neg fó]_{Nx}$	$[[N]_i \neg fó]_{Nj}$	$[[N] \neg fó]$	Suf	Agent
31	aniwu	<i>àní-wú</i> eye-die 'shame'	<i>X ani a-wu</i> X eye PERF-die 'X is ashamed'	• Comp	$[[[N]_i [V]_j]_{Nk}}$	$[[N]_i [V]_j]_{IP}$	[N+V]	R	N
32	ankøbea	<i>a-n-kɔ-bea</i> NMLZ-NEG-go-place 'a person who doesn't like travelling'	<i>X n-kɔ bea</i> X NEG-go place 'X does not go anywhere'	• Aff	$[a- [[NEG-V]_i [N]_j]_{VP}]_{Nk}$	$[a- [[V]_i [N]_j]_{VP}]_{Nk}$	$[a- [V+N]]$	Pre f	Prop
33	ankonam	<i>a-nko-nam</i> NMLZ-alone-walk 'a lonely person (lit. walk alone)'	<i>X nko nam</i> X alone walk 'X walks alone'	• Aff	$[a- [A]_i [V]_j]_{Nk}$	$[a- [[A]_i [V]_j]_{IP}]_{Nk}$	$[a- [A+V]]$	Pre f	Result/Property
34	anobaabae	<i>ano-baa~bae</i> mouth-RED~open 'verbal exchanges'	<i>baa~bae ano</i> RED~open mouth 'open the mouth'	• HD- Inv • Comp	$[[N]_i [RED-V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N
35	anodi	<i>ano-di</i> mouth-engage 'contract/declaration'	<i>di ano</i> to_engage mouth 'to bargain/contract'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N
36	anodisem	<i>anodi-sem</i> contract-matter 'declaration/contents of an agreement'	<i>anodi</i> 'contract/bargain'	• Comp	$[[[N]_i [V]_j]_{Nk} [N]_x]_{Nx}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R
37	anokoro	<i>ano-korɔ</i> mouth-one 'unity'	<i>ano korɔ</i> mouth one 'one mouth'	• Comp	$[[N]_i [Num]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	[N+Num]	L	N
38	anoyi	<i>ano-yi</i> mouth-remove 'response/answer reply'	<i>yi ano</i> remove mouth 'to respond/answer/reply'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N
39	antɔbor	<i>a-n-tɔ-bor</i> NMLZ-NEG-buy-get_drunk 'one who gets drunk on other's expense'	<i>ɔ-n-tɔ nso ɔ-bor</i> 3SG-NEG-buy but 3SG-be_drunk 'He does not buy but gets drunk'	• Aff	$[a- [[NEG-V]_i [V]_j]_{VP}]_{Nk}$	$[a- [[V]_i [V]_j]_{VP}]_{Nk}$	$[a- [V+V]]$	Pre f	Result

40	apaa-mboa	<i>apaa m-boa</i> Apam PL-net 'a type of fishing net (from Apam)'	<i>apaa mboa</i> 'Apam (name of a town) 'fishing net'	• Comp	$[[N]_i [PL-N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Prop
41	apaamu	<i>apaa-mu</i> <i>area-in</i> 'vicinity'	<i>apaa</i> 'area' <i>mu</i> 'in'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	[N+N]	L	N	Loc
42	apedeɛ	<i>a-pe-de-ɛ</i> NMLZ-like-thing-AFV 'desires'	<i>ade a wo-pe</i> thing REL 3SG-like 'a thing one likes/wants'	• HD- Inv • Comp	$[[a- [V]_i]_{Nj} [N]_k]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Result
43	asaasease	<i>asaase ase</i> earth under 'belly of the earth'	<i>asaase ase</i> earth under 'belly of the earth'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	[N+N]	L	N	Loc
44	asaaseaseni	<i>asaase-ase-ni</i> earth-under-NMLZ[person.SG] 'beings under the earth'	<i>asaase ase</i> earth under 'under the earth'	• Aff	$[[[[N]_i [N]_j]_{Nk} -ni]_{Nx}}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf		Prov/inhab
45	asaasebonini	<i>asaase-bonini</i> earth-barren 'infertile land'	<i>asaase</i> 'earth' <i>bonini</i> 'barren'	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	[N+A]	L	L	
46	asaasemfonini	<i>asaase-mfoni</i> earth-picture 'a map'	<i>asaase</i> 'earth' <i>mfoni</i> 'picture'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	
47	asaaseso	<i>asaase so</i> earth top 'on the earth'	<i>asaase so</i> earth on 'on the earth'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	[N+N]	L	N	Provenance
48	asaasesoni	<i>asaase-so-ni</i> earth-top-NMLZ[person.SG] 'earthly person/people of the earth'	<i>asaase so</i> earth on 'on the earth'	• Aff	$[[[[N]_i [N]_j]_{Nk} -ni]_{Nx}}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf		Provenance
49	asafo	<i>a-sa-fo</i> PL-war-NMLZ[person] 'traditional army/congregation'	<i>sa</i> 'war'	• Aff	$[[a- [V]_i]_{Nj} -fo]_{Nk}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf		
50	asafomuni	<i>asafo-mu-ni</i> war-NMLZ[person]-in-NMLZ[person.SG] 'member of a company or congregation'	<i>asafo</i> 'traditional army/congregation' <i>mu</i> 'in'	• Aff	$[[[[a- [V]_i]_{Nj} -fo]_{Nk} [N]_x]_{Ny} -ni]_{Nz}}$	$[[N]_i -ni]_{Nj}$	$[N] -ni]$	Suf		

51	asore	<i>a-sore</i> NMLZ-worship 'church'	<i>sore</i> 'to serve/worship'	• Aff	$[[a \cdot [V]_i]_{Nj}}$	$[a \cdot [V]_{iNj}]$	$[a \cdot [V]]$	Pre f	Resu lt
52	asedee	<i>a-se-de-e</i> NMLZ-befit-thing-AFV 'right/duty'	<i>ade a e-se</i> thing REL 3SG-befit 'a thing that is befitting/right'	• HD- Inv • Comp	$[[a \cdot [V]_i]_{Nj} [N]_k]_{Nk}$	$[[N]_i [N]_{jNj}]$	$[N+N]$	R	R
53	asefo	<i>ase-fo</i> under-NMLZ[person] 'descendants/offspring/progeny'	<i>ase</i> 'under'	• Aff	$[[N]_i \neg fo]_{Nj}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf	Loc
54	asekyere	<i>ase-kyere</i> meaning-show 'interpretation/explanation'	<i>kyere ase</i> show meaning 'to explain/interpret/translate'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	N
55	asekyereni	<i>asekyere-ni</i> interpretation-NMLZ[person.SG] 'an interpreter'	<i>asekyere</i> 'interpretation/explanation'	• Aff	$[[[[N]_i [V]_j]_{Nk} \neg ni]_{Nx}}$	$[[N]_i \neg ni]_{Nj}$	$[N] \neg ni]$	Suf	Agen t
56	asetena (asetra)	<i>ase-tena</i> (<i>ase-tra</i>) down-sit 'life/livelihood/standard of living'	<i>tena ase</i> sit down 'to live'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	N
57	asetenam ahiadee	<i>asetena-m ahiadee</i> down-sit-in need 'basic necessities of life'	<i>asetena mu ahiadee</i> life in need 'what is needed in life'	• Comp	$[[[[N]_i [V]_j]_{Nk} [N]_x]_{Ny} [a \cdot [[V]_z$ $[N]_s]_{VP}]_{Nr}]_{Nr}$	$[[N]_i [N]_{jNk}]$	$[N+N]$	R	R
58	asiafo	<i>asia-fo</i> six-NMLZ[person] 'a person with a sixth finger'	<i>asia</i> 'six'	• Aff	$[[Num]_i \neg fo]_{Nj}$	$[[Num]_i \neg fo]_{Nj}$	$[[Num] \neg fo]$	Suf	Resu lt
59	asooden (asoodenzen)	<i>aso-o-den</i> ear-be-hard 'stubbornness'	<i>X aso ye den</i> X eye be hard 'X's ear is hard (X is stubborn)'	• LEX	$[[N]_i \circ [A]_j]_{Nk}$	$[[N]_i O [A]_j]_{Nk}$	$[[N] O [A]]$	N/ A	N/ A
60	asoodenfo	<i>osooden-fo</i> stubbornness-NMLZ[person] 'disobedient person'	<i>osooden</i> 'stubbornness'	• Aff	$[[[[N]_i \circ [A]_j]_{Nk} \neg fo]_{Nx}}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf	Prop
61	asokwani	<i>asokwa-ni</i> traditional_horn-NMLZ[person.SG] 'traditional horn blower'	<i>asokwa</i> 'traditional_horn'	• Aff	$[[N]_i \neg ni]_{Nj}$	$[[N]_i \neg ni]_{Nj}$	$[[N] \neg ni]$	Suf	

62	asomaade	<i>aso-m-aade</i> ear-in-thing 'earring'	<i>aso mu ade</i> ear mu thing 'earring (a thing for the ear)'	• Comp	$[[[[N]_i [N]_j]_{Nk} [N]_x]_{Nx}}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Result
63	asomdwoe ε	<i>aso-m-dwo-e-ε</i> ear-in-cool-NMLZ-AFV 'peace'	<i>X aso mu a-dwo no</i> X ear in PERF-cool 3SGOBJ 'X' ear has cooled down'	• Aff	$[[[[N]_i [N]_j]_{Nk} [V]_x]_{Ny} -e]_{Nz}}$	$[[N]_i [V]_j]_{Nk} -e]_{Nx}$	$[[N+V] -I]$	Suf		Result
64	asomdwoe ε kuo	<i>asomdwoee kuo</i> peace organization 'The Peace Council (UN)'	<i>asomdwoee</i> 'peace' <i>kuo</i> 'organization'	• Comp	$[[[[N]_i [N]_j]_{Nk} [V]_x]_{Ny} -e]_{Nz} [N]_r]_{Nr}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	
65	asomudwo eni	<i>asomudwoe-ni</i> peace-NMLZ[person.SG] 'peaceful person'	<i>asomudwoe</i> 'peace'	• Aff	$[[[[N]_i [N]_j]_{Nk} [V]_x]_{Ny} -e]_{Nz} -ni]_{Nr}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf		
66	asorekye- mba	<i>asorekye-m-ba</i> waves-PL-child 'little/minor waves'	<i>asorekye</i> 'waves' <i>m-ba</i> 'PL-child'	• Comp	$[[N]_i [PL-N]_j]_{Ni}$	$[[N]_i [N]_j]_{Ni}$	[N+N]	L	L	
67	asotwe	<i>aso-twe</i> ear-pull 'punishment/penalty'	<i>twe aso</i> pull ear 'to punish'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
68	asubo	<i>asu-bɔ</i> baptism-apply/perform 'baptism'	<i>bɔ asu</i> to apply water 'to baptise'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	
69	asubohwe hwe	<i>asubo-hwe~hweε</i> baptism-RED-search_for 'baptismal candidacy'	<i>hwe~hwe asubo</i> RED~search_for baptism 'to seek to be baptised'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk} [RED-V]_x]_{Ny}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	
70	asubohwe hwefo	<i>asubo-hwehwe-fo</i> baptismal candidacy-NMLZ[person] 'candidate for baptism'	<i>asubo-hwehwe</i> 'baptismal candidacy'	• Aff	$[[[[N]_i [V]_j]_{Nk} [RED-V]_x]_{Ny} -fo]_{Nz}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf		
71	atabrakoni	<i>atabrako-ni</i> farm_labour- NMLZ[person.SG] 'a farm labourer who is paid on daily basis'	<i>atabrako</i> 'farm labour'	• Aff	$[[N]_i -ni]_{Nj}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf		
72	awareε (wadeε)	<i>a-ware-ε</i> (<i>a-wade-ε</i>) NMLZ-marry-AFV 'marriage'	ware 'to marry'	• Aff	$[a- [V]_i]_{Nj}$	$[a- [V]]_{Nj}$	$[a- [V]]$	Pre f		Result

73	aweabo	<i>a-we-abo</i> NMLZ-chew-stones 'one who chews stones'	<i>we a-bo</i> to chew PL-stone 'chew stones'	• Aff	$[a- [[V]_i [N]_j]_{VP}]_{Nk}$	$[a- [[V]_i [N]_j]_{VP}]_{Nk}$	$[a- [V+N]]$	Pre f	
74	ayefor	<i>a-ye-for</i> NMLZ-wife-new 'bride'	<i>ɔyere fosor</i> wife new 'new wife'	• Aff	$[a- [[N]_i [A]_j]_{NP}]_{Nk}$	$[a- [[N]_i [A]_j]_{Ni}]_{Nk}$	$[a- [N+A]]$	Pre f	
75	ayefor <i>nda-</i> <i>awɔtwe</i>	<i>ayefor nda-awɔtwe</i> wedding day-eight '8 th day after wedding'	<i>ayefor</i> 'wedding' <i>nda-awɔtwe</i> 'day-eight'	• Comp	$[[a- [[N]_i [A]_j]_{NP}]_{Nk} [[N]_x [Num]_y]_{Nz}]_{Nz}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R R	
76	ayeforhyia	<i>ayefor-hyia</i> wedding-meet 'wedding ceremony'	<i>hyia ayefor</i> meet wedding 'to conduct a wedding ceremony'	• HD- Inv • Comp	$[[a- [[N]_i [A]_j]_{NP}]_{Nk} [V]_x]_{Ny}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N	
77	baako	<i>ɔ-baako</i> NMLZ-one 'an individual/a single person'	<i>baako</i> 'one'	• Aff	$[\sigma- [Num]_i]_{Nj}$	$[O- [Num]_i]_{Nj}$	$[\sigma- [Num]]$	Pre f	Prop erty
78	baakofo	<i>ɔbaako-so</i> one-NMLZ[person] 'an individual'	<i>ɔbaako</i> 'one'	• Aff	$[[\sigma- [Num]_i]_{Nj} -\sigma o]_{Nk}$	$[[N]_i -\sigma o]_{Nj}$	$[[N] -\sigma o]$	Suf	
79	baapanyin	<i>ɔ-baa-panyin</i> SG-woman-elder 'elderly woman'	<i>ɔbaa</i> 'woman' <i>panyin</i> 'elder'	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	$[N+A]$	L L	State /Prop erty
80	baatan	<i>ɔ-baa-tan</i> SG-woman-parent 'mother'	<i>ɔbaa</i> 'woman' <i>tan</i> 'parent'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R R	Prop erty
81	baawa	<i>a-baa-wa</i> NMLZ-woman-DIM 'servant (girl)'	<i>ɔbaa</i> 'woman'	• Aff	$[[a- [N]_i]_{Nj} -\sigma wa]_{Nk}$	$[[N]_i -\sigma wa]_{Nj}$	$[[N] -\sigma wa]$	Suf	Prop erty
82	babaawa	<i>a-ba-baa-wa</i> NMLZ-child-female-DIM 'maiden/young woman'	<i>ɔbaa</i> 'woman' <i>ɔba</i> 'child'	• Aff	$[[a- [[N]_i [N]_j]_{Ni}]_{Nk} -\sigma wa]_{Nx}$	$[[N]_i -\sigma wa]_{Nj}$	$[[N] -\sigma wa]$	Suf	Prop erty
83	babunu	<i>ɔ-baa-bunu</i> SG-woman-unripe 'virgin'	<i>ɔbaa</i> 'woman' <i>bunu</i> 'unripe'	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	$[N+A]$	L L	Prop erty

84	badesefo	<i>ɔ̄-ba-deseefo</i> SG-child- wasteful person 'prodigal child'	<i>ɔ̄-ba</i> 'SG-child' <i>deseefo</i> 'wasteful person'	• Comp	$[[N]_i [[[N]_j [V]_k]_{Nx} -fo]_{Ny}]_{Ny}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Prop erty
85	badwa kesee	<i>badwa kesee</i> assembly big 'General Assembly (UN)'	<i>badwa</i> 'assembly' <i>kesee</i> 'big'	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	[N+A]	L	L	
86	badwenba nyi	<i>ɔ̄-ba-dwen-ba-nyi</i> SG-child-think-offspring-NMLZ _[pers.SG] 'wise/thoughtful person'	<i>ɔ̄ba</i> 'child' <i>dwen</i> 'think' <i>ba</i> 'offspring'	• Aff	$[[[N]_i [[V]_j [N]_k]_{Nx} -ni]_{Ny}]_{Ny}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf		Prop erty
87	bae	<i>m-ba-e</i> NMLZ-come-NMLZ 'coming/arrival'	<i>ba</i> 'to come'	• Aff	$[[m- [V]_i]_{Nj} -e]_{Nk}$	$[[n- [V]_i]_{Nj} -e]_{Nk}$	$[[M- [N]] -I]$	Suf		Action
88	baguafō (badwafō)	<i>bagua-fo</i> assembly-NMLZ _[person] 'members of a council (councillors)'	<i>bagua</i> (badwafō) 'assembly/council'	• Aff	$[[N]_i -fo]_{Nj}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf		
89	baguafō atrae	<i>bàguàfó átráé</i> counsellors seat 'seat of councillors/councils'	<i>baguafō</i> 'councillors' <i>atrae</i> 'seat'	• Comp	$[[[N]_i -fo]_{Nj} [[a- [V]_k]_{Nx} -e]_{Ny}]_{Ny}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Loc
90	baka enufo	<i>bàká ènùfó</i> lagoon stirers 'those who fish in lagoons (lagoon fishers)'	<i>baka</i> 'lagoon' <i>enufo</i> 'stirrers'	• Comp	$[[N]_i [[e- [V]]_{Nk} -fo]_{Nx}]_{Nx}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Resu lt
91	bakanam	<i>bàká-nám</i> lagoon-fish 'fish caught in a lagoon'	<i>baka</i> 'lagoon' <i>enam</i> 'fish'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Resu lt
92	baka-nsu	<i>bàká-!ńsú</i> lagoon-water 'lagoon water'	<i>baka</i> 'lagoon' <i>nsu</i> 'water'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Resu lt
93	bakanu	<i>baka-nu</i> lagoon-stirring 'fishing in a lagoon'	<i>nu baka-</i> stir lagoon- 'lagoon-stirring'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Acti
94	bakosem	<i>a-ba-kɔ-sem</i> NMLZ-come-go-mattter 'history (story of past events)'	<i>asem a a-ba kɔ</i> matter REL PERF-come go 'A matter that has come and gone'	• HD- Inv • Comp	$[[a- [[V]_i [V]_j]_{VP}]_{Nk} [N]_x]_{Nx}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Resu lt

95	banyin	<i>ɔ-ba-nyin</i> SG-child-male 'man (male child)'	<i>ɔba</i> 'child' <i>nyin</i> 'male'	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	[N+A]	L	L	Property
96	barimaa	<i>a-barima-a</i> NMLZ-male-DIM 'boy/lad'	<i>barima</i> 'male'	• Aff	$[[a- [N]_i]_{Nj} -a]_{Nk}$	$[[N]_i -a]_{Nj}$	$[[N] -a]$	Suf		Result
97	basafa	<i>basa-fa</i> arm-half 'half of a arm-length'	<i>basa</i> 'arm' <i>fa</i> 'half'	• Comp	$[[N]_i [Num]_j]_{Ni}$	$[[N]_i [N]_j]_{Ni}$	[N+N]	L	N	
98	basamu	<i>abasa-mu</i> arm-whole 'full-arm length'	<i>abasa mu</i> arm whole 'a whole arm'	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	[N+A]	L	N	Product
99	basiaba	<i>a-basia-ba</i> SG-female-child 'maiden/girl'	<i>basia</i> 'female'	• Aff	$[[N]_i -ba]_{Nj}$	$[[N]_i -wa]_{Nj}$	$[[N] -ba]$	Suf		
100	basobo	<i>aba-so-bɔ</i> shoulder-on-hit 'commendation/promotion'	<i>bɔ aba so</i> hit shoulder on 'to award/promote/commend'	• HD- Inv • Comp	$[[[N]_i [N]_j]_{Nk} [V]_x]_{Ny}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
101	basobode	<i>abasobɔ-de</i> promotion-thing 'an award'	<i>ade a wɔ-de-bɔ aba so</i> thing REL 3SGSBJ-take-hit shoulder on 'award (something for the shoulder)'	• Comp	$[[[[N]_i [N]_j]_{Nk} [V]_x]_{Ny} [N]_z]_{Nz}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Result
102	bataboa	bata-boa cling-help 'mutual help'	<i>bata</i> 'cling' <i>boa</i> 'help'	• Comp	$[[V]_i [V]_j]_{Nk}$	$[[V]_i [V]_j]_{Nk}$	[V+V]	B	N	
103	batani	<i>ɔ-bata-ni</i> SG-trade-NMLZ[person.SG] 'trader/merchant/customer/buyer'	<i>bata</i> 'trade'	• Aff	$[[N]_i -ni]_{Nj}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf		Agent
104	batow	<i>aba-tow</i> ballot-cast 'election/voting'	<i>tow aba</i> cast ballot 'to vote'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
105	batowni	<i>abatow-ni</i> election-NMLZ[person.SG] 'a voter'	<i>abatow</i> 'election/voting'	• Aff	$[[[N]_i [V]_j]_{Nk} -ni]_{Nx}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf		Agent

106	bayifoɔ	ɔ-bayi-fo-ɔ SG-witchcraft-NMLZ[person]-AFV 'witch'	<i>bayi</i> 'witchcraft'	• Aff	[[N] _i -fo] _{Nj}	[[N] _i -fo] _{Nj}	[[N] -fo]	Suf	Property	
107	bɔadze (ɔbɔadeɛ)	ɔ-bɔ-adze (ɔ-bɔ-adee) NMLZ-create-thing 'creator'	<i>bɔ adze</i> create thing 'to create'	• Aff	[ɔ- [[V] _i [N] _j] _{VP}] _{Nk}	[O- [[V] _i [N] _j] _{VP}] _{Nk}	[ɔ- [V+N]]	Pre f	Agent	
108	bɔoni	ɔ-bɔɔ-ni SG-boy-NMLZ[person.SG] 'an apprentice/a student'	<i>bɔɔbɔe</i> 'boy'	• Aff	[[N] _i -ni] _{Nj}	[[N] _i -ni] _{Nj}	[[N] -ni]	Suf	Result	
109	bɔdam	a-bɔ-dam SG-hit-madness 'madness'	<i>bɔ dam</i> hit madness 'to go crazy'	• Aff	[a- [[V] _i [N] _j] _{VP}] _{Nk}	[a- [[V] _i [N] _j] _{VP}] _{Nk}	[a- [V+N]]	Pre f	Prote ry/St ate	
110	bɔdamni	ɔ-bɔdam-ni SG-madness-NMLZ[person.SG] 'a mad person'	<i>abɔdam</i> 'madness'	• Aff	[[[V] _i [N] _j] _{VP} -ni] _{Nk}	[[N] _i -ni] _{Nj}	[[N] -ni]	Suf	Prote ry/St ate	
111	bɔdeemun yansape	abɔdee-mu-nyansa-pe creation-in-wisdom-search 'science (the search for the wisdom in creation)'	<i>pe abɔdee mu nyansa</i> search creation in wisdom 'to search for the wisdom in creation'	• HD- Inv • Comp	[[[a- [[V] _i [N] _j] _{VP}] _{Nk} [N] _x] _{Ny} [[N] _z] [[V] _s] _{Nr}] _{Nr}	[[N] _i [N] _j] _{Nj}	[N+N]	R	R	Act
112	bɔfo	ɔ-bɔ-fo SG-hit-NMLZ[person] 'hunter'	<i>bɔ</i> 'to hit'	• Aff	[[V] _i -fo] _{Nj}	[[V] _i -fo] _{Nj}	[[V] -fo]	Suf	Agent	
113	bɔfo	ɔ-bɔ-fo SG-announce-NMLZ[person] 'messenger/angel'	<i>bɔ</i> 'to announce'	• Aff	[[V] _i -fo] _{Nj}	[[V] _i -fo] _{Nj}	[[V] -fo]	Suf	Pati ent	
114	bɔhyɛ	bɔ-hye promise-give 'promise'	<i>hye bɔ</i> give promise 'to promise'	• HD- Inv • Comp	[[N] _i [V] _j] _{Nk}	[[N] _i [V] _j] _{Nk}	[N+V]	R	N	
115	bɔnfakyɛ	bɔn-fa-kye sin-take-give_as_a_gift 'forgiveness (of sin)'	<i>fa bɔn kye</i> take sin give_as_a_gift 'to forgive sine'	• HD- Inv • Comp	[[N] _i [[V] _j [V] _k] _{Nx}] _{Ny}	[[N] _i [N] _j] _{Nj}	[N+N]	R	N	Result
116	bɔseremka	bɔ-sere-m-ka hit-thigh-in-say 'conjecture'	<i>bɔ sere mu ka</i> hit thigh in say 'to conjecture'	• LEX	[[[V] _i [[N] _j [N] _k] _{NP}] _{VP} [V] _x] _{Ny}	[[[V] _i [N] _j] _{VP} [V] _k] _{Nx}	[[V+N]+V]	N/ A	N/ A	Resu lt

117	bediako	<i>be-di-a-ko</i> INGR-engage_in-PL-battle 'quarrelsome person (warrior)'	<i>X be-di a-ko</i> X INGR-engage_in PL-battle 'X came to fight'	• LEX	$[[be\text{-}V]_i [N]_j]_{VP}$	$[[V]_i [N]_j]_{VP}$	[V+N]	N/A	N/A	Result
118	berewa	<i>a-bere-wa</i> NMLZ-ripe/(female)-DIM 'old woman'	<i>bere</i> 'ripe'	• Aff	$[[a\text{-}[V]_i]_{Nj} -wa]_{Nk}$	$[[N]_i -wa]_{Nj}$	$[[N] -wa]$	Suf	Identity	
119	berwa-na-mba	<i>a-berwa-na-m-ba</i> SG-old_woman-CONJ-PL-child 'old lady and children (constellation of star)'	<i>aberwa na m-ba</i> old_lady CONJ PL-child 'old lady and children'	• LEX	$[[[a\text{-}[V]_i]_{Nj} -wa]_{Nk} na [N]_x]_{Ny}$	$[[N]_i \text{CONJ} [N]_j]_{Nk}$	$[[N] na [N]]$	N/A	N/A	
120	bo(w)fo	<i>ɔ-bo(w)-fo</i> NMLZ-get_drunk-NMLZ[person] 'alcoholic'	<i>bow</i> 'to get drunk'	• Aff	$[[ɔ\text{-}[V]_i]_{Nj} -fo]_{Nk}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Property	
121	boa	<i>m-bòá</i> NMLZ-help 'help/assistance'	<i>boa</i> 'to help'	• Aff	$[m\text{-}[V]_i]_{Nj}$	$[n\text{-}[V]_i]_{Nj}$	$[M\text{-}[V]]$	Pref	Result	
122	boaboaho	<i>m-bòà~bòà-hó</i> NMLZ-RED~gather-self 'preparation'	<i>boa~boa-ho</i> RED~gather-self 'to prepare'	• Aff	$[m\text{-}[[RED\text{-}V]_i [N]_j]_{VP}]_{Nk}$	$[n\text{-}[[V]_i [N]_j]_{VP}]_{Nk}$	$[M\text{-}[V+N]]$	Pref	Act	
123	boadua	<i>m-boa-dua</i> PL-net-tree 'a place for keeping fishing nets'	<i>m-boa</i> 'PL-net' <i>dua</i> 'tree'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	[N+N]	R N	Result	
124	boadua do	<i>mboadua do</i> a_place_for_keeping_fishing_nets on 'the location of "mboadua"	<i>mboadua</i> 'a_place_for_fishing_nets' <i>do</i> 'on'	• Comp	$[[[N]_i [N]_j]_{Nk} [N]_x]_{Ny}$	$[[N]_i [N]_j]_{Nk}$	[N+N]	L N	Loc	
125	boafø	<i>a-boa-fo</i> PL-help-NMLZ[person] 'aides, helpers, conspirator'	<i>boa</i> 'to help'	• Aff	$[[N]_i -fo]_{Nj}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Agent	
126	bodinakeka	<i>a-bo-din-a-ke~ka</i> NMLZ-mention-name-NMLZ-say~say 'The act of associating one's name with something good or bad'	<i>bo din ke~ka</i> mention name RED~speak 'to mention one's name in a speech'	• Comp	$[[a\text{-}[[V]_i [N]_j]_{VP}]_{Nk} [a\text{-}[[RED\text{-}V]_x]_{Ny}]_{Nz}}$	$[[N]_i [N]_j]_{Nk}$	[N+N]	R N		
127	bodwokye ree	<i>a-bo-dwo-kyere-(e)</i> NMLZ-chest-cool-keep_long-(AFV) 'tolerance/longsuffering'	<i>X bo dwo kyere-(e)</i> X chest cool keep_long 'X is tolerant (X's chest cools for long)'	• Aff	$[a\text{-}[[N]_i [V]_j]_{IP} [V]_k]_{Nx}$	$[a\text{-}[[N]_i [V]_j]_{IP} [V]_k]_{Nx}$	[N+V]	Pref	Result	

	bofon	<i>à-bó-fóń</i> PL-chest-loathe 'nausea/disgust'	<i>bo</i> 'chest' <i>fon</i> 'to loathe'	• Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N		
128	129	boka-daadze	<i>boka-daadze</i> east-down 'south-east'	<i>boka</i> 'east' <i>daadze</i> 'down'	• Comp	$[[N]_i [N]_j]_{Nij}$	$[[N]_i [N]_j]_{Nij}$	[N+N]	L	B	Loc
129	130	borɔfo	<i>a-borɔ-fo</i> PL-horizon-NMLZ[person] 'whitemen (people from beyond the horizon)'	<i>bor(ɔ)</i> 'horizon/Europe'	• Aff	$[[N]_i \text{-} fo]_{Nj}$	$[[N]_i \text{-} fo]_{Nj}$	$[[N] \text{-} fo]$	Suf	Prov enan ce	
130	131	borɔfoben	<i>a-borɔfo-ben</i> PL-white_man-dye 'white man's dye'	<i>aborɔfo</i> 'white men' <i>ben</i> 'dye'	• Comp	$[[N]_i \text{-} fo]_{Nj} [N]_k]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Prod uct
131	132	borɔfoho ma	<i>borɔfo-homa</i> European-thread 'name of a type of string'	<i>borɔfo</i> 'european' <i>ahoma</i> 'thread/string'	• Comp	$[[N]_i \text{-} fo]_{Nj} [N]_k]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Resu lt
132	133	borɔfokaa dow	<i>borɔfo-kaadow</i> European-whitewash (paint) 'foreign paint'	<i>borɔfo</i> 'european' <i>kaadow</i> 'whatwash'	• Comp	$[[N]_i \text{-} fo]_{Nj} [N]_k]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Resu lt
133	134	borɔkyir	<i>a-borɔ-kyir</i> NMLZ-horizon-back 'overseas'	<i>bor(ɔ)</i> <i>kyir</i> <i>horizon</i> back/beyond 'beyond the horizon'	• Aff	$[a- [[N]_i [N]_j]_{Nk}]_{Nx}$	$[a- [[N]_i [N]_j]_{Nk}]_{Nx}$	$[a- [N]]$	Pre f		
134	135	borɔkyirab a	<i>aborɔkyir-aba</i> oversees-seed 'strategy for fishing'	<i>aborɔkyir</i> 'oversees' <i>aba</i> 'seed'	• Comp	$[[a- [[N]_i [N]_j]_{Nk}]_{Nx} [N]_y]_{Nz}$	$[[N]_i [N]_j]_{Nk}$	[N+N]	R	N	Act
135	136	bosom	<i>ɔ-bo-som</i> SG-stone-serve 'a god/'	<i>som</i> <i>ɔbo</i> serve stone 'to stone serve'	• Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Prop erty
136	137	bosomsem	<i>a-bosom-sem</i> PL-god-matter 'fetish matter'	<i>bosom</i> 'fetish' <i>asem</i> 'matter'	• Comp	$[[N]_i [V]_j]_{Nk} [N]_x]_{Nx}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Act
137	138	botan	<i>ɔ-bo-tan</i> SG-stone-parent 'rock'	<i>ɔbo</i> 'stone' <i>tan</i> 'parent'	• Comp	$[[N]_i [N]_j]_{Ni}$	$[[N]_i [N]_j]_{Ni}$	[N+N]	L	L	Resu lt

139	botantim	<i>ɔbotan-tim</i> rock-be_firm 'firm/solid rock'	<i>ɔbotan a a-tim</i> rock REL PERF-be_firm 'a rock which is firm'	• Comp	$[[[[N]_i [N]_j]_{Nk} [V]_x]_{Nk}}$	$[[N]_i [V]_j]_{Nj}$	[N+V]	L	L	Prop erty
140	botesem	<i>abote-sem</i> exasperation-matter 'exasperating matter'	<i>asem a ε-te bo</i> matter REL 3SGSBJ-rends chest 'a matter which rends the chest'	• Comp	$[[a- [[N]_i [V]_j]_{Nk}]_{Nx} [N]_y]_{Ny}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Prop erty
141	brabəbom e	<i>bra-be-bɔ-me</i> come-INGR-hit-me 'come and hit me' (a name)	<i>bra be-bɔ me</i> come INGR-hit me 'come and hit me'	• LEX	$[[V]_i [[be-V]_j [N]_k]_{VP}]_{VP}$	$[[V]_i [[V]_j [N]_k]_{VP}]_{VP}$	[V+[V+N]]	N/ A	N/ A	
142	brafo	<i>ɔ-bra-fo</i> SG-curtail-NMLZ[person] 'executioner'	<i>bra</i> 'to curtail'	• Aff	$[[V]_i -fo]_{Nj}$	$[[V]_i -fo]_{Nj}$	$[[V] -fo]$	Suf		Agent
143	brayəbəna	<i>ɔbra-ye-bɔ-na</i> life-be-live-difficult 'life is hard (a name)'	<i>ɔbra ye bɔ na</i> life be live difficult 'life is hard'	• LEX	$[[N]_i [[V]_j [[N]_k [A]_x]_{NP}]_{VP}]_{IP}$	$[[N]_i [[V]_j [[N]_k [A]_x]_{NP}]_{VP}]_{IP}$		N/ A	N/ A	Resu lt
144	brayəko	<i>ɔbra-ye-ko</i> life-be-fight 'type of fishing net (lit. life is war)'	<i>ɔbra</i> 'life' <i>ye</i> 'be' <i>ko</i> 'battle'	• LEX	$[[N]_i [[V]_j [N]_k]_{VP}]_{IP}$	$[[N]_i [[V]_j [N]_k]_{VP}]_{IP}$		N/ A	N/ A	State
145	bré	<i>bré</i> to suffer 'effort/suffering'	<i>bré</i> 'to suffer'	• Tonal alternatio n	$[[V]_i]_{Nj}$	$[[V]_i]_{Nj}$	[V]	N/A	N/A	
146	brenya	<i>bre-nya</i> suffer-gain 'suffer to gain (this is also a surname)'	<i>bre nya</i> suffer gain	• Comp	$[[V]_i [V]_j]_{Nk}$	$[[V]_i [V]_j]_{Nk}$	[V+V]	B	N	
147	busuabo	<i>abusua-bɔ</i> family-join 'joining/becoming family member'	<i>bɔ abusua</i> join family 'to be come a member of a family'.	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	
148	busuabo nnyinasoɔ mfitiasee	<i>abusuabɔ nnyinasoɔ mfitiasee</i> family_joining foundation beginning 'fundamental unit (foundation) of society'	<i>abusuabɔ</i> 'family' <i>nnyinasoɔ</i> 'foundation' <i>mfitiasee</i> 'beginning'	• Comp	$[[[[N]_i [V]_j]_{Nk} [n- [[V]_x [N]_y]_{VP}]_{Nz} [n- [[V]_q [N]_r]_{VP}]_{Nr}]_{Nr}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Prod uct
149	busuafø	<i>a-busua-fo</i> PL-family-NMLZ[person] 'kinsmen'	<i>abusua</i> 'family'	• Aff	$[[N]_i -fo]_{Nj}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf		

150	busuani	<i>o-busua-ni</i> SG-family-NMLZ[person.SG] 'family member/kinsman'	<i>abusua</i> 'family'	• Aff	$[[N]_i \text{-} ni]_{Nj}$	$[[N]_i \text{-} ni]_{Nj}$	$[[N] \text{-} ni]$	Suf
151	busuapənni	<i>o-busua-pən-ni</i> SG-family-main-NMLZ[person.SG] 'kinsman, close family member'	<i>obusua pən</i> family main '	• Aff	$[[[N]_i [A]_j]_{Nj} \text{-} ni]_{Nk}$	$[[N]_i \text{-} ni]_{Nj}$	$[[N] \text{-} ni]$	Suf
152	busuasem	<i>abusua-sem</i> family-matter 'family matters'	<i>abusua</i> 'family' <i>asem</i> 'matter'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R R
153	busude	<i>a-busu-de</i> NMLZ-mischief-thing 'mischief/devilish thing'	<i>mbusu</i> 'mischief/devilish' <i>ade</i> 'thing'	• Comp	$[[a- [N]_i]_{Nj} [N]_k]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R R Result
154	bususem	<i>a-busu-sem</i> NMLZ-mischief-matter 'devilish issues'	<i>mbusu</i> 'devilish' <i>asem</i> 'matter'	• Comp	$[[a- [N]_i]_{Nj} [N]_k]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R R Property
155	daadze mframa	<i>daadze mframa</i> groud wind 'ground wind'	<i>daadze</i> 'groud' <i>mframa</i> 'wind'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R R Result
156	da-amona	<i>da amona</i> sleep hole 'an animal which dwells in a hole'	<i>abo a ɔ-da amona mu</i> something REL 3SG-sleep hole in 'that which dwells in a hole'	• Comp	$[[V]_i [N]_j]_{Nk}$	$[[V]_i [N]_j]_{Nk}$	$[V+N]$	L N Result
157	da-du	<i>da-du</i> day-ten '10 th day'	<i>da</i> 'day' <i>du</i> 'ten'	• Comp	$[[N]_i [Num]_j]_{Ni}$	$[[N]_i [N]_j]_{Ni}$	$[N+N]$	L L Result
158	dadua	<i>da-dua</i> lie-wood 'imprisonment'	<i>da dua</i> sleep wood 'to imprison'	• Comp	$[[V]_i [N]_j]_{Nk}$	$[[V]_i [N]_j]_{Nk}$	$[V+N]$	L N Patient
159	daduafo	<i>a-dadua-fo</i> PL-imprisonment-NMLZ[person] 'prisoners'	<i>dadua</i> 'imprisonment'	• Aff	$[[[V]_i [N]_j]_{VP} \text{-} fo]_{Nk}$	$[[N]_i \text{-} fo]_{Nj}$	$[[N] \text{-} fo]$	Suf Patient
160	dae	<i>a-da-e</i> NMLZ-lie-NMLZ _[loc] 'location, sleeping place'	<i>da</i> 'lie/sleep'	• Aff	$[[a- [V]_i]_{Nj} \text{-} e]_{Nk}$	$[[a- [V]_i]_{Nj} \text{-} e]_{Nk}$	$[[a- [V]] \text{-} I]$	Suf Loc

161	daeso	<i>a-dae-so</i> PL-dream-ICV[to dream] 'dreaming'	<i>so dae</i> ICV dream 'to dream'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Ni}$	$[[N]_i [V]_j]_{Ni}$	[N+V]	R	L	Act/ Product
162	danekuru m	<i>adanse-kurum</i> witness-crooked 'false witness'	<i>adanse</i> 'testimony/evidence' <i>kurum</i> 'be crooked/bent/curving'	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	[N+A]	L	L	Product
163	danseni / dasenyi	<i>ɔ-danse-ni</i> (ɔ-dase-nyi) PL-witness-NMLZ[person.SG] 'a witness'	<i>adan¹¹⁶se</i> 'witness' <i>dase</i> 'witness'	• Aff	$[[N]_i -ni]_{Nj}$	$[[N]_i -ni]_{Nj}$	[[N] -ni]	Suf		Agen ti
164	dansesem	<i>adanse-sem</i> witness-matter 'testimony/evidence'	<i>adanse</i> 'testimony/evidence' <i>asem</i> 'word/matter'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Product
165	dɔfo	<i>a-dɔ-fo</i> PL-love-NMLZ[person] 'loved ones'	<i>dɔ</i> 'to love'	• Aff	$[[N]_i -fo]_{Nj}$	$[[N]_i -fo]_{Nj}$	[[N] -fo]	Suf		Experienc er
166	dɔmba	<i>a-dɔm-ba</i> NMLZ-bell-DIM 'a (little) bell'	<i>dɔm</i> 'bell'	• Aff	$[[a- [N]_i]_{Nj} -ba]_{Nk}$	$[[N]_i -wa]_{Nj}$	[[N] -ba]	Suf		Prop erty
167	dɔmeabra	<i>dɔ-me-a-bra</i> love-me-SE-come 'a place that is not easily accessible'	<i>wo-dɔ me a bra</i> 3SG-love me COND come 'if you love me come'	• LEX	$[[[V]_i [N]_j]_{VP} a [V]_k]_{Nx}$	$[[[V]_i [N]_j]_{VP} a [V]_k]_{Nx}$	[[V+N] a [V]]	N/A	N/A	Resu lt
168	dɔmpiafo	<i>ɔdɔm-piafɔ</i> 'crowed-pusher' 'commander of an army'	<i>dɔm</i> 'crowed' <i>piafo</i> 'pusher'	• Comp	$[[N]_i [[V]_j -fo]_{Nk}]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Agen t
169	dɔnhwer	<i>dɔn-hwer</i> bell-spend 'hour (spent bell)'	<i>dɔn</i> 'bell' <i>hwer</i> 'spend'	• Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Resu lt
170	dɔnhwer fa	<i>dɔnhwer fa</i> hour half 'half hour'	<i>dɔnhwer</i> 'half hour'	• Comp	$[[[N]_i [V]_j]_{Nk} [Num]_k]_{Nx}$	$[[N]_i [N]_j]_{Ni}$	[N+N]	L	L	Resu lt
171	dɔnkɔni	<i>ɔ-dɔnkɔ-ni</i> SG-slavery-NMLZ[person.SG] 'a slave'	<i>dɔnkɔ</i> 'slavery'	• Aff	$[[N]_i -ni]_{Nj}$	$[[N]_i -ni]_{Nj}$	[[N] -ni]	Suf		Pati ent

¹¹⁶ Infixation

172	dəwber	<i>a-dəw-ber</i> NMLZ-weed-season 'farming season'	<i>dəw</i> 'weed' <i>ber</i> 'time'	• Comp	$[[a- [V]_i]_{Nj} [N]_k]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Result
173	debəneyef o	<i>ade-bo-ne-yε</i> deed-evil-do 'act of sinning/doing evil'	<i>ye ade bo-ne</i> do deed bad 'to do bad thing(s)'	• HD- Inv • Comp	$[[[N]_i [A]_j]_{Nk} [V]_x]_{Ny}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Agent/Property
174	debəneyef o	<i>ɔ-debəneye-fo</i> SG-act_of_sinning/doing_evil-NMLZ[person] 'sinner, evil doer'	<i>adebəneye</i> 'act of sinning/doing evil'	• Aff	$[[[[N]_i [A]_j]_{Nk} [V]_x]_{Ny} \neg fo]_{Nz}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf	Agent/Property	
175	dedie	<i>ade-di-e</i> thing-assume-AFV 'succession'	<i>di ade</i> assume thing 'to inherit/assume something/position'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
176	dedifo (odiadieni)	<i>ɔ-dedi-fo</i> SG-inheritance-NMLZ[person] 'successor'	<i>adidie</i> 'inheritance/inheritance'	• Aff	$[[[[N]_i [V]_j]_{Nk} \neg fo]_{Nx}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf	Agent	
177	defo / ɔdzefo	<i>ɔ-de-fo</i> (<i>ɔ-dze-fo</i>) SG-thing-NMLZ[person] 'rich/wealthy person'	<i>ade</i> 'thing, wealth'	• Aff	$[[N]_i \neg fo]_{Nj}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf	Property	
178	demude	<i>ade-mu-de</i> thing-in-thing 'well-kept possession'	<i>ade</i> 'thing (a safe)' <i>mu</i> 'in' <i>de</i> 'thing'	• Comp	$[[[[N]_i [N]_j]_{Nk} [N]_x]_{Nx}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Result
179	deneho	<i>ɔ-de-ne-ho</i> 3SG-hold-“SGPOSS-self 'self reliant (self sufficient) person'	<i>ɔ-de ne ho</i> 3SG-hold SGPOSS self 's/he is in control of himself/herself'	• LEX	$[[PRN]_i [[V]_j [[POSS]_k [N]_x]_{NP}]_{VP}]_{IP}$	$[[PRN]_i [[V]_j [[POSS]_k [N]_x]_{NP}]_{VP}]_{IP}$		N/A	N/A	
180	deseε	<i>ade-see</i> thing-destroy 'wastefulness'	<i>see ade</i> destroy thing 'destroy a thing'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
181	deseεfo	<i>adesee-fo</i> wastefulness-NMLZ[person] 'prodigal/ wasteful person'	<i>adesee</i> SG-thing-destroy 'wastefulness'	• Aff	$[[[[N]_i [V]_j]_{Nk} \neg fo]_{Nx}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf	Agent	
182	desoa	<i>ade-soa</i> thing-carry 'burden'	<i>soa ade</i> carry thing 'to carry something'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Product

183	desua	<i>ade-sua</i> thing-learn 'education, learning'	<i>sua ade</i> learn thing 'learning'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act	
184	desua ahyese	<i>adesua ahyese</i> learning beginning 'beginning of education'	<i>adesua</i> 'learning' <i>ahyese</i> 'beginning'	• Comp	$[[[N]_i [V]_j]_{Nk} [a- [[V]_x [N]_y]_{VP}]_{Nz}]_{Nz}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Product	
185	deto	<i>ade-to</i> thing-buy 'act of buying'	<i>tɔ ade</i> buy thing 'to buy something'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Action	
186	detɔfo	<i>ɔ-detɔ-fo</i> SG-buying-NMLZ _[person] 'buyer'	<i>adetɔ</i> 'act of buying'	• Aff	$[[[N]_i [V]_j]_{Nk} -fo]_{Nx}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf		Agent	
187	detɔn	<i>ade-tɔn</i> thing-sell-NMLZ _[person] 'selling'	<i>tɔn ade</i> sell thing 'to sell something'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Action	
188	detɔnfo	<i>ɔ-detɔn-fo</i> SG-selling-NMLZ _[person] 'sellers, traders'	<i>adetɔn</i> 'selling'	• Aff	$[[[N]_i [V]_j]_{Nk} -fo]_{Nx}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf		Agent	
189	detsebir	<i>a-detse-bir</i> PL-soil-dark 'black soil'	<i>datse a o-bir</i> soil REL 3-be.black/dark 'soil that is black/dark'	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	[N+A]	L	L	Property	
190	dewa	<i>ade-wa</i> thing-DIM 'trifle'	<i>ade</i> 'a thing'	• Aff	$[[N]_i -wa]_{Nj}$	$[[N]_i -wa]_{Nj}$	$[[N] -wa]$	Suf		Result	
191	deye	<i>ade-ye</i> thing-do 'working/carrying out an activity'	<i>ye ade</i> do thing 'to do something/to act'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Action	
192	deyefoo	<i>ɔ-deye-fo-ɔ</i> SG-working-NMLZ _[person] -AFV 'hardworking person'	<i>adeye</i> 'working'	• Aff	$[[[N]_i [V]_j]_{Nk} -fo]_{Nx}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf		Agentive	
193	deyepena	<i>ade-ye-pe-na</i> (adeepena) thing-be-search-difficult 'Scarce commodity' (a name)	<i>ade-ye-pe-na</i> (adeepena) thing-be-search-difficult 'Scarce commodity' (a name)	• LEX	$[[N]_i [[V]_j [[N]_k [A]_x]_{NP}]_{VP}]_{IP}$	$[[N]_i [[V]_j [[N]_k [A]_x]_{NP}]_{VP}]_{IP}$	$[[N]_i [[V]_j [[N]_k [A]_x]_{NP}]_{VP}]_{IP}$	$[[N]_i [[V]_j [[N]_k [A]_x]_{NP}]_{VP}]_{IP}$	N/ A	N/ A	Property

194	diadeni (ødedifo)	<i>o-di-ade-ni</i> SG-inherit-thing-NMLZ[person.SG] 'succesor'	<i>di ade</i> assume thing 'to inherit something/position'	• Aff	$[[[[V_i [N_j]_{VP}]_{NK} -ni]_{Nx}}$	$[[N_i -ni]_{Nj}}$	$[[V+N] -ni]$	Suf	Agent
195	diasempa	<i>o-di-asem-pa</i> NMLZ-engage_in-matter-good 'one who does what is right'	<i>di asem pa</i> engage_in matter good 'to do what is right'	• Aff	$[o- [[V_i [[N_j [A_k]_{Nj}]_{VP}]_{Nx}}$	$[O- [[V_i [N_j]_{VP}]_{NK}}$	$[o- [V+N]]$	Pre f	
196	diawuo	<i>o-di-awu-o</i> NMLZ-engage_in-death-AFV 'murderer/one who causes harm'	<i>di awu</i> engage_in mayhem/murder 'to cause murder/harm'	• Aff	$[o- [[V_i [a- [V_j]_{NK}]_{VP}]_{Nx}}$	$[O- [[V_i [N_j]_{VP}]_{NK}}$	$[o- [V+N]]$	Pre f	Agen tive
197	dibea	<i>di-bea</i> assume-location/place 'position'	<i>di-bea</i> assume-place 'position'	• Comp	$[[V_i [N_j]_{NK}}$	$[[V_i [N_j]_{NK}}$	$[V+N]$	L N	Resu lt
198	difuude	<i>a-di-fiu-de</i> NMLZ-eat-plenty-thing 'cheap_unpaid_for-thing'	<i>di fiu ade</i> eat plenty cheap_unpaid_for thing	• Comp	$[[a- [[V_i [Adv_j]_{VP}]_{NK} [N_x]_{Ny}}$	$[[N_i [N_j]_{Nj}}$	$[N+N]$	R R	Resu lt
199	difuudepe	<i>adifuude-pe</i> cheap_unpaid_for_thing-like 'desire for cheap_things/greediness'	<i>pe adifuude</i> like cheap_unpaid_for_thing 'to like a lot of cheap things'	• HD- Inv • Comp	$[[a- [[V_i [Adv_j]_{VP}]_{NK} [N_x]_{Ny}$	$[[N_i [V_j]_{NK}}$	$[N+V]$	R N	Stati ve
200	dikanfo	<i>ɔ-di-kan-fo</i> NMLZ-assume-front-NMLZ[person] 'a leader/founder/pioneer/ancestor'	<i>di kan</i> assume front/lead 'to lead'	• Aff	$[[a- [[V_i [N_j]_{VP}]_{NK} -fo]_{Nx}}$	$[[N_i -fo]_{Nj}}$	$[[N] -fo]$	Suf	Agent
201	dima	<i>o-di-ma</i> NMLZ-eat-give-NMLZ[person] 'intercession/advocacy'	<i>di ma</i> eat-give 'to intercede'	• Aff	$[o- [[V_i [V_j]_{VP}]_{NK}}$	$[O- [[V_i [V_j]_{VP}]_{NK}}$	$[o- [V+V]]$	Pre f	Action/Act
202	dimafoo	<i>odima-fo-ɔ</i> intercession-NMLZ[person] 'intercessor/advocate'	<i>odima</i> 'intercession'	• Aff	$[[o- [[V_i [V_j]_{VP}]_{NK} -fo]_{Nx}}$	$[[N_i -fo]_{Nj}}$	$[[N] -fo]$	Suf	Agent
203	dimmone	<i>dim-mɔne</i> name-bad 'name name'	<i>din</i> 'name' <i>bɔne</i> 'bad'	• Comp	$[[N_i [A_j]_{Ni}}$	$[[N_i [A_j]_{Ni}}$	$[N+A]$	L L	Resu lt
204	diyi	<i>adi-yi</i> open-reveal 'revelation/manifestation'	<i>yi adi</i> make open 'to reveal'	• HD- Inv • Comp	$[[N_i [V_j]_{NK}}$	$[[N_i [V_j]_{NK}}$	$[N+V]$	R N	Action

205	diyifoɔ	<i>o-diyi-fo-ɔ</i> SG-revelation-NMLZ[person] 'prophet'	<i>odiyi</i> 'revelation'	• Aff	$[[[[N]_i [V]_j]_{Nk} \cdot fo]_{Nx}}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Experiencer
206	dodoɔ	<i>ɔ-dodo-ɔ</i> NMLZ-many-AFV 'the majority of people'	<i>dodoɔ</i> 'many'	• Aff	$[\sigma \cdot [A]_i]_{Nj}$	$[O \cdot [A]_i]_{Nj}$	$[\sigma \cdot [A]]$	Pre f	Result
207	dodoɔ amammuo	<i>ɔdodoɔ amammuo</i> many governance 'democracy'	<i>codoɔc amammuo</i> 'many' 'governance'	• Comp	$[[\sigma \cdot [A]_i]_{Nj} [a \cdot [[N]_k [V]_x]_{Ny}]_{Nz}]_{Nz}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R	R Result
208	dom	<i>a-dom</i> NMLZ-to_favour 'grace/favour'	<i>dom</i> 'to favour'	• Aff	$[a \cdot [V]_i]_{Nj}$	$[a \cdot [V]_i]_{Nj}$	$[a \cdot [V]]$	Pre f	Result
209	domakyede	<i>ɔ-dom-akyede</i> NMLZ-grace-gift 'gift of grace'	<i>adom</i> 'grace' <i>akyede</i> 'gift'	• Comp	$[[\sigma \cdot [V]_i]_{Nj} [a \cdot [[V]_k [N]_x]_{VP}]_{Ny}]_{Ny}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R	R product
210	domfo	<i>ɔ-dom-fo</i> NMLZ-show_favour-NMLZ[person] 'benefactor'	<i>dom</i> 'to favour'	• Aff	$[[\sigma \cdot [V]_i]_{Nj} \cdot fo]_{Nk}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agent
211	dom-nsu	<i>adom-nsu</i> favour-water/rain 'grace water/rain (type of rainfall)'	<i>adom</i> 'grace/favour' <i>nsu</i> 'water/rain'	• Comp	$[[a \cdot [V]_i]_{Nj} [N]_k]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R	R
212	duaba	<i>n-dua-ba</i> PL-tree-DIM 'twig'	<i>dua ba</i> tree child 'twig'	• Aff	$[[N]_i \cdot ba]_{Nj}$	$[[N]_i \cdot wa]_{Nj}$	$[[N] \cdot ba]$	Suf	
213	duabatabo ɔ	<i>dua-bata-boɔ</i> tree-cling_to-stone 'that which is inextricably linked to another'	<i>dua a ε-bata boɔ</i> tree REL 3SG-cling_to stone 'a tree that is clinging to a rock'	• LEX	$[[N]_i [[V]_j [N]_k]_{VP}]_{IP}$	$[[N]_i [[V]_j [N]_k]_{VP}]_{IP}$	$[N+VP]$	N/ A	N/ A Result
214	duase	<i>dua-se</i> tree-under 'name of a town'	<i>dua ase</i> tree under 'the base of a tree'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	$[N+N]$	L	N Loc
215	duasin	<i>dua-sin</i> tree-fraction 'stump'	<i>dua</i> 'tree' <i>sin</i> 'fraction'	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	$[N+A]$	L	L Result

	dubiako	<i>du-biako</i> ten-one 'eleven'	<i>du</i> 'ten' <i>biako</i> 'one'	• Comp	$[[[Num]_i [Num]_j]_{NUMk}}$	$[[[Num]_i [Num]_j]_{NUMk}}$	[Num+Num]	L	N	Result
216	duebien	<i>du-ebien</i> ten-two 'twelve'	<i>du</i> 'ten' <i>ebien</i> 'two'	• Comp	$[[[Num]_i [Num]_j]_{NUMk}}$	$[[[Num]_i [Num]_j]_{NUMk}}$	[Num+Num]	L	N	Result
217	dunwɔtwe	<i>du-nwɔtwe</i> (<i>du-awɔtwe</i>) ten-eight 'eighteen'	<i>du</i> 'ten' <i>nwɔtwe</i> (<i>awɔtwe</i>) 'eight'	• Comp	$[[[Num]_i [Num]_j]_{NUMk}}$	$[[[Num]_i [Num]_j]_{NUMk}}$	[Num+Num]	L	N	Result
218	dupɔn	<i>n-du-pɔn</i> PL-tree-great 'huge trees'	<i>dua</i> 'tree' <i>pɔn</i> 'great'	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	[N+A]	L	L	Property
219	duradee	<i>a-dura-de-ɛ</i> NMLZ-cover-thing-AFV 'clothing/covering'	<i>dura</i> 'to cover' <i>ade</i> 'thing'	• Comp	$[[a- [V]_i]_{Nj} [N]_k]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Instrument/Result
220	duruye	<i>aduru-ye</i> medicine-do 'healthcare/healing'	<i>ye aduru</i> do medicine 'administer cure'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Agen- tive
221	duruyɛfo	<i>ɔ-duruyɛ-fo</i> NMLZ-healthcare-NMLZ[person] 'physician/doctor/herbalist'	<i>aduruye</i> 'healthcare/healing'	• Aff	$[[[[N]_i [V]_j]_{Nk} -fo]_{Nx}}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf		Agen- tive
222	dwadie	<i>dwa-di-e</i> market-engage-NMLZ 'trading/shopping'	<i>di dwa</i> engage market 'to trade'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Result
223	dwankɔbe a	<i>dwan-kɔ-bea</i> run-go-place 'refuge'	<i>bea a ye-dwane kɔ</i> place REL 3PL-run go 'a place to seek refuge'	• HD- Inv • Comp	$[[[V]_i [V]_j]_{vk} [N]_x]_{Nx}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	
224	dwempa	<i>adwem-pa</i> mind-good 'good intentions/discretion'	<i>adwene</i> 'mind/thought' <i>pa(pa)</i> 'good'	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	[N+A]	L	L	Property
225	dwendahɔ	<i>adwen-da-hɔ</i> mind-lie-there (mind-be_there/be_open) 'astuteness/presence of mind/alertness'	<i>adwen</i> 'mind' <i>da</i> 'good' <i>hɔ</i> 'there'	• LEX	$[[N]_i [[V]_j [PRN]_k]_{VP}]_{IP}$	$[[N]_i [[V]_j [N]_k]_{VP}]_{IP}$	[N+[V+N]]	N/ A	N/ A	

227	dwendwe mfo	<i>a-dwen~dwem-fo</i> NMLZ-RED-think-NMLZ[person] 'thinking being/thoughtful person'	<i>dwene</i> 'to think'	• Aff	$[[a- [RED-V]_i]_{Nj} \cdot fo]_{Nk}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Experiencer
228	dwenehare	<i>adwene-hare</i> mind-fast/light 'light-mindedness/perceptiveness'	<i>adwene-hare</i> 'mind' <i>hare</i> 'fast'	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	$[N+A]$	L	Property
229	dwenehare ni	<i>ɔ-dwenehare-ni</i> NMLZ- perceptiveness-NMLZ[person.SG] 'a perceptive person'	<i>adwene-hare</i> 'perceptiveness'	• Aff	$[[[N]_i [A]_j]_{Nk} \cdot ni]_{Nx}$	$[[N]_i \cdot ni]_{Nj}$	$[[N] \cdot ni]$	Suf	Property
230	dwumadie /(dwumad zi)	<i>dwuma-di-e</i> work-engage-AFV 'activity, work'	<i>di dwuma</i> engage work 'carry out a task'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	Action
231	Dwumadif o	<i>dwumadi-fo</i> work-engage-NMLZ[person] 'worker'	<i>dwumadie</i> 'work/activity'	• Aff	$[[[N]_i [V]_j]_{Nk} \cdot fo]_{Nx}$	$[[N]_i \cdot ni]_{Nj}$	$[[N] \cdot fo]$	Suf	Agen tive
232	dwumaye/ adwumayo	<i>adwuma-ye</i> (<i>edwuma-ye</i>) work-do '(act of) working/labouring'	<i>ye adwuma</i> do work 'to work'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	Action
233	dwumayef oɔ kuo	<i>adwumayef oɔ</i> <i>kuo</i> workers group 'trade union/workers' group'	<i>kuo</i> 'group.organization' <i>adwumaye</i> 'work'	• Comp	$[[[[N]_i [V]_j]_{Nk} \cdot fo]_{Nx} [N]_y]_{Ny}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R	Product/R esult
234	dwumayef oo	<i>adwumayef oɔ</i> (<i>adwuma-yo-fo-ɔ</i>) working-NMLZ[person]-AFV 'workers'	<i>adwumaye</i> '(act of) working'	• Aff	$[[[N]_i [V]_j]_{Nk} \cdot fo]_{Nx}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agen t
235	dwumfo	<i>a-dwum-fo</i> PL-to_craft- NMLZ[person] 'craftsman/artisan/artist'	<i>dwini</i> 'to fabricate'	• Aff	$[[a- [V]_i]_{Nj} \cdot fo]_{Nk}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agen t
236	dzekyee	<i>adze-kye-e</i> thing-become_visible-NMLZ 'daybreak/daylight'	<i>adze a-kye</i> thing PERF-become_visible 'things have become visible'	• Aff	$[[[N]_i [V]_j]_{IP} \cdot e]_{Nx}$	$[[[N]_i [V]_j]_{IP} \cdot e]_{Nx}$	$[[N+V] \cdot I]$	Suf	Resu lt
237	dzepam	<i>adze-pam</i> thing-sew 'sewing/tailoring'	<i>pam adze</i> sew thing 'to sew'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	Act

238	dzepamnyi	<i>adzepam-nyi</i> sewing-NMLZ[person] 'seamstress/tailor'	<i>adzepam</i> 'sewing'	• Aff	$[[[[N]_i [V]_j]_{Nk} -ni]_{Nx}}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf	Agent
239	dzidzi	<i>e-dzi~dzi</i> NMLZ-RED~eat 'eating'	<i>dzidzi</i> 'to eat'	• Aff	$[e- [V]_i]_{Nj}$	$[a- [V]_i]_{Nj}$	$[a- [V]]$	Pre f	Act
240	dzidzikaw	<i>edzidzi kaw</i> eating debt 'the cost of feeding'	<i>edzidzi</i> 'eating' <i>kaw</i> 'debt'	• Comp	$[[e- [V]_i]_{Nj} [N]_k]_{Nx}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R R	Result
241	dzidzifo	<i>o-dzidzi-fo</i> SG-RED~eat 'glutton (lit. eater)'	<i>edzidzi</i> 'eating'	• Aff	$[[o- [V]_i]_{Nj} -fo]_{Nk}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Agentic
242	dzi	<i>n-dzi-i</i> NMLZ-eat-NMLZ 'execution (eating) of'	<i>dzi</i> 'to eat/execute'	• Aff	$[[n- [V]_i]_{Nj} -i]_{Nk}$	$[[n- [V]_i]_{Nj} -e]_{Nk}$	$[[M- [V]] -I]$	Suf	Act
243	dzinoa	<i>n-dzi-noa</i> NMLZ-eat-cook 'benefit'	<i>noa</i> 'to cook' <i>dzi</i> 'eat'	• Aff	$[n- [V]_i [V]_j]_{Nk}$	$[n- [V]_i [V]_j]_{Nk}$	$[n- [V+V]]$	Pre f	Result
244	eboa gow	<i>eboa gow</i> net weak 'decrepit net'	<i>eboa</i> 'net' <i>gow</i> 'weak'	• Comp	$[[N]_i [V]_j]_{Ni}$	$[[N]_i [V]_j]_{Ni}$	$[N+V]$	L L	Result
245	eboahata	<i>eboa-hata</i> net-drying 'net-drying'	<i>hata eboa</i> drying net 'drying net'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N	Act
246	eburontesw	<i>eburo-ntsew</i> maize-hask 'maize husk/chaff'	<i>eburo-</i> 'maize' <i>ntsew</i> 'chaff/hask'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R R	
247	efirsuanyi	<i>efir-sua</i> trap-set 'trap-setting'	<i>sua efir</i> set trap 'to set a trap'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N	Act
248	efirsuanyi	<i>efirsua-nyi</i> trap-setting-NMLZ[person.SG] 'the one who sets a trap'	<i>efirsua</i> 'trap setting'	• Aff	$[[[[N]_i [V]_j]_{Nk} -ni]_{Nx}}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf	Agentic

249	efuw	<i>e-fuw</i> NMLZ-grow 'grass (lit. growth)'	<i>fuw</i> 'to grow'	• Aff	$[e \cdot [V]_i]_{Nj}$	$[a \cdot [V]_i]_{Nj}$	$[e \cdot [V]]$	Pre f	Resu lt
250	enoantem	<i>e-noa-n̩tem</i> 3SGSUBJ-cook-quick 'it cooks fast (name of a gas stove)'	<i>e-noa n̩tem</i> SG-cook quick 'it cooks fast'	• LEX	$[[PRN]_i [[V]_j [Adv]_k]_{VP}]_{IP}$	$[[PRN]_i [[V]_j [Adv]_k]_{VP}]_{IP}$		N/ A	N/ A
251	enwitaaso	<i>en-wi-taa-so-ɔ</i> NMLZ-shew-put-top_of-AFV 'persistence/determination'	<i>wi taa so</i> chew pile on 'to determine'	• Aff	$[en- [[V]_i [[V]_j [N]_k]_{VP}]_{VP}]_{Nx}$	$[en- [[V]_i [[V]_j [N]_k]_{VP}]_{VP}]_{Nx}$	$[en- [V+ [V+N]]]$	Pre f	
252	enyigye	<i>enyi-gye</i> eye-get 'happiness'	<i>gye enyi</i> get eye 'be happy'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N	Resu lt
253	enyikam	<i>enyi-kam</i> eye-mark 'earmark (lit. eyemark)'	<i>enyi</i> 'eye' <i>akam</i> 'mark'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	$[N+N]$	R N	Resu lt
254	fadze	<i>a-fa-dze</i> NMLZ-dress-thing 'costume'	<i>fa adze</i> dressing thing 'to dress (lit. to take something)'	• Aff	$[a- [[V]_i [N]_j]_{VP}]_{Nk}$	$[a- [[V]_i [N]_j]_{VP}]_{Nk}$	$[a- [V+N]]$	Pre f	Prod uct
255	fakyɛ	<i>fa-kye</i> sin-take-give_as_a_gift 'forgiveness'	<i>fa kye</i> take give_as_a_gift 'to forgive'	• Comp	$[[V]_i [V]_j]_{Nk}$	$[[V]_i [V]_j]_{Nk}$	$[V+V]$	B N	Resu lt
256	famu mbae	<i>famu m-ba-e</i> ground NMLZ-come-NMLZ 'coming to the shore'	<i>famu</i> 'ground' <i>mbae</i> 'come'	• Comp	$[[N]_i [[m- [V]_j]_{Nk} -e]_{Nx}]_{Nx}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R R	Action
257	fantsefo	<i>M-fantse-fo</i> NMLZ-Fante-NMLZ[person] 'the Fante people'	<i>mfantse</i> 'the Fante tribe'	• Aff	$[[m- [N]_i]_{Nj} -fo]_{Nk}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Prov enan ce
258	far kuro	<i>ɔ-far kuro</i> NMLZ-fishing town 'fishing town/community'	<i>far</i> 'fishing' <i>kuro</i> 'town'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R R	Loca tion
259	farebae	<i>fare-ba-e</i> take-come-NMLZ 'founder, originator'	<i>fa ba</i> take come 'to bring into being'	• Aff	$[[[V]_i [V]_j]_{VP} -e]_{Nk}$	$[[[V]_i [V]_j]_{VP} -e]_{Nk}$	$[[V+V] -I]$	Suf	Resu lt

260	farfo	<i>a-far-fo</i> PL-fishing-NMLZ[person] 'fishermen/fishers'	<i>far</i> 'fishing'	• Aff	$[[N]_i \cdot fo]_{Nj}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agen tive
261	farfo mbaa	<i>afarfo mbaa</i> ¹¹⁷ (mbasiafo/ far mbaa) 'women fisher folks/fisher woman' 'lady fishers/fisherwomen'	<i>afarfo</i> 'fishermen' <i>mbaa/mbasiafo/mbaa</i> 'women'	• Comp	$[[PL\text{-}N]_i \cdot fo]_{Nj} [PL\text{-}N]_{Nk}]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R	R Agen tive
262	farnyi	<i>ɔ-far-nyi</i> NMLZ-fishing-NMLZ[person.SG] 'fisherman'	<i>far</i> 'fishing'	• Aff	$[[N]_i \cdot ni]_{Nj}$	$[[N]_i \cdot ni]_{Nj}$	$[[N] \cdot ni]$	Suf	Agen tive
263	fasope	<i>mfaso-pe</i> profit-like 'profit orientedess'	<i>pe mfaso</i> like profit 'to like/look for profit'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	N Action
264	fasopefo	<i>mfasope-fo</i> profit_orientedness-NMLZ[person] 'profit oriented trader'	<i>mfasope</i> 'profit-orientedness'	• Aff	$[[N]_i [V]_j]_{Nk} \cdot fo]_{Nx}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agen t
265	fe	<i>fé</i> throw up 'vomit'	<i>fé</i> 'to throw up'	• Tonal alternatio n	$[[V]_i]_{Nj}$	$[[V]_i]_{Nj}$	$[V]$	N/ A	N/ A Result
266	fefoo	<i>afe-fo-ɔ</i> equal-NMLZ[person]-AFV 'coequals/contemporaries'	<i>afe</i> 'equals/age mates/contemporary'	• Aff	$[[N]_i \cdot fo]_{Nj}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Prop erty
267	fekuo (afekuo)	<i>afe-kuo</i> equal-group 'organization/group of equals/fellowship'	<i>afe</i> 'equals/contemporaries' <i>kuo</i> 'group/organization'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R	R Result
268	fekuwbo	<i>afekuw-bo</i> fellowship-joing 'joining an organization'	<i>bo fe-kuw-</i> joing equal-group 'join a group of equals'	• HD- Inv • Comp	$[[N]_i [N]_j]_{Nj} [V]_k]_{Nx}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	N Action
269	fiase	<i>a-fi-ase</i> PL-house-under 'prison'	<i>fi</i> 'house' <i>ase</i> 'under'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	$[N+N]$	L	N Loc
270	fidua	<i>fi-dua</i> house-tree 'home, household'	<i>fi dua</i> house tree 'home'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	$[N+N]$	N	N Result

¹¹⁷ Inflected nominal bases occur as a compound member.

271	fiembowa	<i>fie-m-bowa</i> home-PL-animal 'domestic(ated) animals'	<i>fie</i> 'home' <i>m-bowa</i> 'PL-animal'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Result
272	fifo	<i>fi-fo</i> home-NMLZ[person] 'family members'	<i>fi</i> 'home'	• Aff	$[[N]_i -fo]_{Nj}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf		Result
273	fintsidua (hintidua)	<i>fintsi-dua</i> (hinti-dua) stumble-wood 'stumbling block'	<i>Fintsi (hinti)</i> 'stumble' <i>dua</i> 'wood'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	[V+N]	R	N	Instrumental
274	fipamfo	<i>o-fi-pam-fo</i> SG-house-join-NMLZ[person] 'immediate neighbours'	<i>ofi pam</i> house sew 'joining of dwellings'	• Aff	$[[[N]_i [V]_j]_{Nk} -fo]_{Nx}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf		Result
275	firidwuma	<i>m-firi-dwuma</i> PL-machine-work 'industries'	<i>m-firi-</i> 'PL-machine' <i>adwuma</i> 'work'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Result
276	fisem	<i>a-fi-sem</i> PL-house-matter 'domestic matter'	<i>fi</i> 'home' <i>asem</i> 'matter'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Property
277	fitiasee (mfiase)	<i>m-fiti-ase-e</i> NMLZ-bore_into-under-AFV 'beginning/foundation"	<i>fiti ase</i> enter under 'to begin (lay the foundation of)'	• Aff	$[m- [[V]_i [N]_j]_{VP}]_{Nk}$	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[m- [V+N]]$	Pre f		Product/Result
278	foforɔ	<i>ɔ-sofor-ɔ</i> NMLZ-new-AFV 'others (people/things)'	<i>sofor</i> 'new'	• Aff	$[\partial- [A]_i]_{Nj}$	$[O- [A]_i]_{Nj}$	$[\partial- [A]]$	Pre f		Result
279	fomsoo	<i>m-som-so-ɔ</i> NMLZ-miss-on-AFV 'blunder'	<i>som so</i> miss on 'to miss'	• Aff	$[m- [[V]_i [N]_j]_{VP}]_{Nk}$	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[M- [V+N]]$	Pre f		Result
280	fonyin tsintsimii	<i>mfonyin n-tsin~tsimi-i</i> picture NMLZ-RED~print-NMLZ 'drawing'	<i>tsin~tsimi</i> <i>mfonyin</i> RED~print picture 'print picture'	• Comp	$[[N]_i [n- [[RED-V]_j -i]_{Nk}]_{Nx}]_{Ni}$	$[[N]_i [N]_j]_{Ni}$	[N+N]	L	L	Result
281	frama-no	<i>mframa-no</i> wind-mouth 'direction of the wind'	<i>mframa ano</i> wind mouth 'direction of the wind'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	[N+N]	L	N	

282	guadzi (guadi)	<i>gua-dzi</i> (<i>a-gua-di</i>) NMLZ-engage_in-market 'trading'	<i>dzi gua</i> engage_in market 'to trade'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Action
283	guadzinyi (guadini)	<i>oguadzi-nyi</i> (<i>aguadi-ni</i>) NMLZ-market-engage_in-NMLZ[person] 'trader'	<i>oguadzi</i> 'a trade'	• Aff	$[[[[N]_i [V]_j]_{Nk} \cdot ni]_{Nx}}$	$[[N]_i \cdot ni]_{Nj}$	$[[N] ni]$	Suf	Agent	
284	guan	<i>en-guan</i> NMLZ-run 'race'	<i>guan</i> 'to run'	• Aff	$[en \cdot [V]_i]_{Nj}$	$[en \cdot [V]_i]_{Nj}$	$[en \cdot [V]]$	Pre f		
285	gyaesayayo	<i>gyae-saa-yo</i> stop-that-do 'stop doing that (a personal name)'	<i>gyae saa yo</i> stop that do 'stop doing that'	• LEX	$[[V]_x [[N]_i [V]_j]_{Nk}]_{VP}$	$[[V]_x [[N]_i [V]_j]_{Nk}]_{VP}$	[V+N]	N/ A	N/ A	
286	gyanka	<i>a-gya-n-ka</i> SG-father-NEG-remain 'orphan'	<i>agya a-n-ka</i> father PAST-NEG-remain 'father did not remain'	• Comp	$[[N]_i [NEG-V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Result
287	gyapadee	<i>agya-pa-de-e</i> (adwapadee) father-good-thing- 'an inheritance/a property'	<i>agya</i> 'father' <i>pa(pa)</i> 'good' <i>ade(e)</i> 'thing'	• Comp	$[[[N]_i [A]_j]_{Nk} [N]_x]_{Ny}$	$[[N]_i [N]_j]_{Nk}$	[N+N]	R	N	
288	gyefo(o)	<i>ɔ-gye-fo</i> NMLZ-save-NMLZ[person] 'saviour'	<i>gye</i> 'to save'	• Aff	$[[\sigma \cdot [V]_i]_{Nj} \cdot fo]_{Nk}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agent	
289	gyidie	<i>gyi-di-e</i> take-eat-AFV 'faith'	<i>gyi di</i> take eat 'to believe'	• Comp	$[[V]_i [V]_j]_{Nk}$	$[[V]_i [V]_j]_{Nk}$	[V+V]	B	N	Result
290	gyinabew	<i>gyina-bew</i> stand-place 'position'	<i>gyina-bew</i> stand-place 'position'	• Comp	$[[V]_i [N]_j]_{Nk}$	$[[V]_i [N]_j]_{Nk}$	[V+N]	R	N	Loc
291	gyinae	<i>a-gyina-e</i> NMLZ-stand-NMLZ 'decision'	<i>gyina</i> 'to stand'	• Aff	$[[a \cdot [V]_i]_{Nj} \cdot e]_{Nk}$	$[[a \cdot [V]_i]_{Nj} \cdot e]_{Nk}$	$[[N]_i \cdot e]_{Nj}$	Suf		Result
292	gyinamudi	<i>agyina-mu-di</i> stand-in-assume 'guaranteeing/advocacy'	<i>di agyina mu</i> assume standing in 'to guarantee'	• HD- Inv • Comp	$[[a \cdot [[V]_i [N]_j]_{VP}]_{Nk} [V]_x]_{Ny}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act

	gyinamudi ni	<i>agyinamudi-ni</i> guaranteeing-NMLZ[person.SG] 'guarantor'	<i>agyinamudi</i> 'guaranteeing/advocacy'	• Aff	$[[a- [[V]_i [N]_j]_{VP}]_{Nk} [V]_x]_{Ny} -ni]_{Nz}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf	Prop erty
293	293	gyinatu	<i>agyina-tu</i> standing-move-NMLZ[person] 'consultaton/taking council elsewhere'	<i>tu agyina</i> move standing 'to consult'	• HD- Inv • Comp	$[[a- [V]_i]_{Nj} [V]_k]_{Nx}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N Act
294	294	gyinatufo:	<i>agyinatu-fo</i> consultation-NMLZ[person] 'counselors'	<i>agyinatu</i> 'consultation'	• Aff	$[[a- [V]_i]_{Nj} [V]_k]_{Nx} -fo]_{Ny}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf Agent
295	295	haansa	<i>a-ha-ansa</i> PL-hundred-three 'three hundred'	<i>ɔha</i> 'hundred' <i>nsa</i> 'three'	• Comp	$[[Num]_i [Num]_j]_{NUMk}$	$[[Num]_i [Num]_j]_{NUMk}$	$[Num+Num]$	L N
296	296	haanu aduonu	<i>ahaanu aduonu</i> two_hundred twenty 'two hundred and twenty'	<i>ahanu</i> 'two hundred' <i>aduonu</i> 'twenty'	• Comp	$[[[Num]_i [Num]_j]_{Nk} [[Num]_x [Num]_y]_{Nz}]_{NUMr}$	$[[Num]_i [Num]_j]_{NUMk}$	$[Num+Num]$	L N
297	297	haanu aduowɔtw e	<i>a-haanu aduowɔtw</i> PL-two_hundred eighty 'two hundred and eighty'	<i>ahanu</i> 'two hundred' <i>aduowɔtw</i> 'eighty'	• Comp	$[[[Num]_i [Num]_j]_{Nk} [[Num]_x [Num]_y]_{Nz}]_{NUMr}$	$[[Num]_i [Num]_j]_{NUMk}$	$[Num+Num]$	L N
298	298	haban-ase- fo	<i>haban-ase-fo</i> shrub-under-NMLZ[person] 'people of the forest/farming community'	<i>haban-ase</i> shrub-under 'faming community'	• Aff	$[[[N]_i [N]_j]_{Nk} -fo]$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf Provenance
299	299	haesia	<i>a-ha-esia</i> PL-hundred-six 'six hundred'	<i>ɔha</i> 'hundred' <i>esia</i> 'six'	• Comp	$[[Num]_i [Num]_j]_{NUMij}$	$[[Num]_i [Num]_j]_{NUMij}$	$[Num+Num]$	B B
300	300	hambowa	<i>ha-m-bowa</i> forest-in-animal 'wild animals'	<i>ha mu abowa</i> forest in animal 'wild animals'	• Comp	$[[[N]_i [N]_j]_{Nk} [N]_x]_{Nx}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R R
301	301	hamuni	<i>ɔ-ha-mu-ni</i> SG-forest-NMLZ[person.SG] 'a village dweller'	<i>ha mu</i> forest in	• Aff	$[[[N]_i [N]_j]_{Nk} -ni]_{Nx}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf Provenance
302	302	hanamanta ber	<i>ahanamanta-ber</i> harmattan-time 'harmattan season'	<i>ahanamanta</i> 'harmattan' <i>aber</i> 'time'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R R

	hatae	<i>n-hata-e</i> NMLZ-to_dry-NMLZ 'drying/dried ones'	<i>hata</i> 'to dry'	• Aff	$[[n- [V]_i]_{Nj} -e]_{Nk}$	$[[n- [V]_i]_{Nj} -e]_{Nk}$	$[[M- [V]] -I]$	Suf	Act/ Resu lt	
304	305	haw	<i>ɔ-haw</i> NMLZ-worry 'disturbance, ...'	<i>haw</i> 'to disturb'	• Aff	$[\partial- [V]_i]_{Nj}$	$[O- [V]_i]_{Nj}$	$[\partial- [V]]$	Pre f	Resu lt
305	306	hembat	<i>hem-ba</i> vehicle-DIM 'canoe'	<i>hem ba</i> vehicle child 'a small vehicle'	• Aff	$[[N]_i -ba]_{Nj}$	$[[N]_i -wa]_{Nj}$	$[[N] -ba]$	Suf	Resu lt
306	307	hembatwe	<i>hemba-twe</i> canoe-pull 'canoe dragging'	<i>twe hemba</i> pull canoe 'to drag a canoe'	• HD- Inv • Comp	$[[[N]_i -ba]_{Nj} [V]_k]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N	Act
307	308	hemmaa	<i>ɔ-hem-maa</i> SG-king-female 'queen (mother)'	<i>ɔhene</i> 'chief' <i>ɔbaa</i> 'female'	• Comp	$[[N]_i [N]_j]_{Nij}$	$[[N]_i [N]_j]_{Nij}$	$[N+N]$	L B	Prop erty
308	309	hempən	<i>hem-pən</i> king-great 'paramount chief'	<i>ɔhene pən</i> king great 'great king, paramount chief'	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	$[N+A]$	L L	
309	310	hənka	<i>hen-ka</i> vehicle-drive 'driving/operating a vehicle'	<i>ka hen</i> drive vehicle 'to drive/operate a vehicle'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N	Act
310	311	hənkan	<i>hen-kan</i> vehicle-front 'the front of a canoe'	<i>hən</i> 'vehicle' <i>kan</i> 'front'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	$[N+N]$	L N	
311	312	henkan gyina	<i>henkan gyina</i> vehicle_front stand 'marksmanship'	<i>gyina hen-kan</i> stand vehicle-front	• HD- Inv • Comp	$[[[N]_i [N]_j]_{Nk} [V]_x]_{Ny}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N	Act
312	313	henkanyi	<i>henka-nyi</i> driving-NMLZ[person.SG] 'driver/operator (specialized: the one who casts the nets during fishing)'	<i>henka</i> drive vehicle 'driving/operate a vehicle'	• Aff	$[[[N]_i [V]_j]_{Nk} -ni]_{Nx}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf	Agent
313	314	henkwa	<i>a-hen-kwaa</i> PL-chief-servant 'servant'	<i>ɔhen(e) akwaa</i> chief servant 'the chief's servant'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R R	Prop erty

	315	hənsen	<i>a-hen-sen</i> PL-vehicle-carve '(vehicle = canoe) carving'	<i>sen hen</i> carve vehicle 'to carve a vehicle (canoe)'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
	316	hentu	<i>hen-tu</i> vehicle-hole 'the rear of a canoe'	<i>hen</i> 'vehicle' <i>tu</i> 'hole'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	[N+N]	R	N	
	317	hentu	<i>hen-tu</i> vehicle-move 'driving/operating a vehicle'	<i>tu hen</i> move vehicle 'to move a vehicle'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
	318	həntunyi	<i>hentu-nyi</i> vehicle_moving-NMLZ[person] 'driver/navigator'	<i>hentu</i> 'vehicle_moving/operating'	• Aff	$[[[[N]_i [V]_j]_{Nk} -ni]_{Nx}}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf		
	319	hia	<i>(o)-hia</i> (NMLZ)-to_need 'poverty'	<i>hia</i> 'to need'	• Aff	$[o- [V]_i]_{Nj}$	$[O- [V]_i]_{Nj}$	$[o- [V]]$	Pref		Result
	320	hiadee (ehiadze)	<i>a-hia-de-e</i> (<i>e-hia-dze</i>) NMLZ-to_need-thing-AFV 'need/necessity'	<i>adee a ε-ho hia</i> thing REL 3SG-self be_needed 'an thing which is needed'	• HD- Inv • Com	$[[a- [N]_i]_{Nj} [N]_k]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Result
	321	hiani	<i>o-hia-ni</i> NMLZ-to_need-NMLZ[person.SG] 'poor person'	<i>ohia</i> 'poverty'	• Aff	$[[o- [V]_i]_{Nj} -ni]_{Nk}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf		
	322	hiasem (asəmhia)	<i>a-hia-sem</i> NMLZ-to_need-matter 'important matter'	<i>asem a ε-hia</i> matter REL 3SG-be_needed 'an important matter'	• HD- Inv • Comp	$[[a- [N]_i]_{Nj} [N]_k]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	
	323	hoampam u	<i>a-ho-a¹¹⁸-m-pa-mu</i> NMLZ-self-SE-NEG-be_wanting-in 'the ubiquitous one'	<i>X ho m-pa mu</i> X self NEG-be_wanting in 'X is never absent (X is ubiquitous)'	• Aff	$[a- [[N]_i a [[NEG-V]_j [N]_k]_{VP}]_{IP}]_{Nx}$	$[a- [[N]_i a [[V]_j [N]_k]_{VP}]_{IP}]_{Nx}$	$[a- [[N]_i a [[V]_j [N]_k]_{VP}]_{IP}]_{Nx}$	$[a- [N+ [V+N]]]$	Pref	Result
324		hobrease	<i>a-ho-bre-ase</i> NMLZ-self-bring-under 'humility'	<i>X bre ne ho ase</i> X bring 3SG-self under 'X humbles himself/herself'	• HD- Inv • Aff	$[a- [[N]_i [[V]_j [N]_k]_{VP}]_{Nx}$	$[a- [[N]_i [[V]_j [N]_k]_{VP}]_{Nx}$	[N+VP]	Pref		Result

¹¹⁸ This is an intrusive segment. Unlike other which can be seen to be residue from the syntactic structure that underlies the nominal, this *-a* does not seem to have such a provenance. It would seem that it mimicks other constructions with similar patterns. This may be regarded as a constructional property.

	hoodzen	<i>a-ho-o-dzen</i> NMLZ-self-be-hard 'strength'	<i>X ho ye dzen</i> X self be hard 'X is strong'	• Aff	$[a- [[N]_i \circ [A]_j]_{Nk}]_{Nx}$	$[[N]_i O [A]_j]_{Nk}$	$[[N] O [A]]$	Pref	Result	
325	326	hoodzenfo	<i>ahoodzen-fo</i> strength-NMLZ-[person] 'strong people'	<i>ahoodzen</i> 'strength'	• Aff	$[[a- [[N]_i \circ [A]_j]_{Nk}]_{Nx} -fo]_{Ny}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Result/Property
326	327	hoofe	<i>a-ho-o-fe</i> NMLZ-self-be-nice 'beauty'	<i>X ho ye fe</i> X self be nice 'X is beautiful'	• Aff	$[a- [[N]_i \circ [A]_j]_{Nk}]_{Nx}$	$[[N]_i O [A]_j]_{Nk}$	$[[N] O [A]]$	Pref	Result
327	328	hohare	<i>a-ho-o-hare</i> NMLZ-self-be-fast 'swiftness'	<i>X ho ye hare</i> X self be light 'X is fast'	• Aff	$[a- [[N]_i \circ [A]_j]_{Nk}]_{Nx}$	$[[N]_i O [A]_j]_{Nk}$	$[[N] O [A]]$	Pref	Result
328	329	hodwo	<i>a-ho-dwo</i> NMLZ-self-cool 'relief'	<i>X ho a-dwo no</i> X self PERF-cool 3SGOBJ 'X is relieved'	• Aff	$[a- [[N]_i [V]_j]_{Nk}]_{Nx}$	$[a- [[N]_i [V]_j]_{Nk}]_{Nx}$	$[a- [N+V]]$	Pre f	Result
329	330	hodze	<i>a-ho-dze</i> NMLZ-self-thing 'personal possession'	<i>ho adze</i> self thing 'personal possession'	• Aff	$[a- [[N]_i [N]_j]_{Nk}]_{Nx}$	$[a- [[N]_i [N]_j]_{Nk}]_{Nx}$	$[a- [N+N]]$	Pre f	Result
330	331	hofadie (fahodie)	<i>a-ho-fa-di-e</i> NMLZ-self-take-rule-AFV 'liberty/freedom/independence'	<i>X a-fa ne ho a-di</i> X PERF-take 3SGPOSS self CONS-eat 'X has has set free'	• HD- Inv • Aff	$[a- [[N]_i [[V]_j [V]_k]_{VP}]_{Nx}]_{Ny}$	$[a- [[N]_i [[V]_j [V]_k]_{VP}]_{Nx}]_{Ny}$	$[a- [N+[V+V]]]$	Pre f	Result
331	332	hogono	<i>a-ho-gono</i> NMLZ-self-be_at_ease 'easiness/freedom from pain/distress'	<i>X ho gono no</i> X self be_at_ease 3SGOBJ 'X is relaxed, at ease'	• Aff	$[a- [[N]_i [V]_j]_{Nk}]_{Nx}$	$[a- [[N]_i [V]_j]_{Nk}]_{Nx}$	$[a- [N+V]]$	Pref	Result
332	333	hohia	<i>a-ho-hia</i> NMLZ-self-to_need 'distress'	<i>X ho hia no</i> X self be_in_need 3SGOBJ 'X is distressed'	• Aff	$[a- [[N]_i [V]_j]_{Nk}]_{Nx}$	$[a- [[N]_i [V]_j]_{Nk}]_{Nx}$	$[a- [N+V]]$	Pre f	Result
333	334	hohia fre	<i>ahohia fre</i> distress call 'distress call/S.O.S'	<i>ahohia</i> 'distress' <i>fre</i> 'call'	• Comp	$[[a- [[N]_i [V]_j]_{Nk}]_{Nx} [N]_y]_{Ny}$	$[[N]_i [N]_j]_{Nj}$	$[N+V]$	R	Product
334	335	hokafoɔ	<i>ho-ka-fo-o</i> self-join-NMLZ[person]-AFV 'companion/partner'	<i>ka</i> 'add_to' <i>ho</i> 'self'	• Aff	$[[[[N]_i [V]_j]_{Nk} -fo]_{Nx}}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Result

	hokyer	<i>a-ho-kyer</i> NMLZ-self/exterior-catch 'difficulty/suffering'	<i>X ho kyere no</i> X self catch 3SGOBJ 'X is in difficulty'	• Aff	$[a- [[N]_i [V]_j]_{Nk}]_{Nx}$	$[a- [[N]_i [V]_j]_{Nk}]_{Nx}$	$[a- [N+V]]$	Pre f	Resu lt	
336	336	home	<i>a-home</i> NMLZ-to_breathe 'breath'	<i>home</i> 'to breathe'	• Aff	$[a- [V]_i]_{Nj}$	$[a- [V]_i]_{Nj}$	$[a- [V]]$	Pre f	Resu lt
337	337	homeka (ahomka)	<i>a-home-ka</i> NMLZ-to_breathe-touch 'satisfaction, rest, good feeling'	<i>X home a-ka ne ho</i> X breath PERF-touch 3SGPOSS self 'X is satisfied/glad, etc.'	• Comp	$[[a- [V]_i]_{Nj} [V]_k]_{Nx}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N	Resu lt
338	338	hometew	<i>a-home-tew</i> (<i>a-hom-te-e</i>) NMLZ-to_breathe-to_tear 'disturbance/discomfort'	<i>X tew home</i> X tear breath 'X is vexatious'	• Comp	$[[a- [V]_i]_{Nj} [V]_k]_{Nx}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N	Resu lt
339	339	hom-mbra- mbedzidzi	hom-m-bra-m-be-dzidzi 2PL-IMP-come-IMP-INGR-eat '(You (pl.)) come and eat'	hom-m-bra m-be-dzidzi 2PL-IMP-come IMP-INGR-eat '(You (pl.)) come and eat'	• LEX	$[[N]_i [[V]_j [V]_k]_{VP}]_{IP}$	$[[N]_i [[V]_j [V]_k]_{VP}]_{IP}$		N/ A	N/ A
340	340	honam	<i>ho-nam</i> self/exterior-meat/flesh 'the skin'	<i>ho</i> 'self/exterior' <i>nam</i> 'meat/flesh'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	$[N+N]$	R N	
341	341	honamase	<i>honam-ase</i> skin-under 'feelings/condition in the flesh/self'	<i>honam</i> 'the skin'	• Comp	$[[[N]_i [N]_j]_{Nk} [N]_x]_{Ny}$	$[[N]_i [N]_j]_{Nk}$	$[N+N]$	L N	
342	342	honim	<i>a-ho-nim</i> NMLZ-self-to_know 'conscience (self knowledge)'	<i>X nim ne ho</i> X know 3SGPOSS self 'X knows himself/herself'	• HD- Inv • Aff	$[a- [[N]_i [V]_j]_{Nk}]_{Nx}$	$[a- [[N]_i [V]_j]_{Nk}]_{Nx}$	$[a- [N+V]]$	Pre f	Resu lt
343	343	hopakyiri	<i>a-ho-pa-kyiri</i> NMLZ-self-leave-back 'self-denial'	<i>X pa ne ho akyiri</i> X remove 3SGPOSS self behind 'X denies self (lit. leaves self behind)'	• HD- Inv • Aff	$[a- [[N]_i [[V]_j [N]_k]_{VP}]_{Nx}]_{Ny}$	$[a- [[N]_i [[V]_j [N]_k]_{VP}]_{Nx}]_{Ny}$	$[a- [N+VP]]$	Pre f	Act
344	344	hosepe	<i>a-ho-sepe</i> NMLZ-self-rejoice 'cheerfulness'	<i>X ho sepe no</i> X self exhilarate 3SGOBJ 'X has is joyous/cheerful'	• Aff	$[a- [[N]_i [V]_j]_{Nk}]_{Nx}$	$[a- [[N]_i [V]_j]_{Nk}]_{Nx}$	$[a- [N+V]]$	Pre f	Resu lt
345	345	hotɔ	<i>a-ho-tɔ</i> NMLZ-self-fall/rest 'comfort'	<i>X ho a-tɔ no</i> X self PERF-to fall/rest 3SGOBJ 'X is at rest'	• Aff	$[a- [[N]_i [V]_j]_{Nk}]_{Nx}$	$[a- [[N]_i [V]_j]_{Nk}]_{Nx}$	$[a- [N+V]]$	Pre f	Resu lt

	howee	<i>n-how-ee</i> NMLZ-roast-NMLZ 'roasting/roasted'	<i>how</i> 'to roast'	• Aff	$[[n- [V]_i]_{Nj} -e]_{Nk}$	$[[n- [V]_i]_{Nj} -e]_{Nk}$	$[[M- [V]] -I]$	Suf	Act/ Resu lt	
347	348	huhu bra	<i>a-huhu bra</i> NMLZ-vain life 'life of vanity'	<i>ahuhu</i> 'vanity' <i>ɔbra</i> 'life'	• Comp	$[[a- [A]_i]_{Nj} [N]_k]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R R Resu lt	
348	349	huhufo (ahuhuni)	<i>a-huhu-fo</i> (<i>a-huhu-ni</i>) NMLZ-vanity-NMLZ[person] 'vain people'	<i>ahuhu</i> 'vanity'	• Aff	$[[a- [A]_i]_{Nj} -fo]_{Nk}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	
349	350	huhufo bra	<i>ahuhufo bra</i> vain_People life 'life of the vain'	<i>ahuhu</i> 'vanity' <i>ɔbra</i> 'life'	• Comp	$[[a- [A]_i]_{Nj} -fo]_{Nk} [N]_x]_{Nx}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R R Prop erty	
350	351	humombor ɔ	<i>a-hu-mɔmbɔrɔ</i> /(<i>a-hu-mmobɔ</i>) NMLZ-see-pity 'mercy'	<i>hu mmɔborɔ</i> see pity 'have mercy'	• Aff	$[a- [[V]_i [N]_j]_{VP}]_{Nk}$	$[a- [[V]_i [N]_j]_{VP}]_{Nk}$	$[a- [V+N]]$	Pre f	Resu lt
351	352	humu	<i>n-hu-mu</i> NMLZ-see-in 'discernment'	<i>hu mu</i> see in 'to discernment'	• Aff	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[M- [V+N]]$	Pre f	
352	353	huntahunu	<i>a-hunta-hunu</i> NMLZ-hide-see 'all-seeing/he who sees what is hidden'	<i>O-hu dza o-hunta</i> 3SG-see thing 3SG-hide 'He sees that which is hidden'	• Aff	$[a- [[V]_i [V]_j]_{Nk}]_{Nx}$	$[a- [[V]_i [V]_j]_{VP}]_{Nk}$	$[a- [V+V]]$	Pre f	Prop erty
353	354	hunuabɔbi rim	<i>a-hunu-a-bɔ-birim</i> NMLZ-see-SE-strike-awe 'one whose presence startles/an awe-inspiring person'	<i>Wo-hunu no a wobɔ birim</i> 1SGSBJ-see 3SGOBJ REL 1SGSBJ-hit awe 'When you see him you become startled/awestruck'	• Aff	$[a- [[V]_i a [[V]_j [N]_k]_{VP}]_{IP}]_{Nx}$	$[a- [[V]_i a [[V]_j [N]_k]_{VP}]_{IP}]_{Nx}$	$[a- [[V] a [V+N]]]$	Pre f	Resu lt/Pro perty
354	355	hypoo	<i>a-hu-poo</i> NMLZ-fear-intimidation 'oppression'	<i>hu</i> 'fear' <i>apoo</i> 'intimidation'	• Comp	$[[a- [V]_i]_{Nj} [N]_k]_{Nx}$	$[[N]_i [N]_j]_{Nk}$	[N+N]	B N	Resu lt
355	356	hwefo	<i>a-hwe-fo</i> PL-look_after-NMLZ[person] 'caretakers/guardian/custodian/curator'	<i>hwe</i> 'to look_after/care_for/to_take-of'	• Aff	$[[V]_i -fo]_{Nj}$	$[[V]_i -fo]_{Nj}$	$[[V] -fo]$	Suf	Agen tive
356	357	hwehwɛ	<i>a-hwe~hwe</i> NMLZ-RED~look 'mirror '	<i>hwe</i> 'to look'	• Aff	$[a- [RED-V]_i]_{Nj}$	$[a- [V]_i]_{Nj}$	$[a- [V]]$	Pre f	Resu lt

	hwehwem ba	<i>n-hwe~hwe-m-ba</i> NMLZ-RED~look-PL-child 'that which is searched for (name of a type of (fish) catch)'	<i>hwehwe</i> 'to search_for' <i>m-ba</i> 'child/fruit'	• Aff	$[n- [[\text{RED-V}]_i [\text{PL-N}]_j]_{\text{VP}}]_{\text{Nk}}$	$[n- [[\text{V}]_i [\text{N}]_j]_{\text{VP}}]_{\text{Nk}}$	$[M- [\text{V}+\text{N}]]$	Pre f		
358	359	hweso	<i>n-hwe-so</i> NMLZ-look-on 'an example/taking care of something '	<i>hwe so</i> look on 'to look at/look after'	• Aff	$[n- [[\text{V}]_i [\text{N}]_j]_{\text{VP}}]_{\text{Nk}}$	$[n- [[\text{V}]_i [\text{N}]_j]_{\text{VP}}]_{\text{Nk}}$	$[M- [\text{V}+\text{N}]]$	Pre f	Act/Resu lt
359	360	hwesoni	<i>nhweso-ni</i> taking_care_of_sth-NMLZ[person.SG] 'caretaker'	<i>nhweso</i> 'taking care of something'	• Aff	$[[n- [[\text{V}]_i [\text{N}]_j]_{\text{VP}}]_{\text{Nk}} -ni]_{\text{Nx}}$	$[[\text{N}]_i -ni]_{\text{Nj}}$	$[[\text{N}] -ni]$	Suf	Agen tive
360	361	hwew	<i>a-hwew</i> NMLZ-to_clear (as in water) 'a method of fishing in lagoons by women'	<i>hwew</i> 'to clear (water)'	• Aff	$[a- [\text{V}]_i]_{\text{Nj}}$	$[a- [\text{V}]_i]_{\text{Nj}}$	$[a- [\text{V}]]$	Pre f	Act
361	362	hweyie	<i>n-hwe-yie</i> NMLZ-look-well 'carefulness'	<i>hwe yie</i> look well 'to be careful'	• Aff	$[n- [[\text{V}]_i [\text{Adv}]_j]_{\text{VP}}]_{\text{Nk}}$	$[n- [[\text{V}]_i [\text{Adv}]_j]_{\text{VP}}]_{\text{Nk}}$	$[M- [\text{V}+\text{Adv}]]$	Pre f	Act
362	363	hwiromats en	<i>nhwiroma-tsen</i> whistle-straight 'sweet whistles'	<i>nhwiroma</i> 'whistle' <i>tsen</i> 'straight'	• Comp	$[[\text{N}]_i [\text{A}]_j]_{\text{Ni}}$	$[[\text{N}]_i [\text{A}]_j]_{\text{Ni}}$	$[\text{N+A}]$	L	L
363	364	hye	<i>n-hye</i> NMLZ-to_compel 'compulsion'	<i>hye</i> 'to compel'	• Aff	$[n- [\text{V}]_i]_{\text{Nj}}$	$[n- [\text{V}]_i]_{\text{Nj}}$	$[M- [\text{V}]]$	Pre f	Act/Action
364	365	hyedee	<i>a-hye-de-e</i> NMLZ-to_order-thing-AFV 'article, statute'	<i>hye ade</i> pass thing 'to institute/legislate'	• Aff	$[a- [[\text{V}]_i [\text{N}]_j]_{\text{VP}}]_{\text{Nk}}$	$[a- [[\text{V}]_i [\text{N}]_j]_{\text{VP}}]_{\text{Nk}}$	$[a- [\text{V}+\text{N}]]$	Pre f	Resu lt
365	366	hyehyee	<i>n-hyehye-e</i> NMLZ-arrange-NMLZ 'principle/arrangement/agreement/plan/order'	<i>hyehye</i> 'to arrange'	• Aff	$[[n- [\text{RED-V}]_i]_{\text{Nj}} -e]_{\text{Nk}}$	$[[n- [\text{V}]_i]_{\text{Nj}} -e]_{\text{Nk}}$	$[[M- [\text{V}]] -I]$	Suf	
366	367	hyekon	<i>a-hye-kon</i> NMLZ-to_put_on-neck 'types of fishing net'	<i>hye kon</i> to_put_on neck 'tie around the neck'	• Aff	$[a- [[\text{V}]_i [\text{N}]_j]_{\text{VP}}]_{\text{Nk}}$	$[a- [[\text{V}]_i [\text{N}]_j]_{\text{VP}}]_{\text{Nk}}$	$[a- [\text{V}+\text{N}]]$	Pre f	Resu lt
367	368	hyensew	<i>a-hye-nsew</i> NMLZ-to_put_on-mark 'a mark/sign'	<i>hye nsew</i> to_put_on mark 'to put a mark/sign on something'	• Aff	$[a- [[\text{V}]_i [\text{N}]_j]_{\text{VP}}]_{\text{Nk}}$	$[a- [[\text{V}]_i [\text{N}]_j]_{\text{VP}}]_{\text{Nk}}$	$[a- [\text{V}+\text{N}]]$	Pre f	Resu lt

369	hyesee	<i>a-hyε-se-ε</i> NMLZ-to_enter-under-AFV 'beginning'	<i>hye asee</i> to_enter uner 'to beginning'	• Aff	$[a- [[V]_i [N]_j]_{VP}]_{Nk}$	$[a- [[V]_i [N]_j]_{VP}]_{Nk}$	$[a- [V+N]]$	Pre f	Resu lt
370	hyiabea	<i>hyia-bea</i> meet-place 'meeting place'	<i>bea a wɔ-hyia</i> place REL 3PL-meet 'meeting place'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R	R Loc
371	hyiadan	<i>hyia-dan</i> meet-building 'meeting room'	<i>dan a wɔ-hyia mu</i> building REL 3PL-meet in 'meeting room'	• HD- Inv • Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R	R Loc
372	hyiakwa	<i>a-hyia-kwa</i> NMLZ-to_meet-by_chance 'accident/coincidence'	<i>hyia kwa</i> to_meet by_chance 'accident/coincidence'	• Aff	$[a- [[V]_i [Adv]_j]_{VP}]_{Nk}$	$[a- [[V]_i [Adv]_j]_{VP}]_{Nk}$	$[a- [V+Adv]]$	Pre f	Resu lt
373	hyiaye (ahyiae)	<i>a-hyia-yε</i> NMLZ-meet- NMLZ[location] 'meeting place'	<i>hyia</i> 'to meet'	• Aff	$[[a- [V]_i]_{Nj} -yε]_{Nk}$	$[[a- [V]_i]_{Nj} -e]_{Nk}$	$[[a- [V]] -I]$	Suf	Resu lt
374	hyira	<i>n-hyira</i> NMLZ-bless '(act of) blessing'	<i>hyira</i> 'to bless'	• Aff	$[n- [V]_i]_{Nj}$	$[n- [V]_i]_{Nj}$	$[M- [V]]$	Pre f	Act/ Resu lt
375	kaafo	<i>n-kaa-fo</i> NMLZ-remain-NMLZ[person] 'remaining people'	<i>nkae</i> 'to remain'	• Aff	$[[n- [V]_i]_{Nj} -fo]_{Nk}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Resu lt
376	kaakyire	<i>ka-akyire</i> remain-behind 'last born/youngest member of a family'	<i>ka akyire</i> remain behind 'to remain behind'	• Comp	$[[[V]_i [N]_j]_{VP}]_{Nk}$	$[[V]_i [N]_j]_{Nk}$	$[V+N]$	L	N
377	kabom	<i>n-ka-bo-m</i> NMLZ-touch-hit-in 'unity'	<i>ka bo mu</i> touch hit in 'to add/unify/to unite'	• Aff	$[n- [[V]_i [[V]_j [N]_k]_{VP}]_{VP}]_{Nx}$	$[n- [[V]_i [[V]_j [N]_k]_{VP}]_{VP}]_{Nx}$	$[M- [V+[V+N]]]$	Pre f	Resu lt
378	kabom kuo	<i>nkabom kuo</i> unity organization 'unity organization/union'	<i>nkabom</i> 'unity' <i>kuo</i> 'organization'	• Comp	$[n- [[V]_i [[V]_j [N]_k]_{VP}]_{VP}]_{Nx} [N]_y]_{Ny}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R	R Resu lt
379	ka-e	<i>n-ka-e</i> NMLZ-remain-NMLZ 'remainder (the rest) of'	<i>ka</i> 'to remain'	• Aff	$[[n- [V]_i]_{Nj} -e]_{Nk}$	$[[n- [V]_i]_{Nj} -e]_{Nk}$	$[[M- [V]] -I]$	Suf	Resu lt

380	kafo	<i>ɔ-ka-fo</i> SG-debt-NMLZ[person] 'debtor'	<i>ka</i> 'debt'	• Aff	$[[N]_i \cdot fo]_{Nj}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	The me/P rop.
381	kagynam	<i>a-ka-gyina-m(u)</i> NMLZ-debt-stand-in 'surety'	<i>gyina ka mu</i> stand debt in 'to stand surety/to guarantee'	• HD- Inv • Aff	$[a- [[N]_i [[V]_j [N]_k]_{VP}]_{Nx}]_{Ny}$	$[a- [[N]_i [[V]_j [N]_k]_{VP}]_{Nx}]_{Ny}$	$[a- [N+[V+N]]]$	Pre f	Act
382	kagynam di	<i>akagyinam-di</i> surety-act 'the act of guaranteeing'	<i>di akagyinam</i> act surety 'to act as a guarantor'	• HD- Inv • Comp	$[[a- [[N]_i [[V]_j [N]_k]_{VP}]_{Nx}]_{Ny} [V]_z]_{Ns}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N	Action/Act
383	kagynam difo	<i>akagyinamdi-fo</i> debt-stand-in-act-NMLZ[person] 'guarantor'	<i>akagyinamdi</i> 'the act of guaranteeing'	• Aff	$[[a- [[N]_i [[V]_j [N]_k]_{VP}]_{Nx}]_{Ny} [V]_z]_{Ns}$ $\cdot fo]_{Nr}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agent
384	kama	<i>ka-ma</i> say-give 'advocacy/intercession'	<i>ka ma</i> say give 'to advocate/intercede'	• Comp	$[[V]_i [V]_j]_{Nk}$	$[[V]_i [V]_j]_{Nk}$	$[V+V]$	B N	Act
385	kamafo	<i>ɔkama-fo</i> advocacy/intercession-NMLZ[person] 'advocate/intercessor'	<i>ɔkama</i> 'advocacy/intercession'	• Aff	$[[ɔ- [[V]_i [V]_j]_{VP}]_{Nk} \cdot fo]_{Nx}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agent
386	kanawu	<i>ka-na-wu</i> say-and-de 'one who says his/her mind (a maverick)'	<i>ka na wu</i> say CONJ die 'to say one's mind (lit. say and die)'	• LEX	$[[V]_i na [V]]_{VP}$	$[[V]_i \text{CONJ} [V]_j]_{VP}$	$[[V] na [V]]$	N/ A	N/ A Act/ Resu lt
387	kannyi	<i>ɔ-kan-nyi</i> SG-Akan-NMLZ[person.SG] 'Akan (a native of Akan)"	<i>akan</i> 'Akan'	• Aff	$[[N]_i \cdot ni]_{Nj}$	$[[N]_i \cdot ni]_{Nj}$	$[[N] \cdot ni]$	Suf	Prov enan ce
388	kansi	<i>akan-si</i> competition-engage 'competition'	<i>si akan</i> ICV competition 'to compete'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N	Act
389	kansifo	<i>akansi-fo</i> competition-engage- NMLZ[person] 'competitors'	<i>akansi</i> 'competition'	• Aff	$[[[N]_i [V]_j]_{Nk} \cdot fo]_{Nx}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agent
390	kantamant o	<i>ka-ntam-a-n-to</i> say-oath-SE-NEG-violate 'one who does not go back on his/her word'	<i>ɔ-ka ntam a ɔ-n-to</i> 3SG-say oath REL 3SG-NEG-violate 'S/he does not violate an ooth'	• LEX	$[[[V]_i [N]_j]_{VP} a [NEG-V]_k]_{Nx}$	$[[[V]_i [N]_j]_{VP} a [V]_k]_{Nx}$	$[[VP] a [V]]$	N/ A	N/ A

391	kapentanyi	<i>kapenta-nyi</i> carpentry-NMLZ[person.SG] 'carpenter'	<i>kapenta</i> 'carpentry'	• Aff	$[[N]_i \cdot ni]_{Nj}$	$[[N]_i \cdot ni]_{Nj}$	$[[N] \cdot ni]$	Suf	
392	kasae	<i>n-kasa-e</i> NMLZ-speak-NMLZ 'speaking/speech'	<i>kasa</i> 'to speak'	• Aff	$[[n \cdot [V]_i]_{Nj} \cdot e]_{Nk}$	$[[n \cdot [V]_i]_{Nj} \cdot e]_{Nk}$	$[[M \cdot [V]] \cdot I]$	Pre f	Act/Resul
393	kasapreko	<i>kasa-pre-ko</i> speak-time-one 'the name of an alcoholic beverage'	<i>kasa pre ko</i> speak time one 'speak ones (lit. speak one time)'	• LEX	$[[V]_i [[N]_j [Num]_k]_{Adv}]_{VP}$	$[[V]_i [[N]_j [Num]_k]_{Adv}]_{VP}$	[V+Adv]	N/A	N/A
394	kasawtu	<i>akasaw-tu</i> crat-dig 'picking up the crab'	<i>tu akasaw</i> dig "akasaw" [type of crab] 'to pick up "akasaw"'	• HD-Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R N	Act
395	katamanso	<i>a-kata-man-so</i> NMLZ-cover-nation-top 'an umbrella'	<i>kata ḡman so</i> cover nation top 'to cover the nation'	• Aff	$[a \cdot [[V]_i [[N]_j [N]_k]_{Nk}]_{VP}]_{Nx}$	$[a \cdot [[V]_i [N]_j]_{VP}]_{Nk}$	$[a \cdot [V+N]]$	Pre f	Prod uct
396	katua	<i>a-ka-tua</i> NMLZ-debt-pay 'remuneration/salary'	<i>tua ka</i> pay debt/price 'to pay for something or debt owed'	• HD-Inv • Comp	$[[a \cdot [N]_i]_{Nj} [V]_k]_{Nx}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R N	Act
397	kɔdaanda	<i>kɔ-da-a-n-da</i> go-sleep-SE-NEG-sleep 'anything that causes sleeplessness'	<i>wo-kɔ-da a wo-n-da</i> 2SG-go-sleep COND 2SG-NEG-sleep 'when you go to sleep, you don't sleep'	• LEX	$[[kɔ-V]_i a [NEG-V]_j]_{Nk}$	$[[V]_i a [V]_j]_{Nk}$	$[[V] a [V]]$	N/A	N/A Resul
398	kœ (nkoree)	<i>n-kɔ-e</i> (<i>n-kɔr-ee</i>) NMLZ-go-NMLZ/ 'going'	<i>kɔ(r)</i> 'to go'	• Aff	$[[n \cdot [V]_i]_{Nj} \cdot e]_{Nk}$	$[[n \cdot [V]_i]_{Nj} \cdot e]_{Nk}$	$[[M \cdot [V]] \cdot I]$	Suf	Action
399	kokabeka me	<i>kɔ-ka-be-ka-me</i> go-cause-come-touch-me 'collateral damage'	<i>kɔ-ka be-ka me</i> go-cause come-touch 2SGOBJ 'Go'	• LEX	$[[kɔ-V]_i [[be-V]_j [PRN]_k]_{VP}]_{VP}$	$[[V]_i [[V]_j [PRN]_k]_{VP}]_{VP}$	[V+[V+PRN]]	N/A	N/A Resul
400	kɔkoam	<i>kɔkoam-m</i> corner-in 'in secret'	<i>kɔkoam mu</i> corner in 'in a corner'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	[N+N]	L N	Loc
401	kɔkoamsem m	<i>kɔkoam-sem</i> in_secret-matter 'a secret/private matter'	<i>kɔkoam</i> 'in_secret'	• Comp	$[[[N]_i [N]_j]_{Nk} [N]_x]_{Nx}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R R	Resul

402	kɔm	a-kɔm NMLZ-to_perform fetish dance 'fetish dance'	kɔm 'to perform a fetish dance'	• Aff	[a- [V] _i] _{Nj}	[a- [V] _i] _{Nj}	[a- [V]]	Pre f	Action
403	kɔmase	akɔm-ase fetish_dance-location 'location of a fetish dance'	akɔm 'fetish dance' ase 'location of ...'	• Comp	[[a- [V] _i] _{Nj} [N] _k] _{Nx}	[[N] _i [N] _j] _{Nk}	[N+N]	L	N
404	kɔmase nwomtofo	akɔmase nwomtofo location_of_fetish_dance singer 'a singer who performs at fetish dances'	akɔmase 'location of a fetsh dance' nwomtofo 'singer'	• Comp	[[[a- [V] _i] _{Nj} [N] _k] _{Nx} [[N] _y [V] _z] _{Ns} - fo] _{Nr}	[[N] _i [N] _j] _{Nj}	[N+N]	R	R
405	kɔmfo	ɔ-kɔm-fo SG-perform_the_fetish_dance-NMLZ[person] 'fetish priest/ oracle'	kɔm 'to perform the fetish dance'	• Aff	[[N] _i -fo] _{Nj}	[[N] _i -fo] _{Nj}	[[N] -fo]	Suf	Agen t
406	kɔmhye	nkɔm-hyε prophecy-utter 'prophesying/prophecy'	hyε nkɔm utter prophecy 'to prophesy'	• HD- Inv • Comp	[[N] _i [V] _j] _{Ni}	[[N] _i [V] _j] _{Ni}	[N+V]	R	L
407	kɔneaba	a-kɔ-ne-a-ba NMLZ-go-CONJ-NMLZ-come '(act of) moving to and fro'	X kɔ na ɔ-ba X go CONJ 3SG-come 'X goes and comes'	• LEX	[[a- [V] _i] _{Nj} ne [a- [V] _k] _{Nx}] _{Ny}	[[N] _i ne [N] _j] _{Nk}	[[N] ne [N]]	N/ A	N/ A
408	kɔsabrafie	a-kɔ-san-bra-fie NMLZ-go-return-come-home 'one who always finds his way back home'	ɔ-kɔ san ba fie 3SG-go return come home 'he goes and returns home'	• Aff	[a- [[V] _i [[V] _j [[V] _k [N] _x]vp]vp]vp] _{Ny}	[a- [[V] _i [[V] _j [[V] _k [N] _x]vp]vp]vp] _{Ny}	[a- [V+[V+[V+N]]]]	Pre f	Resu lt
409	kɔtɔ pa	n-kɔtɔ pa PL-crab good 'type of crab'	nkɔtɔ 'PL-crab' pa(pa) 'good'	• Comp	[[N] _i [A] _j] _{Ni}	[[N] _i [A] _j] _{Ni}	[N+A]	L	L
410	kɔtebekä	kɔ-te-be-ka go-hear-come-say reporter/correspondence'	kɔ-te be-ka go-hear come-say 'go and hear and come and tell'	• LEX	[[kɔ-V] _i [be-V] _j] _{Nk}	[[V] _i [V] _j] _{Nk}	[V+V]	N/ A	N/ A
411	kekaboa	a-ke~ka-boa NMLZ-RED~bit-animal '?wild animal'	ka 'to bite' aboa 'animal'	• Comp	[[a- [RED-V] _i] _{Nj} [N] _k] _{Nx}	[[N] _i [N] _j] _{Nj}	[N+N]	R	R
412	kɔankɔ	kɔ-a-n-kɔ fight-SE-NEG-go 'chronic (e.g., disease)'	wo-kɔ a ε-n-kɔ 2SG-fight COND 3SG-NEG-go 'it doesn't go when you fight it'	• LEX	[[V] _i a [NEG-V] _j] _{Nk}	[[V] _i a [V] _j] _{Nk}	[[V] a [V]]	N/ A	N/ A

	kōde	a-kō-de PL-to_fight-thing 'arms'	kō 'to fight' ade 'thing'	• Comp	[[N] _i [N] _j] _{Nj}	[[N] _i [N] _j] _{Nj}	[N+N]	R	R	Instrumental
413										
414	koe	n-ko-e NMLZ-sit-NMLZ 'sitting'	ko 'to sit'	• Aff	[[n- [V] _i] _{Nj} -e] _{Nk}	[[n- [V] _i] _{Nj} -e] _{Nk}	[[M-[V]]-I]	Suf		
415	kōe	n-kō-e NMLZ-fight-NMLZ 'fight/battle'	kō 'to fight'	• Aff	[[n- [V] _i] _{Nj} -e] _{Nk}	[[n- [V] _i] _{Nj} -e] _{Nk}	[[M-[V]]-I]	Suf		Act
416	kōfo	ɔ-kō-fo NMLZ-fight-NMLZ[person] 'a warrior'	kō 'to fight'	• Aff	[[ɔ- [V] _i] _{Nj} -fo] _{Nk}	[[N] _i -fo] _{Nj}	[[N]-fo]	Suf		Agent
417	kōforoboo	ɔ-kō-foro-boɔ SG-fight-climb-mountain 'the mountain-climbing warrior'	ɔ-kō foro boɔ 3SG-fight climb stone 'S/he fights whilst climbing a mounain'	• LEX	[[PRN] _i [[V] _j [[V] _k [N] _x]VP]VP] _{IP}	[[PRN] _i [[V] _j [[V] _k [N] _x]VP]VP] _{IP}		N/ A	N/ A	Property
418	kokonini	akokɔ-nini fowl-male 'cocker, rooter'	akokɔ 'chicken' nini 'male'	• Comp	[[N] _i [A] _j] _{Ni}	[[N] _i [A] _j] _{Ni}	[N+A]	L	L	
419	kokoduro	a-koko-dur [a-koko-ɔ-dur] NMLZ-chest-heazy 'courage/bravery'	X koko ye duru X chest be heazy 'X is brave (lit. X's chest in heavy)' 	• Aff	[a- [[N] _i ɔ [A] _j] _{Nk}] _{Nx}	[[N] _i O [A] _j] _{Nk}	[[N] O [A]]	Pre f		Result/Pro perty
420	kokoduruf o	ɔ-kokoduru-fo NMLZ-bravery-NMLZ[person] 'a courageous person'	kokoduru 'bravery'	• Aff	[[a- [[N] _i ɔ [A] _j] _{Nk}] _{Nx} -fo] _{Ny}	[[N] _i -fo] _{Nj}	[[N]-fo]	Suf		Property
421	kono	a-ko-no NMLZ-to_fight-mouth 'war front/frontline'	ko ano battle mouth 'battle front'	• Comp	[[a- [V] _i] _{Nj} [N] _k] _{Nx}	[[N] _i [N] _j] _{Nk}	[N+N]	L	N	Loc
422	korafo:	a-kora-fo PL-rivalry-NMLZ[person] 'co-wives, the wives of siblings, people who dislike each other'	kora 'rivalry'	• Aff	[[N] _i -fo] _{Nj}	[[N] _i -fo] _{Nj}	[[N]-fo]	Suf		Result
423	kotwareas uo	ɔ-ko-tware-a-suo 3SG-fight-cross-PL-water 'the river-crossing warrior'	ɔ-ko tware a-suo 3SG-fight cross PL-water 'he crosses rivers whilst fighting'	• LEX	[[PRN] _i - [[V] _j [[V] _k [N] _x]VP]VP] _{IP}	[[PRN] _i [[V] _j [[V] _k [N] _x]VP]VP] _{IP}		N/ A	N/ A	

	krabirifo	<i>ɔkra-biri-fo</i> soul-black-NMLZ[person.SG] 'an unfortunate person'	<i>ɔkra a e-biri</i> sould REL 3SG-darken 'a soul that is dark'	• Aff	$[[[N]_i [[A]_j]_{Nk} \cdot fo]_{Nk}}$	$[[N]_i \cdot fo]_{Nj}$	[N+N]	Suf	Ident ity	
424	425	kuadwum a	<i>e-kua-dwuma</i> NMLZ-farm-work 'farm work'	<i>kua dwuma</i> farming work 'farm work'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R R	Resu lt
426	427	kuadze	<i>e-kua-dze</i> NMLZ-farming-thing 'farm produce'	<i>kua</i> 'farming' <i>adze</i> 'thing'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R R	
427	428	kuafø	<i>o-kua-fo</i> SG-farming-NMLZ[person] 'farmer, planter, husbandman'	<i>kua</i> 'farming'	• Aff	$[[N]_i \cdot fo]_{Nj}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agent
428	429	kuayɛ	<i>e-kua-ye</i> NMLZ-farming-do 'farming'	<i>ye kua</i> do farming 'to farm'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]]	R N	Act
429	430	kukruant umi	<i>kukuru-a-n-tumi</i> lift-SE-NEG-be_able 'name of a town'	<i>wo-kukuru a wo-n-tumi</i> 2SG-lift COND 2SG-NEG-be_able 'you are not able to lift it'	• LEX	$[[V]_i a [NEG-V]_j]_{Nk}$	$[[V]_i a [V]_j]_{Nk}$	$[[V] a [V]]$	N/ A	N/ A
430	431	kum	<i>o-kum</i> NMLZ-to_kill 'killing'	<i>kum</i> 'to kill'	• Aff	$[o- [V]_i]_{Nj}$	$[O- [V]_i]_{Nj}$	$[o- [V]]$	Pre f	Act
431	432	kumanini/ okunini	<i>o-kum-a-nini</i> (<i>o-ku-nini</i>) NMLZ-kill-PL-male 'champion/a notable, distinguished person'	<i>kum a-nini</i> kill PL-male 'to kill (defeats) males'	• Aff	$[o- [[V]_i [N]_j]_{VP}]_{Nk}$	$[O- [[V]_i [N]_j]_{VP}]_{Nk}$	$[o- [V+N]]$	Pre f	Prop erty
432	433	kumfɔ	<i>kum-fɔ</i> kill-xx 'a condemned person'	<i>kum</i> 'to kill'	• Aff	$[[V]_i \cdot fɔ]_{Nj}$	$[[V]_i \cdot fɔ]_{Nj}$		Suf	
433	434	kumkɔm	<i>kum-kɔm</i> kill-hunger 'hunger killer/a species of maize'	<i>kum kɔm</i> kill hunger 'to kill hunger'	• Comp	$[[[V]_i [N]_j]_{VP}]_{Nk}$	$[[V]_i [N]_j]_{Nk}$	[V+N]	L N	
434		kunafo	<i>o-kuna-fo</i> NMLZ-widowhood-NMLZ[person] 'widow'	<i>kuna</i> 'widowhood'	• Aff	$[[N]_i \cdot fo]_{Nj}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	

435	<i>kur kaw</i>	<i>kur kaw</i> sore debt 'medical bill/cost of healthcare'	<i>kur kaw</i> 'sore' 'debt'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	
436	<i>kuraasi</i>	<i>a-kur-a (-ase)</i> NMLZ-town-DIM -under 'village'	<i>kuro</i> 'town' <i>ase</i> 'under'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	[N+N]	L	N	
437	<i>kuraasini</i>	<i>o-kuraase-ni</i> NMLZ-village-person 'villager'	<i>kuraase</i> 'village'	• Aff	$[[[N]_i [N]_j]_{Nk} \text{-} ni]_{Nx}$	$[[N]_i \text{-} ni]_{Nj}$	$[[N] \text{-} ni]$	Suf		
438	<i>kuromfo</i>	<i>e-kuro-m-fo</i> PL-town-in-people 'inhabitants of a town'	<i>kuro mu</i> town in 'in-town'	• Aff	$[[[N]_i [N]_j]_{Nk} \text{-} fo]_{Nx}$	$[[N]_i \text{-} fo]_{Nj}$	$[[N] \text{-} fo]$	Suf		
439	<i>kuroni</i>	<i>o-kuro-ni</i> NMLZ-town-NMLZ[person.SG] 'inhabitant (of a town)'	<i>kuro</i> 'town'	• Aff	$[[N]_i \text{-} ni]_{Nj}$	$[[N]_i \text{-} ni]_{Nj}$	$[[N] \text{-} ni]$	Suf		
440	<i>kwaafonyi</i>	<i>ɔ-kwaa-fo-nyi</i> NMLZ-forest-NMLZ-NMLZ[person.SG] 'farmer'	<i>kwaa</i> 'forest'	• Aff	$[[[N]_i \text{-} fo]_{Nj} \text{-} ni]_{Nk}$	$[[N]_i \text{-} ni]_{Nj}$	$[[N] \text{-} ni]$	Suf	Agen t	
441	<i>kwaamu</i>	<i>kwaa-mu</i> forest-in 'forest'	<i>kwaa</i> 'forest' <i>mu</i> 'in'	• Comp	$[[N]_i [N]_j]_{Ni}$	$[[N]_i [N]_j]_{Nk}$	[N+N]	L	N	
442	<i>kwadwofo</i> ɔ	<i>ɔ-kwadwo-fo</i> SG-laziness-NMLZ[person] 'lazy person'	<i>akwadwor</i> 'laziness'	• Aff	$[[N]_i \text{-} fo]_{Nj}$	$[[N]_i \text{-} fo]_{Nj}$	$[[N] \text{-} fo]$	Suf	Prop erty	
443	<i>kwammən e/(ɔkwan mone)</i>	<i>ekwan-məne</i> way-bad 'evil means/way'	<i>ɛkwan bəne</i> way bad 'bad way/means of doing something'	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	[N+A]	L	L	
444	<i>kwammuk a</i>	<i>ɔ-kwam-mu-ka</i> NMLZ-way-in-stir 'banditry'	<i>kwan mu ka</i> way in stir 'the stirring of the way/road'	• Comp	$[[[N]_i [N]_j]_{Nk} [V]_x]_{Ny}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
445	<i>kwammuk ani</i>	<i>ɔkwammuka-ni</i> danditry-NMLZ[person.SG] 'brigand/bandit'	<i>ɔkwammuka</i> 'danditry'	• Aff	$[[[N]_i [N]_j]_{Nk} [V]_x]_{Ny} \text{-} ni]_{Nz}$	$[[N]_i \text{-} ni]_{Nj}$	$[[N] \text{-} ni]$	Suf	Agen tive	

446	kwan	<i>a-kwan</i> NMLZ-paddle 'paddling (of a canoe)'	<i>kwan</i> 'to paddle'	• Aff	$[[a- [V]_i]_{Nj}}$	$[a- [V]_i]_{Nj}$	$[a- [V]]$	Pre f	Act
447	kwan dzen	<i>akwan dzen</i> paddling hard 'strong paddling (of a canoe)'	<i>akwan</i> 'paddle' <i>dzen~dzen</i> 'hard'	• Comp	$[[a- [V]_i]_{Nj} [A]_k]_{Nj}$	$[[N]_i [A]_j]_{Ni}$	$[N+A]$	L	L
448	kwansidee	<i>a-kwan-si-de-ε</i> PL-way-block-thing-AFV 'hindrance/impediment'	<i>ade a e-si kwan</i> thing REL 3SG-block way 'a thing that blocks some way'	• HD- Inv • Comp	$[[[N]_i [V]_j]_{Nk} [N]_x]_{Ny}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R	R
449	kwansin	<i>a-kwan-sin</i> PL-way-fraction 'mile/kilometer'	<i>kwan</i> 'way' <i>sin</i> 'fraction'	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	$[N+A]$	L	L
450	kwansrafo	<i>ɔ-kwan-sra-fo</i> NMLZ-way-sivit-NMLZ[person] 'spy'	<i>kwan</i> 'way' <i>sra</i> 'visit'	• Aff	$[[[N]_i [V]_j]_{Nk} \text{-} fo]_{Nx}$	$[[N]_i \text{-} fo]_{Nj}$	$[[N] \text{-} fo]$	Suf	Agen tive
451	kwantofo	<i>ɔ-kwan-to-fo</i> NMLZ-way-miss-NMLZ[person] 'someone who has deviated from his way'	<i>to kwan</i> miss way 'to miss once way'	• Aff	$[[[N]_i [V]_j]_{Nk} \text{-} fo]_{Nx}$	$[[N]_i \text{-} fo]_{Nj}$	$[[N] \text{-} fo]$	Suf	Patici nt
452	kwantsen	<i>a-kwan-tsen</i> NMLZ-way-straight 'highway/road'	<i>kwan (tsen)tsen</i> way long 'long road'	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	$[N+A]$	L	L
453	kwantu	<i>a-kwan-tu</i> PL-way-dig/engage 'journey/travel'	<i>tu kwan</i> engage road 'to travel'	• HD- Inv • Comp	$[[PL-N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	N
454	kwantuni	<i>ɔ-kwantu-ni</i> SG-travel-NMLZ[person.SG] 'traveler'	<i>akwantu</i> 'travel/journey'	• Aff	$[[[N]_i [V]_j]_{Nk} \text{-} ni]_{Nx}$	$[[N]_i \text{-} ni]_{Nj}$	$[[N] \text{-} ni]$	Suf	The me
455	kwasafoman	<i>kwa-safo-man</i> slave-army-nation 'communal nation/society'	<i>nkoə</i> 'servant/slave' <i>asafo</i> 'army/warriors' <i>ɔman</i> 'nation'	• Comp	$[[[N]_i [N]_j]_{Nk} [N]_x]_{Nx}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R	R
456	kwasafoni	<i>kwa-safo-ni</i> slave-army-NMLZ[person.SG] 'communal person/republican'	<i>nkoə</i> 'servant/slave' <i>asafo</i> 'army/warriors'	• Aff	$[[[N]_i [N]_j]_{Nk} \text{-} ni]_{Nx}$	$[[N]_i \text{-} ni]_{Nj}$	$[[N] \text{-} ni]$	Suf	

457	kyeadeε	<i>ɔ-kye-adeε</i> NMLZ-give_as_a_gift-thing 'a generous person'	<i>kye adeε</i> give_as_a_gift thing 'to give a gift'	• Aff	$[ɔ- [[V]_i [N]_j]_{VP}]_{Nk}$	$[O- [[V]_i [N]_j]_{VP}]_{Nk}$	$[ɔ- [V+N]]$	Pre f	Agen t
458	kyede	<i>a-kye-de</i> NMLZ-give_as_a_gift-thing 'a gift'	<i>kye ade</i> to give_as_a_gift thing 'give a gift'	• Aff	$[a- [[V]_i [N]_j]_{VP}]_{Nk}$	$[a- [[V]_i [N]_j]_{VP}]_{Nk}$	$[a- [V+N]]$	Pre f	Prod uct
459	kyehunu	<i>kye-hunu</i> arrest-vain 'arbitrary arrest'	<i>kye 'arrest'</i> <i>hunu 'vain'</i>	• Comp	$[[[V]_i N_i [A]_j]_{Ni}}$	$[[N]_i [A]_j]_{Ni}$	$[N+A]$	L	L
460	kyekyemu	<i>n-kye-kye-mu</i> NMLZ-RED~divide-in 'division'	<i>kye~kye mu</i> RED~share in 'to share/divide'	• Aff	$[n- [[RED-V]_i [N]_j]_{VP}]_{Nk}$	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[M- [V+N]]$	Pre f	
461	kyemu	<i>n-kye-mu</i> NMLZ-divide-in 'division/percentage/fractionation'	<i>kye mu</i> share in 'to share/divide/fractionate'	• Aff	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[M- [V+N]]$	Pre f	Act /Res ult
462	kyepen	<i>kye-pen</i> share-portion 'portion.lot/allotment'	<i>kye 'share'</i> <i>pen 'portion/time'</i>	• Comp	$[[V]_i [N]_j]_{Nk}$	$[[V]_i [N]_j]_{Nk}$	$[V+N]$	L	N
463	kyerεase	<i>n-kyerε-ase</i> NMLZ-show-under 'explanation/meaning'	<i>kyerε ase</i> show under 'to explain'	• Aff	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[M- [V+N]]$	Pre f	Resu lt
464	kyerεkyer εfo	<i>ɔ-kyerε~kyerε-fo</i> (<i>kyerε~kyerε-nyi</i>) NMLZ-RED~teach-NMLZ[person] 'instructor, teacher'	<i>kyerε 'show'</i>	• Aff	$[[n- [RED-V]_i N_j \neg fo]_{Nj}}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf	Agen t
465	kyerεkyer εmu	<i>n-kyerε~kyerε-mu</i> NMLZ-RED~show-in 'explanation'	<i>kyerε~kyerε mu</i> RED~show in 'to explain'	• Aff	$[n- [[RED-V]_i [N]_j]_{VP}]_{Nk}$	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[M- [V+N]]$	Pre f	
466	kyerεmu	<i>n-kyerε-mu</i> NMLZ-show-in 'explanation'	<i>kyerε mu</i> show in 'to explain'	• Aff	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[M- [V+N]]$	Pre f	
467	kyewpa	<i>kyew-pa</i> hat-take_off 'apology'	<i>pa kyew</i> take_off hat 'to apologise'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	N

468	kyi	<i>n-kyi</i> NMLZ-back 'provenance/nationality/background'	<i>akyi</i> 'back'	• Aff	$[n- [N]_i]_{Nj}$	$[n- [N]_i]_{Nj}$	$[M- [N]]$	Pre f	
469	kyidi	<i>akyi-di</i> back-assume 'following'	<i>di akyi</i> assume back 'to follow'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	N
470	kyidifo	<i>akyidi-fo</i> following-NMLZ[person] 'followers'	<i>akyidi</i> 'following'	• Aff	$[[[N]_i [V]_j]_{Nk} \neg fo]_{Nx}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Pre f	Pati ent
471	kyinkyina kyinkyin	<i>a-kyin~kyin-a-kyin~kyin</i> NMLZ-RED~rome-NMLZ-RED~rome 'parambulating/gallivanting'	<i>kyin</i> 'to roam'	• Comp	$[[a- [RED-V]_i]_{Nj} [a- [RED-V]_i]_{Nj}]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	$[N+N]$	N/ A	N/ A
472	kyinnye	<i>akyin-nye</i> wrestle-take disputation/doubt'	<i>gye akyim</i> take-wrestle 'to dispute'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	N
473	kyirmba	<i>n-kyir-m-ba</i> PL-back-PL-child 'posternity'	<i>ekyir m-ba</i> back PL-child future children'	• Comp	$[[PL-N]_i [PL-N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R	R
474	mambœ	<i>a-mam-bɔ-e</i> SG-nation-break-NMLZ 'subversion'	<i>bɔ ɔman</i> break nation' 'subvert a nation'	• Aff	$[[[N]_i [V]_j]_{Nk} \neg e]_{Nx}$	$[[[N]_i [V]_j]_{Nk} \neg e]_{Nx}$	$[[N+V] \neg I]$	Suf	Act/ Resu lt
475	mambœfo	<i>ɔ-mambœ-fo</i> SG-subversion-NMLZ[person] 'subversionist/saboteur'	<i>ɔmambœ</i> 'subversion'	• Aff	$[[[[N]_i [V]_j]_{Nk} \neg e]_{Nx} \neg fo]_{Ny}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf	Agen t
476	mamfra	<i>amam-fra</i> mix-nation 'mixing of nation'	<i>fra a-man</i> mix PL-nations 'mix nations'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	N
477	mamfrafo	<i>amamfra-fo</i> mix_of_nations 'foreigners'	<i>amamfra</i> 'mixing of nations'	• Aff	$[[[N]_i [V]_j]_{Nk} \neg fo]_{Nx}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf	
478	mamfrani (ɔmanfran i)	<i>ɔ-mam-fra-ni</i> (ɔ-man-fra-ni) SG-nation-mix-NMLZ[person.SG] 'foreigner, alien'	<i>man</i> 'nation' <i>fra</i> 'mix'	• Aff	$[[[[N]_i [V]_j]_{Nk} \neg ni]_{Nx}$	$[[N]_i \neg ni]_{Nj}$	$[[N] \neg ni]$	Suf	Prov enan ce

	mammuo	<i>a-mam-mu-o</i> PL-nation-rule-AFV 'governance'	<i>bu ḡman</i> rule nation 'to rule a nation'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
479										
480	mammuo nnyinasoɔ	<i>amammuo nnyinasoɔ</i> governance foundation 'foundation of governance'	<i>amammuo</i> 'governance' <i>nnyinasoɔ</i> 'foundation'	• Comp	$[[[N]_i [V]_j]_{Nk} [n- [[V]_x [N]_y]_{VP}]_{Nz}]_{Nz}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Result
481	manaman nkabom kuo	<i>aman~a-man nkabom kuo</i> RED~PL-nation unity organization 'UNO (nations unity organization)'	<i>amans</i> 'nation' <i>nkabom</i> 'unity' <i>kuo</i> 'organization'	• Comp	$[\text{RED-Pl-N}]_i [n- [[V]_j [[V]_k [N]_x]_{VP}]_{VP}]_{Ny} [N]_z]_{Nz}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Result
482	mandze (amanne)	<i>a-man-dze</i> ¹¹⁹ PL-nation-thing 'trouble/misfortunate/calamity'	<i>᠁man</i> 'nation' <i>adze</i> 'thing'	• Aff	$[a- [[N]_i [N]_j]_{Nj}]_{Nk}$	$[a- [[N]_i [N]_j]_{Nj}]_{Nk}$	[a- [N]]	Pre f		Result
483	mandzehu n	<i>amandze-hun</i> (amanehunu) trouble-see 'being unfortunate/in affliction'	<i>hun amandze</i> to_see trouble 'to be in affliction'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
484	manfoɔ (manni)	<i>man-fo-ɔ</i> [o-man-ni (SG)] nation-NMLZ[person]-AFV 'citizens'	<i>man</i> 'nation'	• Aff	$[[N]_i -fo]_{Nj}$	$[[N]_i -fo]_{Nj}$	[N] -fo	Suf		Provenan ce
485	mankuw	᠁- <i>man-kuw</i> SG-nation-group 'ethnic group'	<i>man</i> 'nation' <i>kuw</i> 'group'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Provenan ce
486	mansee	<i>a-man-see</i> PL-nation-destroy 'destruction of the nation'	<i>see ḡman</i> destroy nation 'to destroy nation'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
487	mansem	<i>a-man-sem</i> PL-nation-matter 'politics (national issues)'	<i>᠁man asem</i> nation matter 'national matter'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	[N+N]	R	N	Result
488	mansendin i	᠁- <i>man-sendini</i> SG-nation-prosecutor 'state attorney'	<i>᠁man asendnii</i> nation prosecutor 'state attorney'	• Comp	$[[N]_i [[[N]_j [V]_k]_{Nx} -ni]_{Ny}]_{Ny}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Agent
489	mansenky erewni	᠁- <i>man-sen-kyerew-ni</i> SG-nation-issue-write-NMLZ[person.SG] 'secretary of state (lit. state writer)'	<i>᠁man</i> 'nation' <i>senkyerewni</i> 'secretry'	• Comp	$[[N]_i [[[N]_j [V]_k]_{Nx} -ni]_{Ny}]_{Ny}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Agent

¹¹⁹ An extreme case of semantic drift; this word is completely non-compositional.

490	mansesew fo	<i>ɔ-man-sesew-fo</i> SG-nation-change-NMLZ[person] 'revolutionists'	<i>man</i> 'nation' <i>sesew</i> 'change'	• Aff	$[[[[N]_i [V]_j]_{Nk} -fo]_{Nx}}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Agent
491	mansini	<i>man-sini</i> nation-fraction/half 'a district in a political system'	<i>man</i> 'nation' <i>sini</i> 'nation half/franction'	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	$[N+A]$	L	Result
492	mansinsoa fo	<i>mansin-soafo</i> district-minister 'district chief executive/commissioner'	<i>mansini</i> 'a district' <i>soafo</i> 'minister/commissioner'	• Comp	$[[[[N]_i [A]_j]_{Ni} [[V]_k -fo]_{Ny}]_{Ny}}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R	Agent
493	mansoafō	<i>ɔman-soafo</i> nation-minister 'minister of state'	<i>ɔman</i> 'nation' <i>soafo</i> 'minister'	• Comp	$[[N]_i [[V]_j -fo]_{Nk}]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R	Agent
494	mansohwe fo	<i>ɔman-so-hwe</i> nation-on-look_after 'taking care of a nation'	<i>hwe</i> <i>ɔman so</i> look_after nation on 'to look after a nation'	• HD- Inv • Comp	$[[[[N]_i [N]_j]_{Nk} [V]_x]_{Ny}}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	Act
495	mansohwe fo	<i>ɔmansohwe-fo</i> taking_care_of_a_nation-NMLZ[person] 'rulers, custodians of the nation'	<i>ɔmansohwe</i> 'taking_care_of_a_nation'	• Aff	$[[[[N], [N]_j]_{Nk} [V]_x]_{Ny} -fo]_{Nz}}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Agent
496	mansotwe	<i>manso-twe</i> litigation-drag 'litigation'	<i>twe manso</i> drag litigation 'to litigate'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	Act
497	mansotwe ni	<i>mansotwe-ni</i> litigation-NMLZ[person.SG] 'litigant'	<i>mansotwe</i> 'litigation'	• Aff	$[[[[N]_i [V]_j]_{Nk} -ni]_{Nx}}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf	Agent
498	mantan	<i>man-tan</i> nation-parent 'region of a country'	<i>man</i> 'nation' <i>tan</i> 'parent'	• Comp	$[[N]_i [N]_j]_{Ni}$	$[[N]_i [N]_j]_{Ni}$	$[N+N]$	L	Result
499	manyɔ	<i>a-man-yɔ</i> PL-nation-do 'politics'	<i>ye</i> <i>ɔman</i> make nation 'politics'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	Act
500	manyɔkuo	<i>manyɔ-kuo</i> politics-organization 'political party/organization'	<i>kuo a wɔ-de-ye</i> <i>ɔman</i> group REL 3SG-use-make nation 'a group for making a nation'	• HD- Inv • Comp	$[[[[N]_i [V]_j]_{Nk} [N]_x]_{Nx}}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R	Result

501	mbarahye	<i>mbara-hyε</i> law-make 'law-making'	<i>hyε mbara</i> making law 'to pass law'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
502	mbarahye bagua	<i>mbarahye-bagua</i> law_passing-council 'parliament'	<i>mbarahye</i> 'law-making' <i>bagua</i> 'counsil'	• Comp	$[[[N]_i [V]_j]_{Nk} [N]_x]_{Nx}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Resu lt
503	mbarahye baguani	<i>mbarahyebagua-ni</i> law_passing_council-NMLZ[person.SG] 'parliamentarian'	<i>mbarahyebegua</i> 'parliamentarian '	• Aff	$[[[[N]_i [V]_j]_{Nk} [N]_x]_{Nx} -ni]_{Ny}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf	Agen t	
504	mbaranim fo	<i>mbara-nim-fo</i> law-know-NMLZ[person] 'lawyer, legal expect'	<i>nim mbara</i> know law 'to know law'	• Aff	$[[[[N]_i [V]_j]_{Nk} -fo]_{Nx}}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Agen t	
505	mbarato	<i>mbara-to</i> law-infringe 'infraction'	<i>to mbara</i> infringe law 'to infringe the law'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
506	mbødzin	<i>a-m-bɔ-dzin</i> NMLZ-NEG-mention-name 'an unmentionable thing'	<i>wɔ-m-bɔ</i> [ne] <i>dzin</i> 3PL-NEG-mention [3SGPOSS] name 'they don't mention [its] name'	• Aff	$[a- [[NEG-V]_i [N]_j]_{VP}]_{Nk}$	$[a- [[V]_i [N]_j]_{VP}]_{Nk}$	$[a- [V+N]]$	Pre f	Resu lt	
507	mbrɔ-nsa	<i>m-brɔ-nsa</i> NMLZ-white-drink 'intoxicating drink'	<i>nsa a ε-boro</i> drink REL 3SG-intoxicate 'a drink that intoxicates'	• Comp	$[[m- [V]_i]_{Nj} [N]_k]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	
508	mɔfrabere m	<i>m-mɔfra-bere-m</i> PL-child-time-in 'childhood'	<i>mɔfra bere mu</i> children time in 'childhood'	• Comp	$[[[N]_i [N]_j]_{Nk} [N]_x]_{Nk}$	$[[N]_i [N]_j]_{Ni}$	[N+N]	L	L	
509	mɔfrabere m nwomasua	<i>mɔfraberem nwomasua</i> childhood education 'childhood education'	<i>mɔfraberem</i> 'childhood' <i>nwomasua</i> 'education'	• Comp	$[[[[N]_i [N]_j]_{Nk} [N]_x]_{Nk} [[N]_y [V]_z]_{Ns}]_{Ns}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Resu lt
510	mɔmœhyε	<i>mɔmœ-hyε</i> salted_fish-apply 'putting salt on fish to preserve it'	<i>hyε mɔmœ</i> apply salted_fish 'to put salt on fish to preserve it'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
511	medɔwias e	<i>me-dɔ-wiase</i> 1SGPOSS-love-earth 'lover'	<i>me-dɔ-</i> <i>wiase</i> 1SGPOSS-love earth 'my love world'	• LEX	$[[[POSS]_i [N]_j]_{Nk} [N]_x]_{Ny}$	$[[N]_i [N]_j]_{Nk}$	[N+N]	N/ A	N/ A	

	meetini	<i>meet-i-ni</i> mate-NMLZ[person.SG] 'driver's mate/bus conductor'	<i>meet-i</i> 'a criver's mate/bus conductor'	• Aff	$[[N]_i \cdot ni]_{Nj}$	$[[N]_i \cdot ni]_{Nj}$	$[[N] \cdot ni]$	Suf	
512									
513	mena-ba	<i>mena-ba</i> broom-child/offspring/DIM 'broom stick'	<i>mena</i> 'broom'	• Aff	$[[N]_i \cdot ba]_{Nj}$	$[[N]_i \cdot wa]_{Nj}$	$[[N] \cdot ba]$	Suf	
514	menease	<i>mene-ase</i> throat-under 'throat'	<i>mene</i> 'throat' <i>ase</i> 'under'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	$[N+N]$	L	N Loc
515	metse-wo-ho	<i>me-tse-wo-ho</i> 1SG-stay.PRS-2SGPOSS-self 'I-am-sitting-by-you (type of (fish) catch)'	<i>me-tse</i> <i>wo-ho</i> 1SG-stay.PRS 2SGPOSS-self 'I am sitting by you'	• LEX	$[[PRN]_i [[V]_j [[PRN]_k [N]_x]_{Ny}]_{VP}]_{IP}$	$[[PRN]_i [[V]_j [[PRN]_k [N]_x]_{Ny}]_{VP}]_{IP}$		N/ A	N/ A
516	mfamfir	<i>a-m-fa-m-fir</i> NMLZ-NEG-take-NEG-credit 'an unforgiving person'	<i>ɔ-m-fa</i> <i>asem</i> <i>m-fir</i> 3SG-NEG-take matter NEG-credit 'S/he does not forgive issue'	• Aff	$[a- [[NEG-V]_i [NEG-V]_j]_{VP}]_{Nk}$	$[a- [[V]_i [V]_j]_{VP}]_{Nk}$	$[a- [V+V]]$	Pre f	
517	mmeresan ten	<i>m-mere-santen</i> PL-time-line 'eternity'	<i>mere</i> 'time' <i>santen</i> 'line'	• Comp	$[[N]_i [N]_j]_{Ni}$	$[[N]_i [N]_j]_{Ni}$	$[N+N]$	L	L
518	mmuae	<i>m-mua-e</i> NMLZ-respond-NMLZ 'reply, response'	<i>bua</i> 'to respond'	• Aff	$[[m- [V]_i]_{Nj} \cdot e]_{Nk}$	$[[n- [V]_i]_{Nj} \cdot e]_{Nk}$	$[[M- [V] \cdot I]$	Suf	Resul t
519	mofraase	<i>m-mofra-ase</i> PL-child-under 'childhood (time)'	<i>mmofra</i> 'PL-child' <i>ase</i> 'under'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	$[N+N]$	L	N
520	mogyadan se	<i>mogya-danse</i> blood-witness-NMLZ[person] 'martyrdom'	<i>mogya</i> 'blood' <i>adanse</i> 'witness'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R	R
521	mogyadan sefo	<i>mogya-danse-fo</i> blood-witness-NMLZ[person] 'martyrs'	<i>mogya-danse</i> 'blood-witness'	• Comp	$[[N]_i [[N]_j \cdot fo]_{Nk}]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R	R
522	mpasuaflo	<i>mpasua-fo</i> constituent-NMLZ[person] 'the soldiers forming a line'	<i>mpasuua-</i> 'constituency'	• Aff	$[[N]_i \cdot fo]_{Nj}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	

	mpatowab oa	<i>mpatowa-boa</i> tilapia-net 'type of fishing net (lit. tilapia net)'	<i>mpatowa</i> 'tilapia' <i>εboa</i> 'net'	• Comp $[[N_i][N_j]]_{Nj}$	$[[N_i][N_j]]_{Nj}$	[N+N]	R	R		
523	523	mpemdu	<i>m-pem-du</i> PL-thousand-ten 'ten thousand'	<i>apem</i> 'one thousand' <i>du</i> 'ten'	• Comp $[[Num_i][Num_j]]_{NUM_k}$	$[[Num_i][Num_j]]_{NUM_i}$	[Num+Num]	L	L	
	524	mpemee	<i>m-pem-ee</i> NMLZ-push-NMLZ 'surging/pushing/movement'	<i>pem</i> 'to push'	• Aff $[[m- [V_i]]_{Nj} - ee]_{Nk}$	$[[n- [V_i]]_{Nj} - e]_{Nk}$	$[[M- [V]] - I]$	Pre f	Act	
	525	mpena ba	<i>mpena ba</i> mistress child 'child born out of wedlock'	<i>mpena</i> 'boyfriend/girlfriend' <i>ba</i> 'child'	• Comp $[[N_i][N_j]]_{Nj}$	$[[N_i][N_j]]_{Nj}$	[N+N]	R	R	
	526	mpentemb uaten	<i>ɔ-m-pe-ntem-bua-ten</i> 3SG-NEG-like-hast-pass-judgement 'one who is not quick to judge'	<i>ɔ-m-pe</i> <i>n̩tem m-bua aten</i> 3SG-NEG-like hast NEG-pass judgement 'S/he does not judge quickly'	• LEX $[[PRN_i][[-NEG-V_j][Adv_k]]_V P$ $[-NEG-V_x[N_j]_V P]_V P]_I P$	$[[PRN_i][[V_j][Adv_k]_V P][[V_x[N_j]_V P]_V P]_I P$	$[ɔ-[(V+N)+(V+N)]]$	N/A	N/A	Prop erty
	527	mpoano	<i>m-po-ano</i> PL-sea-edge 'see shore'	<i>epo</i> 'sea' <i>ano</i> 'edge'	• Comp $[[N_i][N_j]]_{Nk}$	$[[N_i][N_j]]_{Nk}$	[N+N]	L	N	Loc
	528	mumɔye	<i>amumɔ-yɛ</i> evil-do 'evil/impiety'	<i>ye amumɔ</i> do evil/wickedness 'to do evit'	• HD- Inv • Comp $[[N_i][V_j]]_{Ni}$	$[[N_i][V_j]]_{Ni}$	[N+V]	R	L	
	529	mumoyed e	<i>amumɔyɛ-de</i> evil-thing 'eniquity/ungodly deeds'	<i>amumɔyɛ</i> 'evil, mischief' <i>ade</i> 'deed'	• Comp $[[[[N_i][V_j]]_{Ni}[N_x]]_{Nx}}$	$[[N_i][N_j]]_{Nj}$	[N+N]	R	R	Resu lt
	530	mumoyefo	<i>amumɔyɛ-fo</i> evil-NMLZ[person] 'evil doer/miscreant'	<i>amumɔyɛ</i> 'evil, mischief'	• Aff $[[[[N_i][V_j]]_{Nk} \neg fo]_{Nx}}$	$[[N_i] \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf	Agen t	
	531	nafuaber	<i>anafua-ber</i> evening-time 'eventide'	<i>anafua</i> 'evening' <i>aber</i> 'time'	• Comp $[[N_i][N_j]]_{Nj}$	$[[N_i][N_j]]_{Nj}$	[N+N]	R	R	Resu lt
	532	na-kuma	<i>na-kuma</i> mother-younger younger mother (Uncle's wife, mother's younger sister)	<i>ɛna kuma</i> mother junior 'junior mather'	• Comp $[[N_i][A_j]]_{Ni}$	$[[N_i][A_j]]_{Ni}$	[N+A]	L	L	
	533									

534	nam mba	<i>nam m-ba</i> fish PL-child 'fingerlings'	<i>nam m-ba</i> fish PL-child 'fish children'	• Comp	$[[N]_i [PL-N]_j]_{Ni}$	$[[N]_i [N]_j]_{Ni}$	[N+N]	L	L		
535	namugyna	<i>anan-mu-gyina</i> NMLZ-leg-in-stand-NMLZ[person] 'representation'	<i>gyina nan mu</i> stand leg in 'to representative (stand in the legs of)'	• HD- Inv • Comp	$[[N]_i [N]_j]_{Nk} [V]_x]_{Ny}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act/ Resu lt	
536	namugynafo	<i>namugyina-fo</i> representation-NMLZ[person] 'representative'	<i>anamugyina</i> 'representation'	• Aff	$[[N]_i [N]_j]_{Nk} [V]_x]_{Ny} \neg fo]_{Nz}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf		Agen tive	
537	nanabea	<i>a-nana-bea</i> PL-foreign-place 'strange place/foreign land'	<i>anana</i> 'foreign' <i>bea</i> 'place'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Loc	
538	nanani	<i>\o-nana-ni</i> SG-foreign-NMLZ[person.SG] 'stranger, foreigner'	<i>nana</i> 'foreign'	• Aff	$[[N]_i -ni]_{Nj}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf		Prov enanc e	
539	nanfo	<i>\o-nan-fo</i> NMLZ-melt-NMLZ[person] 'melter, smelter'	<i>nan</i> 'to melt'	• Aff	$[\neg [V]_i]_{Nj} \neg fo]_{Nk}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf		Agen tive	
540	nankom	<i>nan-k\om</i> fish-hunger 'fish famine (the scarcity of fish)'	<i>nam kom</i> fish hunger 'fish famine'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Resu lt	
541	nankomber	<i>nankom-ber</i> fish_hunger-time 'time of fish famine/off-fishing season'	<i>nam kom aber</i> fish hunger time 'Time of fish hunger/off-fishing season'	• Comp	$[[N]_i [N]_j]_{Nj} [N]_k]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Resu lt	
542	nankese	<i>nan-kese</i> fish-big 'big fish'	<i>enam kese</i> fish big 'big fish'	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	[N+A]	L	L	Resu lt	
543	nanmusini	<i>anan-mu-si</i> leg-in-position 'representation/succession/replacement'	<i>si a-nan mu</i> position PL-leg in 'to represent/to succeed/to deputize'	• HD- Inv • Comp	$[[N]_i [N]_j]_{Nk} [V]_x]_{Ny}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Resu lt	
544	nanmusini	<i>ananmisi-ni</i> representation-NMLZ[person.SG] 'delegate/representative/ambassador'	<i>ananmisi</i> 'representation'	• Aff	$[[N]_i [N]_j]_{Nk} [V]_x]_{Ny} \neg ni]_{Nz}$	$[[N]_i \neg ni]_{Nj}$	$[[N] \neg ni]$	Suf		Agen t	

545	nantefo	<i>ɔ-nante-fo</i> SG-walk-NMLZ[person] walker, traveler on foot, wanderer, passerby.	<i>nante</i> ‘to walk’	• Aff	$[[V]_i \cdot fo]_{Nj}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agent
546	nanti (nantini)	<i>nan-ti</i> (nan-tini) foot-head (leg-root) 'heel (head/root of the foot)'	<i>ɛnan</i> ‘leg’ <i>ti</i> ‘head’ <i>tini</i> ‘root’	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	$[N+N]$	L	N
547	nantitwitwa	<i>a-nanti-twi~twa</i> PL-heel-RED~cut 'sabotage (lit. cutting of the heel)'	<i>twi~twa ananti</i> RED-cut heel 'to sabotage (lit. to cut the heels)'	• HD- Inv • Comp	$[[N]_i [N]_j]_{Nk} [RED-V]_x]_{Ny}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	N Agent
548	nantwika	<i>nantwi ka</i> cattle drive 'herding cattle'	<i>ka nantwi</i> drive cattle 'to herd cattle'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	N Act
549	nantwikaf o	<i>nantwika-fo</i> cattle-drive-NMLZ[person] 'herdsman'	<i>nantwika</i> ‘herding’	• Aff	$[[N]_i [V]_j]_{Nk} \cdot fo]_{Nx}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agent
550	nantwinini	<i>nantwi-nini</i> cow-male 'bull'	<i>nantwi</i> ‘cow’ <i>nini</i> ‘male’	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	$[N+A]$	L	L Result
551	napanyin	<i>na-panyin</i> mother-senior 'mathers elder sister'	<i>ɛna panyin</i> mother senior 'senior mather'	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	$[N+A]$	L	L Result
552	nasireni	<i>nasire-ni</i> Nazareth-NMLZ[person.SG] 'Nazarene'	<i>nasire</i> ‘Nazareth’	• Aff	$[[N]_i \cdot ni]_{Nj}$	$[[N]_i \cdot ni]_{Nj}$	$[[N] \cdot ni]$	Suf	Provenance
553	ndaanan	<i>n-da-anan</i> PL-day-four 'four days'	<i>nda-anan</i> day-four 'four days'	• Comp	$[[N]_i [Num]_j]_{Ni}$	$[[N]_i [N]_j]_{Ni}$	$[N+N]$	L	L
554	ndaansa	<i>n-da-ansa</i> PL-days-three 'three days'	<i>n-da</i> ‘PL-days’ <i>ansa</i> ‘three’	• Comp	$[[N]_i [Num]_j]_{Ni}$	$[[N]_i [N]_j]_{Ni}$	$[N+N]$	L	L
555	nda-awɔtwe	<i>n-da awɔtwe</i> PL-day eight 'one week (8 th day)'	<i>n-da</i> ‘PL-day’ <i>awɔtwe</i> ‘eight’	• Comp	$[[N]_i [Num]_j]_{Ni}$	$[[N]_i [N]_j]_{Ni}$	$[N+N]$	L	L

	ndaenum	<i>n-da-enum</i> PL-day-five 'five days'	<i>nda-</i> 'day' <i>enum</i> 'five'	• Comp	$[[N]_i [Num]_j]_{Ni}$	$[[N]_i [N]_j]_{Ni}$	[N+N]	L	L	
556	ndanani	<i>n-dan-ani</i> NMLZ-turn-face 'perversion, subversion, revolution'	<i>dan ani</i> turn face 'to pervert/subvert'	• Aff	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	[M- [V+N]]	Pre f		
557	ndofir	<i>n-dɔ-fir</i> NMLZ-enter-exit 'moving in and out of ...'	<i>dɔ fir</i> enter exit 'move in and out'	• Aff	$[n- [[V]_i [V]_j]_{VP}]_{Nk}$	$[n- [[V]_i [V]_j]_{VP}]_{Nk}$	[M- [V+V]]	Pre f		
558	ndønebiasa	<i>n-dɔn-ebiasa</i> PL-watch-three 'three o'clock'	<i>n-dɔn ebiasa</i> PL-bell three 'three o'clock'	• Comp	$[[N]_i [Num]_j]_{Ni}$	$[[N]_i [N]_j]_{Ni}$	[N+N]	L	L	Time
559	ndønnan	<i>n-dɔn-nan</i> PL-watch-four 'four o'clock'	<i>n-dɔn anan</i> PL-bell four '4 o'clock'	• Comp	$[[N]_i [Num]_j]_{Ni}$	$[[N]_i [N]_j]_{Ni}$	[N+N]	L	L	Time
560	ndønnum	<i>n-dɔn-num</i> PL-watch-five 'the five o'clock'	<i>n-dɔn enum</i> PL-bell five 'five o'clock'	• Comp	$[[N]_i [Num]_j]_{Ni}$	$[[N]_i [N]_j]_{Ni}$	[N+N]	L	L	Time
561	nimdee	<i>nim-de-ε</i> know-thing-NMLZ 'knowledge'	<i>nim ade</i> know thing 'to know'	• Aff	$[[[V]_i [N]_j]_{VP} - \varepsilon]_{Nk}$	$[[[V]_i [N]_j]_{VP} - \varepsilon]_{Nk}$	[[[V+N] - I]	Suf		
562	nimdefo	<i>o-nim-de-fo</i> NMLZ-know-thing-NMLZ[person] 'knowledgeable person'	<i>nim ade</i> know thing 'to know something/be knowledgeable'	• Aff	$[[[V]_i [N]_j]_{VP} - fo]_{Nk}$	$[[N]_i - fo]_{Nj}$	[[[N] - fo]	Suf		
563	ninkumtwe	<i>ninkum-twe</i> jealousy-pull 'jealousy'	<i>twe ninkum</i> pull jealousy 'to be jealous'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Ni}$	$[[N]_i [V]_j]_{Ni}$	[N+V]	R	L	
564	nipadua	<i>nipa-dua</i> human-tree 'person/body/frame'	<i>nipa</i> 'human' <i>dua</i> 'tree'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	[N+N]	R	N	
565	nipasuo	<i>nipa-su-o</i> human-nature-AFV 'human nature/racial background'	<i>nipa su</i> human nature 'human nature'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	

	nisu	<i>ni-su</i> eye-water 'tears'	<i>ani</i> 'eye' <i>su</i> 'water'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Product
567	nitan	<i>ni-tan</i> eye-hate 'hatred/harassment'	<i>tan ani</i> hate eye 'to harass (lit. to hate the eye)'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Result
568	nkam	<i>n-kam</i> NMLZ-shout 'shouting'	<i>kam</i> 'to shout'	• Aff	$[n- [V]_i]_{Nj}$	$[n- [V]_i]_{Nj}$	[M- [V]]	Pre f		Act
569	nkasawsua	<i>nkasaw-sua</i> nkasaw-to_set_a_trap 'setting trap for crab'	<i>sua nkasaw</i> to_set nkasaw (a trap) 'to set the nkasaw trap'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	
570	nkombədz i	<i>nkombə-dzi</i> chat-eat(engage in) 'conversation'	<i>dzi nkombə</i> eat(engage in) chat 'conversation'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Ni}$	$[[N]_i [V]_j]_{Ni}$	[N+V]	R	L	Act
571	nkombətw etwe	<i>nkombə-twe~twe</i> chat-RED~pull 'conversation'	<i>twe~twe nkombə</i> RED~pull (engage in) chat 'to converse'	• HD- Inv • Comp	$[[N]_i [RED-V]_j]_{Ni}$	$[[N]_i [V]_j]_{Ni}$	[N+V]	R	L	Act
572	nkoasom	<i>nkoasom</i> slave-serve 'servitude'	<i>nkoasom</i> 'slaves' <i>som</i> 'serving'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Result
573	nkoato	<i>nkoato-tɔ</i> slave-buy 'slave-buying'	<i>tɔ n-koao</i> buy PL-slave 'to buy slaves'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	
574	nkoato ne nkoatɔn	<i>nkoato-tɔ ne nkoatɔn</i> slave-buying CONJ slave-selling 'slave trade'	<i>nkoato ne nkoatɔn</i> slave-buying CONJ slave-selling 'the buying and selling of slaves'	• LEX	$[[[N]_i [V]_j]_{Nk} ne [[N]_x [V]_y]_{Nz}]_{Nkz}$	$[[N]_i ne [N]_j]_{Nk}$	[[N] ne [N]]	N/ A	N/ A	
575	nkoatofo	<i>nkoato-fo</i> slave_buying-NMLZ[person] 'slave buyers'	<i>nkoato</i> 'slave-buying'	• Aff	$[[[N]_i [V]_j]_{Nk} -fo]_{Nx}$	$[[N]_i -fo]_{Nj}$	[[N] -fo]	Suf		Agent
576	nkoatɔn	<i>nkoatɔn</i> slave-sell 'slave-selling'	<i>tɔn n-koao</i> sell PL-slave 'to sell slaves'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act

	nkoatənfo o	<i>nkoatən-fo-o</i> NMLZ-slave-sell-NMLZ[person] 'a person who sells slaves'	<i>nkoatən</i> 'slave-selling'	• Aff	$[[[[N]_i [V]_j]_{Nk} \cdot fo]_{Nx}}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agen t	
578	579	nkongyaa yi	<i>nkongyaa-yi</i> magic-show 'performing magic'	<i>yi nkongyaa</i> perform wonders 'to perform magic'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R N Act	
580	581	nkuafowa kyer	<i>nkuafowa-kyer</i> <i>nkuafowa</i> catch 'catching <i>nkuafowa</i> '	<i>nkuafowa</i> 'type of fish'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R N	
581	582	nkwagye	<i>nkwa-gye</i> life-save 'salvation'	<i>gye nkwa</i> save life 'to save life'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R N	
582	583	nkwansan	<i>nkwan-san</i> soup-pot 'source pan/cooking pot'	<i>nkwan</i> 'broth' <i>san</i> 'pot'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R R	
583	584	nkwansan mu-nam	<i>nkwansan-mu-nam</i> source_pan-in-fish 'fish for the family table'	<i>nkwansan</i> mu nam source_pan in fish 'fish in the source pan'	• Comp	$[[[[N]_i [N]_j]_{Nj} [N]_k]_{Nx} [N]_y]_{Ny}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R R	
584	585	nkwasease m	<i>n-kwasea-sem</i> PL-fool-matter 'nonsense'	<i>kwasea asem</i> fool matter 'a fool's matter'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R R	
585	586	nnahoo	<i>n-na-hoo</i> NMLZ-sleep-deep 'deep sleep'	<i>da hoo</i> sleep deep 'deep sleep'	• Aff	$[n- [[V]_i [Adv]_j]_{VP}]_{Nk}$	$[n- [[V]_i [Adv]_j]_{VP}]_{Nk}$	$[M- [V+Adv]]$	Pre f	Resu lt
586	587	nnamfofa	<i>n-namfo-fa</i> PL-friend-take 'the act of making friends/friendship'	<i>fa namfo</i> take friend 'to make friends'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R N	Act
587	588	nñomumfa	<i>nñomum-fa</i> captivity-take 'the act of taking captive'	<i>fa nñomum</i> take captive 'to captivate'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R N	Act
588		nñomumfa foo	<i>nñomumfa-fooo</i> 'act_of_taking_captive -NMLZ[person]' 'war captives, prisoners of war'	<i>nñomumfa</i> 'the act of taking captive'	• Aff	$[[[[N]_i [V]_j]_{Nk} \cdot fo]_{Nx}}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Resu lt

589	nnebone	<i>n-ne-bo-ne</i> PL-thing-bad 'evil deeds'	<i>ade bo-ne</i> thing bad 'a bad thing'	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	[N+A]	L	L	
590	nneuafo	<i>n-ne-dua-fo</i> PL-sleep-wood-NMLZ[person] 'prisoners'	<i>da dua</i> sleep wood 'to be in prisons'	• Aff	$[[V]_i [N]_j]_{VP} \neg fo]_{Nk}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf	Pati	ent
591	nneyee	<i>n-ne-ye-e</i> PL-thing-do-NMLZ 'act(ivies)/actions'	<i>ye ade</i> do thing 'to act'	• HD- Inv • Aff	$[[N]_i [V]_j]_{Nk} \neg e]_{Nx}$	$[[N]_i [V]_j]_{Nk} \neg e]_{Nx}$	$[[N+V] \neg e]$	Suf	Resu	lt
592	nnianimu	<i>n-ni-animu</i> NMLZ-take_position-front 'preamble'	<i>di animu</i> take_position front 'to lead'	• Aff	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[M- [V+N]]$	Pre f	Resu	lt
593	nnipakuo	<i>n-nipa-kuo</i> PL-person-group 'a group of people'	<i>nipa</i> 'PL-person' <i>kuo</i> 'group'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	
594	nyinasoɔ	<i>n-nyina-so-ɔ</i> NMLZ-stand-on-AFV 'foundation'	<i>gyina so</i> stand on 'to stand on'	• Aff	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[M- [V+N]]$	Pre f		
595	nokwafo	<i>ɔ-nokwa-fo</i> SG-truth-NMLZ[person] 'truthful person, honest person'	<i>nokwa(re)</i> 'truth'	• Aff	$[[N]_i \neg fo]_{Nj}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf	Resu	lt
596	nokwaredi	<i>nokware-di</i> truth-eat 'truthfulness'	<i>di nokware</i> eat truth 'to be truthful'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	
597	nsa-nam	<i>nsa-nam</i> drink-fish 'fish that is sold to get money for drinks'	<i>nsa</i> 'drink' <i>nam</i> 'fish'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	
598	nsanodwuma	<i>nsa-no-dwuma</i> hand/finger-tip-work 'technical/artisanal job'	<i>nsa ano adwuma</i> hand tip work 'figer-tip work'	• Comp	$[[N]_i [N]_j]_{Nk} [N]_x]_{Nx}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Resu
599	nsanom	<i>nsa-nom</i> liquor-drink '(liquor)-drinking'	<i>nom nsa</i> drink liquor 'to drink alcohol'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act

600	nsatseaba	<i>nsa-tsea-ba</i> finger-slender-DIM 'finger'	<i>nsa-</i> 'hand' <i>tsea</i> 'slender'	• Aff	$[[[N]_i [A]_j]_N -ba]_{Nk}$	$[[N]_i -wa]_{Nj}$	$[[N] -ba]$	Suf	
601	nsiho	<i>n-si-ho</i> NMLZ-to_add-self 'interest'	<i>si ho</i> add_to self 'to add to the price of an item'	• Aff	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[M- [V+N]]$	Pre f	Resu lt
602	nsihogef o	<i>nsiho-gye</i> interest-collect 'interest-collection'	<i>gye nsiho</i> collect interest 'to collect interest on ...'	• HD- Inv • Comp	$[[n- [[V]_i [N]_j]_{VP}]_{Nk} [V]_x]_{Ny}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N	Act
603	nsihogef o	<i>nsihogye-fo</i> interest_collection-NMLZ _[person] 'usurer'	<i>nsihogye</i> 'interest collection'	• Aff	$[[n- [[V]_i [N]_j]_{VP}]_{Nk} [V]_x]_{Ny} -fo]_{Nz}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Agent
604	nsihoma	<i>nsiho-ma</i> interest-give 'interest payment'	<i>ma nsiho</i> give interest 'to pay interest on'	• HD- Inv • Comp	$[[n- [[V]_i [N]_j]_{VP}]_{Nk} [V]_x]_{Ny}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N	Action
605	nsihomafo	<i>nsiho-ma-fo</i> interest_paying-NMLZ _[person] 'One who is paying interest on a loan'	<i>nsihoma</i> 'paying of interest'	• Aff	$[[n- [[V]_i [N]_j]_{VP}]_{Nk} [V]_x]_{Ny} -fo]_{Nz}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Agent
606	nsrahwe	<i>n-sra-hwe</i> NMLZ-visit-look 'tourism'	<i>sra</i> 'to visit' <i>hwe</i> 'to look'	• Aff	$[n- [[V]_i [V]_j]_{VP}]_{Nk}$	$[n- [[V]_i [V]_j]_{VP}]_{Nk}$	$[M- [V+V]]$	Pre f	Act
607	nsrahwefo	<i>nsrahwe-fo</i> tourism-NMLZ _[person] 'tourist'	<i>nsrahwe</i> 'tourism'	• Aff	$[[n- [[V]_i [V]_j]_{VP}]_{Nk} -fo]_{Nx}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Agent
608	nsu fonee	<i>nsu fon-ee</i> water make_muddy-NMLZ 'muddying water/muddled water'	<i>fon nsu</i> to muddy water 'muddying water'	• HD- Inv • Comp	$[[N]_i [[V]_j -ee]_{Nk}]_{Ni}$	$[[N]_i [N]_j]_{Ni}$	$[N+N]$	L L	Act/ Resu lt
609	nsuadze	<i>nsu-adze</i> water-under 'bottom of the water/seabed'	<i>nsu</i> 'water' <i>adze</i> 'under'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	$[N+N]$	R N	Loc
610	nsuadze nam	<i>nsuadze nam</i> seabed fish 'deepwater fish (fishes from the seabed)'	<i>nsuadze</i> 'seabed' <i>nam</i> 'fish'	• Comp	$[[N]_i [N]_j]_{Nk} [N]_x]_{Nx}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R R	

	nsuahunfo	<i>n-sua-hun-fo</i> NMLZ-swear_oath-vain-NMLZ[person] 'one who cannot fulfill his oath or promise'	<i>sua hun</i> to swear vain 'empty promise'	• Aff	$[[n- [[V]_i [Adv]_j]_{VP}]_{Nk} \cdot fo]_{Nx}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agent
611	nsuaniwa	<i>nsu-aniwa</i> water-eye/surface 'spring/where water issues from the earth'	<i>nsu</i> 'water' <i>aniwa</i> 'eye'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	$[N+N]$	L	N
612	nsuano	<i>nsu-anō</i> water-mouth/edge 'water's edge/shoreline'	<i>nsu</i> 'water' <i>anō</i> 'mouth'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	$[N+N]$	L	N
613	nsuanoni	<i>nsuanō-ni</i> water's_edge-NMLZ[person.SG] 'inhabitant of the bank of a river lake or sea'	<i>nsuanō</i> 'water's edge'	• Aff	$[[[N]_i [N]_j]_{Nk} \cdot ni]_{Nx}$	$[[N]_i \cdot ni]_{Nj}$	$[[N] \cdot ni]$	Suf	Provenance
614	nsuenyi	<i>nsu-enyi</i> water-surface 'the surface of water'	<i>nsu</i> 'water' <i>enyi</i> 'surface'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	$[N+N]$	L	N
615	nsuenyi nam	<i>nsuenyi nam</i> water-surface fish 'shallow water fish (lit. water surface fish)'	<i>nsuenyi</i> 'water's surface' <i>nam</i> 'fish'	• Comp	$[[[N]_i [N]_j]_{Nk} [N]_x]_{Nx}$	$[[N]_i [N]_j]_{Nk}$	$[N+N]$	R	R
616	nsuhoho	<i>n-su-ho-fo</i> NMLZ-cry-vicinity-NMLZ[person] 'murmurer, grumbler'	<i>su ho</i> cry vicinity 'to cry about something'	• Aff	$[[n- [[V]_i [N]_j]_{VP}]_{Nk} \cdot fo]_{Nx}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agent
617	nsukankan	<i>nsu-kankān</i> water-fetid 'smelling water'	<i>nsu</i> 'water' <i>kankān</i> 'fetid'	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	$[N+A]$	L	L
618	nsunom	<i>nsu-nom</i> water-drinking 'water-drinkering'	<i>nom nsu</i> drink water 'drink water'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	N
619	nsunomfo	<i>nsunom-fo</i> waterdrinking-NMLZ[person] 'drinker of water'	<i>nsunom</i> 'water-drinking'	• Aff	$[[[N]_i [V]_j]_{Nk} \cdot fo]_{Nx}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agenitive
620	nsuonwin u	<i>nsuo-nwinu</i> water-cold 'cold water'	<i>nsuo</i> 'water' <i>nwinu</i> 'cold'	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	$[N+A]$	L	L
621									

622	nsusaw (<i>nsuokɔ</i>)	<i>nsu-saw</i> water-fetch-NMLZ _[person] 'fetching of water'	<i>saw nsu</i> fetch water 'to fetch water'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
623	nsusawfo	<i>nsusaw-fo</i> (<i>kó̄nsúó</i>) water_fetching-NMLZ _[person] 'drawer of water'	<i>nsusaw</i> 'water-fetching' water-fetch	• Aff	$[[[N]_i [V]_j]_{Nk} \neg fo]_{Nx}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf	Agen	tive
624	ntamahoro	<i>ntama-horo</i> cloth-wash 'laundry (clothes wash)'	<i>horo ntama</i> wash cloth 'to wash clothes'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
625	ntankeka	<i>ntan-ke~ka</i> oath-RED~say 'swearing'	<i>ke~ka ntan</i> RED~say oath 'to swear aoths'	• HD- Inv • Comp	$[[N]_i [RED-V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
626	ntankekaf o	<i>ntankekaf-fo</i> oath_swearing-NMLZ _[person] 'swearers'	<i>ntankekaf</i> 'oath_swearing'	• Aff	$[[[N]_i [RED-V]_j]_{Nk} \neg fo]_{Nx}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf	Agen	tive
627	ntantofo	<i>ntan-to-fo</i> oath-violate-NMLZ _[person] 'one who violates an aoth/perjured person'	<i>to ntam</i> violate oath 'to commit perjury/to violate an aoth'	• Aff	$[[[N]_i [V]_j]_{Nk} \neg fo]_{Nx}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf	Agen	tive
628	ntədzii	<i>n-tɔ-dzi-i</i> NMLZ-buy-eat-NMLZ 'meal/something that is bought and eaten'	<i>tɔ dzi</i> buy eat 'to buy and eat'	• Aff	$[[n- [[V]_i [V]]_{VP}]_{Nk} \neg i]_{Nx}$	$[[n- [[V]_i [V]]_{VP}]_{Nk} \neg i]_{Nx}$	$[M- [V+V]]$	Suf	Resu	lt
629	ntɔrɔfo	<i>ntɔrɔ-fo</i> family-NMLZ _[person] 'persons of the same ancient family'	<i>ntɔrɔ</i> 'family'	• Aff	$[[N]_i \neg fo]_{Nj}$	$[[N]_i \neg fo]_{Nj}$	$[[N] fo]$	Suf	Prov	enanc
630	nteaseε	<i>n-te-ase-ε</i> NMLZ-stay-under-NMLZ 'understanding'	<i>te ase</i> stay under 'to understand'	• Aff	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[M- [V+N]]$	Pre	Resu	lt
631	ntenkyew	<i>nten-kyew</i> judgement-crooked 'skewed judgement, miscarriage of justice'	<i>nten</i> 'judgment' <i>kyew</i> 'crooked/skewed'	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	[N+A]	L	L	Resu
632	ntoto	<i>n-toto</i> NMLZ-entangle 'confusion'	<i>toto</i> 'to entangle'	• Aff	$[n- [V]_i]_{Nj}$	$[n- [V]_i]_{Nj}$	$[M- [V]]$	Pre	Resu	lt

	ntowee	<i>n-tow-ee</i> NMLZ-throw-NMLZ 'throwing'	<i>tow</i> 'to throw'	• Aff	$[[n\text{-} [V]_i]_{Nj} -e]_{Nk}$	$[[n\text{-} [V]_i]_{Nj} -e]_{Nk}$	$[[M\text{-} [V]] -I]$	Pre f	Act
633	nu	<i>e-nu</i> NMLZ-stir 'stirring (method of fishing)'	<i>nu</i> 'to stir'	• Aff	$[e\text{-} [V]_i]_{Nj}$	$[a\text{-} [V]_i]_{Nj}$	$[e\text{-} [V]]$	Pre f	Act
634	nuabrima	<i>nua-barima</i> sibling-male 'brother (lit. male sibling)'	<i>nua</i> 'sibling' <i>barima</i> 'male'	• Comp	$[[N]_i [N]_j]_{Nij}$	$[[N]_i [N]_j]_{Nij}$	$[N+N]$	L B	Resu lt
635	nufo	<i>enu-fo</i> stiring-NMLZ _[person] 'stirers'	<i>nu</i> 'to stir'	• Aff	$[[e\text{-} [V]_i]_{Nj} -fo]_{Nk}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Agen t
636	nuonyamf o	<i>o-nuonyam-fo</i> SG-face-be-glory-NMLZ _[person] 'honourable person'	<i>anuonyam</i> 'glory/honour'	• Aff	$[[[N]_i o [A]_j]_{Nk} -fo]_{Nx}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	
637	nwomasua	<i>nwoma-sua</i> book-learn 'learning/(formal) education'	<i>sua nwoma</i> learn book 'to learn/to educate'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N	Act
638	nwomto	<i>nwom-to</i> song-sing 'singing'	<i>to nwom</i> sing song 'to sing'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N	Act
639	nwomtofo	<i>nnwomto-fo</i> singing-NMLZ _[person] 'singer(s)'	<i>nnwomto</i> 'singing'	• Aff	$[[[N]_i [V]_j]_{Nk} -fo]_{Nx}$	$[[N]_i -fo]_{Nj}$	$[[N] fo]$	Suf	Agen t
640	nwomye	<i>nnwom-yε</i> song-make 'music composition'	<i>ye nnwom</i> make song 'to compose music'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N	Act
641	nwomyefo	<i>nnwomye-fo</i> song-make-NMLZ _[person] 'music makers, composers'	<i>nnwomye</i> 'song-making'	• Aff	$[[[N]_i [V]_j]_{Nk} -fo]_{Nx}$	$[[N]_i -fo]_{Nj}$	$[[N] fo]$	Suf	Agen tive
642	nwonwade	<i>a-nwonwa-de</i> NMLZ-wonderful-thing 'miracle/wonders'	<i>ade nwonwa</i> thing wonder 'wonderful thing'	• HD- Inv • Comp	$[[a\text{-} [A]_i]_{Nj} [N]_k]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R R	Resu lt

644	nwonwase m	<i>a-nwonwa-sem</i> NMLZ-wonderful-matter 'wonders/strange'	<i>asem nownwa</i> matter wonder 'wonderful thing'	• HD- Inv • Comp	$[[a- [A]_i]_{Nj} [N]_k]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Resu lt
645	nworaba pon	<i>nworaba pon</i> star table 'table of stars'	<i>nworaba</i> 'star' <i>pon</i> 'table'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Resu lt
646	nyameama	<i>nyame-a-ma</i> God-SE-give 'God-given X/something got free of charge'	<i>Nyame a-ma</i> God PERF-give 'God has given'	• LEX	$[[N]_i [a-V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	N/ A	N/ A	
647	nyamebea	<i>onyame-bea</i> deity-FEM 'goddess'	<i>onyame</i> 'deity' <i>øbea</i> 'female'	• Comp	$[[N]_i [N]_j]_{Nij}$	$[[N]_i [N]_j]_{Nij}$	[N+N]	L	B	
648	nyamesem	<i>a-nyame-sem</i> PL-god-message 'gospel/sermon'	<i>nyame</i> 'God' <i>asem</i> 'thing'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Resu lt
649	nyamesom	<i>nyame-som</i> deity-serve 'religion'	<i>som nyame</i> serve deity 'to serve a deity'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Resu lt
650	nyamesom mu gyidie	<i>nyamesom mu gyidie</i> religion in belief 'religious belief/faith'	<i>nyamesom mu gyidie</i> religion in belief 'religious belief/faith'	• Comp	$[[[[N]_i [V]_j]_{Nk} [N]_x]_{Nx} [[V]_y [V]_z]_{VPNsNs}}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Resu lt
651	nyamesom ni	<i>nyamesom-nyi</i> religion-NMLZ _[person.SG] 'religious person'	<i>nyamesom</i> 'religion'	• Aff	$[[[[N]_i [V]_j]_{Nk} -ni]_{Nx}}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf	Agen t	
652	nyamesuro	<i>nyame-suro</i> God-fear 'the fear/reverence of/for God'	<i>suro nyame</i> fear God 'to fear God'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	
653	nyamesuron i	<i>nyamesuro-ni</i> God-fear-NMLZ _[person.SG] 'a god-fearing person'	<i>nyamesuro</i> 'The fear of God'	• Aff	$[[[[N]_i [V]_j]_{Nk} -ni]_{Nx}}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf	Experi encer	
654	nyansa adwumfo	<i>nyansa adwumfo</i> wisdom craftsman 'philosopher (lit. wisdom craftsman)'	<i>nyansa</i> 'wisdom' <i>adwumfo</i> 'craftsman'	• Comp	$[[N]_i [[a- [V]_j]_{Nk} -fo]_{Nx}]_{Nx}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	

	nyansafō	<i>o-nyansa-fo</i> SG-wisdom-NMLZ[person] 'wise person'	<i>nyansa</i> 'wisdom'	• Aff	$[[N]_i \cdot fo]_{Nj}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Experience
655	nyansahu	<i>nyansa-hu</i> wisdom-see/know 'philosophy/science/learning'	<i>hu nyansa</i> know/see wisdom 'to get/see/know wisdom'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N	Result
656	nyanskwan	<i>nyansa-kwan</i> wisdom-way 'cunning way'	<i>nyansa</i> 'wisdom' <i>kwan</i> 'way'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R R	Result
657	nyansape	<i>nyansa-pe</i> wisdom-like/love 'the search/love for wisdom/philosophy'	<i>pε nyansa</i> like/love wisdom 'to search for/love wisdom'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N	Act/ Result
658	nyansapefō	<i>nyansape-fo</i> philosophy-NMLZ[person] 'philosopher'	<i>nyansape</i> 'philosophy'	• Aff	$[[[N]_i [V]_j]_{Nk} \cdot fo]_{Nx}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agent
659	nyee	<i>n-ye-e</i> NMLZ-do-NMLZ 'act of doing, execution'	<i>ye</i> 'to do'	• Aff	$[[n- [V]_i]_{Nj} \cdot e]_{Nk}$	$[[n- [V]_i]_{Nj} \cdot e]_{Nk}$	$[[M- [V]] \cdot I]$	Suf	Act
660	nyikam	<i>enyi-kam</i> eye-mark 'earmark'	<i>enyi</i> 'eye' <i>akam</i> 'a mark'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	$[N+N]$	R N	
661	nyimdzee	<i>nyim-dze-e</i> know-thing-NMLZ 'knowledge'	<i>nyim adze</i> know thing 'be knowledgable (lit. know something)'	• Aff	$[[[V]_i [N]_j]_{VP} \cdot e]_{Nk}$	$[[[V]_i [N]_j]_{VP} \cdot e]_{Nk}$	$[[V+N] \cdot I]$	Suf	
662	nyimguase	<i>enyim-gu-ase</i> face-fall-ground 'disgrace'	X <i>enyim e-gu ase</i> X face PERF-fall ground 'X's face has fallen/X is disgraced'	• LEX	$[[N]_i [[V]_j [N]_k]_{VP}]_{Nx}$	$[[N]_i [[V]_j [N]_k]_{VP}]_{IP}$	$[N+[V+N]]$	N/A	N/ A Result
663	nyini	<i>o-nyini</i> NMLZ-grow 'growth/ageing'	<i>nyini</i> 'grow'	• Aff	$[o- [V]_i]_{Nj}$	$[O- [V]_i]_{Nj}$	$[o [V]]$	Pre f	Act/r esult
664	nyiso	<i>enyi-sɔ</i> eye-please 'pleasing/respectful/respectable'	sɔ <i>enyi</i> please eye 'be pleasing (to the eye)'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N	Result

	obibinyi	<i>o-bibi-nyi</i> NMLZ-africa-NMLZ _[person.SG] 'African'	<i>e-bibir</i> 'Africa'	• Aff	$[[N]_i \cdot ni]_{Nj}$	$[[N]_i \cdot ni]_{Nj}$	$[N] \cdot ni$	Suf		
666	667	obuo	<i>o-bu-o</i> NMLZ-to_respect-AFV 'respect'	<i>bu</i> 'to respect'	• Aff	$[o \cdot [V]_i]_{Nj}$	$[O \cdot [V]_i]_{Nj}$	$[o \cdot [V]]$	Pre f	
668	669	okunyin	<i>o-ku-nyin</i> NMLZ-kill-male 'great man'	<i>ku</i> 'to kill' <i>nyin</i> 'male'	• Aff	$[o \cdot [[V]_i [N]_j]_{VP}]_{Nk}$	$[O \cdot [[V]_i [N]_j]_{VP}]_{Nk}$	$[o \cdot [V+N]]$	Pre f	
670	671	oniawuo	<i>o-ni-a-wu-o</i> NMLZ-mother-SE-die-AFV 'one who mother is dead'	<i>ne ni a-wu</i> 3SGPOSS mother PERF-die 'His/her mother is dead'	• Aff	$[o \cdot [[N]_i [a-V]_j]_{IP}]_{Nk}$	$[O \cdot [[N]_i [V]_j]_{IP}]_{Nk}$	$[o \cdot [N+V]]$	Pre f	
672	673	onnyibi	<i>O-n-nyi bi</i> 3SG-NEG-have some 'he hasn't got some'	<i>O-n-nyi bi</i> 3SG-NEG-have some 'he hasn't got some'	• LEX	$[[PRN]_i [[NEG-V]_j [PRN]_k]_{VP}]_{IP}$	$[[PRN]_i [[V]_j [PRN]_k]_{VP}]_{IP}$		N/A	N/A
674	675	osebua	<i>o-se-bua</i> NMLZ-say-respond 'conversation/cross examination'	<i>se bua</i> say respond 'to cross examination'	• Aff	$[o \cdot [[V]_i [V]_j]_{VP}]_{Nk}$	$[O \cdot [[V]_i [V]_j]_{VP}]_{Nk}$	$[o \cdot [V+V]]$	Pre f	Act
676	677	paa	<i>m-paa</i> NMLZ-separate 'separation/adjournment'	<i>pae</i> 'to split'	• Aff	$[m \cdot [V]_i]_{Nj}$	$[n \cdot [V]_i]_{Nj}$	$[m \cdot [V]]$	Pre f	Act
678	679	paadie	<i>paa-di-e</i> labour-engage-AFV 'labour, work'	<i>di paa</i> engage labour 'to labour/work'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N	Act
680	681	paadifo	<i>ɔ-paadi-fo</i> NMLZ-labour-NMLZ _[person] 'labourer, worker, hireling'	<i>paadie</i> 'the act of working'	• Aff	$[[[N]_i [V]_j]_{Nk} \cdot fo]_{Nx}$	$[[N]_i \cdot fo]_{Nj}$	$[[V] \cdot fo]$	Suf	Agent
682	683	paafo	<i>a-paa-fo</i> PL-labour-NMLZ _[person] 'labourers'	<i>paa</i> 'labour'	• Aff	$[[N]_i \cdot fo]_{Nj}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agent
684	685	paamu	<i>m-paa-mu</i> NMLZ-separate-im 'division'	<i>pae mu</i> split in 'to divide'	• Aff	$[m \cdot [[V]_i [N]_j]_{VP}]_{Nk}$	$[n \cdot [[V]_i [N]_j]_{VP}]_{Nk}$	$[M \cdot [V+N]]$	Pre f	Loc

	paapani	<i>paapa-ni</i> pope-NMLZ _[person.SG] 'papist'	<i>paapa</i> 'pope'	• Aff	$[[N]_i \cdot ni]_{Nj}$	$[[N]_i \cdot ni]_{Nj}$	$[[N] \cdot ni]$	Suf			
677	678	pakansoa	<i>apakan-soa</i> palanquin-carry 'palanquin carrying'	<i>soa apakan</i> carry palanquin 'carry palanquin'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N	Act	
679	680	pakansoani	<i>ɔ-pakanso-a-ni</i> SG-palanquin_carrying-NMLZ _[person.SG] 'carrier of the palanquin'	<i>apakan-soa</i> carry palanquin	• Aff	$[[N]_i [V]_j]_{Nk} \cdot ni]_{Nx}$	$[[N]_i \cdot ni]_{Nj}$	$[[N] \cdot ni]$	Suf	Agent	
681	682	pamfo	<i>ɔ-pam-fo</i> SG-sew-NMLZ _[person] 'sewer/seamstress/tailor'	<i>pam</i> 'sew'	• Aff	$[[V]_i \cdot fo]_{Nj}$	$[[N]_i \cdot fo]_{Nj}$	$[[V] \cdot fo]$	Suf	Agent	
683	684	pamfo	<i>m-pa-m-fo</i> NMLZ-choose-in-NMLZ _[person] 'the elect'	<i>pa mu</i> choose in 'to discriminate'	• Aff	$[[m- [V]_i [N]_j]_{VP} \cdot fo]_{Nx}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Patient	
685	686	pamni	<i>apam-ni</i> covenant-NMLZ _[person.SG] 'confederate/ally/associate'	<i>apam</i> 'covenant/agreement'	• Aff	$[[N]_i \cdot ni]_{Nj}$	$[[N]_i \cdot ni]_{Nj}$	$[[N] \cdot ni]$	Suf	Provenance	
687	688	pamsee	<i>apam-see</i> agreement-destroy-NMLZ _[person] 'truce breaking/violation of an oath'	<i>see apam</i> destroy agreement 'to break an argument'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N	Act	
689	690	pamseefo	<i>apamsee-fo</i> agreement-breaking-NMLZ _[person] 'truce breaker/implacable person'	<i>apamsee</i> 'breaking contract/truce'	• Aff	$[[N]_i [V]_j]_{Nk} \cdot fo]_{Nx}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agent	
691	692	papani (papafo)	<i>papa-ni</i> (<i>a-pa~pa-fo</i>) good-NMLZ _[person.SG] 'a good, righteous person(s)'	<i>papa</i> 'good'	• Aff	$[[N]_i \cdot ni]_{Nj}$	$[[N]_i \cdot ni]_{Nj}$	$[[N] \cdot ni]$	Suf		
693	694	patafo	<i>ɔ-pata-fo</i> NMLZ-separate-NMLZ _[person] 'pacifier/peace maker/ conciliator'	<i>pata</i> 'to separate'	• Aff	$[[N]_i \cdot fo]_{Nj}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Pre f	Agent	
695	696	patakogye kobonebo	<i>ɔ-pata-ko-gye-ko-bɔ-ne-bo</i> 3SG-separate-fight-take-fight-put-3SG-chest 'He who fights for the weak'	<i>ɔ-pata ko gye ko bɔ ne bo</i> 3SG-separate fight take fight put 3SGPOSS hest 'He fights of the weak'	• LEX	$[[PRN]_i [[V]_j [[N]_k]_{NP}]_{VP} [[V]_x [[N]_y]_{NP}]_{VP} [[V]_z [[POSS]_s [N]_r]_{NP}]_{VP}}$ $[[PRN]_i [[V]_j [[N]_k]_{NP}]_{VP} [[V]_x [[N]_y]_{NP}]_{VP} [[V]_z [[POSS]_s [N]_r]_{NP}]_{VP}}$	$[[PRN]_i [[V]_j [[N]_k]_{NP}]_{VP} [[V]_x [[N]_y]_{NP}]_{VP} [[V]_z [[POSS]_s [N]_r]_{NP}]_{VP}}$		N/ A	N/ A	Property

688	pɔnkɔsoh we	<i>a-pɔnkɔ-so-hwɛ</i> PL-horse-on-look 'horse breeding'	<i>hwɛ a-pɔnkɔ so</i> look PL-horse on 'breed (look after) horses'	• HD- Inv • Comp	$[[[[N]_i [N]_j]_{Nk} [V]_x]_{Ny}}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act	
689	pɔnkɔsoh wefo	<i>a-pɔnkɔsohwe-fo</i> horse-breeding-NMLZ _[person] 'horse breeders'	<i>apɔnkɔsohwe</i> 'horse-breeding'	• Aff	$[[[[N]_i [N]_j]_{Nk} [V]_x]_{Ny} -fo]_{Nz}}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Agen	t	
690	pɛ	<i>pé</i> like 'will/desire'	<i>pɛ</i> 'to like'	• Tonal alternatio n	$[[V]_i]_{Nj}$	$[[V]_i]_{Nj}$	[[V]]	N/ A	N/ A		
691	pɛfo	<i>ɔ-pɛ-fo</i> NMLZ-love-NMLZ _[person] 'seeker/lover'	<i>pɛ</i> 'to like/love'	• Aff	$[[ɔ- [N]_i]_{Nj} -fo]_{Nk}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Agen	t	
692	pemeseeɛ	<i>pe-me-see-ɛ</i> like-1SGPOSS-destruction-AFV 'one who looks for the downfall of another'	<i>X pe-me-seeɛ</i> X like-1SGPOSS-destruction 'X is looking for my downfall'	• LEX	$[[V]_i [[POSS]_j [N]_k]_{NP}]_{VP}$	$[[V]_i [[POSS]_j [N]_k]_{NP}]_{VP}$	[V+N]	N/ A	N/ A	Prop erty	
693	penni	<i>pen-ni</i> time-NMLZ _[person.SG] 'a contemporary'	<i>pen</i> 'time'	• Aff	$[[N]_i -ni]_{Nj}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf	Resu	lt	
694	pesemenk omenya	<i>pe-se-me-nko-me-nya</i> like-COMP-1SGSBJ-only-1ASGSBJ-benefit 'selfishness (lit. I want to benefit a lone)'	<i>me-pe se me nko me-nya</i> 1SGSBJ-like COMP 1SGSBJ only 1SG-get 'I want to benefit a lone '	• LEX	$[[V]_i [[COMP]_j [[[PRN]_k [A]_x]_{PRN}]_y]_{NP} [[V]_z]_{VP}]_{IP}]_{CP}]_{VP}$	$[[V]_i [[COMP]_j [[[PRN]_k [A]_x]_{PRN}]_y]_{NP} [[V]_z]_{VP}]_{IP}]_{CP}]_{VP}$		N/ A	N/ A	Por erty	
695	pesemenk omenyani	<i>pesemenkonya-ni</i> I want_to_benefit_alone-NMLZ _[person.SG] 'selfish (I want to benefit alone) person'	<i>pesemenkomanya</i> 1SG-like COMP 1SGSBJ only 1SG-ge 'I want to benefit a lone '	• Aff	$[[N]_i -ni]_{Nj}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf	Prop erty		
696	piafo (piafo)	<i>pia-fo</i> push-NMLZ _[person] 'pusher/commander'	<i>pia</i> 'to push'	• Aff	$[[V]_i -fo]_{Nj}$	$[[V]_i -fo]_{Nj}$	$[[V] -fo]$	Suf	Agen	t	
697	pira	<i>pirá</i> 'injury'	<i>pirà</i> 'to injure'	• Tonal alternatio n	$[[V]_i]_{Nj}$	$[[V]_i]_{Nj}$	[V]	N/A	N/A	Resu	lt
698	po mpemee	<i>po mpemee</i> sea pushing 'sea surge/push/movement'	<i>epo</i> 'sea' <i>mpemee</i> 'pushing'	• Comp	$[[N]_i [[m- [V]_j]_{Nk} -ee]_{Nx}]_{Nx}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Act	

699	po nkam	<i>po nkam</i> sea shouting 'the shouting of the see'	<i>epo ne nkam</i> sea 3SGPOSS shout 'the sea' shouting'	• Comp	$[[N]_i [n- [V]_j]_{Nk}]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Act
700	po nk̥ree	<i>po nk̥ree</i> sea going '(going) fishing'	<i>nk̥ree</i> 'going' <i>epo</i> 'sea'	• Comp	$[[N]_i [[n- [V]_j]_{Nk} -ee]_{Nx}]_{Nx}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Act
701	pofo	<i>a-po-fo</i> PL-sea-NMLZ _[person] 'fisherman (lit. sea people)'	<i>epo</i> 'sea'	• Aff	$[[N]_i -fo]_{Nj}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf		Agent
702	pofohen	<i>apofo-hen</i> fishermen-chief 'chief fisherman'	<i>apofo</i> 'fishermen' <i>ɔhen</i> 'chief'	• Comp	$[[[N]_i -fo]_{Nj} [N]_k]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Agent
703	pofomba	<i>apofo-m-ba</i> PL-fishermen-PL-member '(group of) fishermen'	<i>apofo</i> 'fishermen' <i>m-ba</i> 'member (lit. children)'	• Comp	$[[[N]_i -fo]_{Nj} [N]_k]_{Nk}$	$[[N]_i [N]_j]_{Ni}$	[N+N]	L	L	Agent
704	pofoni	<i>ɔ-po-fo-ni</i> SG-sea-climb-NMLZ _[person.SG] 'fisherman'	<i>fow epo</i> climb sea 'go to sea (lit. clime the sea)'	• Aff	$[[[N]_i -fo]_{Nj} -ni]_{Nk} / [[[N]_i [V]_j]_{Nk} -ni]_{Nx}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf		Agent
705	pokɔ	<i>a-po-kɔ</i> NMLZ-sea-go 'see-going/fishing'	<i>kɔ po</i> to_go sea 'go to sea/fishing'	• HD- Inv • Aff	$[a- [[N]_i [V]_j]_{Nk}]_{Nx}$	$[a- [[N]_i [V]_j]_{Nk}]_{Nx}$	$[a- [N+V]]$	Pre f		Act
706	pokɔber	<i>apokɔ ber</i> sea-going time 'season-going time'	<i>apokɔ</i> 'sea-going' <i>aber</i> 'time'	• Comp	$[[a- [[N]_i [V]_j]_{Nk}]_{Nx} [N]_y]_{Ny}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	
707	poobɔfo	<i>apoo-bɔ</i> intimidation-ICV 'intimidation/extortion'	<i>bɔ apoo</i> ICV intimidation 'to intimidate'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Ni}$	$[[N]_i [V]_j]_{Ni}$	[N+V]	R	L	Act
708	poobɔfo	<i>ɔ-poobɔ-fo</i> NMLZ-extortion/intimidation-NMLZ _[person] 'exortortionist'	<i>apoobɔ</i> 'intimidation/extortion'	• Aff	$[[[N]_i [V]_j]_{Nk} -fo]_{Nx}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf		Agent
709	po-sor	<i>po-sor</i> sea-top 'top/surface of the sea/high seas'	<i>epo</i> 'sea' <i>esor</i> 'top'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	[N+N]	L	N	Loc

	posor nkoree	<i>posor nkoree</i> high_seas going 'going to high seas'	<i>kɔ po-sor</i> go sea-top 'go to (the of the) sea'	• Comp	$[[[N]_i [N]_j]_{Nk} [[n-[V]_x]_{Ny}-ee]_{Nz}]_{Nz}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Act
710	potwa	<i>a-po-twa</i> NMLZ-sea-cross 'sea crossing'	<i>twa po</i> cross sea 'cross the sea'	• HD- Inv • Aff	$[a- [[N]_i [V]_j]_{Nk}]_{Nx}$	$[a- [[N]_i [V]_j]_{Nk}]_{Nx}$	$[a- [N+V]]$	Pre f		Act
711	poye	<i>a-po-yε</i> NMLZ-sea-doing 'extended fishing expedition'	<i>ye po</i> do sea 'to fish elsewhere for extended time'	• HD- Inv • Aff	$[a- [[N]_i [V]_j]_{Nk}]_{Nx}$	$[a- [[N]_i [V]_j]_{Nk}]_{Nx}$	$[a- [N+V]]$	Pre f		Act
712	poyefo	<i>apoye-fo</i> NMLZ-sea-do-NMLZ _[person] 'fishers'	<i>apoye</i> 'fishing (elsewhere for an extended time)'	• Aff	$[[a- [[N]_i [V]_j]_{Nk}]_{Nx}-fo]_{Ny}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf		Agent
713	prapransu adze	<i>a-pra~pra-nsu-adze</i> NMLZ-RED~sweep-water-under 'a type of fishing net'	<i>pra-pra nsu adze</i> RED~sweep water under 'sweet under water'	• Aff	$[a- [[RED-V]_i [[N]_j [N]_k]_{NP}]_{VP}]_{Nx}$	$[a- [[V]_i [N]_j]_{VP}]_{Nk}$	$[a- [V+N]]$	Pre f		Result
714	puei	<i>m-pue-i</i> NMLZ-go_out-NMLZ _[location] 'exiting'	<i>pue</i> 'to exit'	• Aff	$[[m- [V]_i]_{Nj}-i]_{Nk}$	$[[n- [V]_i]_{Nj}-e]_{Nk}$	$[[M- [V]]-I]$	Pre f		Act
715	refomeni	<i>refome-ni</i> reform-NMLZ _[person,SG] 'reformed Christian/reformist'	<i>refome</i> 'reform'	• Aff	$[[N]_i -ni]_{Nj}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf		
716	sabarima	<i>ɔsa-barima</i> war-man 'warrior'	<i>ɔsa</i> 'war' <i>barima</i> 'man'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	
717	sabofo	<i>ɔ-sa-bo-fo</i> SG-alcohol-drink-NMLZ _[person] 'drunken person/a drunkard'	<i>bo (n)sa</i> be-drunk liquor 'to be intoxicated'	• Aff	$[[[N]_i [V]_j]_{Nk}-fo]_{Nx}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf		Experienc er
718	sabufo	<i>ɔ-sa-bu-fo</i> NMLZ-hand-turn-NMLZ _[person] 'menstruous woman'	<i>bu nsa</i> turn hand 'to menstruate'	• HD- Inv • Aff	$[[[N]_i [V]_j]_{Nk}-fo]_{Nx}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf		Experienc er
719	safohene	<i>ɔ-safo-hene</i> SG-army-chief 'war lord, leader of an army'	<i>safo hene</i> warriors chief 'commander/leader of an army'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Agent
720										

	sagyefo	<i>øsa-gye-fo</i> war-save-NMLZ _[person] 'a redeemer/a conquering warrior'	<i>gye øsa</i> save battle/war 'to save a war'	• HD- Inv • Comp	$[[N]_i [[V]_j \text{-}fo]_{Nk}]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Agent	
721	721	sahen	<i>øsa-hen</i> war-chief 'commander'	<i>øsa</i> 'war' <i>hen</i> 'chief'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Property
722	722	sahenkuni ni	<i>øsahen-kunini</i> commander-champion 'archduke, marshal, field marshal'	<i>øsahen</i> 'commander' <i>okunini</i> 'champion'	• Comp	$[[[N]_i [N]_j]_{Nk} [[[V]_x [N]_y]_{VP}]_{Nz}]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	
723	723	sakyer	<i>n-sakyer</i> NMLZ-change 'change'	<i>sakyer</i> 'to change'	• Aff	$[n- [V]_i]_{Nj}$	$[n- [V]_i]_{Nj}$	$[M- [V]]$	Pre f		Act
724	724	samando	<i>ø-saman-dɔ</i> SG-ghost-love 'necromancy'	<i>dɔ saman</i> love ghost 'love for ghosts'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
725	725	samandɔfo	<i>øsamando-fo</i> necromancy-NMLZ _[person] 'necromancer'	<i>øsamando</i> 'necromancy'	• Aff	$[[\text{-}ø-} [[N]_i [V]_j]_{Nk}]_{Nx} \text{-}fo]_{Ny}$	$[[N]_i \text{-}fo]_{Nj}$	$[[N] \text{-}fo]$	Suf		Agent
726	726	samanhyia	<i>se-m-a-n-hyia</i> COND-1SG-PAST-NEG-meet 'serendipity, a person one meets fortuitously'	<i>se-m-a-n-hyia</i> COND-1SG-PAST-NEG-meet 'Had I not met'	• LEX	$[[\text{COND}]_i [[\text{PRN}]_j [\text{PAST-NEG-}V]_k]_{IP}]_{CP}$	$[[\text{COND}]_i [[\text{PRN}]_j [\text{PAST-NEG-}V]_k]_{IP}]_{CP}$		N/A	N/A	
727	727	samdo	<i>n-sam-do</i> NMLZ-lay-on 'layer of ...'	<i>sam do</i> lay on 'to lay something over'	• Aff	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[M- [V+N]]$	Pre f		
728	728	sankɔfa	<i>san-kɔ-fa</i> return-go(EGR)-take 'something worth going back for'	<i>san kɔ fa</i> return-go-take 'to go back for ...'	• LEX	$[[V]_i [kɔ\text{-}V]_j]_{VP}$	$[[V]_i [V]_j]_{VP}$	[V+V]	N/A	N/A	
729	729	sankubo	<i>sanku-bɔ</i> organ-play 'organ-playing'	<i>bɔ sanku</i> play organ 'to play an organ'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
730	730	sankubɔfo	<i>ø-sankubɔ-fo</i> SG-organ_playing-NMLZ _[person] 'organist'	<i>sankubɔ</i> 'organ-playing'	• Aff	$[[[N]_i [V]_j]_{Nk} \text{-}fo]_{Nx}$	$[[N]_i \text{-}fo]_{Nj}$	$[[N] \text{-}fo]$	Suf		Agent

	732	sanomfo	<i>ɔ-sanom-fo</i> SG-drinking-NMLZ _[person] 'drunkard'	<i>nsanom</i> 'drinking'	• Aff [[[N] _i [V] _j] _{Nk} - <i>fo</i>] _{Nx}	[[N] _i - <i>fo</i>] _{Nj}	[[N] - <i>fo</i>]	Suf	Agent
	733	sansani	<i>ɔ-sansa-ni</i> NMLZ-aimless-NMLZ _[person.SG] 'a characterless/unarmed follower of a host'	(<i>a</i>) <i>sansa</i> 'aimlessness'	• Aff [[N] _i - <i>ni</i>] _{Nj}	[[N] _i - <i>ni</i>] _{Nj}	[[N] - <i>ni</i>]	Suf	The me
	734	santeni	<i>asante-ni</i> NMLZ-Asante-NMLZ _[person.SG] 'a man (inhabitant) of asante'	Asante 'Asante (a tribe)'	• Aff [[N] _i - <i>ni</i>] _{Nj}	[[N] _i - <i>ni</i>] _{Nj}	[[N] - <i>ni</i>]	Suf	Provenance
	735	satuafø	<i>nsa-tua</i> liquor-abstain 'teetotalism'	<i>tua nsa</i> proscribe liquor 'to abstain from the use of alcohol'	• HD- Inv • Comp [[N] _i [V] _j] _{Nk}	[[N] _i [V] _j] _{Nk}	[N+V]	R N	
	736	satuafø	<i>nsa-tua-fo</i> liquor-abstain-NMLZ _[person] 'teetotal(ler)'	<i>nsatua</i> 'teetotalism'	• Aff [[[N] _i [V] _j] _{Nk} - <i>fo</i>] _{Nx}	[[N] _i - <i>fo</i>] _{Nj}	[[N] - <i>fo</i>]	Suf	Exp
	737	satwafo	<i>ɔ-sa-twa-fo</i> NMLZ-path-cut-NMLZ _[person] 'pioneer'	<i>twa sa</i> cut path 'clear a path'	• HD- Inv • Aff [[[N] _i [V] _j] _{Nk} - <i>fo</i>] _{Nx}	[[N] _i - <i>fo</i>] _{Nj}	[[N] - <i>fo</i>]	Suf	Agent
	738	sɔfo	<i>ɔ-sɔ-fo</i> SG-worship-NMLZ _[person] 'pastor, ministers of the gospel'	<i>sɔr</i> 'to serve/worship'	• Aff [[N] _i - <i>fo</i>] _{Nj}	[[N] _i - <i>fo</i>] _{Nj}	[[N] _i - <i>fo</i>] _{Nj}	Suf	Agent
	739	sɔfoboafø	<i>ɔsɔfo-boafø</i> pastor-helper 'helper of a minister of the gospel'	<i>ɔsɔfo</i> 'pastor' <i>boafø</i> 'to helper'	• Comp [[[N] _i - <i>fo</i>] _{Nj} [[V] _k - <i>fo</i>] _{Nx}] _{Nx}	[[N] _i [N] _j] _{Nj}	[N+N]	R R	Agent
	740	sɔfopanyi n	<i>ɔsɔfo-panyin</i> NMLZ-worship-NMLZ _[person] -elder 'chief priest/senior minister'	<i>ɔsɔfo</i> 'pastor' <i>panyin</i> 'senior'	• Comp [[[N] _i - <i>fo</i>] _{Nj} [A] _k] _{Nj}	[[N] _i [A] _j] _{Ni}	[N+A]	L L	State
	741	sɔhwɛ	<i>n-sɔ-hwɛ</i> NMLZ-touch-see 'test/taste/temptation/trial'	<i>sɔ hwɛ</i> touch see 'to test/to try'	• Aff [n- [[V] _i [V] _j] _{VP}] _{Nk}	[n- [[V] _i [V] _j] _{VP}] _{Nk}	[M- [V+V]]	Pre f	
	742	sɔhwefø	<i>ɔ-sɔhwɛ-fo</i> NMLZ-temptation-NMLZ _[person] 'tempter'	<i>nsɔhwɛ</i> 'temptation'	• Aff [[ɔ- [[V] _i [V] _j] _{VP}] _{Nk} - <i>fo</i>] _{Nx}	[[N] _i - <i>fo</i>] _{Nj}	[[N] - <i>fo</i>]	Suf	Agent

743	sɔhwefo	<i>n-sɔhwε-fo</i> NMLZ-testing-NMLZ _[person] 'foretaster/butler'	<i>nɔhwε</i> 'testing/trial'	• Aff	$[[n- [[V]_i [V]]_{VP}]_{NK} \cdot fo]_{Nx}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agent
744	sɔnkɔni	<i>ɔ-sɔnkɔ-ni</i> NMLZ-sɔnkɔ-NMLZ _[person.SG] a member of a company in Akropong	<i>sɔnkɔ</i> 'name of a group'	• Aff	$[[N]_i \cdot ni]_{Nj}$	$[[N]_i \cdot ni]_{Nj}$	$[[N] \cdot ni]$	Suf	Provenance
745	sɔwdɔ	<i>n-sɔw-do</i> NMLZ-continue-on 'continuation of ...'	<i>sɔw do</i> add on 'to add to/to continue'	• Aff	$[n- [[V]_i [N]_j]_{VP}]_{NK}$	$[n- [[V]_i [N]_j]_{VP}]_{NK}$	$[M- [V+N]]$	Pref	Act
746	seadeeyɔ	<i>ɔ-se-adee-yɔ</i> 3SG-say-thing-do 'trustworthy person (does what s/he says)'	<i>ɔ-se adee a ɔ-yɔ</i> 3SG-say thing REL 3SG-do 's/he does what s/he says'	• LEX	$[[PRN]_i [[V]_j [N]_k]_{VP} [V]_x]_{IP}$	$[[PRN]_i [[V]_j [N]_k]_{VP} [V]_x]_{IP}$		N/A N/A	Agent
747	seefo	<i>ɔ-see-fo</i> NMLZ-destroy-NMLZ _[person] 'destroyer'	<i>see</i> 'to destroy'	• Aff	$[[N]_i \cdot fo]_{Nj}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agent
748	semafo	<i>sema-fo</i> Shama-NMLZ _[person] 'people from Shema'	<i>sema</i> 'Shama (name of a city)	• Aff	$[[N]_i \cdot fo]_{Nj}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Provenance
749	semahen	<i>sema-hen</i> Shama-vehicle 'vehicle (canoe) made in Shema'	<i>sema</i> 'Shama (name of a city) <i>hen</i> 'vehicle'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R R	
750	sembisa	<i>asem-bisa</i> matter-ask 'questioning/interrogation'	<i>bisa asem-</i> ask matter 'to question (lit. to ask matter)'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N	Act
751	sembisafø	<i>ɔ-sembisa-fo</i> NMLZ-questioning-NMLZ _[person] 'questioner'	<i>asembisa</i> 'questioning/interrogation'	• Aff	$[[[N]_i [V]_j]_{Nk} \cdot fo]_{Nx}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agent
752	semfo	<i>a-sem-fo</i> PL-carve-NMLZ _[person] 'carvers'	<i>sen</i> 'to carve'	• Aff	$[[V]_i \cdot fo]_{Nj}$	$[[N]_i \cdot fo]_{Nj}$	$[[V] \cdot fo]$	Suf	Agent
753	semfurafo	<i>ɔ-sem-fura-fo</i> SG-matter-blind-NMLZ _[person] 'a blind word'	<i>asem</i> 'matter' <i>fura</i> 'blind'	• Aff	$[[N]_i [[A]_j \cdot fo]_{Nk}]_{Nx}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	

754	semhunu	<i>n-sem-hunu</i> PL-matter-useless 'useless/senseless matter/talk'	<i>n-sem hunu</i> ‘PL-matter’ ‘useless’	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	[N+A]	L	L	Result
755	sempaka	<i>asem-pa</i> news-good 'goodnews (the Gospel)'	<i>asem</i> ‘matter, news’ <i>pa</i> ‘good’	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	[N+A]	L	L	Act
756	sempaka	<i>asempa-ka</i> good_news-say 'preaching (of the Gospel)'	<i>ka asempa</i> say matter-good 'to preach thye Gospel'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
757	sempakafo	<i>asempaka-fo</i> preaching-NMLZ _[person] 'preacher'	<i>asempaka</i> ‘preaching’	• Aff	$[[[[N]_i [V]_j]_{Nk} -fo]_{Nx}}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf		Agent
758	sempamutrew	<i>asempa-mu-trew</i> / <i>(asempatrew)</i> good_news-in-spread 'mission/evangelism'	<i>trew asempa mu</i> spread good_news in 'to evangelize (spread the Gospel)'	• HD- Inv • Comp	$[[[[N]_i [A]_j]_{Ni} [N]_k]_{Nk} [V]_x]_{Ny}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
759	sempamutrewni	<i>asempamutrew-ni</i> mission-NMLZ _[person.SG] 'missionary/evangelist'	<i>asempamutrew</i> ‘evangelism/mission’	• Aff	$[[[[N]_i [A]_j]_{Ni} [N]_k]_{Nk} [V]_x]_{Ny} -ni]_{Nz}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf		Agentive
760	sempani	<i>ɔ-sem-pa-ni</i> NMLZ-news-good-NMLZ _[person.SG] 'an evangelical'	<i>asem pa</i> news good 'goodnews'	• Aff	$[[[[N]_i [A]_j]_{Ni} -ni]_{Nk}}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf	Agen t/Pro perty	
761	sempefo	<i>ɔ-sem-pe-fo</i> NMLZ-issue-like=NMLZ _[person] 'litigious, quarrelsome person'	<i>pe asem</i> like issue 'to be litigious'	• Aff	$[[[[N]_i [V]_j]_{Nk} -fo]_{Nx}}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf		Agent
762	sendifo	<i>ɔ-sendi-fo</i> SG-adjudication-NMLZ _[person] 'judge'	<i>asemdi</i> ‘adjudication’	• Aff	$[[[[N]_i [V]_j]_{Nk} -fo]_{Nx}}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf		Agentive
763	senee	<i>n-sen-ee</i> NMLZ-carve-NMLZ 'carving'	<i>sen</i> ‘to carve’	• Aff	$[[n- [V]_i]_{Nj} -e]_{Nk}$	$[[n- [V]_i]_{Nj} -e]_{Nk}$	$[[M- [[V]] -I]$	Suf		Act
764	senhia	<i>asen-hia</i> (ahiasem) matter-need 'an important matter'	<i>asem a ε-hia</i> matter REL 3SG-need 'important matter (of concern)'	• Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	

765	senka	<i>asen-ka</i> matter-say 'speaker/preacher/evangelist'	<i>ka asem</i> say matter 'to say something/to preach'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Agent
766	senkafo	<i>ɔ-senka-fo</i> NMLZ-preaching-NMLZ _[person] 'speaker/preacher'	<i>asemka</i> 'preaching'	• Aff	$[[[N]_i [V]_j]_{Nk} \neg fo]_{Nx}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf		Agent
767	senkeka	<i>nsen-ke~ka</i> matter-RED~talk 'prattling/saying something repeatedly'	<i>ke~ka nsem</i> RED~talk matter 'to prattle'	• HD- Inv • Comp	$[[PL-N]_i [RED-V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
768	senkekafø	<i>ɔ-senkeka-fo</i> NMLZ-matter-say~say-NMLZ _[person] 'prattler'	<i>nsenkeka</i> 'prattling'	• Aff	$[[[PL-N]_i [RED-V]_j]_{Nk} \neg fo]_{Nx}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf		Agent
769	senkese	<i>asen-kese</i> matter-big 'big issue'	<i>asem kese</i> matter big 'big issue'	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	[N+A]	L	L	
770	senkyerenne	<i>nsen-kyere-(n)-ne</i> (<i>nsen-kyere-dze</i>) matter-show-SE-thing 'sign/an example'	<i>ade a wɔ-de kyere asem</i> thing REL 3PL-take show matter 'a thing for for illustrating a matter'	• HD- Inv • Comp	$[[[N]_i [V]_j]_{Nk} [N]_x]_{Ny}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	
771	senkyerewni	<i>nsen-kyerew</i> issue-write 'journalism'	<i>kyerew nsen</i> write issue 'the writing of issuse'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	
772	senkyerewni	<i>ɔ-senkyerew-ni</i> NMLZ-journalism-NMLZ _[person.SG] 'journalist'	<i>nsenkyerew</i> 'journalism'	• Aff	$[[[N]_i [V]_j]_{Nk} \neg ni]_{Nx}$	$[[N]_i \neg ni]_{Nj}$	$[[N] \neg ni]$	Suf		
773	senni	<i>asen-ni</i> matter-engage 'trial/judicial proceeding/adjudication'	<i>di asem</i> engage matter 'to adjudicate/prosecute'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
774	sennifoo	<i>asenni-fo-ɔ</i> trial-NMLZ _{[person]-AFV} 'judges'	<i>asenni</i> 'trial'	• Aff	$[[[N]_i [V]_j]_{Nk} \neg fo]_{Nx}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf		Agent
775	sennii	<i>asenni-i</i> (<i>asenni-ie</i>) trial-NMLZ _[location] 'a court/tribunal'	<i>asenni</i> 'trial'	• Aff	$[[[N]_i [V]_j]_{Nk} \neg i]_{Nx}$	$[[N]_i \neg e]_{Nj}$	$[[N] \neg I]$	Suf		Loc

	sensanee	<i>n-sen~san-ee</i> NMLZ-RED~mark-NMLZ 'marks'	<i>sen~san</i> RED~mark 'to mark'	• Aff	$[[n\text{-} [\text{RED-V}]_i]_{Nj}\text{-}e]_{Nk}$	$[[n\text{-} [\text{V}]_i]_{Nj}\text{-}e]_{Nk}$	$[[M\text{-} [\text{V}]]\text{-}I]$	Suf	Result
776	776	<i>asen-tow</i> matter-compact 'sentence'	<i>asem</i> 'matter/saying' <i>tow</i> 'compact'	• Comp	$[[N]_i [N]_j]_{Ni}$	$[[N]_i [N]_j]_{Ni}$	$[N+N]$	L	L
777	777	<i>sentiefo</i> <i>ɔ-sen-tie-fo</i> SG-matter-listen _[person] 'hearer, listener'	<i>tie nsem</i> listen matter listen to issues	• HD- Inv • Aff	$[[N]_i [V]_j]_{Nk}\text{-}fo]_{Nx}$	$[[N]_i \text{-}fo]_{Nj}$	$[[N] \text{-}fo]$	Suf	Agent
778	778	<i>sentoaf</i> <i>asen-toa</i> matter-join 'prattling/wittering'	<i>toa asem</i> join matter 'to prattle'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	N
779	779	<i>sentoaf</i> <i>asentoa-fo</i> prattling-NMLZ _[person] 'prattler'	<i>asentoa</i> 'prattling'	• Aff	$[[N]_i [V]_j]_{Nk}\text{-}fo]_{Nx}$	$[[N]_i \text{-}fo]_{Nj}$	$[[N] \text{-}fo]$	Suf	Agent
780	780	<i>sentrennee</i> <i>asen-trenee</i> saying-just 'a just saying'	<i>asem trenee</i> matter just 'a just saying'	• Comp	$[[N]_i [[V]_j \text{-}ee]_{Nk}]_{Ni}$	$[[N]_i [N]_j]_{Ni}$	$[N+N]$	L	L
781	781	<i>sentwamf</i> <i>ɔ-sen-twa-m-fo</i> NMLZ-issue-cut-in-[person] 'arbitrator, impire, referee, judge'	<i>twa asem mu</i> cut matter/issue in 'to arbitrate'	• HD- Inv • Aff	$[[N]_i [[V]_j [N]_k]_{VP}]_{Nx}\text{-}fo]_{Ny}$	$[[N]_i \text{-}fo]_{Nj}$	$[[N] \text{-}fo]$	Suf	Agent
782	782	<i>si</i> <i>n-si</i> NMLZ-to_determine determination	<i>si</i> 'to_determine'	• Aff	$[n\text{-} [\text{V}]_i]_{Nj}$	$[n\text{-} [\text{V}]_i]_{Nj}$	$[n\text{-} [\text{V}]]$	Pre f	Result
783	783	<i>siakwan</i> <i>o-si-a-kwan</i> NMLZ-block-PL-way 'blockage'	<i>o-si a-kwan</i> 3SGSUBJ-lock PL-way 'S/he blocks the way'	• Aff	$[o\text{-} [[V]_i [\text{PL-N}]_j]_{VP}]_{Nk}$	$[O\text{-} [[V]_i [N]_j]_{VP}]_{Nk}$	$[o\text{-} [\text{V}+\text{N}]]$	Pre f	Result
784	784	<i>sigyani</i> <i>o-sigya-ni</i> SG-bachelorhood-NMLZ _[person.SG] 'one who has never married/or is divorced'	<i>sigya</i> 'bachelorhood/spinsterhood'	• Aff	$[[N]_i \text{-}ni]_{Nj}$	$[[N]_i \text{-}ni]_{Nj}$	$[[N] \text{-}ni]$	Suf	
785	785	<i>siifo</i> <i>o-sii-fo</i> NMLZ-tip_toe-NMLZ _[person] 'lame person/someone having one leg shorter that makes him/her limp'	<i>sii</i> 'tip_toe'	• Aff	$[[N]_i \text{-}fo]_{Nj}$	$[[N]_i \text{-}fo]_{Nj}$	$[[N] \text{-}fo]$	Suf	

787	sikadi	<i>sika-di</i> gold-mine/refine 'gold-mining/refining'	<i>di sika</i> mine/refine gold 'to miner/refine gold'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
788	sikadifo	<i>o-sikadi-fo</i> NMLZ –gold_mining/refining-NMLZ _[person] 'gold miner/gold smith'	<i>sikadi</i> 'gold mining/refining'	• Aff	$[[[N]_i [V]_j]_{Nk} \neg fo]_{Nx}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf		Agen tive
789	sikadwini	<i>sika-dwini</i> gold-mould 'goldsmiths work or to work in gold'	<i>dwini sika</i> mould gold 'to mould gold'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
790	sikafo mma	<i>a-sikafo m-ma</i> PL-rich_people PL-child 'children of rich people'	<i>sikafo</i> 'rich people' <i>mma</i> 'children'	• Comp	$[[PL-N]_i [PL-N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	Resu lt
791	sikakora	<i>sika-kora</i> money-keep 'banking/money keeping'	<i>kora sika</i> keep money 'keep money'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
792	sikakorabe a	<i>sikakora-bea</i> money Keeping-place 'bank, vault'	<i>sikakora</i> 'money-keeping' <i>bea</i> 'location'	• Comp	$[[[N]_i [V]_j]_{Nk} [N]_x]_{Nx}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	
793	sikakorafo	<i>sikakora-fo</i> money_keeping-NMLZ _[person] 'banker, treasurer'	<i>sikakora</i> 'money-keeping'	• Aff	$[[[N]_i [V]_j]_{Nk} \neg fo]_{Nx}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf		
794	sikakorafo atrae	<i>sikakorafo atrae</i> treasurer seat/location 'treasury/office of a banker'	<i>sikakorafo</i> 'treasurer' <i>atrae</i> 'location/seat'	• Comp	$[[[[N]_i [V]_j]_{Nk} \neg fo]_{Nx} [[a-[V]_y]_{Nz} - e]_{Ns}]_{Ns}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	
795	sikani	<i>o-sika-ni</i> SG-money-NMLZ _[person.SG] 'a rich, wealthy, opulent person '	<i>sika</i> 'money'	• Aff	$[[N]_i -ni]_{Nj}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf		
796	sikape	<i>sika-pe</i> money-like 'the quest/search for money'	<i>pe sika</i> like money 'to like/look for money'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	
797	sikapefo	<i>o-sikape-fo</i> NMLZ-money-like-NMLZ _[person] 'a covetous/greedy person/ lover of money'	<i>sikape</i> 'the love for money'	• Aff	$[[[N]_i [V]_j]_{Nk} \neg fo]_{Nx}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf		Agen t

	sikasem	<i>sika-sem</i> money-matter 'economics'	sika 'money' <i>asem</i> 'matter'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R		
798	799	<i>sikayena</i> (sikena)	<i>sika-yε-na</i> money-be-scartee 'money is scarce'	<i>sika yε na</i> money be scartee 'money is scarce'	• LEX	$[[N]_i [[V]_j [A]_k]_{VP}]_{IP}$	$[[N]_i [[V]_j [A]_k]_{VP}]_{IP}$		N/A	N/A	
800	801	sinetow	<i>sine-tow</i> 'sine'-throw 'sine-throwing'	<i>tow "sine"</i> throw 'sine' 'to throw "sine"'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
801	802	sire-ahoma	<i>sire-ahoma</i> "sire"-thread 'strings for catching the fish "sire"	<i>sire</i> ?'type of fish' <i>ahoma</i> 'thread'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	[N+N]	R	R	
802	803	siretsi	<i>sire-tsi</i> "sire"-fetch "'sire"-catching'	<i>tsi sire</i> fetch "sire" (type of fish) 'to catch "sire"'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
803	804	sisie	<i>a-sisi-e</i> NMLZ-cheat-AFV 'cheating'	<i>sisi</i> 'to cheat'	• Aff	$[a- [V]_i]_{Nj}$	$[a- [V]_i]_{Nj}$	[a [V]]	Pre f		Act
804	805	soafo	<i>ɔ-soa-fo</i> NMLZ-carry-NMLZ[person] 'carrier/minister'	<i>soa</i> 'to carry'	• Aff	$[[ɔ- [V]_i]_{Nj} -fo]_{Nk}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf		Agen tive
805	806	soakyini	<i>ɔ-soa-kyini</i> NMLZ-carry-roam 'peddling, hawking'	<i>soa kyin</i> carry roam 'to hawk'	• Aff	$[\mathcal{O}- [[V]_i [V]_j]_{VP}]_{Nk}$	$[\mathcal{O}- [[V]_i [V]_j]_{VP}]_{Nk}$	$[\mathcal{O}- [V+V]]$	Pre f		Act/ Actio n
806	807	soee	<i>a-soe-e</i> NMLZ-put_down-NMLZ[location] 'resting place'	<i>soe</i> 'to put down a burden'	• Aff	$[[a- [V]_i]_{Nj} -e]_{Nk}$	$[[a- [V]_i]_{Nj} -e]_{Nk}$	$[[a- [V]] -I]$	Suf		Loca tion
807	808	somafo	<i>ɔ-soma-fo</i> NMLZ-send-NMLZ[person] 'messenger, apostle'	<i>soma</i> 'to send'	• Aff	$[[ɔ- [V]_i]_{Nj} -fo]_{Nk}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf		Pati ent/th eme
808		somanka	<i>ɔ-soma-n-ka</i> SG-errand-NEG-say 'refusal to deliver a message'	<i>n-ka soma</i> NEG-say errand/message '... not deliver message'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	R	N	Act

809	somankaf o	<i>ɔ-somanka-fo</i> SG-refusal to deliver a message-NMLZ _[person] 'one who does not go when s/he is sent'	<i>somanka</i> 'refusal to deliver a message'	• Aff	$[[[[N]_i [V]_j]_{Nk} -fo]_{Nx}}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Agen tive	
810	somfo	<i>ɔ-som-fo</i> NMLZ-serve-NMLZ _[person] 'servant/attendant'	<i>som</i> 'to serve'	• Aff	$[[ɔ- [V]_i]_{Nj} -fo]_{Nk}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Agen tive	
811	sonani	<i>ɔ-sona-ni</i> SG-sona-NMLZ _[person.SG] 'a member of the asona'	<i>asona</i> 'name of a clan'	• Aff	$[[[N]_i -ni]_{Nj}}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf	Prov enanc e	
812	sonoe	<i>n-sono-e</i> NMLZ-differ-NMLZ 'difference'	<i>sono</i> 'to be different'	• Aff	$[[n- [V]_i]_{Nj} -e]_{Nk}$	$[[n- [V]_i]_{Nj} -e]_{Nk}$	$[[M- [V]] -I]$	Suf	Resu lt	
813	sopa	<i>n-sopa</i> NMLZ-to_insult 'insult'	<i>sopa</i> 'to_insult'	• Aff	$[n- [V]_i]_{Nj}$	$[n- [V]_i]_{Nj}$	$[M- [V]]$	Pre f	Act	
814	soro-ani- mukyekye	<i>ɔsoro-animu-kye~kye</i> up-face-catch~catch 'astrology'	<i>kye~kye</i> <i>ɔsoro animu</i> catch~catch sky face 'catch the face of the sky'	• HD- Inv • Comp	$[[[[N]_i [N]_j]_{Nk} [RED-V]_x]_{Ny}}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	N	Act
815	soro-ani- mukyekye fo	<i>ɔsoro-animu-kye~kye-fo</i> up-face-catch~catch-NMLZ _[person] 'astrologer'	<i>ɔsoro-animu-kye~kye</i> up-face-catch~catch 'astrology'	• Aff	$[[[[N]_i [N]_j]_{Nk} [RED-V]_x]_{Ny} -fo]_{Nz}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Agen t	
816	sorobøfo	<i>ɔsoro-bɔfo</i> heaven-masennger' 'angel'	<i>soro</i> 'up (heaven)' <i>bɔfo</i> 'messenger'	• Comp	$[[N]_i [[V]_j -fo]_{Nk}]_{Nx}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R	R	Agent
817	soroni	<i>ɔsoro-ni</i> above-NMLZ _[person.SG] 'person from above'	<i>soro</i> 'up (sky)'	• Aff	$[[N]_i -ni]_{Nj}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf	Prov enanc e	
818	sorosoroni	<i>ɔsoro~soro-ni</i> RED~above-NMLZ _[person.SG] 'most high'	<i>soro</i> 'up (heaven)'	• Aff	$[[RED-N]_i -ni]_{Nj}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf	The me	
819	sosɔw	<i>a-so~sɔw</i> NMLZ-RED~to_peck 'fishing with a line and hook'	<i>sosɔw</i> 'to peck'	• Aff	$[a- [RED-V]_i]_{Nj}$	$[a- [V]_i]_{Nj}$	$[a- [V]]$	Pre f	Act	

820	sowee	<i>n-sow-ee</i> NMLZ-bear_fruit-NMLZ 'fruit-bearing'	<i>sow</i> 'to bear fruit'	• Aff	$[[n- [V]_i]_{Nj} -ee]_{Nk}$	$[[n- [V]_i]_{Nj} -e]_{Nk}$	$[[M- [V]] -I]$	Suf	Act/ Resu- lt
821	srasomfo	<i>ɔ-sra-som</i> SG-tobacco-sniff 'tobacco snuffing'	<i>son asra</i> sniff snuff 'take snuff'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	N
822	srasomfo	<i>ɔ-sra-som-fo</i> SG-tobacco-sniff-NMLZ _[person] 'one who takes snuff, snuff taker.'	<i>son asra</i> sniff snuff 'take snuff'	• Aff	$[[[N]_i [V]_j]_{Nk} -fo]_{Nx}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Exp./ Agen- t
823	sresrefo	<i>ɔ-sre~sre-fo</i> SG-RED~beg-NMLZ _[person] 'beggars'	<i>sre</i> 'beg for'	• Aff	$[[a- [RED-V]_i]_{Nj} -fo]_{Nk}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Agen- t
824	suadze	<i>e-sua-dze</i> NMLZ-learn-thing 'lesson'	<i>sua dze</i> learn thing 'to learn'	• Aff	$[e- [[V]_i [N]_j]_{VP}]_{Nk}$	$[a- [[V]_i [N]_j]_{VP}]_{Nk}$	$[e- [V+N]]$	Pre- f	Resu- lt
825	suafo	<i>a-sua-fo</i> PL-learn-NMLZ _[person] 'students, disciples'	<i>sua</i> 'to learn'	• Aff	$[[V]_i -fo]_{Nj}$	$[[V]_i -fo]_{Nj}$	$[[V] -fo]$	Suf	
826	suanı (osuafo)	<i>o-sua-ni</i> SG-learn-NMLZ _[person.SG] 'leaner, student, apprentice, disciple'	<i>sua</i> 'to learn'	• Aff	$[[V]_i -ni]_{Nj}$	$[[N]_i -ni]_{Nj}$	$[[V] -ni]$	Suf	Agen- t
827	suanoni	<i>a-su-ano-ni</i> PL-water-edge-NMLZ _[person.SG] 'one from/living near the coast/river bank'	<i>nsu ano</i> water edge 'the coast, river bank'	• Aff	$[[[N]_i [N]_j]_{Nk} -ni]_{Nx}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf	
828	suapɔn	<i>sua-pɔn</i> learn-great 'university'	<i>sua</i> 'to learn' <i>pɔn</i> 'great'	• Comp	$[[V]_i [A]_j]_{Nk}$	$[[V]_i [A]_j]_{Nk}$	$[V+A]$	L	N
829	suasuafø	<i>o-sua~sua-fo</i> SG-RED~learn-NMLZ _[person] 'imitator'	<i>sua~sua</i> RED~learn 'to imitate'	• Aff	$[[a- [RED-V]_i]_{Nj} -fo]_{Nk}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Agen- t
830	subɔni	<i>ɔ-su-bɔ-ni</i> NMLZ-baptism-administer-NMLZ _[person.SG] 'one who administers baptism, (John the Baptist)'	<i>asubɔ</i> 'baptism'	• Aff	$[[[N]_i [V]_j]_{Nk} -ni]_{Nx}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf	Agen- t

	suboaf	<i>o-su-boa</i> NMLZ-weep-help 'act of helping another to weep'	<i>su boa</i> weep help 'to help another to weep'	• Aff	$[[o- [[V]_i [V]_j]_{VP}]_{Nk}}$	$[[O- [[V]_i [V]_j]_{VP}]_{Nk}}$	$[o- [N+V]]$	Pre f	Pati ent/A gent
831	suboaf	<i>o-su-boa-fo</i> NMLZ-weep-help-NMLZ _[person] 'one who joins (helps) another to weep'	<i>osuboa</i> 'act of helping another to weep'	• Aff	$[[o- [[V]_i [V]_j]_{VP}-fo]_{Nx}}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Agent
832	suegya	<i>esu-egya</i> water-end 'the end (other side) of a water body'	<i>esu egya</i> water end 'the end of a water body'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	$[N+N]$	L N	Loc
833	Sufo	<i>o-su-fo</i> NMLZ-weep-NMLZ _[person] 'weeper, mourner'	<i>su</i> 'to weep'	• Aff	$[[\sigma- [V]_i]_{Nj}-fo]_{Nk}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Agent
834	sugarefo	<i>osu-guare</i> water-bathe 'swimming/diving'	<i>guare nsu</i> bath water 'to swimmer'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N	Act
835	sugarefo	<i>osu-guare-fo</i> water-bathe-NMLZ _[person] 'swimmer/diver'	<i>guare nsu</i> bath water 'to swimmer'	• Aff	$[[[N]_i [V]_j]_{Nk}-fo]_{Nx}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Act
836	sukɔ	<i>esu-kɔ</i> water-go 'diving'	<i>kɔ esu</i> go water 'to dive'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R N	Act
837	sumasem	<i>e-suma-sem</i> NMLZ-hide-matter 'secret/mystery'	<i>asem a ə-e-suma</i> matter REL 3SG-PERF-hide 'a matter which is hidden'	• HD- Inv • Comp	$[[e- [V]_i]_{Nj} [N]_k]_{Nx}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R R	Resu lt
838	Suroni	<i>o-suro-ni</i> NMLZ-fear- NMLZ _[person.SG] 'one who fears/a coward'	<i>suro</i> 'to fear'	• Aff	$[[o- [V]_i]_{Nj}-ni]_{Nk}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf	Experienc er
839	susow-ber	<i>esusow-ber</i> rain-time 'raining season'	<i>esusow</i> 'rain' <i>ber</i> 'time'	• Comp	$[[N]_i [N]_j]_{Nj}$	$[[N]_i [N]_j]_{Nj}$	$[N+N]$	R R	Resu lt
840	susudua	<i>susu-dua</i> measure-stick 'standard/yardstick (measuring rod)'	<i>susu</i> 'measure' <i>dua</i> 'stick'	• Comp	$[[V]_i [N]_j]_{Nk}$	$[[V]_i [N]_j]_{Nk}$	$[V+N]$	R N	Resu lt

	Sutwa	<i>osu-twa</i> water-cross 'water-crossing'	<i>twa nsu</i> cross water 'to cross water'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
842	sutwafō	<i>osutwa-fo</i> water_crossing-NMLZ _[person] 'ferry-man'	<i>nsutwa</i> 'water_crossing'	• Aff	$[[[N]_i [V]_j]_{Nk} \neg fo]_{Nx}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf		Agent
843	taahobedi	<i>taa-hɔ-be-di</i> stand (as of water)-there-INGR-eat 'scrounger (never works for his/her food)'	<i>X taa hɔ be-di</i> X stand there come-eat 'X is siting there come and eat'	• LEX	$[[[V]_i [PRN]_j]_{VP} [be-V]_k]_{VP}$	$[[[V]_i [PRN]_j]_{VP} [V]_k]_{VP}$		N/A	N/A	
844	tadehye	<i>atade-hye</i> dress-wear 'dressing'	<i>hye atade</i> wear dress 'to wear a dress/to dress'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
845	tadehyefō	<i>\tadəh̥yɛ-fo</i> (stadehyeni) NMLZ-dressing-NMLZ _[person] 'a person in european dress.'	<i>atadehye</i> 'dressing'	• Aff	$[[[N]_i [V]_j]_{Nk} \neg fo]_{Nx}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf		Agent
846	tamahoro	<i>ntama-horo</i> laundry-NMLZ _[person] 'laundry'	<i>horo ntama</i> wash cloth 'to wash clothes'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Act
847	tama-horofo	<i>ntamahoro-fo</i> laundry-NMLZ _[person] 'launderer'	<i>ntamahoro</i> 'laundry'	• Aff	$[[[N]_i [V]_j]_{Nk} \neg fo]_{Nx}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf		
848	tamasi	<i>ntama-si</i> cloth-wash 'laundry'	<i>si ntama</i> wash cloth 'to wash clothes'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Agentive
849	tamasifo	<i>\təməsi-fo</i> SG-laundry-NMLZ _[person] 'launderer'	<i>ntamasi</i> 'laundry'	• Aff	$[[[N]_i [V]_j]_{Nk} \neg fo]_{Nx}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf		Agentive
850	tamawemfō	<i>\təməwem-fo</i> SG-cloth-weave 'weaving'	<i>wen ntama</i> weave cloth 'weave a cloth'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	Agentive
851	tamawemfō	<i>\təməwem-fo</i> SG-cloth-weave-NMLZ _[person] 'weaver'	<i>ntamawen</i> 'weaving'	• Aff	$[[[N]_i [V]_j]_{Nk} \neg fo]_{Nx}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf		Agent

	Tamfo	<i>ɔ-tam-fo</i> NMLZ-hate-NMLZ _[person] 'enemy/adversary'	<i>ɔtan</i> 'hatred'	• Aff	$[[\partial- [V]_i]_{Nj} \partial- fo]_{Nk}$	$[[N]_i \partial- fo]_{Nj}$	$[[N] \partial- fo]$	Suf	Agen t/Pro perty	
853	854	Tan	<i>ɔ-tan</i> NMLZ-hate 'enemity/hatred'	<i>tan</i> 'to hate'	• Aff	$[\partial- [V]_i]_{Nj}$	$[O- [V]_i]_{Nj}$	$[\partial- [V]]$	Pre f	Resu lt
854	855	tɔantua	<i>tɔ-a-n-tua</i> buy-COND-NEG-pay 'one who buys things and does not pay'	<i>tɔ-a- ɔ-n-tua</i> 3SG-buy COND 3SG-NEG-pay 'When he buys, he doesn'y pay'	• LEX	$[[V]_i a [NEG-V]_j]_{Nk}$	$[[V]_i a [V]_j]_{Nk}$	$[V+V]$	N/A	N/A
855	856	tɔfo	<i>ɔ-tɔ-fo</i> NMLZ-buy-NMLZ _[person] 'buyer/customer'	<i>tɔ</i> 'to buy'	• Aff	$[[\partial- [V]_i]_{Nj} \partial- fo]_{Nk}$	$[[N]_i \partial- fo]_{Nj}$	$[[N] \partial- fo]$	Suf	
856	857	tɔkwape	<i>ntɔkwa-pe</i> NMLZ-quarrel-like-NMLZ _[person] 'a quarrelsomeness'	<i>pe ntɔkwa</i> like quarrel 'to be quarrelsome'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	N
857	858	tɔkwapefo	<i>ɔ-tɔkwape-fo</i> SG-quarrel-like-NMLZ _[person] 'a quarrelsome person'	<i>ntɔkwape</i> 'a quarrelsomeness'	• Aff	$[[[N]_i [V]_j]_{Nk} \partial- fo]_{Nk}$	$[[N]_i \partial- fo]_{Nj}$	$[[N] \partial- fo]$	Suf	Agen t/Pro perty
858	859	tɔnfo	<i>ɔ-tɔn-fo</i> NMLZ-sell-NMLZ _[person] 'seller'	<i>tɔn</i> 'to sell'	• Aff	$[[\partial- [V]_i]_{Nj} \partial- fo]_{Nk}$	$[[N]_i \partial- fo]_{Nj}$	$[[N] \partial- fo]$	Suf	Agen t
859	860	tɔperefo	<i>ɔ-tɔ-pere-fo</i> NMLZ-to_fall-strive-NMLZ _[person] 'a forward person, a brave warrior'	<i>tɔ</i> 'to die tragically' <i>pere</i> 'to strive'	• Aff	$[[\partial- [[V]_i [V]_j]_{VP} \partial- fo]_{Nk}}$	$[[N]_i \partial- fo]_{Nj}$	$[[N] \partial- fo]$	Suf	Prop erty
860	861	tɔye (atœ)	<i>a-tɔ-yε</i> (<i>a-tɔ-e</i>) NMLZ-fall-NMLZ _[location] 'west (lit. falling place)'	<i>tɔ</i> 'to fall'	• Aff	$[[a- [V]_i]_{Nj} \partial- e]_{Nk}$	$[[a- [V]_i]_{Nj} \partial- e]_{Nk}$	$[[a- [V]] \partial- I]$	Suf	Loc
861	862	teaseawuo	<i>te-ase-a-wu-o</i> stay-alive-SE-die-AFV 'a person who is as good as dead'	<i>ɔ-te ase nso w'-a-wu</i> 3SG-stay alive but 3SG-PERF-die 'He is alive but dead'	• LEX	$[[[V]_i [N]_j]_{VP} [a-[V]_j]_{Nx}]_{Ny}$	$[[[V]_i [N]_j]_{VP} [a-[V]_j]_{Nx}]_{Ny}$	$[[V+N]+N]$	N/A	N/A
862	863	teaseenam	<i>te-ase-ε-nam</i> sit-under-SE-walk/move 'vehicle, chariot (move while sitting)'	<i>wo-te ase na ε-nam</i> 2SG-sit under CONJ 3SG-move 'vehicle, chariot (move while sitting)'	• LEX	$[[[V]_i [N]_j]_{VP} [[PRN]_k [V]_x]_{IP}]_{Ny}$	$[[[V]_i [N]_j]_{VP} [[PRN]_k [V]_x]_{IP}]_{Ny}$	$[[V+N]+V]$	N/A	N/A

864	teasefo	<i>ɔ-te-ase-fo</i> NMLZ-stay-under-NMLZ _[person] 'a living being'	<i>te ase</i> stay under 'to live/to be alive'	• Aff	$[[[V]_i [N]_j]_{VP} \neg fo]_{NK}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf	Property
865	Tebea	<i>te-bea</i> be-manner/nature 'state, condition'	<i>te</i> 'to be (like)' <i>bea</i> 'nature/maner/appearance'	• Comp	$[[V]_i [N]_j]_{NK}$	$[[V]_i [N]_j]_{NK}$	$[V+N]$	R	N
866	Tefo	<i>ɔ-te-fo</i> NMLZ-hear-NMLZ _[person] 'hearer one who hears'	<i>te</i> 'to hear'	• Aff	$[[\sigma- [V]_i]_{Nj} \neg fo]_{NK}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf	Experiencer
867	tekakyere	<i>ɔ-te-ka-kyere</i> NMLZ-hear-say-show 'hearsay'	<i>te ka kyere</i> hear say show 'to hear and tell'	• Aff	$[\sigma- [[V]_i [[V]_j [V]_k]_{VP}]_{VP}]_{Nx}$	$[O- [[V]_i [[V]_j [V]_k]_{VP}]_{VP}]_{Nx}$	$[\sigma- [V+[V+V]]]$	Pre f	Result
868	tekɔfo	<i>ɔ-te-kɔ-fo</i> NMLZ-hear-go-NMLZ _[person] 'tales bearer, reporter'	<i>te kɔ</i> hear go 'hear ... go'	• Aff	$[[\sigma- [[V]_i [V]_j]_{VP}]_{NK} \neg fo]_{Nx}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf	
869	tekremafo	<i>ɔ-tekrema-fo</i> SG-tongue-NMLZ _[person] 'liar, braggart'	<i>tekrema</i> 'tongue'	• Aff	$[[N]_i \neg fo]_{Nj}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf	Property
870	tekyerema nini	<i>tekyerema-nini</i> tongue-male 'a sharp tongued'	<i>tekyerema-</i> 'tongue' <i>nini</i> 'male'	• Comp	$[[N]_i [A]_j]_{Ni}$	$[[N]_i [A]_j]_{Ni}$	$[N+A]$	L	L
871	temanmuh unu	<i>te-man-mu-hunu</i> live-nation-in-vain 'one who is not useful to nation'	<i>ɔ-te man mu hunu</i> 3SG-live nation in vain 'S/he lives in the nation in vain'	• LEX	$[[[V]_i [[N]_j [N]_k]_{NP}]_{VP} [Adv]_x]_V$	$[[[V]_i [[N]_j [N]_k]_{NP}]_{VP} [Adv]_x]_V$	$[[V+N]+Adv]$	N/A	N/A
872	temmu	<i>atem-mu</i> judgement-pass 'the act of judging/judgement'	<i>bu aten</i> pass judgement 'to past judgement'	• HD-Inv • Comp	$[[N]_i [V]_j]_{Ni}$	$[[N]_i [V]_j]_{Ni}$	$[N+V]$	R	L
873	temmufo	<i>atemmu-fo</i> judgement-NMLZ _[person] 'judges'	<i>atemmu</i> 'act of judging'	• Aff	$[[[N]_i [V]_j]_{NK} \neg fo]_{Nx}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf	Agent
874	tenankong uafo	<i>a-tena-n-kongua-fo</i> NMLZ-sit-PL-seat-NMLZ _[person] 'the counsellors of a chief'	<i>tena</i> 'to sit' <i>nkongua</i> 'seat'	• Aff	$[[a- [[V]_i [PL-N]_j]_{VP}]_{NK} \neg fo]_{Nx}$	$[[N]_i \neg fo]_{Nj}$	$[a- [V+N]]$	Suf	

	Tenefo	<i>a-tene-fo</i> PL-straight-NMLZ _[person] 'jurors'	<i>tene</i> 'to straighten'	• Aff	$[[V]_i \cdot fo]_{Nj}$	$[[N]_i \cdot fo]_{Nj}$	$[[V] \cdot fo]$	Suf		
875	876	<i>tene-nee</i> (trenee)	<i>tene-nee</i> straighten-NMLZ 'straight/just/right(eous)'	<i>tene</i> 'to straighten'	• Aff	$[[V]_i \cdot nee]_{Nj}$	$[[V]_i \cdot nee]_{Nj}$	$[[V] \cdot nee]$	Suf	
877	878	tentenenee	<i>aten- tenenee</i> judgement-just 'justice'	<i>aten</i> <i>tenenee</i> judgement just 'just judgement'	• Comp	$[[[N]_i [[V]_j \cdot nee]_{Nk}]_{Nk}}$	$[[N]_i [N]_j]_{Ni}$	$[N+N]$	L	L
879	880	tenyi	<i>aten-yi</i> judgement-ICV 'act of remonstration/expostulation'	<i>yi</i> <i>aten</i> ICV judgement 'to remonstrate/reprimand'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Ni}$	$[[N]_i [V]_j]_{Ni}$	$[N+V]$	R	L
881	882	tenyifo	<i>atenyi-fo</i> remonstration-NMLZ _[person] 'accusers/complainants'	<i>atenyi</i> 'remonstration'	• Aff	$[[[N]_i [V]_j]_{Nk} \cdot fo]_{Nx}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	
883	884	Tetefo	<i>tete-fo</i> ancient_time-NMLZ _[person] 'people of old'	<i>tete</i> 'ancient_time'	• Aff	$[[N]_i \cdot fo]_{Nj}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	
885	886	Tiefo	<i>o-tie-fo</i> NMLZ-listen-NMLZ _[person] 'hearer, audience'	<i>tie</i> 'to listen'	• Aff	$[[N]_i \cdot fo]_{Nj}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agent
887	888	tipenfo (tsipenfo)	<i>ti-pen-fo</i> (tsipenfo) head-time- NMLZ _[person] 'peers/contemporary/age mates'	<i>ti</i> 'head' <i>pen</i> 'time/mate'	• Aff	$[[[N]_i [N]_j]_{Nk} \cdot fo]_{Nx}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	
889	890	tisee	<i>ti-see</i> head-spoil 'insanity'	<i>see</i> <i>ti</i> spoil head 'to spoil one's head/make insane'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	N
891	892	tiseefo	<i>o-ti-see-fo</i> SG-head-spoil-NMLZ _[person] 'an insane person, madman'	<i>tisee</i> 'insanity'	• Aff	$[[[N]_i [V]_j]_{Nk} \cdot fo]_{Nx}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agent
893	894	Titrafo	<i>o-ti-tra-fo</i> SG-head-sit-NMLZ _[person] 'chairperson'	<i>tra</i> <i>ti</i> sit head 'to chair (to sit at the head of ...)'	• Aff	$[[[N]_i [V]_j]_{Nk} \cdot fo]_{Nx}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agent

886	Tiwfo	<i>tiw-fo</i> pursue-NMLZ _[person] 'pursuer/persecutor'	<i>tiw</i> 'to pursue'	• Aff	$[[V]_i \cdot fo]_{Nj}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Patient
887	Tiwui	<i>ti-wu-i</i> head-die-NMLZ 'block-headedness'	<i>X ti a-wu</i> X head PERF-die 'X is stupid (lit. X's head is dead)'	• Aff	$[[[N]_i [V]_j]_{IP} \cdot i]_{Nx}$	$[[[N]_i [V]_j]_{IP} \cdot e]_{Nx}$	$[[N+V] \cdot e]$	Suf	Property
888	tiwuini	<i>tiwui-ni</i> blockheadedness-NMLZ _[person.SG] 'stupid person (one who is not gifted)'	<i>tiwui</i> 'blockheadedness'	• Aff	$[[[[N]_i [V]_j]_{NK} \cdot i]_{Nx} \cdot ni]_{Ny}$	$[[N]_i \cdot ni]_{Nj}$	$[[N] \cdot ni]$	Suf	Patient
889	Tobew	<i>to-bew</i> put-place 'location (where something is put)'	<i>to</i> 'to put' <i>bew</i> 'place'	• Comp	$[[V]_i [N]_j]_{Nk}$	$[[V]_i [N]_j]_{Nk}$	$[V+N]$	R	Loc
890	Tofo	<i>ɔ-to-fo</i> NMLZ-violate-NMLZ _[person] 'transgressor'	<i>to</i> 'to violate/transgress'	• Aff	$[[ɔ- [V]_i]_{Nj} \cdot fo]_{Nk}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agen tive
891	togyeni	<i>tow-gye</i> tax-collect 'toll or tax collection'	<i>gye tow</i> collect tax	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	Act
892	tomfo	<i>ɔ-tom-fo</i> SG-forge-NMLZ _[person] 'blacksmith'	<i>tom</i> 'to forge'	• Aff	$[[V]_i \cdot fo]_{Nj}$	$[[V]_i \cdot fo]_{Nj}$	$[[V] \cdot fo]$	Suf	Agen t
893	Torfo	<i>ɔ-tor-fo</i> NMLZ-lie-NMLZ _[person] 'liar'	<i>ator</i> 'a lie/falsehood'	• Aff	$[[ɔ- [V]_i]_{Nj} \cdot fo]_{Nk}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agen t
894	totobɔtɔm u	<i>a-to-to-bɔtɔ-mu</i> NMLZ-RED~search-pocket-in 'pick pocketing'	<i>to-to- bɔtɔ mu</i> RED~search pocket in 'to empty the pocket'	• Aff	$[a- [[RED-V]_i [[N]_j [N]_k]_{NP}]_{VP}]_{Nx}$	$[a- [[V]_i [N]_j]_{VP}]_{Nk}$	$[a- [V+N]]$	Pre f	
895	Totow	<i>a-to~tow</i> NMLZ-RED~throw 'fishing with a line and hook'	<i>to~tow</i> RED~throw 'to throw/to fish with line and hook'	• Aff	$[a- [RED-V]_i]_{Nj}$	$[a- [V]_i]_{Nj}$	$[a- [V]]$	Pre f	Action
896	towgyefo	<i>ɔ-tow-gye-fo</i> SG-tax-collect-NMLZ _[person] 'publican, toll or tax collector'	<i>gye to</i> collect tax 'to collect tax'	• Aff	$[[[N]_i [V]_j]_{NK} \cdot fo]_{Nx}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agen t

897	trae / atenae	<i>a-tra-e</i> NMLZ-sit-NMLZ _[location] 'seat/location'	<i>tra</i> 'location/seat'	• Aff	$[[a- [V]_i]_{Nj} -e]_{Nk}$	$[[a- [V]_i]_{Nj} -e]_{Nk}$	$[[a- [V]] -I]$	Suf	Loc
898	Trafo	<i>ɔ-tra-fo</i> NMLZ-sit-NMLZ _[person] 'steersman'	<i>tra</i> 'sit'	• Aff	$[[ɔ- [V]_i]_{Nj} -fo]_{Nk}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	Agent
899	Tsen	<i>a-tsən</i> NMLZ-straight 'straight line'	<i>tsen</i> 'straight'	• Aff	$[a- [A]_i]_{Nj}$	$[a- [A]_i]_{Nj}$	$[a- [V]]$	Pref	Result
900	tseneneen yi	<i>ɔ-tsenenee-nyi</i> SG-righteousness-NMLZ _[person-SG] 'a righteous person'	<i>tsenenee</i> 'righteousness'	• Aff	$[[[V]_i -nee]_{Nj} -ni]_{Nk}$	$[[N]_i -ni]_{Nj}$	$[[N] -ni]$	Suf	Property
901	Tsetse	<i>n-tsetse-e</i> NMLZ-to_train/groom 'act of training/upbringing'	<i>tsetse</i> 'to train/groom'	• Aff	$[[n- [V]_i]_{Nj} -e]_{Nk}$	$[[n- [V]_i]_{Nj} -e]_{Nk}$	$[[M- [V]] -I]$	Suf	Act
902	tsiafo ¹²⁰	<i>tsia-fo</i> step_on-NMLZ 'a part of a canoe (just before the very font)'	<i>tsia</i> 'to step_on'	• Aff	$[[V]_i -fo]_{Nj}$	$[[V]_i -fo]_{Nj}$	$[[V] -fo]$	Suf	
903	tsintsimii	<i>n-tsin~tsim-ii</i> NMLZ-RED~print-NMLZ 'a drawing/printed photo'	<i>tsin~tsim</i> 'to print/emboss'	• Aff	$[[n- [RED-V]_i]_{Nj} -ii]_{Nk}$	$[[n- [V]_i]_{Nj} -e]_{Nk}$	$[[M- [V]] -I]$	Suf	Result
904	tsirmodze n	<i>a-tsir-m-ɔ-dzen</i> (<i>a-tiri-mu-ɔ-den</i>) NMLZ-head-in-be-hard 'wickedness'	<i>Ne tsir mu ye dzen</i> 3SGPOSS head in be hard 's/he is wicked'	• Aff	$[a- [[[N]_i [N]_j]_{Nk} \circ [A]_x]_{Ny}]_{Nz}$	$[[N]_i O [A]_j]_{Nk}$	$[[N] O [A]]$	Pref	property
905	tsirmodze nfo	<i>atsirmoden-fo</i> (<i>tsirmoden-nyi</i>) wickedness-NMLZ _[person] 'wicked person(s)'	<i>tsirmoden</i> 'wickedness'	• Aff	$[[a- [[[N]_i [N]_j]_{Nk} \circ [A]_x]_{Ny}]_{Nz} -fo]_{Ns}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	
906	tuatew (tuatee)	<i>atua-tew</i> (<i>atua-tee</i>) rebellion-tear 'rebellion'	<i>tew attua</i> tear rebellion 'to rebel'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Ni}$	$[[N]_i [V]_j]_{Ni}$	$[N+V]$	R L	Act
907	tuatewfo	<i>o-tuatew-fo</i> SG-rebellion-NMLZ _[person] 'rebel'	<i>atuatew</i> 'rebellion'	• Aff	$[[[N]_i [V]_j]_{Nk} -fo]_{Nx}$	$[[N]_i -fo]_{Nj}$	$[[N] -fo]$	Suf	

¹²⁰ This word seems to suggest that the suffix *-fo* occurs on non-human nominals.

908	tubɔfo	<i>o-tu-bɔ-fo</i> SG-gun-shoot-NMLZ _[person] 'one who shoots himself, shooter'	<i>bɔ tuo</i> shoot gun 'to shoot a gun'	• Aff	$[[[[N]_i [V]_j]_{Nk} \cdot fo]_{Nx}}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	
909	tubrafo	<i>o-tu-bra-fo</i> NMLZ-move-come-NMLZ _[person] 'immigrant'	<i>tu bra</i> move come 'to immigrate'	• Aff	$[[[V]_i [V]_j]_{VP} \cdot fo]_{Nk}}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	
910	tudanfo	<i>o-tu-dan-fo</i> SG-move-house-NMLZ _[person] 'sojourner'	<i>tu dan</i> move house 'to move homes/to sojourn'	• Aff	$[[[V]_i [N]_j]_{VP} \cdot fo]_{Nk}}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	
911	Tuefo	<i>o-tue-fo</i> NMLZ-bore-NMLZ _[person] 'pourer, hole borer'	<i>tue</i> 'to bore a hole'	• Aff	$[[o- [V]_i]_{Nj} \cdot fo]_{Nk}}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agent
912	Tufo	<i>o-tu-fo</i> NMLZ-move-NMLZ _[person] 'emigrant, armed soldier'	<i>tu</i> 'to move'	• Aff	$[[o- [V]_i]_{Nj} \cdot fo]_{Nk}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	
913	tufoantie	<i>tu-fo-a-n-tie</i> ICV-advice-SE-NEG-listen 'stubborn person'	<i>wo-tu no fo-a-ɔ-n-tie</i> 2SG-ICV-3SG-advise-REL-3SG-NEG-listen 'He does not heed advice'	• LEX	$[[[V]_i [N]_j]_{VP} a [NEG-V]_k]_{Nx}$	$[[[V]_i [N]_j]_{VP} a [V]_k]_{Nx}$	$[[V+N]+V]$	N/A	N/A
914	tukɔfo	<i>o-tu-kɔ-fo</i> SG-move-go-NMLZ _[person] 'an emigrant'	<i>tu kɔ</i> move go 'to emigrate'	• Aff	$[[[V]_i [V]_j]_{VP} \cdot fo]_{Nk}}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	
915	Tumfo	<i>o-tum-fo</i> SG-power-NMLZ _[person] 'mighty man'	<i>tum(i)</i> 'power'	• Aff	$[[N]_i \cdot fo]_{Nj}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Result
916	tumpanka	<i>atumpan-ka</i> talking_drum-beat/play 'talking drum beating'	<i>ka atumpan</i> beat/play talking_drum 'to beat the talking_drum'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	N
917	tumpanka ni	<i>atumpanka-ni</i> talking_drum-beat-NMLZ _[person.SG] 'drummer (of talking_drum)'	<i>atumpanka</i> 'talking_drum beating'	• Aff	$[[[N]_i [V]_j]_{Nk} \cdot ni]_{Nx}$	$[[N]_i \cdot ni]_{Nj}$	$[[N] \cdot ni]$	Suf	Agent
918	Tutofo	<i>o-tu-to-fo</i> SG-gun-shoot-NMLZ _[person] 'bearer of the king's gun'	<i>to tuo</i> shoot gun 'to shoot a gun'	• Aff	$[[[N]_i [V]_j]_{Nk} \cdot fo]_{Nx}}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agent

919	Twafo	<i>ɔ-twa-fo</i> NMLZ-be_epileptic-NMLZ _[person] 'a person who suffers from epilepsy'	<i>twa</i> 'to have epileptic seizure'	• Aff	$[[\partial- [V]_i]_{Nj} \cdot fo]_{Nk}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agent
920	Twafo	<i>twa-fo</i> cut-NMLZ[person] 'cutters (vanguard/frontline)'	<i>twa</i> 'to cut'	• Aff	$[[V]_i \cdot fo]_{Nj}$	$[[V]_i \cdot fo]_{Nj}$	$[[V] \cdot fo]$	Suf	
921	twedeamp ɔn/twerea mpon	<i>twede-a-m-pɔn</i> lean_on-SE-NEG-discharge ‘...’	<i>wo-twɛre no a wo-m-pɔn</i> 2SG-lean_on 3SG REL 2SG-NEG-slip 'When you lean on him you don't fall'	• LEX	$[[V]_i a [NEG-V]_j]_{Nk}$	$[[V]_i a [V]_j]_{Nk}$	$[[V] a [V]]$	N/A	N/A
922	Twee	<i>n-twe-e</i> NMLZ-pull-NMLZ '(the act of) pulling'	<i>twe</i> 'to pull'	• Aff	$[[n- [V]_i]_{Nj} \cdot e]_{Nk}$	$[[n- [V]_i]_{Nj} \cdot e]_{Nk}$	$[[M- [V]] \cdot I]$	Suf	Act
923	twehoni	<i>n-twe-ho-ni</i> NMLZ-draw_away-self-NMLZ _[person.SG] 'monk (lit. a person withdraws himself)'	<i>twe ho</i> draw self 'to withdraw'	• Aff	$[[n- [[V]_i [N]_j]_{VP}]_{Nk} \cdot ni]_{Nx}$	$[[N]_i \cdot ni]_{Nj}$	$[[N] \cdot ni]$	Suf	
924	twentwem fo	<i>ɔ- twen~twem-fo</i> NMLZ-RED~nimbley-NMLZ _[person] 'a healthy, vigorous, energetic, person'	<i>twem~twem</i> 'energetic'	• Aff	$[[\partial- [RED-A]_i]_{Nj} \cdot fo]_{Nk}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	property
925	twerewho	<i>n-twerew-ho</i> NMLZ-scratch-self 'removing fish scales'	<i>twerew</i> 'to scratch'	• Aff	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[M- [V+N]]$	Pre f	
926	twetiani	<i>twe-tia-ni</i> cut-short-NMLZ _[person.SG] 'circumcised person'	<i>twa tia</i> cut short 'to circumcize'	• Aff	$[[[V]_i [A]_j]_{VP} \cdot ni]_{Nk}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	
927 a	twetwesi	<i>a-twe~twe-si</i> NMLZ-RED-mockery-do 'mockery'	<i>si a-twe~twe</i> ICV NMLZ-RED-pull 'to mock'	• HD- Inv • Comp	$[[a- [V]_i]_{Nj} [V]_k]_{Nx}$	$[[N]_i [V]_j]_{Ni}$	$[N+V]$	R	L
928	twetwesini	<i>ɔ-twetwesi-ni</i> SG-mockery-NMLZ _[person.SG] ' mocker'	<i>atwetwesi</i> 'mockery'	• Aff	$[[[\partial- [V]_i]_{Nj} [V]_k]_{Nx} \cdot ni]_{Ny}$	$[[N]_i \cdot ni]_{Nj}$	$[[N] \cdot ni]$	Suf	Act
929	Twini	<i>twi-ni</i> twi-NMLZ _[person.SG] 'a person of twi origin'	<i>twi</i> 'the name of an Akan tribe'	• Aff	$[[N]_i \cdot ni]_{Nj}$	$[[N]_i \cdot ni]_{Nj}$	$[[N] \cdot ni]$	Suf	

930	twitwafo	<i>o-twi~twa-fo</i> NMLZ-RED~cut-NMLZ _[person] 'mower/sheep shearer'	<i>twi~twa</i> RED~cut 'to cut/to mow/to shear sheep'	• Aff	$[[o- [\text{RED-V}]_i]_{\text{Nj}} \text{-} \text{fo}]_{\text{Nj}}$	$[[\text{N}]_i \text{-} \text{fo}]_{\text{Nj}}$	$[[\text{N}] \text{-} \text{fo}]$	Suf	Agent/Inst.
931	twitwatire	<i>a-twi~twa-tire</i> NMLZ-cut~cut-head 'executioner (one who cuts heads)'	<i>twi~twa tire</i> RED~cut head 'to cut off the head'	• Aff	$[a- [[\text{RED-V}]_i [\text{N}]_j]_{\text{VP}}]_{\text{Nk}}$	$[\text{a- } [[\text{V}]_i [\text{N}]_j]_{\text{VP}}]_{\text{Nk}}$	$[\text{a- } [\text{V+N}]]$	Pre f	Agent
932	Twuwii	<i>twuw-ii</i> drag-NMLZ 'fishing by dragnet'	<i>twuw</i> 'to drag'	• Aff	$[[\text{V}]_i \text{-} ii]_{\text{Nj}}$	$[[\text{V}]_i \text{-} e]_{\text{Nj}}$	$[[\text{V}] \text{-} I]$	Suf	Act/Result
933	twuwii nam	<i>twuwii nam</i> fishing_by_dragnet fish 'fishes caught by dragnet'	<i>twuwii</i> 'fishing_by_dragnet' <i>nam</i> 'fish'	• Comp	$[[[\text{V}]_i \text{-} ii]_{\text{Nj}} [\text{N}]_k]_{\text{Nx}}$	$[[\text{N}]_i [\text{N}]_j]_{\text{Nj}}$	$[\text{N+N}]$	R R	
934	Wanini	<i>ɔ-wa-nini</i> SG-snail-male 'a large snail'	<i>wa</i> 'snail' <i>nini</i> 'male'	• Comp	$[[\text{N}]_i [\text{A}]_j]_{\text{Ni}}$	$[[\text{N}]_i [\text{A}]_j]_{\text{Ni}}$	$[\text{N+A}]$	L L	
935	warefoo	<i>aware-fo-ɔ</i> marriage-NMLZ _[person] 'couples'	<i>awaree</i> 'marriage'	• Aff	$[[a- [\text{V}]_i]_{\text{Nj}} \text{-} \text{fo}]_{\text{Nk}}$	$[[\text{N}]_i \text{-} \text{fo}]_{\text{Nj}}$	$[[\text{N}] \text{-} \text{fo}]$	Suf	
936	waregyaeɛ	<i>aware-gyae-ɛ</i> marriage-stop-AFV 'divorce'	<i>gyae awaree</i> stop marriage 'to divorce'	• HD-Inv • Comp	$[[a- [\text{V}]_i]_{\text{Nj}} [\text{V}]_k]_{\text{Nx}}$	$[[\text{N}]_i [\text{V}]_j]_{\text{Nk}}$	$[\text{N+V}]$	R N	Act/Result
937	wɔmmfann kɔ	<i>wɔ-mm-fa-nn-kɔ</i> 3PL-INGR-take-INGR-go 'Let them take it away' (personal name)	<i>Wɔ-m-fa-n-kɔ</i> 3PL-IMP-take-IMP-go 'Let them take it/them away'	• LEX	$[[\text{PRN}]_i [[\text{V}]_j [\text{V}]_k]_{\text{VP}}]_{\text{IP}}$	$[[\text{PRN}]_i [[\text{V}]_j [\text{V}]_k]_{\text{VP}}]_{\text{IP}}$		N/A N/A	
938	wɔwfɔ	<i>a-wɔw-fo</i> PL-pound-NMLZ _[person] 'pounders'	<i>wɔ</i> 'to pound'	• Aff	$[[\text{N}]_i \text{-} \text{fo}]_{\text{Nj}}$	$[[\text{N}]_i \text{-} \text{fo}]_{\text{Nj}}$	$[[\text{N}] \text{-} \text{fo}]$	Suf	Agent
939	Wemfo	<i>ɔ-wem-fo</i> SG-weave-NMLZ _[person] 'weaver'	<i>wen</i> 'to weave'	• Aff	$[[\text{V}]_i \text{-} \text{fo}]_{\text{Nj}}$	$[[\text{N}]_i \text{-} \text{fo}]_{\text{Nj}}$	$[[\text{N}] \text{-} \text{fo}]$	Suf	Agent
940	wemfo	<i>ɔ-wem-fo</i> SG-watch-NMLZ _[person] 'watchman, guard'	<i>wen</i> 'watch'	• Aff	$[[\text{V}]_i \text{-} \text{fo}]_{\text{Nj}}$	$[[\text{N}]_i \text{-} \text{fo}]_{\text{Nj}}$	$[[\text{N}] \text{-} \text{fo}]$	Suf	Agent

941	wennade	<i>a-we-n-nade</i> NMLZ-chew-PL-metal 'Lion (lit. one who chews metals)	<i>we n-nade</i> to_chew PL-metal 'to chew metals'	• Aff	$[[a- [[V]_i [PL-N]_j]_{VP}]_{NK}}$	$[[a- [[V]_i [N]_j]_{VP}]_{NK}}$	$[a- [V+N]]$	Pre f	
942	Weredi	<i>a-were-di</i> NMLZ-skin-eat 'vengeance'	<i>di were</i> eat skin 'to take revenge'	• HD- Inv • Comp	$[[a- [N]_i]_{Nj} [V]_k]_{Nx}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	N
943	weredifo	<i>ɔ-weredi-fo</i> SG-vengence-NMLZ[person] 'a person who takes revenge'	aweredi 'vengeance'	• Aff	$[[[N]_i [V]_j]_{Nk} \neg fo]_{Nx}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf	Agen t
944	werefifo	<i>ɔ-werefí-fo</i> SG-forgetfulness-NMLZ[person] 'a person easily forgets'	<i>awerefir</i> 'forgetfulness'	• Aff	$[[[N]_i [V]_j]_{Nk} \neg fo]_{Nx}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf	Prop erty
945	werefir	<i>a-were-fir</i> NMLZ-soul-exit 'forgetfulness'	<i>X ne were a-fir</i> X 3SGPOSS soul PERF-exit 'X has forgotten (X's soul has exited)'	• Comp	$[[a- [N]_i]_{Nj} [V]_k]_{Nx}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	N
946	wereshow	<i>a-were-how</i> NMLZ-soul-wither 'sorrow'	<i>X ne were a-how</i> X 3SGPOSS soul PERF-wither 'X is sad (X's soul has withered)'	• Comp	$[[a- [N]_i]_{Nj} [V]_k]_{Nx}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	N
947	wereshown i	<i>awereshow-ni</i> sorrow-NMLZ[person.SG] 'sorrowful, unhappy person'	awereshow 'sorrow'	• Aff	$[[[N]_i [V]_j]_{Nk} \neg ni]_{Nx}$	$[[N]_i \neg ni]_{Nj}$	$[[N] \neg ni]$	Suf	Experienc er
948	werekycle ye	<i>a-were-kyekye</i> NMLZ-sould-bind 'comfort, consolation'	<i>X ne were a-kyekye</i> X 3SGPOSS soul PERF-bound_up 'X is comforted'	• Comp	$[[a- [N]_i]_{Nj} [V]_k]_{Nx}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	N
949	wereto	<i>a-were-to</i> NMLZ-skin-buy 'vengeance'	<i>tɔ were</i> buy skin 'to avenge someone'	• HD- Inv • Comp	$[[a- [N]_i]_{Nj} [V]_k]_{Nx}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	N
950	òwèrètɔ!f ó	<i>ɔ-wèrètɔ-lfó</i> SG-vengence-NMLZ[person] 'a revengeful person, an avenger'	àwèrètɔ 'vengence'	• Aff	$[[[N]_i [V]_j]_{Nk} \neg fo]_{Nx}$	$[[N]_i \neg fo]_{Nj}$	$[[N] \neg fo]$	Suf	Agen t
951	Wiásé	<i>wí-ásé</i> sky-under 'earth/world'	<i>wí</i> 'sky' <i>àsé</i> 'under'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	$[N+N]$	L	N

952	<i>wiàsèfó</i>	<i>wiàsè-fó</i> earth-NMLZ _[person] 'inhabitants of this world, mankind'	wiásé 'earth'	• Aff	$[[N]_i \cdot fo]_{Nj}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	
953	<i>òwiéfó</i>	<i>ò-wié-fó</i> NMLZ-finish-NMLZ _[person] 'finisher/perfector'	<i>è-wiè-i</i> 'completion/end'	• Aff	$[[o \cdot [V]_i]_{Nj} fo]_{Nk}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agen t
954	<i>Èwièí</i>	<i>è-wiè-i</i> NMLZ-finish-NMLZ 'end'	<i>wiè</i> 'to finish/end'	• Aff	$[[e \cdot [V]_i]_{Nj} \cdot i]_{Nk}$	$[[a \cdot [V]_i]_{Nj} \cdot e]_{Nk}$	$[[a \cdot [V]] \cdot I]$	Suf	Resu lt
955	<i>Òwifó</i>	<i>ò-wi-fó</i> NMLZ-steal-NMLZ _[person] 'thief'	<i>awi</i> 'stealing/thievery'	• Aff	$[[N]_i \cdot fo]_{Nj}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agen t
956	<i>wìmdé</i>	<i>wim-dé</i> sky-thing 'esoteric/abstract matters'	<i>wím àdè</i> sky thing 'esoteric/abstract matters'	• Comp	$[[N]_i [N]_j]_{Nk}$	$[[N]_i [N]_j]_{Nk}$	$[N+N]$	R	R
957	<i>Wiriwiriw-tsí</i> <i>wtsí</i>	<i>wiriwiriw-tsí</i> "wiriwiriw"-fetch 'fishing for a type of fish'	<i>tsí</i> <i>wiriwiriw</i> fetch <i>wiriwiriw</i> (type of fish) 'fishing for <i>wiriwiriw</i> '	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	N
958	<i>òwiyám</i>	<i>òwi-yán</i> corn-grind 'corn grinding/act of grinding corn'	<i>yàm òwí</i> grind corm 'to grind corn'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	$[N+V]$	R	N
959	<i>òwiyám-/fó</i> ó	<i>òwiyám-/fó</i> corn_grinding-NMLZ _[person] 'one who grinds corn/miller'	<i>òwi-yám</i> 'corn grinding/act of grinding corn'	• Aff	$[[[N]_i [V]_j]_{Nk} fo]_{Nx}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	
960	<i>àwó́</i>	<i>à-wó-́</i> NMLZ-give_birth-AFV 'giving birth'	<i>wó</i> 'to give birth'	• Aff	$[a \cdot [V]_i]_{Nj}$	$[a \cdot [V]_i]_{Nj}$	$[a \cdot [V]]$	Pre f	
961	<i>òwóàníní</i>	<i>ò-wó-à-níní</i> NMLZ-give_birth-PL-male 'a person who gives birth to males only, a nickname of a famous person'	<i>X á-wò</i> <i>à-níní</i> X PERF-give_birth_to PL-males 'X has given birth to men/champions'	• Aff	$[\sigma \cdot [[V]_i [N]_j]_{VP}]_{Nk}$	$[O \cdot [[V]_i [N]_j]_{VP}]_{Nk}$	$[\sigma \cdot [V+N]]$	Pre f	Agen t/Pro perty
962	<i>òwó!/fó</i>	<i>ò-wó-/fó</i> NMLZ-giving_birth-NMLZ _[person] 'parent'	<i>àwó</i> 'giving birth'	• Aff	$[[\sigma \cdot [V]_i]_{Nj} fo]_{Nk}$	$[[N]_i \cdot fo]_{Nj}$	$[[N] \cdot fo]$	Suf	Agen t

963	àwó!gyé	àwó-!gyé birth-deliver 'midwifery'	gyè àwó receive birth 'to deliver someone of a baby'	• HD- Inv • Comp	[[N] _i [V] _j] _{Nk}	[[N] _i [V] _j] _{Nk}	[N+V]	R	N	Act
964	òwògyé!fó ó	ò-wògyé-!fó SG-midwifery-NMLZ _[person] 'midwife'	àwó!gyé 'midwifery'	• Aff	[[[N] _i [V] _j] _{Nk} -fó] _{Nx}	[[N] _i -fó] _{Nj}	[[N] -fó]	Suf	Agen t	
965	òwóntà	ò-wó-ntá NMLZ-give_birth_to-twin 'mother of twins'	wò ntá give_birth twin 'to give birth to twins'	• Aff	[ɔ- [[V] _i [N] _j] _{VP}] _{Nk}	[O- [[V] _i [N] _j] _{VP}] _{Nk}	[ɔ- [V+N]]	Pre f	Agen t	
966	òwòwá!ní í	ò-wòwá-!ní NMLZ-collateral-NMLZ _[person.SG] 'pawn for debt'	àwòwá 'collateral'	• Aff	[[N] _i -ni] _{Nj}	[[N] _i -ni] _{Nj}	[[N] -ni]	Suf	The me	
967	òwú	ò-wú NMLZ-die 'death'	wú 'die'	• Aff	[o- [V] _i] _{Nj}	[O- [V] _i] _{Nj}	[o- [V]]	Pre f		
968	òwú ñkwàntá	òwú ñkwàntá death junction 'death junction/brink of death'	òwú 'death' ñkwàntá 'junction'	• Comp	[[o- [V] _i] _{Nj} [N] _k] _{Nx}	[[N] _i [N] _j] _{Nk}	[N+N]	R	N	
969	òwúbó!fó	òwú-bó!fó death-angel 'angle of death'	òwú 'death' bó!fó 'angel'	• Comp	[[o- [V] _i] _{Nj} [[V] _k -fó] _{Nx}] _{Nx}	[[N] _i [N] _j] _{Nj}	[N+N]	R	R	
970	òwùdí!fó	ò-wùdí-!fó (owudini) SG-murder-NMLZ _[person] 'murderer'	àwú!dí 'murder'	• Aff	[[[o- [V] _i] _{Nj} [V] _k] _{Nx} -fó] _{Ny}	[[N] _i -fó] _{Nj}	[[N] -fó]	Suf		
971	Wufo	òwú-fó death-NMLZ _[person] 'deceased/dead person'	òwú 'death'	• Aff	[[o- [V] _i] _{Nj} -fó] _{Nk}	[[N] _i -fó] _{Nj}	[[N] -fó]	Suf		
972	òwúnyá!fó ó	òwú-nyá-!fó death-get-NMLZ _[person] 'survivor/heirs'	òwú 'death' nyá 'get/benefit'	• Aff	[[[o- [V] _i] _{Nj} [V] _k] _{Nx} -fó] _{Ny}	[[N] _i -fó] _{Nj}	[[N+V] -fó]	Suf		
973	òwùprèn ù	òwù-prè-nù death-time-two 'double death'	òwú-mpchè-nú death-time-two 'double death'	• Comp	[[o- [V] _i] _{Nj} [[N] _k [Num] _x] _{Nx}] _{Nj}	[[N] _i [N] _j] _{Ni}	[N+N]	L	L	

974	àwùràwù ràhwéné mú	à-wùrà~wùrà-hwéné-mú NMLZ-enter~enter-nose-in 'an insect believed to enter the nostrils of humans (grasshopper)'	X wúrà~wùrà hwéné mú X RED~enter nose in 'X enters the nostrils'	• Aff	[a- [[RED-V] _i [[N] _j [N] _k] _{NP}] _{VP}] _{Nx}	[a- [[V] _i [N] _j] _{VP}] _{NK}	[a- [V+N]]	Pre f	
975	òyá!fóó	ò-yá-fó-ó NMLZ-to_insult-NMLZ _[person] -AFV 'reviler'	yá 'to insult'	• Aff	[[ɔ- [V] _i] _{Nj} -fó] _{NK}	[[N] _i -fó] _{Nj}	[[N] -fó]	Suf	Agent
976	òyàñfó	ò-yàñ-fó NMLZ-to_drum-NMLZ _[person] 'drummer'	yání 'to drum'	• Aff	[[ɔ- [V] _i] _{Nj} -fó] _{NK}	[[N] _i -fó] _{Nj}	[[N] -fó]	Suf	Agent
977	àyàmyé	a-yam-ye à-yàñ-yé NMLZ-belly-be_good 'a charity/kindness'	X yámí yé X belly be_good 'X is kind'	• Aff	[a- [[N] _i [V] _j] _{Nk}] _{Nx}	[a- [[N] _i [V] _j] _{Nk}] _{Nx}	[a- [N+V]]	Pre f	Property/state
978	òyàmyé!fóó	ò-yàmyé!fó-ó NMLZ-kindness-NMLZ _[person] -AFV 'a charitable person'	àyàmyé 'a charity/kindness'	• Aff	[[[N] _i [V] _j] _{Nk} -fó] _{Nx}	[[N] _i -fó] _{Nj}	[[N] -fó]	Suf	Property/state
979	òyàré!fóó	ò-yàré!fó-ó NMLZ-be_ill-NMLZ _[person] -AFV 'patient'	yàré 'to_be_ill'	• Aff	[[N] _i -fó] _{Nj}	[[N] _i -fó] _{Nj}	[[N] -fó]	Suf	Patient/
980	àyàréhw é	à-yàré-hwé PL-sickness-care_for 'medicare/healthcare'	hwé yàré care_for sickness 'to take care of a sick person'	• HD- Inv • Comp	[a- [[N] _i [V] _j] _{Nk}] _{Nx}	[[N] _i [V] _j] _{Nk}	[N+V]	R N	Act
981	òyàréhwé !fóó	ò-yàréhwé!fó-ó SG-medicare-NMLZ _[person] -AFV 'healthcare provider'	àyàréhwé 'medicare/healthcare'	• Aff	[[[N] _i [V] _j] _{Nk} -fó] _{Nx}	[[N] _i -fó] _{Nj}	[[N] -fó]	Suf	Agent
982	àyàrésá	à-yàré-sá PL-disease-heal-place 'act of curing disease'	sà yàré cure disease 'to cure disease'	• HD- Inv • Comp	[[PL-N] _i [V] _j] _{Nk}	[[N] _i [V] _j] _{Nk}	[N+V]	R N	
983	àyàrésáb éá	àyàrésá-béá disease_curing-place 'infirmary/hospital'	àyàrésá 'disease_curing'	• Comp	[[[N] _i [V] _j] _{Nk} [N] _x] _{Nx}	[[N] _i [N] _j] _{Nj}	[N+N]	R	R
984	òyéàdéeé!y ié	ò-yé-àdéeé!yíé 3SG-do-thing-well 'repairer/restorer'	ò-yé-àdéeé!yíé 3SG-do-thing-well 'S/he does something well'	• LEX	[[PRN] _i [[[V] _j [N] _k] _{VP} [Adv] _x] _{VP}]	[[PRN] _i [[[V] _j [N] _k] _{VP} [Adv] _x] _{VP}]		N/A	N/A

985	èyé!fó	è-yé-!fó NMLZ-be_good-NMLZ _[person] good, just, pious person.	yé ‘good/just/pious’	• Aff	[[ε- [V] _i] _{Nj} -fó] _{Nk}	[[N] _i -fó] _{Nj}	[[N] -fó]	Suf	Experiencer
986	òyé!fó	ò-yé-!fó NMLZ-make-NMLZ _[person] ‘maker/mischief maker’	yé ‘to make’	• Aff	[[N] _i -fó] _{Nj}	[[N] _i -fó] _{Nj}	[[N] -fó]	Suf	Property/Agent
987	yèfùn-kòtòkú	yèfùn-kòtòkú belly-sack ‘stomach (belly sack)’	yèfùn ‘belly’ kòtòkú ‘sack’	• Comp	[[N] _i [N] _j] _{Nj}	[[N] _i [N] _j] _{Nj}	[N+N]	R	R
988	òyémá!fó	ò-yé-má-!fó NMLZ-do-give-NMLZ _[person] ‘agent, attorney’	yé má do give ‘to act on behalf of another’	• Aff	[[[V] _i [V] _j] _{VP} -fó] _{Nk}	[[N] _i -fó] _{Nj}	[V+V]	Suf	Agent
989	yemuhyeh ye	à-yèmù-hyè~hyé NMLZ-tummy-burb~burn ‘compassion/anxiety’	X yámù hyèhyé nò X tummy burn.PRES 3SGOBJ ‘X is anxious (X’s stomach burns)’	• Aff	[a- [[N] _i [RED-V] _j] _{VP}] _{Nk}	[[N] _i [V] _j] _{Nk}	[a- [N+V]]	Pref	
990	Yerefa	à-yèrè-fá PL-wife-take ‘adultery’	fá òyéré take wife ‘to sleep with another person’s wife’	• HD- Inv • Comp	[[N] _i [V] _j] _{Nk}	[[N] _i [V] _j] _{Nk}	[N+V]	R	N Act
991	yerefafo	ò-yèrè-fá-!fó SG-wife-take-NMLZ _[person] ‘one who takes anothr’s wife/adulterer’	àyèrèfá ‘adultery’	• Aff	[[[N] _i [V] _j] _{Nk} -fó] _{Nx}	[[N] _i -fó] _{Nj}	[[N] -fó]	Suf	Agent
992	èyiádzé !káw	èyi-ádzé !káw funeral-under(location) debt ‘funeral bill’	èyiádzé ‘funeral’ èkáw ‘debt’	• Comp	[[[N] _i [N] _j] _{Nk} [N] _x] _{Nx}	[[N] _i [N] _j] _{Nj}	[N+N]	R	R Product
993	ñyìànó	ñ-yì-ànó NMLZ-give-mouth ‘response, reply’	yì ànó remove mouth ‘to respond reply to’	• Aff	[n- [[V] _i [N] _j] _{VP}] _{Nk}	[n- [[V] _i [N] _j] _{VP}] _{Nk}	[M- [V+N]]	Pref	Result
994	òyifó	ò-yì-fó SG-shave-NMLZ _[person] ‘barber/hair cutter/shearer/fisherman’	yí ‘to barber’	• Aff	[[N] _i -fó] _{Nj}	[[N] _i -fó] _{Nj}	[[N] -fó]	Suf	
995	àyí!yé	àyí-!yé funeral-perform ‘performance of funeral’	yè àyí perform funeral ‘perform a funeral’	• HD- Inv • Comp	[[N] _i [V] _j] _{Nk}	[[N] _i [V] _j] _{Nk}	[N+V]	R	N

996	<i>Yiyèdí</i>	<i>yìyè-dí</i> (yiedie) good-assume 'human rights/wellbeing'	<i>dì yí!yé</i> assume good 'wellbeing'	• HD- Inv • Comp	$[[N]_i [V]_j]_{Nk}$	$[[N]_i [V]_j]_{Nk}$	[N+V]	R	N	
997	<i>òyí!yé!fó</i>	<i>ò-yí!yé!fó</i> NMLZ-goodness-NMLZ _[person] 'good, pious person'	<i>yí!yé</i> 'goodness'	• Aff	$[[N]_i \neg fó]_{Nj}$	$[[N]_i \neg fó]_{Nj}$	$[[N] \neg fó]$	Suf		
998	<i>òyìyé!fó</i>	<i>ò-yìyé!fó</i> NMLZ-funeral-perform-NMLZ _[person] 'mourner'	<i>àyí!yé</i> funeral-perform 'performance of funeral'	• Aff	$[[[N]_i [V]_j]_{Nk} \neg fó]_{Nx}$	$[[N]_i \neg fó]_{Nj}$	$[[N] \neg fó]$	Suf		
999	<i>nyìyìàní</i>	<i>ñ-yì-yì-àní</i> NMLZ-RED~withdraw-eye 'habit of turning a blind eye to a problem'	<i>yì-yì- àní</i> RED~withdraw eye 'to turn a blind eye'	• Aff	$[n- [[RED-V]_i [N]_j]_{VP}]_{Nk}$	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[M- [V+N]]$	Pre f		Act
1000	<i>nyìyìmú</i>	<i>ñ-yì-yì-mú</i> NMLZ-RED~choose-in 'discrimination'	<i>yì~yì mú</i> RED~choose in 'to discriminate'	• Aff	$[n- [[RED-V]_i [N]_j]_{VP}]_{Nk}$	$[n- [[V]_i [N]_j]_{VP}]_{Nk}$	$[M- [V+N]]$	Pre f		Act