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ISSUES IN ESAHIE NOMINAL MORPHOLOGY:  
FROM INFLECTION TO WORD FORMATION

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*Issues in Esahie nominal morphology: From inflection to word formation*

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PhD thesis

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## ABSTRACT

The present study is a documentation-oriented research which aims at exploring the nominal morphology of Esahie, an otherwise unexplored cross-border Kwa language. Essentially, it examines pertinent inflectional and word formation issues in the nominal domain of Esahie such as noun class system, agreement, syncretism, nominalization, and compounding. The overall goal of this thesis is to investigate and provide a comprehensive account of the attested types, structure, formation, and the lexical semantics of nouns and nominalizations in Esahie. This thesis also seeks to understand what the facts about the structure and formation of nouns and nominalizations in Esahie reveal about the nature of the interface between morphology, phonology, syntax, and semantics, and about the architecture of the grammar in general. In interpreting the Esahie data, we ultimately hope to contribute to current theoretical debates by presenting empirical arguments in support of an abstractive, rather than a constructive view of morphology, by arguing that adopting the formalism of Construction Morphology (CxM, see Booij 2010a-d), as an abstractive model, comes with many advantages. We show that the formalism espoused in CxM is able to deal adequately with all the inflectional and word formation issues discussed in this thesis, including the irregular (non-canonical) patterns which are characterized either by cumulative exponence or extra-compositionality. With regards to compounding, this study confirms the view (cf. Appah 2013; 2015; Akrofi-Ansah 2012b; Lawer 2017) that, in Kwa, notwithstanding the word class of the input elements, the output of a compounding operation is always a nominal. This characterization points to a fascinating (mutual) interplay between the word-formation phenomena of compounding and nominalization, since the former operation invariably feeds into the latter. Overall, this thesis shows that nominalization is a prominent word-formation operation in Kwa grammar. Data used in this thesis emanates from several fieldtrips carried out in some Esahie speaking communities in the Western-North region of Ghana, as well as other secondary sources.

**Keywords:** Esahie, nominal morphology, inflection, nominalization, compounding.

## SOMMARIO

Il presente studio è una ricerca che ha lo scopo di documentare una lingua del Ghana, lo Esahie (Kwa), quasi del tutto inesplorata sinora, e che nello specifico mira ad indagarne la morfologia nominale. La tesi esamina i fenomeni morfologici relativi alla flessione e alla formazione delle parole nel dominio nominale, quali il sistema delle classi nominali, fenomeni di accordo e sincretismo, la nominalizzazione e la composizione. L'obiettivo generale è quello di indagare e fornire un resoconto esaustivo dei tipi di nome attestati in Esahie, della loro struttura, del loro significato e dei fenomeni di nominalizzazione. Il fine della ricerca è anche quello di tentare di capire ciò che i dati sulla struttura e la formazione dei nomi in Esahie rivelano in merito alla natura dell'interfaccia tra morfologia, sintassi e semantica e, più in generale, sull'architettura della grammatica. Nell'interpretare i dati della lingua Esahie, auspichiamo inoltre di contribuire all'attuale dibattito teorico sulla morfologia, presentando argomentazioni empiriche a sostegno di una visione 'astrattiva', anziché 'costruttivista' della morfologia: sosteneremo che l'adozione del formalismo del modello teorico della Construction Morphology, CxM (Booij 2010a-d), un modello astrattivo, presenta numerosi vantaggi. Come si tenterà di illustrare, il formalismo della CxM permette di modellizzare i fenomeni di flessione e di formazione delle parole discussi in questa tesi, compresi gli schemi irregolari (non canonici) che sono caratterizzati dall'esponenza cumulativa o dall'esocentricità. Per quanto riguarda la composizione, questo studio conferma i dati raccolti in altre lingue Kwa (cfr. Appah 2013; 2015; Akrofi-Ansah 2012b; Lawer 2017) dove, nonostante le varie categorie lessicali degli elementi di input, la composizione forma esclusivamente nomi. Questa caratterizzazione indica un'affascinante (e reciproca) interazione tra i fenomeni di composizione e nominalizzazione, poiché la prima operazione sembra instanziare un tipo della seconda. Nel complesso, questa tesi mostra che la nominalizzazione è un fenomeno di formazione di parola prominente nella morfosintassi della lingua Esahie. I dati utilizzati in questa tesi sono stati raccolti primariamente dall'autore,

attraverso numerosi *fieldwork* effettuati in alcune comunità parlanti la lingua Esahie nella regione occidentale del Ghana, e da altre fonti secondarie.

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## DEDICATION

To

*Gloria Obiribea Broohm*, my late mother

It's been over a decade already since you left us, rest in peace

To

*Salomey Ama Nkuah*, my wife

for all the support and encouragement

To

*Awo and Paapa*, my niece and nephew

for being family

To

*George Kwabena Mozu*, my Verona God-father

for caring and going all out for me

To

*All Esahie speakers*

This is for you

## LIST OF ABBREVIATIONS AND MARKING CONVENTIONS

1	First person
2	Second person
3	Third person
A	Adjective
ABS	Absolutive case
ACC	Accusative case
AGR	Agreement marker
AN	Action Nominal
ANIM	Animacy
ATAP	Attributive/Appositive compound
ATR	Advanced tongue root
A-structure	Argument structure
BSG	Bible Society of Ghana
CEN	Complex event nominal
CM	Class marker
COORD	Coordinate compound
CONS	Consecutive aspect marker
CxM	Construction Morphology
DAT	Dative case
DM	Distributed morphology
DP	Determiner Phrase
E/R	Event/Result nominalization
ERG	Ergative case
FEM	Feminine gender
GILLBT	Ghana Institute of Linguistics Literacy and Bible Translation

GTM	Ghana Togo Mountain
H	High tone
HNA	Homorganic nasal assimilation
ICV	Inherent complement verb
INC	Incorporating nominal typology
INST	Instrumental
IP	Inflection phrase
L	Low tone
L1	First language
L2	Second language
LCS	Lexical conceptual structure
LOC	Locative
MASC	Masculine gender
N	Noun
NCS	Noun class system
NMLZ	Nominalizing affix/Nominalizer
NOM	Nominative case
NP	Noun Phrase
PFX	Prefix
PP	Personal/Participant nominalization
RED	Reduplicant
RHR	Right-hand head rule
RN	Result/referential nominal
RP	Resumptive pronoun
SIL	Summer Institute of Linguistics
SILCAWL	SIL comparative African Wordlist

SUB	Subordinate compound
SUFF	Suffix
TP	Tense Phrase
UBH	Unitary Base Hypothesis
V	Verb
VA	Voicing assimilation
VH	Vowel harmony
VP	Verb phrase
WFR	Word Formation Rule

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# CHAPTER ONE

## GENERAL INTRODUCTION

### 1.1 Introduction

This thesis explores the nominal morphology of Esahie, an otherwise understudied Ghanaian language. Specifically, it examines some pertinent inflectional and word formation issues in the nominal domain. Since Esahie is not only understudied but also critically undocumented, this thesis has been primarily construed as a language documentation-oriented research.

The overall goal of the thesis is twofold. The first is descriptive, to the extent that it seeks to investigate and provide a comprehensive account of the attested types, structure, formation, and the lexical semantics of nouns and nominalizations in Esahie. The second is to understand what the facts about the structure and formation of nouns and nominalizations in Esahie reveal about the nature of the interface between morphology, syntax, and semantics, and about the general architecture of the grammar.

Ultimately, we hope to provide an adequate description of inflection and word formation as they obtain in the nominal domain of Esahie, as well to contribute to current theoretical debates by presenting empirical arguments in support of an abstractive, rather than a constructive view of morphology. In interpreting the Esahie data from a theoretical perspective, we show that Construction Morphology (Booij 2010a-d), as an abstractive model, comes with many advantages.

This chapter provides a general background to the study. We begin by introducing some of the important aspects of Esahie linguistics that will be needed for the understanding of the discussion in this thesis, as well as a short description of the sociolinguistics of the language ([section 1.2](#)). The rest covers the problem statement ([section 1.3](#)), the aims of the study ([section 1.4](#)), the research questions ([section 1.5](#)), data and methodological issues ([section 1.6](#)), and the organization of the thesis ([section 1.7](#)).



## **1.2 The Grammar and Sociolinguistics of Esahie**

The language we are concerned with is Esahie and its speakers are the Sehwi (Sefwi) people. In this section, we discuss the Sehwi communities in terms of their demographic and geographic features, as well as their social structure (section [1.2.1](#)), and proceed to also discuss some key aspects of the grammar of Esahie (section [1.2.2](#)).

### **1.2.1 The Sehwi People**

According to the Ghana Statistical Service 2013 report (based on the 2010 National Census), speakers of Esahie number about 573,020 and live mostly in the Western Region (now Western-North region) of Ghana.

Ntummy and Bofo (2002) report that geographically, the Sehwi area occupies the northernmost part of the Western-North Region of Ghana. Its northern boundary is restricted by the southern boundaries of the Brong Ahafo region and the Ashanti region. Towards the east, the Sehwi area is bounded by the western boundary of the Central Region that stretches approximately between latitudes 6°13' and 6°20'. The southern boundary of the Sehwi area extends from the Ghana-Côte d'Ivoire border (approximately along the 6°00' latitude), and cuts inland along the eastern tributary of the Tano river, the Subraw river, and then stretches eastwards towards the vicinity of the Ankobra.

In terms of traditional paramountcy, Sehwi has three paramount areas – Anhwiaso, Bekwai and Wiawso. Some major towns include Dwinase, Yamatwa, Kaase, Adabokrom, Juaboso, Asafo, Osei Kwadwo, Bodi, Bekwai, Akontombra, Bibiani, and Asawinso. Figure 1 below is a language map of Ghana, and area coded as [58] is where the Esahie speaking communities can be located in the Western-North region of Ghana.

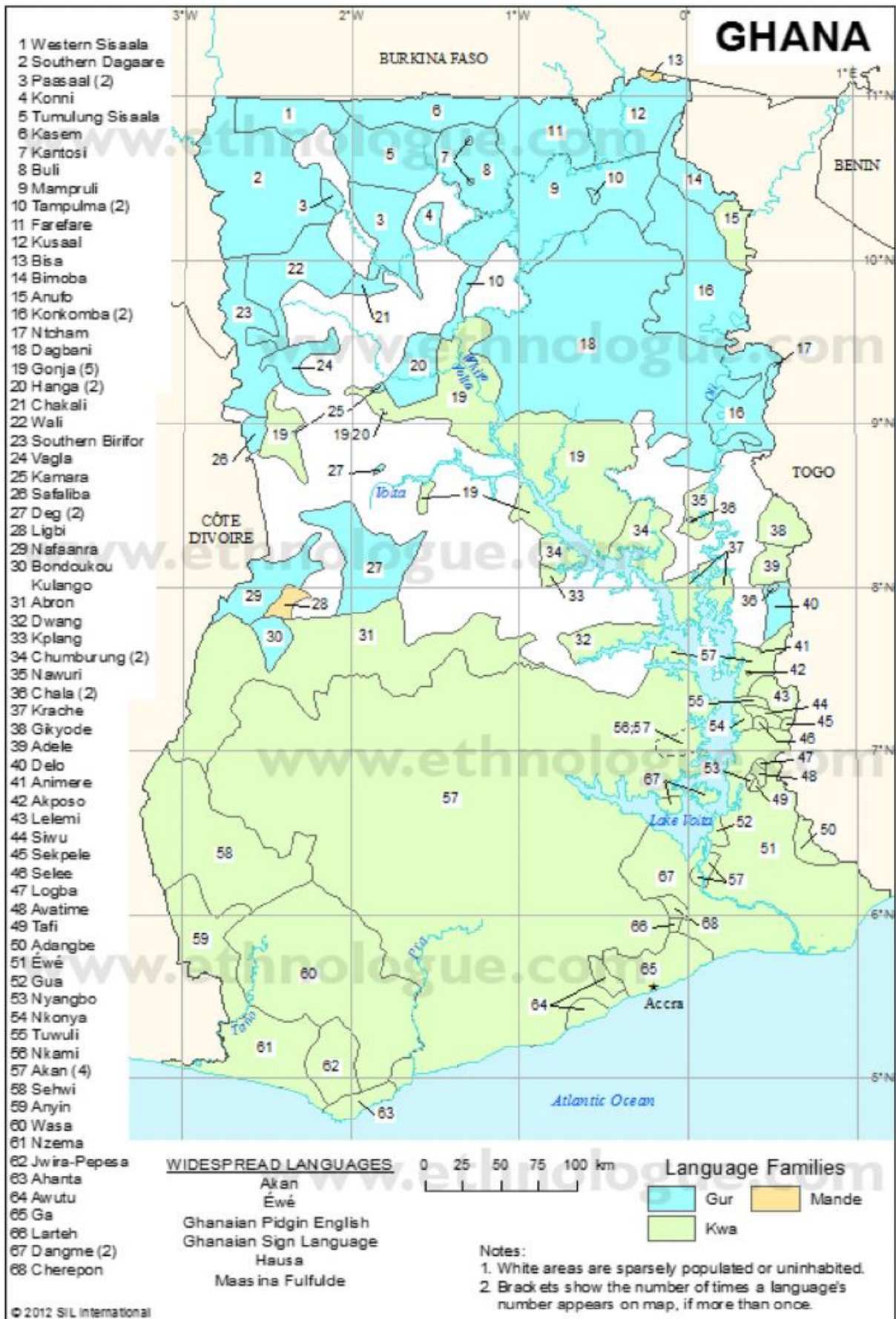


Figure 1: Language map of Ghana (SIL, 2012)

The Western-North region of Ghana is situated within the tropical rainforest belt and, therefore, has very fertile lands and produces large quantities of cash and food crops such as cocoa. Thus, the main occupations of the Sehwi people include farming, predominantly the growing of cocoa and food crops like plantain, cassava and maize. An increasing number of Sehwis now gain their livelihood in the informal sector as traditional craftsmen, small scale entrepreneurs, skilled and unskilled laborers and drivers. The region is rich in natural resources, including gold, and host the second largest gold mining company in Ghana – Bibiani Gold Mines. The region also boasts of the only bauxite mining company in Ghana, Awaso Bauxite. The region is also the only region blessed with an oil find. According to the World report (World Report 386 – June/July), only 53.3% of the Esahie population are literate in English or a known Ghanaian language. The literacy level of Esahie speakers is relatively fair.<sup>1</sup> Furthermore, preschoolers and primary 1-3 pupils who, according to the Ghanaian educational policy, are supposed to be instructed in their L1 (Esahie), are instead taught in Akan because (some of) the teachers are themselves not Sehwi natives and teaching materials needed for instruction are not available in Esahie.

Administratively, the Sehwi area is divided into four districts. These are the Bibiani-Anhwiaso-Bekwai, Juaboso, Essam-Debiso and the Wiawso, which was upgraded into a municipality in 2012. Politically, the Sehwi area has seven constituencies: Bibiani-Anhwiaso-Bekwai, Juaboso, Bodi, Bia, Essam-Debiso, Wiawso and Akontombra.

### **1.2.2 The Esahie Language**

Esahie (ISO 639-3: [sfw](#)) is a Kwa (Niger-Congo) language spoken mainly in Southern Ghana and parts of the Ivory Coast. It has been alternatively referred to as Asahyue, Sanvi<sup>2</sup> and Sehwi.

---

<sup>1</sup> Some Esahie speakers are also literate in Nzema, Akan and English.

<sup>2</sup> As pointed out to me by a reviewer, this name is only a term used in Cote d'Ivoire.

Esahie belongs to the Northern Bia family of the Central-Tano subgroup (Dolphyne and Dakubu, 1988), and is a sister to Aowin which then belong to Anyi subgroup of the Anyi-Baule cluster, as shown in the Kwa language family tree in Figure 2 below.

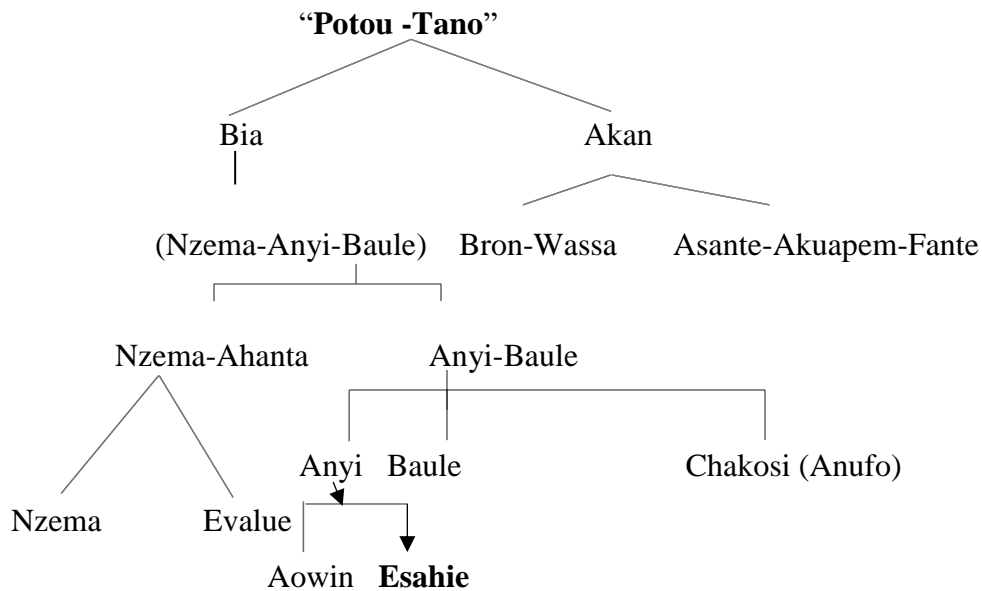


Figure 2: Kwa language family tree (Dolphyne and Dakubu 1988: 56)

As shown in Figure 2, the first split under the Bia language group is between Nzema and Ahanta, on one side, and Anyi and Baule, on the other side. Thereafter, Anyi, Baule, and Chakosi split from each other. Anyi then also splits into Aowin and Esahie.

Esahie has two dialects (Ntummy & Boafo, 2002). The *Anhwiaso* dialect, which is spoken in the extreme east of the area, that is, east of the River Subraw in towns like Sehwi-Anhwiaso, Sehwi-Bekwai, and Asawinso, and the *Wiawso* dialect, which is the major variety in use, in the wider area, westwards of the River Subraw. Data used in this thesis is drawn mainly from the latter variety since it is the most widely used variety in Ghana. Table 1 presents some dialectal lexical differences in words from the two varieties. The two varieties are, however, mutually intelligible and considered the same language by the speakers of each variety.

Table 1: Some dialectal lexical differences

Gloss	Anhwiaso Variety	Wiawso Variety
charcoal	<i>ebure</i>	<i>ebunaen</i>
male	<i>binzua</i>	<i>bienzua</i>
towel	<i>nzasre</i>	<i>nnasre</i>
dream	<i>nnaleε</i>	<i>laleε</i>
which one (question particle)	<i>boni</i>	<i>beni</i>

So far, only few aspects of Esahie grammar including the phonology and syntax/pragmatics have been described. Frimpong (2009), for instance, describes some phonological processes and features of Esahie including assimilation, vowel harmony, and tonology *inter alia*. Information structure (i.e. focalization and topicalization) as it obtains in Esahie has been investigated and described in Broohm (2014). Finally, the (cardinal) numeracy system of Esahie has also been described in Andam (2017). To the best of my knowledge, these descriptions<sup>3</sup> constitute the (already completed)<sup>4</sup> works on Esahie grammar, and they are unpublished. There are also other literary and educative materials such as primers designed by some private/Christian institutions to help preschoolers and pupils to learn to read Esahie (see section 1.3 for more on the extent of documentation of Esahie).

In what follows, we present a sketch of the main features of the Esahie language, and offer a short overview of the syntax, phonology and morphology of Esahie.

### 1.2.2.1 Syntax

Like Akan, and indeed other Kwa languages (cf. Aboh and Essegbey 2010), Esahie is a strictly SVO language. Structurally, the agent precedes the verb and the patient follows the verb in a

<sup>3</sup> Frimpong (2009) and Broohm (2014) are MA theses while Andam (2017) is a BA thesis.

<sup>4</sup> Owusu-Ansah (forthcoming) is an ongoing PhD project that looks at the prosodic structure of nouns and verbs in Esahie.

simple transitive clause. The subject of an intransitive clause also precedes the verb, as exemplified in (1).

- (1) a. *Sàló pò-lè àtààdéé né*  
 Salo wash-PAST dress DEF  
 ‘Salo washed the dress.’
- b. *Sàló là-lè*  
 Salo sleep-PAST  
 ‘Salo slept.’

### 1.2.2.2 Phonology

#### 1.2.2.2.1 Tone

Esahie is a tonal language (cf. Frimpong 2009). Esahie distinguishes between two basic contrastive tones: a high tone (relatively high pitch) marked with an acute accent (´), and a low tone (relatively low pitch) marked with a grave accent (`). Tone in Esahie plays both grammatical and lexical roles. This means that tone is used phonemically to bring about differences in meaning between two or more otherwise identical words. For instance, in Esahie, the phonological word *bɔkɔɔ* has two meanings depending on its tonal melody. It can either be produced on a high-high-high tonal melody, as in (2), or on a low-low-low tonal melody, as in (3), to convey different meanings. Thus, the meaning of a phonological word in Esahie does not only depend on the sound segments, but also on the pitch patterns they are associated with.

(2) *bókóó* ‘completely’

(3) *bòkòò* ‘slowly’<sup>5</sup>

---

<sup>5</sup> This form is likely to have been borrowed from Akan where, when bearing the same tonal melody, the form has the same meaning as what it bears in Esahie. The form *bɔkɔɔ* could be seen as an ideophonic template so that the tonal tiers are added to provide the meanings. I am grateful to a reviewer for pointing this out to me.

This points to the fact that a phonological word in Esahie has both segmental and autosegmental features, and more importantly, that a segmental form on its own does not constitute a grammatical word in Esahie.

In its grammatical role, tone in Esahie can be used to signal or alter the tense, aspect, mood, and polarity of verbs. For example, tone can be employed in distinguishing between the habitual aspect and the progressive aspect of Esahie verbs. As can be seen from the data in (4) Esahie habitual form of verbs is marked by a low tone on monosyllabic stems, and low-high tone on the first and second syllables in disyllabic stems respectively.

- (4) *me-kò*  
1SG-go.HAB  
'I go'

The progressive form of Esahie verbs is marked by a high tone for monosyllabic stems and their pronoun, and H-H-H tonal melody on disyllabic stems and their pronouns (Frimpong 2009).

- (5) *me-búkyé*  
1SG-open. PROG  
'I open'

We notice, from examples (4) and (5) that the only difference between the habitual and progressive forms and their respective pronouns is clearly caused by alternations in tonal

melody. In terms of polarity marking, a low tone on a copular verb signals positive polarity while a high tone indicates negative polarity.<sup>6</sup> Let us examine the following examples.

- (6) a.    *ɔ-tè*                    *nahorɛ*  
           3SG-COP                truth  
           ‘It is true.’
- b.    *ɔ-té*                    *nahorɛ*  
           3SG-COP.NEG         truth  
           ‘It is not true.’

In addition to these functions, we will argue (in [section 3.3.2.7.2](#) of [Chapter 3](#)) that tone also plays a crucial morphemic role in Esahie nominalization. In what follow, we will briefly discuss some other phonological phenomena that apply at the morpheme/word boundaries, including vowel harmony and assimilation.

#### 1.2.2.2.2 Vowel Harmony (VH)

As a well-formedness condition, vowel harmony ensures that vowels in a word agree in quality with respect to a particular phonetic property. In Esahie phonology, this a prominent feature. The most relevant phonological information is the *advanced tongue root* (ATR) vowel harmony principle. Esahie has ten vowel phonemes. The two sets of vowels are distinguished by the feature [ATR]. In virtue of the vowel harmony principle, the ten vowels of Esahie fall into two phonetically distinctive classes, i.e. a vowel is either produced with an advanced tongue root or an un-advanced tongue root, as shown in (7) below:

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<sup>6</sup> Since elsewhere in the language, negation is marked morphemically (i.e. not tonally), we could argue that tonally-marked negation is only linked with copula and auxiliary verbs in general. Hence, negative is not always a sort of polar tone.



- (7) a. Set I: [+ATR]: [i, u, e, æ, o]  
 b. Set II: [-ATR]: [ɪ, ʊ, ɛ, a, ɔ] (cf. Frimpong 2009: 86)

Following the distinction, all stem vowels are required (or at least expected) to be of a common ATR feature specification. ATR harmony in Esahie is stem-controlled, unless a stem is underlyingly disharmonic. Affixes are usually underspecified for ATR, such that, if the vowel(s) of the stem is [+ATR], one of the following vowels of the affix /i, u, e, æ, o/ will be selected. If, on the other hand, it is [-ATR], the vowels selected will be one of these: /ɪ, ʊ, ɛ, a, ɔ/. Take for instance, the words *ɛtma* ‘cloth’ and *ebote* ‘grass cutter’. Phonologically, we can observe (ATR) VH at work in the selection of the singular prefix for both words. The rule in (8) captures the differences between the prefix in *ɛ-tma* and *e-bote*:

$$(8) \quad V_{\text{Pfx}[\alpha\text{ATR}]} \rightarrow [\alpha\text{ATR}] / \text{---} V_{\text{STEM}[\alpha\text{ATR}]}$$

### 1.2.2.2.3 Assimilation

Another pervasive phenomenon in Esahie morpho-phonology is assimilation, most commonly, homorganic nasal assimilation (*henceforth* HNA) and consonant mutation. Esahie consonant mutation may occur as a case of voicing assimilation (*henceforth* VA) or glottalization. As an exemplification of these phenomena, we begin by discussing the case of plural formation. The most productive plural marker is the morpheme /N/ which has an unspecified place of articulation when it precedes a consonant. It has a zero place of articulation and agrees in place with the consonant following it. The nasal can become a bilabial (as in (9a)), a labio-dental, an alveolar, a palatal (as in (9b)) or a velar (as in (9c)) before a bilabial, a labio-dental, an alveolar, a palatal or a velar, respectively. This is exemplified below.

	<u>Gloss</u>	<u>Singular</u>	<u>Plural Affixation</u>	<u>HNA</u>
(9) a.	squirrel	<i>pure</i>	<i>n-pure</i>	<i>m-mure</i>
b.	dog	<i>kyra</i>	<i>n-kyra</i>	<i>ɲ-dzɪa</i>
c.	basket	<i>kɛndɛɪn</i>	<i>n-kɛndɛɪn</i>	<i>ŋ-kɛndɛɪn</i>

Apart from HNA, we also observe VA from the data above. In example (9a), the nasal spreads its voicing onto the voiced bilabial stop /b/, causing it to assimilate into a voiced sound. Similarly, in example (9b) a voiceless affricate becomes voiced affricate as a result of the presence of a nasal. Unlike what obtains in HNA and VH, VA shows a progressive directionality since it is the affix that is the trigger. The rules below account for both phenomena which are triggered by the plural formation, respectively.

- (9) d. HNA:  $N_{[\alpha\text{Place}]} \rightarrow N_{[\alpha\text{Place}]} - / \text{---} [C_{[\alpha\text{Place}]}]_{\text{word}}$
- e. VA:  $C_{[-\text{voi.}; \alpha\text{Place}]} \rightarrow C_{[+\text{voi.}; \alpha\text{Place}]} / N\text{----}$

#### 1.2.2.2.4 Lenition

Lenition or phonological weakening in Esahie is morpho-phonologically conditioned, and usually involves a voiceless velar stop mutating into a glottal fricative when it occurs intervocalically. With regards to nouns, it typically occurs (at morpheme boundary) when the plural prefix /a-/ is attached to nouns beginning in a voiceless velar stop.

- (10) *ko* → /a/ + *ko* / → *ahoε*  
 war.SG PL+ war wars

This rule below explains the data above:

(11) **Rule:** /k/ → /h/ [+voi] \_\_\_\_\_ [+voi]

However, lenition is not a general rule in Esahie. There are cases where /k/ is not glottalized intervocalically. For pluralization, nouns that appear to be borrowed<sup>7</sup> from Akan tend to block this rule. This accounts for why *kuanie* ‘farmer’ which selects the plural marker [a-] has its plural form as *akuafɔɛ* ‘farmers’, and not \**ahuaɔɛ*. Indeed, it would be more accurate to argue that these formatives, together with their affixes (such as *a-*, *-nie*, *-fɔɛ* and *-mɔ*), are inherited from the Proto-Tano genealogy, and not necessarily from Akan. This is because, such formatives pervade the Kwa family, and their semantics are quite transparent across board.

### 1.2.2.3 Morphology

Morphologically, it would be most suitable to categorize Esahie as typologically isolating, in consonance with what has been observed generally for Kwa (cf. Broohm and Rabanus 2018; Broohm 2017; Aboh and Essegbey 2010). As such, one characteristic feature of Esahie is that it has a fairly limited inflectional morphology.<sup>8</sup> Consequently, lexical DPs are not inflected for case, but only for number, as is seen in example (12).

(12)	a.	<i>kyía</i>	<i>a-hye</i>	<i>ebote</i>	b.	<i>ebote</i>	<i>a-hye</i>	<i>kyía</i>
		dog	PERF-catch	rabbit		rabbit	PERF-catch	dog
		‘A dog has caught a rabbit’				‘A rabbit has caught a dog’		

Broohm & Rabanus (2018: 102)

<sup>7</sup> Borrowed words tend to block some phonological rules.

<sup>8</sup> A reviewer has drawn my attention to the fact this feature is independent of Esahie’s isolating nature. The reviewer believes that this rather shows that Esahie is not a pure isolating language. I agree with the reviewer that, indeed, Esahie is not the best-case-scenario of an isolating language, however, largely, the language exhibits the features of an isolating language.

It is instructive to mention, however, that Esahie pronouns inflect for case (nominative, accusative). Notwithstanding the case-sensitivity exhibited by the pronominal system, Broohm (2017) observes that, relatively speaking, Esahie has suffered a stronger deal of morpho-syntactic decay especially in its nominal inflection system, resulting in a general paucity of inflection marking.

### **1.3 Problem Statement**

The problem that motivates this research is both empirical (i.e. fact-finding) and theoretical.

First, the morphology of Kwa languages has not been studied as much other domains of grammar. Most of the studies on Ghanaian (Kwa) languages have usually focused on syntactic phonological, and semantic (and pragmatic) issues such as information structure, clausal complementation, relativization, serial verb constructions, tonology, vowel harmony, etc. Information Structure, for instance, has received enormous attention in the Kwa literature. Information structure as it obtains in the following languages have been fairly described: Akan (Boadi 1974, 1990; Bearth 1999; Saah 1998; Marfo and Bodomomo 2005; Fiedler & Schwarz 2005; Amfo 2010; 2018; Ameka 2010; Ofori 2011; Schwarz 2011), Ewe (Ameka 1990, 1991; 1992; 2010), Gungbe (Aboh 2010), Ga (Dakubu 1992; 2005, Grubic et al. 2017), Dangme (Ofoe 2007; Akortia 2014) and Esahie (Broohm 2014). Serial verb constructions have also received appreciable attention in literature: Akan (Osam 1994a, 1994b, 1997; Agyeman 2002; Kambon 2012; Nyampong 2015), Ewe (Ameka 2006; Ameka & Essegbey 2013), Dangme (Ceasar 2016), Lɛtɛ (Ofori 2010), and Efutu (Agyemang 2016). For Kwa languages, studies on morphological issues such as inflectional classes, reduplication, allomorphy, syncretism, compounding, nominalization, evaluative morphology, and morphological awareness, are generally few. Reduplication and evaluative morphology, however, are some of the issues

which have been discussed quite fairly in the Kwa morphology literature, relatively speaking.<sup>9</sup> Indeed, for reduplication, for instance, mention could be made of works such as Adomako (2012), Osam et al. (2013), Boakye (2015), Abakah (2015), Dingemanse (2015) and Marfo and Osam (2018). For evaluative morphology too, the works of Appah & Amfo (2011), Agbetsoamedo & Di Garbo (2015), Agbetsoamedo & Agbedor (2015), and Amfo & Appah (2019), easily come to mind.

Second, very little is known about the grammar of Esahie generally. As far as I am aware of, it is only aspects of the phonological system of Esahie (cf. Frimpong 2009; Owusu-Ansah forthcoming), the numeracy system of Esahie (cf. Andam 2017), and aspects of nominal (inflectional) morphology of Esahie (cf. Broohm 2017; Broohm and Rabanus 2018), that have received some scholarly attention so far. It is interesting to point out that the works on the nominal morphology of Esahie (cf. Broohm 2017; Broohm and Rabanus 2018), actually emanate from the current thesis and partially overlap with [Chapter 2](#) of the thesis. Given this *status quo*, the morphology of Esahie remains highly understudied. To date, word formation issues such as nominalization and compounding in Esahie as well as many other inflectional issues remain outstanding. This state of under-description particularly in the area of compounding is consonance with Guevara and Scalise's (2009) observation that compounding is a rather neglected phenomenon in typological studies. As Guevara and Scalise (2009) note, this situation is surprising since as is well known, compounds are the morphological constructions which are closest to syntactic constructions, to the point that it is sometimes difficult to distinguish between compounds and phrases. There is, therefore, a need for the present work, which seeks to offer a detailed description of inflection and word formation which obtain in the nominal domain of Esahie. Employing the tenets of the Construction

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<sup>9</sup> I am grateful to a reviewer for drawing my attention to this.

Morphology theory as proposed in Booij (2010a-d; 2015) in this work will be a useful contribution to the empirical coverage of the theory.

Third, the few morphological studies that exist on Kwa languages have often focused on data that exhibit compositional semantics at the neglect of those with idiomatic or idiosyncratic semantics. This is partly due to the fact that the theoretical position assumed in most of these studies is either the morpheme-based approach to morphology where the prediction is that the correspondence between form and meaning is one-to-one, or the bottom-up approach to the computation of word structure where every grammatical property of a construction is assumed to emanate from the building-blocks (i.e. morphemes or words) which have been combined to form the construction. This orientation makes it difficult to deal with structures that exhibit extra-compositional features such as exocentric compounds, as well as structures characterized by cumulative exponence, extended exponence, allomorphy, and zero-morphology all of which deviate from the one-to-one prediction. The constructionist framework adopted in this thesis assumes a top-down approach to the computation of syntactic category, word structure, and meaning. This top-down assumption does not entirely reject the notion of compositionality.

#### **1.4 Aims of the study**

This thesis is, therefore, generally dedicated to the exploration of the nominal domain in Esahie.

The specific goals of this thesis are outlined below:

1. To investigate and offer an accurate description of the inflectional system of the nominal domain in Esahie. To this end, we make an attempt at defining a noun class

system (NCS) for Esahie.<sup>10</sup> Other inflectional issues such as **syncretism** are also accounted for.

2. To examine and provide a comprehensive and insightful account of word formation in the nominal domain of Esahie. To this end, we pay particular attention to issues of **compounding** and **nominalization**, and how their interplay enriches our understanding of word formation in Esahie.

- ✓ This aspect of the research is aimed at investigating the attested types, structure and formation of compounds in Esahie.

- ✓ I will seek to understand what the facts about the structure and formation of nominalizations in Esahie reveal about the nature of the interaction between morphology and syntax and about the architecture of the grammar generally, through a detailed analysis of aspects of the various attested nominalizations.

3. In terms of theoretical alignment, the thesis hopes to provide further empirical support to adopting an abstractive (top-down) view of word structure computation as is argued in constructionist theories, rather than a constructive (bottom-up) view. We hope to show that the formalism espoused in Construction Morphology is able to deal aptly with all the inflectional and word formation issues discussed in this thesis, including irregular patterns (i.e. forms which deviate from the one-to-one correspondence between form and meaning), characterized by cumulative exponence or extra-compositionality.

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<sup>10</sup> It is important to point out that noun classes may also have derivational functions in addition to their traditional inflectional roles.

Overall, the thesis is language-documentation oriented, and the approach adopted is descriptive and comparative/typological, so as to better define and describe Esahie against the Akanic (Kwa), Bantu and Indo-European background.

## **1.5 Research Questions**

In its fact-finding quest, this thesis hopes to answer the following:

1. What are the relevant morpho-syntactic features in the inflectional system of the nominal domain in Esahie?
2. What is the overall level of robustness of the inflectional system of the nominal domain in Esahie?
3. What types of nominalizations are attested in Esahie?
4. What is the structure of these nominalizations (headedness issues, recursion, input and output constraints, etc.)?
5. What are their semantic properties (compositional semantics, idiosyncrasy and idiomatic meaning, etc.)?
6. To what extent are these phenomena productive in the morphological system of Esahie?
7. What does the structure and meaning of Esahie compounds/nominalizations tell us about the interaction between morphology and syntax and the overall architecture of grammar?

## **1.6 Data and Methods**

For purposes of data gathering, three separate fieldwork exercises were embarked on during the period of this research. This became necessary first because I am an L2 speaker of Esahie,



and also because in terms of secondary data, not much is available on Esahie. The first fieldtrip took place from December 2016 – March 2017. The second spanned a month from July 2017 to August 2017. The third took place from April 2018 to July 2018. Overall, a period of about nine months was dedicated to data-gathering on the field in the Western-North Region of Ghana.

### **1.6.1 Data**

Two types of data are employed in this thesis; data from primary and secondary sources. Amongst them, primary data constitutes the more reliable option since as earlier mentioned, literature and materials on Esahie are scanty. Nonetheless, data ascertained from secondary sources have also proven useful in this thesis.

#### ***1.6.1.1 Secondary data***

Some of the secondary sources consulted for data for this thesis include published (non-linguistics) books such as *Sehwi Forever* and *Esahie Culture vs. Christianity* authored by (the late) Rev. G.K. Kobiri, who until his demise was one of my most resourceful consultants. May his soul rest in peace! Other materials include the New Testament Esahie Bible compiled by the Ghana Bible Society (BSG). The leadership of BSG was gracious enough to give me electronic copies of some of the Bible chapters and this went a long way to enhancing my data annotation and analysis.<sup>11</sup> They also included six primers compiled by the Ghana Institute of Linguistics Literacy and Bible Translation (GILLBT) generally titled *Yesu Kro Wc Dwire* Vol 1-3 (lit. Jesus Loves You!) and *Esahie Kengale* Vol 1-3 (lit. Reading Esahie). Other ecclesiastical materials such as the *Jehovah Witness Esahie Bible Study Manual* were also consulted. Unpublished theses such as Frimpong (2009) and Broohm (2014) were also useful.

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<sup>11</sup> Reverend Issifu Yahaya Dokurugu of the BSG Accra Office deserves special mention for facilitating this process.

Also, Christian cartoon videos for kids prepared by the Jehovah Witness Group were downloaded and used (the particularly ones downloaded and used are available here: [https://www.dropbox.com/sh/533yeumz472cqtt/AAB7cVym\\_eEfHPKfJ3TohJVma?dl=0](https://www.dropbox.com/sh/533yeumz472cqtt/AAB7cVym_eEfHPKfJ3TohJVma?dl=0)).

## **1.6.2 Methods and Research Techniques**

Elicited production is the main research technique adopted in collecting primary data for this thesis. In all, a total of 35 language consultants were selected from across various Esahie speaking communities (see [Table 36](#) of the [appendix](#) for their names and other relevant details). In order to get a good representation of Esahie as is used synchronically, persons from three categories of age brackets were selected. The first group of participants whom I call *young adults* were in the 15-35 age bracket, while the second group which I call the *mid adults* were in 36-50 age bracket. The third group whom I label the *adults* were also in 51-75 age bracket. Out of the 35 consultants 15 belonged to the young adult group and 10 belonged to the mid adult group, while the remaining 10 formed the *adult* group. Of the 10 adult consultants, 6 were renowned facilitators of radio programs hosted in Esahie. These consultants sit either as pundits or hosts on Sehwi-based radio stations including Liberty FM (located at Sefwi-Wiawso), Uniq FM (located at Sefwi-Bosomoiso), De Beat FM (located at Sefwi-Asawinso) and Golden Pod Radio (located as Juabeso). A consultant named *Assembly Man*, for instance, is the host of *Esahie Semba* radio program held on Uniq FM. Other native speakers were also randomly interviewed in order to extract relevant data. These specific radio programs are held exclusively in Esahie. It is important to stress the fact all consultants were speakers of the Wiawso dialect.

### **1.6.2.1 Interviews**

Another method used in the data collection which was the interview technique which in this context may be construed as staged event of asking general and thematic questions which yield

some responses and narratives. Through both (structured and unstructured) interviews, consultants were asked questions about different topics. For instance, a consultant could be asked to describe the different methods of hunting or one particular method of hunting or to talk about the process of cultivating a cocoa farm, etc. Consultants could also choose to talk about a topic of their own. Topics discussed in the contexts of this method included but were not limited to the following:

- Cocoa cultivation
- Cocoa harvesting and preservation
- Preparation of some local dishes
- Hunting
- Palm wine tapping
- *Alueluo* festival<sup>12</sup> (i.e. a reduplicated form of the word *boluo* ‘yam’)
- Puberty rites (traditionally called *manzaa-hyele* ‘puberty rites’ (this is a synthetic compound)).
- Traditional marriage ceremonies.

Several interview sessions were held in towns including Sefwi-Camp, Anhwiam, Boako, Asafo, Asawinso, Juabeso, and Wiawso. The whole question-and-answer turn-taking process was audio reordered using my personal (Samsung A3) phone.

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<sup>12</sup> This is the traditional yam festival celebrated by the Sehwi people to commemorate the beginning of the farming season.

### 1.6.3 Research tools

#### 1.6.3.1 Wordlists

The [\*SIL comparative African Wordlist\*](#) (SILCAWL) compiled by Snider and Roberts (2006) was the main tool used in the various elicitation sessions organized. This wordlist which contains 1700 words constitutes (one of) the largest African wordlists and has so far proven very useful for comparative studies on African languages. The items in this wordlist appear with both English and French glosses and are arranged semantically under twelve main themes which, in turn, are subdivided into second and third-degree themes. In general, the words in the list are structured and ordered so that we move from items relating to human domains to items relating to non-human domains, and from more concrete items to more abstract items.

The twelve main themes are the following:

- Man's physical being
- Man's nonphysical being
- Persons
- Personal interaction
- Human civilization
- Animals
- Plants
- Environment
- Events and actions
- Quality
- Quantity
- Grammatical items

This wordlist was administered to the three group of participants in a bid to elicit Esahie equivalents of these words. Approximately 1600 words were collected through the [\*SILCAWL\*](#) (see [appendix](#)).

### 1.6.3.2 Listening-and-Speaking Exercises

Listening and speaking exercises were organized in six different schools. They included basic schools such as NAKAMS (located at Wiawso)<sup>13</sup>, Ahokwaah RC (located at Sefwi-Ahokwaah), Wiawso RC (located at Wiawso) and Juabeso LA (located at Juabeso). They also included Senior High Schools (SHS) such as Sefwi-Wiawso SHS (located at Anhwiam) and Asawinso SHS (located at Asawinso). Permission was sought to engage students and teachers of these schools in listening-and-speaking exercises involving sharing of folk stories, proverbs and riddles. Esahie speaking teachers and students took turns to tell stories, proverbs and riddles in Esahie. On some occasions, some of the language consultants were taken along to be part of storytelling exercises, especially where the teachers could not speak Esahie.

## 1.7 Structural organization of thesis

This thesis is divided into six chapters. The remainder of the thesis is organized as follows: in [Chapter 2](#), I examine the nominal inflectional in Esahie. The first part of the chapter deals with the declensional system of Esahie, while the second part deals with syncretism.

[Chapter 3](#) examines the word formation phenomenon of nominalization. It begins with an overview of the subject of nominalization and how it was discussed in the early Generative accounts ([section 3.2](#)), and proceeds to discuss two types of nominalization that obtain in Esahie - *clausal* vs. *lexical* nominalizations ([section 3.3](#)). The form and function of action nominalization, as a case of lexical nominalization, is discussed extensively and argued to be productive in the morphological system of Esahie.

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<sup>13</sup> The interested reader may follow the link: <https://www.dropbox.com/s/1cvy2bm4e01t2zk/DSCN0688.AVI?dl=0> or <https://www.dropbox.com/s/fjenff5176xctnl/DSCN0690.AVI?dl=0> to watch videos of some of the exercises conducted in this school.

[Chapter 4](#) looks at the word formation phenomenon of compounding. The chapter begins with a review of some of the core issues in the study of compounding and proceeds to discuss various types of compounds that are attested in Esahie. Ultimately, we examine the mutual interplay between compounding and nominalization in Esahie and other Kwa languages.

[Chapter 5](#) offers theoretical analyses and insights of the Esahie data discussed in the preceding chapters. It provides an overview of the current theories of morphology, and shows, based on the Esahie data, why the ABSTRACTIONIST view of morphology is to be favored over the CONSTRUCTIVIST view. In section ([5.2.4](#)), we lay out the foundational tenets of Construction Morphology, as an ABSTRACTIVE model, and apply this model to all the morphological phenomena in Esahie discussed in this thesis.

[Chapter 6](#) offers a conclusion of the thesis, highlights some of the limitations of this study, and makes recommendations for future work on Esahie morphology.

## CHAPTER TWO

### NOMINAL INFLECTION IN ESAHIE

#### 2.1 Introduction

In this chapter we basically discuss inflection in the nominal domain of Esahie. This chapter is split into two parts. The first part, which partially overlaps with Broohm (2017), deals with *noun class system* (NCS) and *agreement* in Esahie (section 2.3), where we argue that, though the noun class system of Esahie *per se* is morpho-syntactically vestigial, hence differing from other African languages (e.g. most Bantoid languages where noun classes can be likened to gender), number, as a syntactic feature, is active and accordingly triggers agreement. This makes the class system in Esahie a *number-based* one. We also show that other morpho-syntactic features such as *person*, *animacy*, and *case* all enter the Esahie agreement system in various contexts. On morpho-syntactic grounds, six distinctive noun classes are established for Esahie. We also provide an account of how morpho-phonological information influences the noun classes of Esahie. Morpho-phonological information is relevant for understanding the choice of one number affix over the other in Esahie. As we shall see, this is consistent with what has been argued for Akan (cf. Bodomo and Marfo 2006). The present work presents yet another evidence in support of the view that unlike the Ghana-Togo-Mountain languages, which have been attested to have a functional class system (cf. Ameka and Dakubu 2008, Aboh and Essegbey 2010, and Güldemann and Fiedler 2018), the Central-Tano languages, to which Esahie belongs, have a fairly decayed and less-conservative system. Comparing Esahie to Akan, however, the data discussed in this work seems to suggest, *prima facie*, that Esahie has suffered relatively stronger deal of morpho-syntactic decay in the nominal inflectional system.

The second part of this chapter (section [2.6](#)), which also partially overlaps with Broohm and Rabanus (2018), is an extension of our investigation into the inflectional system of the Esahie nominal domain, where we probe further into the paucity of inflection marking in the nominal domain of Esahie by considering the phenomenon of *syncretism*. Ultimately, we demonstrate that syncretism is pervasive in the (pro-)nominal system of Esahie.

In order to set the stage for the discussions that follow in this chapter (as well as [Chapter 3](#)), we begin our discussion with the age-old debate on the distinction between inflection and word formation in section ([2.2](#)). The rest of the chapter is organized as follows: we present a general overview of the concepts of Declension classes vs. Gender (section [2.3](#)), and proceed to look at noun classification systems among African languages (section [2.3.1](#)), juxtaposing the Bantu and Ghana-Togo-Mountain (G-T-M) languages, on one hand, which have been argued to show vibrant systems, against the other Kwa languages, such as Akan, which show residual systems (section [2.3.1.1](#)). We then proceed to look at the Esahie NCS (section [2.4](#)), where nouns are grouped into classes based on similarity in number affixation (section [2.4.1](#)). We then introduce the notion of *agreement* (section [2.4.2](#)), spell out what constitutes canonical agreement (Corbett 2006) and proceed to compare and contrast two types of agreement in Esahie with respect to canonicity: *DP-internal* agreement and *anaphora* agreement (section [2.4.2.2](#)). The relationship between noun classes and (semantically-motivated) affixal selection in Kwa is interrogated in section ([2.4.3](#)). A summary of the NCS section is provided in section ([2.5](#)). Section ([2.6](#)) is dedicated to the subject of syncretism as it obtains in the nominal domain of Esahie. A conclusion of the chapter is offered in section ([2.7](#)).



## 2.2 Inflection versus Word Formation

One of the classical puzzles in morphological theory which has been fiercely debated involves the distinction between inflection and word formation. While some scholars posit a clear-cut distinction between inflection and word formation (cf. Perlmutter 1988; Anderson 1982; 1992), others contend that it is impossible to draw a clean and clear-cut distinction between the two, arguing that they are better conceptualized as a continuum (Stephany 1982; Bybee 1985; Corbin 1987; Plank 1994, Bauer 2004, Stump 2001; 2005).

In ferreting out the dichotomy between inflection and word formation, several properties have been proposed in the literature as constituting practical criteria relevant for this distinction (cf. Plank 1994; Booij 2000; Naumann and Vogel (2000); Bauer 2004, Stump 2001; 2005; Bauer et al. 2013, Varvara 2017).

1. The first difference is one of function. Word formation, as the name suggests, results in the creation of new lexemes, whereas inflection creates word forms from known lexemes, indicating their role in the sentence. The Esahie verb *nia* ‘look’ can be inflected for tense to yield a word form such as *niale* ‘looked’ and can simultaneously serve as the basis of the derivation of a new lexeme *niale* ‘act of looking’, a nominal.
2. In the structure of a given word, inflectional markers are peripheral to word-formation (derivational) markers. Derivational markers attach closer to the root than inflectional ones. This feature has been argued to constitute a linguistic universal (cf. Greenberg 1963). In the English deverbal nominalization *establishments*, the nominalizing affix {-ment} precedes the plural suffix {-s}. This suggests that in defining a word’s morphology, derivational operations apply before inflectional operations.

3. In several respects, inflection is more regular than word formation:
  - a. Inflectional operations tend to be semantically regular, i.e. predictable and compositional, but word formation tends to acquire some degree of meaning autonomy (or idiosyncrasy) from the base and from the general rule it instantiates, hence they are typically less regular in their semantic effect. According to Bauer (2004: 9), this explains why it is difficult to predict that the derived nominal *lover* would mean a person who has a sexual (rather than a purely emotional) relationship with another, although we can predict the meaning we find in *music-lover*. This is partly due to the fact that derived words are susceptible to lexicalization (Bauer 2004).
  - b. Inflectional morphology is more productive than word formation since it applies without exceptions to all relevant words. This is also partly linked to the fact that, unlike word formation processes, inflectional morphology is typically not susceptible to lexicalization or semantic opacity.
  - c. Inflection is formally more regular than word formation, since it does not create different allomorphs for the same morpheme.
  
4. Inflection is usually organized in paradigms, i.e. “sets of contrasting forms, none of which is semantically or functionally presupposed by the others” (Laca, 2001: 1215), while word formation usually does not. There are, however, instances of word formation processes which appear to be organized in paradigms, as appears to be the case of eventive nominalizations derived from the English affixes *-ment*, *-ation*, *-ing*, *-age*, etc. Indeed, Melloni (2007) argues that like many Indo-European languages, Italian has a single paradigmatic class of derivational affixes for the

expression of eventive and referential (multiple) meanings. As we shall see, Esahie derivational affixes can also be said to be in a paradigmatic relation.

5. Unlike inflectional processes, word formation processes such as compounding can be recursive, since a compound can be basis for forming new compounds. For instance, the compound *bantamweight-boxer*, contains another compound *bantamweight*.
6. Inflection is the part of morphology that is relevant to syntax, while word formation is not syntactically determined. As Stump (2001: 55) contends, “a particular syntactic context may necessitate the choice of a particular inflected form, but no syntactic context ever necessitates the choice of a form arising as the effect of a particular word-formation operation.” Interestingly, however, derivation (as type of word formation) may be also relevant for syntax to the extent that it is often transpositional and may determine or affect the argument realization of the derived form.
7. Derivation (as a word formation process) is transpositional since it may result in a change in the syntactic category of the derived form, while inflection typically does not. This claim is problematic in two respects: first, it does not account for cases of transpositional inflection, and second, it ignores cases of non-transpositional derivation.

8. Finally, inflection is obligatory while derivation is generally not. In Esahie, the word for rabbit, *e-bote*, for instance, is obligatorily number-marked via the singular prefix *e-*.

As the foregoing suggests, no single bundle of features or criteria suffice to define a morphological process as pertaining to inflection or word formation. However, following Varvara (2017), I propose that (ir-)regularity (in meaning, form and use) is probably the most suitable feature in distinguishing inflection from word formation.

From the numerous counterexamples and justifiable objections, inflection and word formation are better conceptualized as belonging to a continuum rather than as discrete categories, as has been proposed by some authors in the literature (Bybee 1985; Corbin 1987; Dressler 1989; Plank 1994; Luraghi 1994; Stump 2001; 2005; Varvara 2017). As we shall see, some of the instances of morphological phenomena and operators in Esahie discussed in this study are characterized by this quagmire of indeterminacy, conflation or mixed state. Since such processes or operators share both inflectional and derivational properties, they may be considered as occupying an intermediate position. To give a concrete example, the operators  $\{-nie\}$  as in *asũãnie* ‘student/disciple’ and  $\{-fʋε\}$  as in *asũãfʋε* ‘students/disciples’ derived from the verb *sũã* ‘learn’, for instance, are nominalizers, yet they inherently bear number inflection. The operator  $\{-nie\}$  is usually singular while  $\{-fʋε\}$  is usually plural in meaning (see section [3.3.2.1](#) for further elucidation on this data).

### **2.2.1 The inflection-word formation continuum**

As has been pointed out, the distinction between inflection and word formation is better understood when we assume that they form part of continuum rather constituting distinct categories, especially when we consider the existence of transpositional inflectional markers

(cf. Haspelmath 1996; Bauer 2004). As such, transpositional inflectional markers such as the adverbial suffix *-ly* in *fairly*<sup>14</sup> or the plural suffix *-s* in *basics* are closer in affinity to word formation than non-transpositional inflectional markers. Once we assume that the inflection-word formation distinction can be represented in a continuum, transpositional inflectional markers will occupy an intermediate position. The various defining properties discussed earlier (in section 2.2) can be captured in the figure below, where inflection is seen to be more productive, more semantically transparent, more syntactically relevant; and word formation as less productive, semantically more arbitrary and opaque, syntactically less relevant.

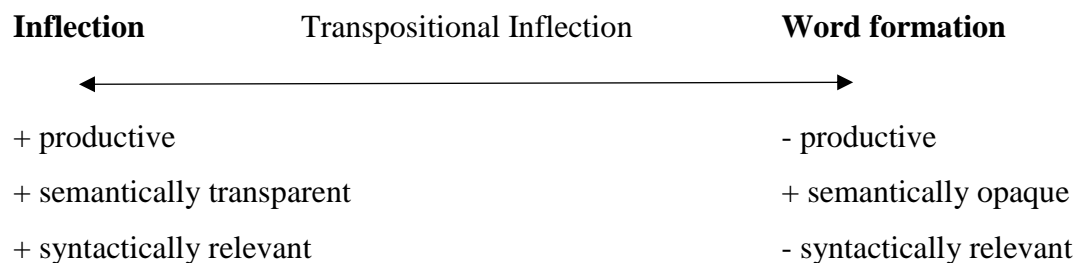


Figure 3: Inflection-Word Formation Cline (cf. Varvara 2017: 10)

As Haspelmath (1996) observes, for words derived via inflectional operators, the internal syntax of the base tends to be more preserved in the derived word, while those derived via derivational operators, on the contrary, tend to alter the internal syntax of the base and to inherit the internal syntax of the new word-class. This observation is crucial especially when we discuss nominalizations in Esahie in [Chapter 3](#). We show that deverbal nominalizations show an internal syntax which is different from the internal syntax of the base verb (or VP).

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<sup>14</sup> According to Haspelmath (1996) the suffix *-ly* is inflectional in the sense that it is regular, general and productive, but nonetheless transpositional.

**PART ONE**  
**NOUN CLASSES IN ESAHIE**

**2.3 Declension classes vs. Gender**

In this section, we deal with the distinction between notions of (grammatical) *gender* and *noun classes*. Grammatical gender typically characterizes Romance languages. Romance languages are generally noted to partition nouns into two grammatical genders, masculine and feminine. Most nouns bear a suffixal word-marker whose shape correlates fairly consistently with the gender of the noun, as in (13). In Spanish, for instance, a plural suffix may even follow the gender marker, as in (14). Nouns denoting humans are distributed among the two genders on the basis of the sex of their referents, as in (15).

**Spanish**

- |      |    |                |    |                 |
|------|----|----------------|----|-----------------|
| (13) | a. | <i>cas-a</i>   | b. | <i>libr-o</i>   |
|      |    | house-FEM      |    | book-MASC       |
|      |    | ‘house’        |    | ‘book’          |
| (14) | a. | <i>cas-a-s</i> | b. | <i>libr-o-s</i> |
|      |    | house-FEM-PL   |    | book-MASC-PL    |
|      |    | ‘houses’       |    | ‘books’         |
| (15) | a. | <i>chic-a</i>  | b. | <i>hij-o</i>    |
|      |    | child-FEM      |    | offspring-MASC  |
|      |    | ‘girl’         |    | ‘son’           |
- (Carstens 2008: 133)

As a grammatical feature, gender participates in various agreement relations within and outside the DP. Within the DP, for instance, gender agreement is realized with most determiners,

adjectives and quantifiers (as in (16a)). Beyond the DP, there is gender agreement between subjects and adjectival predicates (as in (16b)) and, in unaccusative and passive constructions, with the past participle (when present, as in (16c)); object agreement is realized only when the object is a clitic pronoun that appears on the left of a past participle (as in (16e) contrary to (16d)):

**Italian**

- (16) a. *Ho rotto molt-e brocch-e ross-e*  
 have-PRES.1SG broken-MASC.SG many-FEM.PL jugs-FEM.PL red-FEM.PL  
 ‘I broke many red jugs’
- b. *Quest-e brocch-e sono ross-e*  
 these-FEM.PL jugs-FEM.PL are-pres.3PL red-FEM.PL  
 ‘These jugs are red’
- c. *Le brocch-e sono cadut-e*  
 the-FEM.PL jugs-FEM.PL are-PRES.3PL fallen-FEM.PL  
 ‘The jugs have fallen down’
- d. *Ho comprat-o le brocch-e*  
 have-PRES.1SG bought-MASC.SG the-F.PL jugs-F.PL  
 ‘I bought the jugs’
- e. *(A proposito delle brocche) le ho comprat-e*  
 (as for the jugs) them-FEM.PL have-PRES.1SG bought-FEM.PL  
 ‘(As for the jugs) I bought them’

Furthermore, Italian nouns are also organized in three major declension classes in addition to a series of minor ones, a feature which has been argued to be ‘a legacy of the richer system of Latin’ (cf. Crisma et al. 2011: 271). The three main declension classes are as follows:

- (17) a. *-o/-i*: first declension class, which comprises mostly masculine nouns – eg. *tett-o* MASC.SG, *tett-i* MASC.PL ‘roof(s)’;
- b. *-a/-e*: the second declension class comprises mostly feminine nouns – eg. *brocc-a* FEM.SG, *brocc-h-e* FEM.PL ‘jug(s)’;
- c. *-e/-i*: the third declension class comprises both masculine and feminine nouns – eg. *pont-e* MASC.SG, *pont-i* MASC.PL ‘bridge(s)’, *bott-e* FEM.SG, *bott-i* FEM.PL ‘barrel(s)’.

(Crisma et al. 2011: 271)

Like nouns, adjectives in Italian are also organized in declension classes, one analogous to the first/second nominal declension class (singular *-o* or *-a*, plural *-i* or *-e* – ex. *ross-o* MASC.SG, *ross-i* MASC.PL, *ross-a* FEM.SG, *ross-e* FEM.PL ‘red’), the other analogous to the third nominal declension class (singular *-e*, plural *-i* – ex. *verd-e* MASC/FEM.SG, *verd-i* MASC/FEM.PL). It is instructive to clarify, however, that within and outside the DP, Noun-Adjective agreement is controlled by gender and not by declension, therefore declension mismatch is very common: *il tett-o/pont-e ross-o/verd-e* ‘the red/green roof/bridge’, *la brocc-a/bott-e ross-a/ verd-e* ‘the red/green jug/barrel’. Declension classes in Italian and other Romance languages do not trigger agreement and formal correspondences, since they are purely morphological markers.

Where a target form displays gender agreement with a noun, it also displays number agreement, but the reverse is not true. This explains why inflected verbs agree in number but not in gender with their subjects:



- (18) a. *Il gatt-o / la gatt-a miagol-a*  
 the-MASC.SG tomcat-MASC.SG the-FEM.SG she-cat-FEM.SG meows-PRES.3SG
- b. *I gatt-i / le gatt-e miagol-ano*  
 the-MASC.PL tomcats-MASC.PL the-FEM.PL she-cats-FEM.PL meow-PRES.3PL
- (Crisma et al. 2011: 272)

This characterization is crucial, since it provides strong empirical evidence that in Italian (and in Romance in general), number is recognized as a distinct feature from gender. As we shall see later (in section [2.3.1](#)), evidence for the existence of this distinction does not exist for Bantu. Grammatical gender is unpredictable and uninterpretable with inanimate nouns, while it tends to match natural gender with animate nouns in Romance languages.

- (19) a. *sedia*-FEM.SG ‘chair’ vs. *sedile*-MASC.SG ‘seat’
- b. *bambina*-FEM.SG ‘girl’ vs. *bambino*-MASC.SG ‘boy’

Noun classes, as a type of declension markers, have also been an area of long-standing interest in African linguistics. The works of Carstens (1991), Osam (1993), Schuh (1995), Ikoru (1996), Creissels (2000), Bodomo and Marfo (2006), Dorvlo (2008), Carstens (2008), Crisma et al. (2011), Bobuafor (2013), Agbetsoamedo (2014), and Fiedler (2016), to mention but a few, help in appreciating how noun classification has been variously discussed among scholars of African linguistics. Heine (1982) observes that two out of every three African languages have a system of noun classification, but not in the same way among languages or groups of languages.

Prototypically speaking, if nouns of a language can be categorized based on a system of concord and/or affixal markings triggered by the nouns, that language may be argued to have

a noun class system. More specifically, a noun class system is found among languages with a (kind of) gender system where selection of markers is determined or controlled by certain inherent features (semantic, conceptual, and/or formal) of lexical noun (head/controller) nouns.

### **2.3.1 Noun Class Systems in African Languages**

Schuh (1995) notes that the term ‘noun class’ with respect to African languages has usually been understood in two senses. In one, it has been used to refer to “a single set of morphological concords which may show up as affixes on noun stems, affixes on modifiers, and pronominal referents to nouns”, while in the other, it refers to “a paired set of morphological concords” (Schuh 1995: 125) where one member of the pair refers to singular and the other member is its plural equivalent. Throughout this work, “noun class” will refer to the latter concept. This way, we will end up with fewer classes, which could be argued to form natural classes.

One of the remarkable features of the Niger-Congo phylum, as pointed out by Williamson and Blench (2000), is its elaborate noun classification system that facilitates number marking through affixation (usually prefixation, and sometimes suffixation). This system usually triggers agreement between the governing noun and other elements in the sentence.

The Niger-Congo phylum presents interesting data with respect to noun classification, in that, whilst some (especially the Bantoid) languages show fully functional systems, others (especially the Kwa languages) show, to a large extent, a vestigial system. We shall first look at the Bantoid languages, and then the G-T-M languages, both of which show active systems, using Kiswahili and Selee as representatives of the two groups, respectively.

Bantoid languages have been described as having the most grammaticalized classification systems, typically with about 15-20 different noun class distinctions. Prefixes, sets of class specific agreement markers and, to some extent, particular semantic content of a

given class distinguish Bantu noun classes (cf. Maho 1999). Kiswahili, for instance, has a conventionally numbered class system, with class prefixes predominantly taking the CV-form. Because Bantu noun classes are typically distinguished by distinct agreement morphology, the Kiswahili noun classes 1 and 3, as well as 9 and 10, have the same class prefix, but a different agreement morphology. The table below gives an overview of the classes of Kiswahili nouns, the kind of concord exhibited in each class, and the semantic features that characterizes each group.

Table 2: **Swahili noun classes** (Crisma et. al 2011: 254)

Class	class prefix	example	Concord	referential concord	possessive concord	'meaning'
1	<i>m-</i>	<i>m-tu</i>	<i>a-/yu-</i>	<i>ye-</i>	<i>wa-</i>	People
2	<i>wa-</i>	<i>wa-tu</i> 'people'	<i>wa-</i>	<i>o-</i>	<i>wa-</i>	
3	<i>m-</i>	<i>m-ti</i> 'tree'	<i>u-</i>	<i>o-</i>	<i>wa-</i>	trees, plants
4	<i>mi-</i>	<i>mi-ti</i> 'trees'	<i>i-</i>	<i>yo-</i>	<i>ya-</i>	
5	<i>ji-/∅</i>	<i>ji-cho</i> 'eye'	<i>li-</i>	<i>lo-</i>	<i>la-</i>	round things, liquids, masses, augmentatives
6	<i>ma-</i>	<i>ma-cho</i> 'eyes'	<i>ya-</i>	<i>yo-</i>	<i>ya-</i>	
7	<i>ki-</i>	<i>ki-ti</i> 'chair'	<i>ki-</i>	<i>cho-</i>	<i>cha-</i>	artefacts, tools, manner, diminutives
8	<i>vi-</i>	<i>vi-ti</i> 'chairs'	<i>vi-</i>	<i>vyo-</i>	<i>vya-</i>	
9	<i>n-/∅</i>	<i>n-dege</i>	<i>i-</i>	<i>yo-</i>	<i>ya-</i>	animals, loanwords
10	<i>n-/∅</i>	<i>n-dege</i> 'birds'	<i>zi-</i>	<i>zo-</i>	<i>za-</i>	
11	<i>u-</i>	<i>u-bao</i> 'board'	<i>u-</i>	<i>o-</i>	<i>wa-</i>	long things, abstracts
15	<i>ku-</i>	<i>ku-imba</i> 'to sing'	<i>ku-</i>	<i>ko-</i>	<i>kwa-</i>	Infinitives
16	<i>(pa-)</i>	<i>ma-hali</i> 'place'	<i>pa-</i>	<i>po-</i>	<i>pa-</i>	Locatives
17	<i>(ku-)</i>		<i>ku-</i>	<i>ko-</i>	<i>kwa-</i>	
18	<i>(mu-)</i>		<i>mu-</i>	<i>mo-</i>	<i>mwa-</i>	

From the table, we notice that agreement morphology in many classes differs from the noun class prefix, although, except for class 1, the agreement marker of each class can be related

(morpho-phonologically) to one underlying form. We also see that nouns denoting humans typically show “animate agreement”, i.e. concord and (sometimes) referential and possessive concord markers of class 1/2, irrespective of the class of their noun class prefix. The class 2 noun, *wa-tu* ‘people’, for instance, licenses the selection of the affix [*wa-*] on the noun as a class marker, and as an agreement marker on both verbs and possessive pronouns.

In Kiswahili, and Bantu in general, modifiers and arguments in DP inflect for the gender and number features of the head noun as shown in examples (20) and (21) below.

- (20) a. *ki-kombe*                      *ch-angu*              *ch-eupe*  
           7-cup                              7-my                      7-white  
           ‘my white cup’
- b. *vi-kombe*    *vy-angu*    *vy-eupe*  
           8-cup            8-my            8-white  
           ‘my white cups’

- (21) a. *m-toto*    *hu-yu*    *m-dogo*  
           1-child    1-this    1<sup>15</sup>-small  
           ‘this small child’
- b. *wa-toto*    *ha-wa*    *wa-dogo*  
           2-child    2-this    2-small  
           ‘these small children’

[Carstens 2008: 160]

From the Kiswahili examples above, we observe that in Bantu, noun classes and number participate in various gender agreement relations in the DP. Inside the Kiswahili DP, gender agreement is realized between controller nouns and targets adjectives, (most) determiners and quantifiers. In (20), for instance, both the possessive pronoun [*angu* ‘my’] and the adjective

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<sup>15</sup> The numbers 7, 8, 1 and 2 are declension markers which indicate the noun class that a form belongs to.

[*eupe* ‘white’] select the morphemes [*ch-*] in (21a) and [*vy-*] in (20b), depending on the gender of the controller noun.

Finally, there is the question of whether Bantu noun classes are semantically driven, to which Bantuists share divergent views. Some opine that noun classification is built around a semantic core, and that class assignment is semantically motivated (cf. Moxley 1998; Palmer & Woodman 2000; Hendrikse 2011; Selvik 2001; and Contini-Morava 1997; 2000). Kiswahili nouns of classes 1 and 2 are the best examples that can be used to illustrate this view, as they include almost exclusively nouns referring to humans, although not all such nouns are found in classes 1 and 2. Opposed to this, is the view held by Carstens 2008 *inter alia*, that assumes that noun class assignment is an arbitrary lexical quality, implying that it has to be learned during language acquisition and does not reflect any underlying semantic categorization. This view finds grounds in the fact that within the various classes, there are many exceptions and deviations from the semantic generalizations, even the most robust ones.<sup>16</sup>

Carstens (2008), therefore draws the following parallelisms between Gender in Romance languages and Noun Class in Bantu languages:

- (22) a. Bantu and Romance both have grammatical gender.
- b. Bantu has a greater number of genders than Romance.
- c. Bantu expresses number in gender-particular prefixes, while Romance concatenates markers of gender and number as suffixes.
- d. Animacy or humanness has a gender correlation in Bantu languages; biological sexes

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<sup>16</sup> A reviewer believes that Carstens’ claim for arbitrary class assignment is contentious and depends on one’s view of the place of semantics in the description of the classes, especially since it has been shown in many noun class languages that the so-called exceptions actually derive from the analytic stance rather than from a thorough analysis of the semantic structure of the classes. I believe that, in languages with robust noun class systems, class assignment is, indeed, typically semantically-determined.

have such correlates in the genders of Romance.

### ***2.3.1.1 Noun Classification in Kwa***

On the morpho-syntax of the Kwa DP, Aboh (2010a) contends that most (Kwa) languages have completely lost their noun class system (henceforth NCS) and, as a consequence, make no distinction between singular and plural forms. Interestingly, however, while some (particularly the G-T-M languages such as Sɛlɛɛ) show fully developed systems, other languages (particularly the Central-Tano languages such as Akan), on the contrary show an almost-lost system. It is for this reason that Ameka and Dakubu (2008) rightly observe that there is an interesting split in Kwa as far as noun classes and plural formation are concerned. As they note, although there is usually number agreement in Akan and its Tano relatives (including Esahie), generally, there is no (noun) class agreement.

In this section, we shall deal with the NCS phenomena within the Kwa sub-family (to which Esahie belongs) of the Niger-Congo phylum, so as to show its semblance with the Bantu system, as well as to put the Esahie NCS in its rightful typological perspective. I take a closer look at the NCS within Kwa languages, by first drawing a distinction between those that show a functional system, such as Sɛlɛɛ<sup>17</sup>, and those that exhibit a somewhat inactive system such as Akan and Esahie.

#### ***2.3.1.1.1 Noun Classification in G-T-M***

Contrary to the argument that a majority of Kwa sub-family languages tendentially lack an active NCS, the GTM languages, as we shall see, have a system similar to what we earlier saw in Bantu with data from Swahili. As for Sɛlɛɛ, Agbetsoamedo (2014: 100) proposes eight

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<sup>17</sup> Later in the discussion, we shall look at Tutrugbu, another G-T-M language, comparing its NCS to Esahie.

classes. The table below gives a general overview of the various classes and their respective agreement markers that are used to indicate concord both within and outside the DP.

Table 3: Noun class markers and agreement targets in Sɛlɛ

Noun Class	Prefix	Example	AAM	Obj. Pro	Def.	Dem	Num	Int. Pro
1	<i>o-/ɔ-/∅</i>	<i>o-tii</i> ‘person’	<i>ku-/a-</i>	<i>nwu-/nwɔ-</i>	<i>wɔ-</i>	<i>wɔ-</i>	<i>o-</i>	<i>ɔ-</i>
2	<i>ba-</i>	<i>ba-pɛ</i> ‘plant’	<i>ba-</i>	<i>ma-</i>	<i>ba-</i>	<i>ba-</i>	<i>ba-</i>	<i>ba-</i>
3	<i>ka-</i>	<i>ka-futu</i> ‘stomach’	<i>ka-</i>	<i>kã-</i>	<i>ka-</i>	<i>ka-</i>	<i>ka-</i>	<i>ka-</i>
4	<i>si-/se-/sɛ-</i>	<i>sɛ-lɛɛ</i> ‘santrokofi language’	<i>si-</i>	<i>sĩ-</i>	<i>se-</i>	<i>se-</i>	<i>e-</i>	<i>sɛ-</i>
5	<i>di-/li-/ni-/le-/lɛ-</i>	<i>di-si</i> ‘head’	<i>di-</i>	<i>ni-</i>	<i>le-</i>	<i>le-</i>	<i>ni-</i>	<i>lɛ-</i>
6	<i>n-</i>	<i>n-nɔnyi</i> ‘oil’	<i>n-</i>	<i>mi-</i>	<i>be-</i>	<i>be-</i>	<i>n-</i>	<i>m-</i>
7	<i>ku-ko-/kɔ-</i>	<i>kɔkpaku</i> ‘fishes’	<i>ku-ko-/kɔ-</i>	<i>kũ-</i>	<i>ko-</i>	<i>ko-</i>	<i>ku-</i>	<i>ku-ko-/kɔ-</i>
8	<i>a-</i>	<i>a-fɛɛfɔ</i> ‘air’	<i>a-</i>	<i>nya-</i>	<i>ya-</i>	<i>ya-</i>	<i>a-</i>	<i>a-</i>

Agbetsoamedo notes, among other things, that Sɛlɛ nouns trigger agreement on their syntactically dependent elements within and outside the DP. More specifically, she points out that in Sɛlɛ, determiners, numerals and interrogative pronouns agree with their controller nouns, adding that adjectives do not generally show agreement, but occasionally one of two or three adjectives in a DP may take an agreement marker. While in examples (23) and (24), we observe agreement between the head noun and its modifying determiners marked by *ko-* and

*ba-*, respectively, in example (25), we observe agreement between the head noun and its modifying numerals.

- (23) *ko-leele ko-mle o-bè kanto ma-fuo ɔ-nɔɔ*  
 7-harmattan 7-this 1-time rain LSM.FUT-can 3SG-fall  
 ‘This harmattan season<sup>18</sup>, the rain can (really) fall.’

- (24) *ba-tii ba-mle la-tóò-si o-bè lele*  
 2-person 2-DEM LSM.DP.PRF-gather 1-time more  
*ku ba-sankó ba-wo ku Yesu ɔ-ya Maria*  
 and 2-woman 2-some and Jesus 1-mother Mary  
*ku Yesu ba-suɔtɔ-bi lema*  
 and Jesus 2-man-DIM 3PL.POSS  
 ‘These people were gathering every time with some women and Jesus’ mother Mary and Jesus’ brothers [...].’

- (25) a. *ka-fusu ka-nwii* b. *n-fusu n-nyɔ*  
 3-rat 3-one 6-rat 6-two  
 ‘one rat’ ‘two rats’

Like Bantu noun classes, the class system in Sɛlɛɛ also shows a certain amount of semantic consistency. In the table below, Agbetsomedo (2014) provides a semantic underpinning for Sɛlɛɛ noun classification.

Table 4: **The semantics of Sɛlɛɛ classes** (Agbestsoamedo 2014: 120)

Class	Prefixes	Semantics
1/2	<i>o-/ ɔ-; ba-</i>	Human terms (identity, kinship).
	<i>∅- ; ba-</i>	Mostly Derived Human referents, some animals, Borrowed nouns.
5/8	<i>di-/li-/ni-/le-/lɛ- ; a-</i>	Animal offspring; Body parts, Food and Other things with

<sup>18</sup> Harmattan is a very humid season in West Africa that usually begins in January.



		round/circular, Oval or Concave shape.
7/8	<i>ko-/kɔ-/ku-; a-</i>	Long things with flat surfaces, farm and farm-related concepts
¼	<i>o-/ɔ-; se-/sɛ-/si-</i>	Domain Of some human experience, some plants (edible and non-edible)
3/6	<i>ka- ; n-</i>	Most external body parts, mass nouns, locations/places
3/7	<i>ka-; ko-/kɔ-/ku-</i>	Diminutives; ‘fish’ and ‘ant’
7/6	<i>ko-/kɔ-/ku- ; n-</i>	Limbs: hand and leg
1/8	<i>o-/ɔ- ; a-</i>	Running stone and corn

Notwithstanding the seeming semantic motivation and cultural undertones that correlate with the classes, as shown in [Table 4](#), Agbetsoamedo (2014) takes the position that the motivation for the assignment of a majority of Sɛlɛɛ nouns to their respective classes is generally arbitrary.

As has been suggested for Kiswahili by Schadeberg (2001), the singular-plural pairing of classes of Bantu (by extension in G-T-M languages), can be explained as a lexical derivational relationship involving semantic notions of individuals and groups, while in terms of grammatical category, class/gender is the relevant feature. Gender in this case is a grammatical feature which might have some semantic consistency, but still remains a formal feature primarily.

In sum, below are some preliminary generalizations on the NCS in Bantu (i.e. Kiswahili) and G-T-M (i.e. Sɛlɛɛ, Kwa).

- a. Both Bantu and GTM (Kwa) have a gender-like NCS.
- b. Both Bantu and GTM have a comparatively high number of distinctive classes/genders.

- c. Both Bantu and GTM express NUMBER in gender-particular prefixes.
- d. The agreement system in both languages is fairly active.
- e. In terms of phonologically shape, most class/agreement markers take the CV-form.

Having shown the semblance between the Bantu and G-T-M (Kwa) languages, with both having a functional system, we now proceed to deal with the main focus of this chapter (i.e. NCS in Esahie). In order to set the stage for our discussion, we now shift our attention to the Central-Tano sub-group of the Kwa languages, which have been argued to show a residual or inactive system, using Akan as a starting point, since Esahie is closer to Akan, being an Akanic language and crucially differing from G-T-M as far as noun classes are concerned. The choice of Akan finds justification on grounds that, apart from the fact of Akan showing a vestigial class system (making it similar to Esahie, as we shall see), genetically, Akan is also closely related to Esahie, at least because they both belong to the Central-Tano sub-family. In what follows, we shall take a look at what has been described regarding noun classification in the Akan literature, to take some cues.

#### **2.3.1.1.2 NCS in Akan**

In general, there are two positions on the status of NCS in Akan, and we shall discuss them in what follows.

In the first, it is argued by Osam (1993), and shared by Appah (2003), Aboh (2010a), and Ameka and Dakubu (2008), that, in synchronic Akan, the NCS is not a syntactically active system. In an attempt to account for why other Akanists may conclude that Akan has an active NCS, Osam (1993) considers three factors. They are: Akan's genetic affiliation to what is now known as the G-T-M languages which show active systems; morphological evidence in the form of prefixes borne by both singular and plural nouns; and, morpho-syntactic evidence in

the form of number agreement. To corroborate his stance that the Akan NCS is not a syntactically active system, however, Osam appeals to evidences of morphological decay that is observed in the loss of singular noun prefixes, frozen plural nouns, and the complete loss of nominal prefixes. In the examples below, for instance, we observe that the nouns in their singular are zero-marked, as in (26).

(26)	<b><u>Gloss</u></b>	<b><u>Singular</u></b>	<b><u>Plural</u></b>	
	ant	<i>tetea</i>	<i>n-tetea</i>	
	pig	<i>prako</i>	<i>m-prako</i>	
	name	<i>dzin</i>	<i>e-dzin</i>	(Osam 1993: 95)

Osam, however, adds that nouns that show this behavior tend to be either non-human animate or inanimate nouns, and that human nouns hardly lose their prefixes, implying some sort of restriction. He also points to evidences of morpho-syntactic decay seen in frozen forms of adjectival prefixes and loss of number prefixes borne by adjectives. Regarding frozen plural adjectives, he shows that there is no noun-adjective class agreement in synchronic Akan. He explains more specifically that, when the noun and adjective both are marked for plural, the form of the marker borne by the adjective is not dependent on the form of the marker borne by noun. This lack of agreement is shown below in (27).

(27)		<b><u>Singular</u></b>		<b><u>Plural</u></b>	
	a.	<i>a-tar</i>	<i>tuntum</i>	<i>n-tar</i>	<i>e-tuntum</i>
		SG-dress	black	PL-dress	PL-black
		‘black dress’		‘black dresses’	
	b.	<i>kyen</i>	<i>kakraba</i>	<i>a-kyen</i>	<i>n-kakraba</i>
		drum	small	PL-drum	PL-small
		‘small drum’		‘small drums’	(Osam 1993: 97)

From example (27), we notice that a plural noun can be modified by an adjective that has a different plural prefix from that of the noun. In (27a), for example, the plural noun has a nasal prefix [n-], but the adjective's prefix is a vocalic one [e-]. Similarly, the noun in (27b) has a vocalic prefix [a-] but its modifying adjective has a nasal prefix [n-].

As a point of departure, we reckon that Osam's argument for a lack of agreement in the structures above in (27) based solely on the fact that there is no formal correspondence in the relevant number prefixes is moot, since unlike *gender* markers, *noun class* markers need not be correspondent in form. This means that though the declension markers borne by the nouns and adjectives in (27) are different, there is still an agreement relation. If we think of noun classes in Italian and other Romance languages, for instance, they typically do not trigger agreement and formal correspondences in the markers. As earlier explained, declension markers are purely morphological markers, so that Italian nouns ending in [-a] that make their plural in [-i] do not require that their modifying adjectives take the same formal markers. This explains why it is possible to have *gonn-a verd-e* 'green skirt' where there is agreement in (gender and) number but no formal correspondence, or in the plural *gonn-e verd-i* 'green skirts' where again there is no formal correspondences in the markers.

Still on the issue of morpho-syntactic decay, Osam turns to the loss of number prefixes expected to be borne by adjectives as additional evidence. He shows that apart from the inconsistent concordance relation between the noun and adjective plural prefixes, as shown in example (27) above, not all Akan adjectives take the plural marker. This is exemplified below in (28)

(28)	<b><u>Singular</u></b>	<b><u>Plural</u></b>	
	<i>atar hahar</i> 'light dress'	<i>n-tar</i> (*a-)hahar 'light dresses'	
	<i>dua dudur</i> 'heavy log'	<i>n-dua</i> (*e-)dudur 'heavy logs'	(Osam 1993: 98)

As further evidence of the extent of decay in the Akan NCS, Osam considers singular adjectives. He observes that all adjectives have lost their prefixes in the singular and as a result, there is no agreement between a singular noun and the adjective that modifies it, as shown in (29).

(29)	<b><u>Noun</u></b>	<b><u>Adjective</u></b>	<b><u>Gloss</u></b>	
	<i>o-panyin</i>	(* <i>o-</i> ) <i>tse</i> n	‘tall elderly man’	
	<i>ɔ-dan</i>	(* <i>ɔ-</i> ) <i>ke</i> se	‘big building’	
	<i>o-dwan</i>	(* <i>o-</i> ) <i>ke</i> tewa	‘small sheep’	(Osam 1993: 98)

Finally, Osam appeals to the pervasive loss of verbal concord in Akan as further grounds for his position. He argues that, unlike Bantu where the choice of a noun controls the choice of the agreement marker on the verb, the case of Akan is different. Osam explains that the fact that most dialects of Akan have lost the agreement system leaves Akan with hardly any verbal concord. Despite admitting that the Fante and Bron dialects show traces of a frozen verb agreement, Osam demonstrates that even in Fante, the choice of a noun does not control the choice of the (number) agreement marker on the verb as can be seen in (30).

(30)	a.	<i>a-bowa</i>	<i>no</i>	<i>o-bo-wu</i>	b.	* <i>a-bowa</i>	<i>no</i>	<i>a-bo-wu</i>
		SG-animal	DEF	3SG-FUT-die		SG-animal	DEF	3SG-FUT-die
		‘The animal will die’						(Osam 1993: 99)

Osam explains that one would have expected that since the subject of (30) bears the *a*-prefix, the same *a*-prefix would be selected for the verb to show agreement. However, in (30a), the agreement on the verb is the *o*-prefix. Changing this to the expected *a*-prefix renders (30b) ungrammatical. Here too, contra Osam (1993), similar arguments can be made along the lines of those made for example (27), where we show that agreement markers need not take the same

formal shape.<sup>19</sup> Based on the foregoing, Osam concludes that, though Akan might have once had a syntactically active NCS, synchronically speaking, the system is lost.

In the other view on the NCS in Akan, Bodomo and Marfo (2006) opine that Akan still has a class system. As we shall point out, this position is essentially not opposed to Osam's (1993) stance, since while Osam simply claims that the Akan NCS is syntactically inactive, Bodomo and Marfo (2006) do not have anything to say about this. Bodomo and Marfo (2006) argue that distinctive noun classes based on number affixation can be established for Akan. Accordingly, they group nouns into classes based on the formal similarity of both the singular and plural affixes. They explain that the Akan NCS is based mainly on an interface between the morphological and phonological components of the grammar. More specifically, they show that (tongue root) vowel harmony and assimilation are very crucial phonological phenomena that dictate the choice of a particular number affix.

However, they seem to have concentrated only on the morpho-phonologically relevant aspects, ignoring other aspects one would consider as very critical regarding the morpho-syntax of the Akan NCS. As a result, they are completely silent on whether the Akan NCS is a morpho-syntactically active one. For instance, they fail to look at agreement phenomena within and outside the Akan DP. As Creissels (2013) rightly points out, regarding noun classification in the general Niger-Congo family, it is impossible to isolate morphological elements whose sole function is to express number. It appears that the main reason why Bodomo and Marfo (2006) argue for an active system is because of the syntactic feature of number, which could be considered as merely an abstract feature. Assuming, without admitting, that number were not just a superficial feature as far as noun classification itself is concerned, they still fail to show whether or not number triggers agreement with other elements within and outside the DP.

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<sup>19</sup> Rightly so, a reviewer notes that Osam's argument about the form of the prefix on the verb is not exactly right. This is because, one could argue that the form *o-* is due to vowel harmony, especially since the future marker also has a **+ATR** plus round form which is attributable to the fact that the stem vowel *u* is rounded.

Moreover, the singular-plural pairings put forward in Bodomo and Marfo appear to be arbitrary hence unpredictable, a point they admit. Still on number marking, as Osam (1993) rightly points out, Akan has suffered substantial morphological decay, resulting in the partial loss of (singular) noun prefixes, complete loss of nominal prefixes, and the incidence of frozen plural nouns.

A critical look rather shows that the agreement system of Akan is one that could be fittingly described as not robust and highly restricted. However, as we shall see, it would not be entirely correct to classify Akan as a gender-less (i.e. no agreement) language. The two positions on the status of the Akan NCS, therefore, cannot be seen as contrasting as a result of the fact that different methodological and analytical approaches are adopted in both, one being purely morpho-syntactic in scope, and the other being purely morpho-phonological. While Osam (1993) focuses on showing that NCS in synchronic Akan is a morpho-syntactically decayed one, Bodomo and Marfo (2006), focus on how morpho-phonological information feed into selection of one number affix over the other. For Osam (1993), NCS as obtains in Bantu (i.e. syntactically active and triggering concord) does not exist in Akanic languages, so that noun classes are inactive in Akanic and other Kwa languages. For Bodomo and Marfo (2006), this not necessarily the case, since they do not tackle agreement, but offer a complementary analysis of noun forms. The point of agreement maintained by both, however, is that, the Akan NCS is a number-based one.

We will now proceed to look at the Esahie NCS itself ([section 2.4](#)).

## **2.4 Noun Classes in Esahie**

Drawing inspiration from what has been argued for Akan by Osam (1993) and Bodomo and Marfo (2006), we posit six (6) distinctive nominal declension classes for Esahie. In doing this, we primarily put nouns into classes based on the morphological similarity between the singular

and plural affixes. This criterion for classification implies that nouns belong to one and only one class, whether in the singular or plural. The singular-plural pairing in the classes can be explained as a grammatical-inflectional relationship involving the grammatical category of NUMBER. An overview of Esahie nominal morphology shows that the most appropriate criterion that can be used to set up noun classes is number – i.e. singular and plural – categorization, which is marked in Esahie via affixation. This defining criterion works for other Kwa languages such as Akan (Osam 1993, Bodomu and Marfo 2006), Sɛlɛɛ (Agbetsoamedo 2014), Logba (Dorvlo 2007), and Tafi (Bobuafor 2009) and Tutrugbu (Essegbey 2009). Furthermore, as we shall see, agreement markers distinct from affixes indicating number are hardly present in the language. We are thus left with only the affixal markings on the nouns and, as shown in [Table 5](#) below, the function of the affixes as class markers is underscored by the distinctive noun classes based on these (number) affixes.

[Table 5](#) presents the various noun classes, noun class markers, as well as their productivity. In the classification presented in the table, as earlier hinted, we will refrain from treating singular and plural noun classes separately, as is the case with Bantu and the G-T-M traditions, where each unique singular and plural form counts as a separate class. Instead, we will refer to one class as one such pairing, based predominantly on the plural affix, and the singular affix, selected by the various groups of nouns. The motivation for this (plural) number criterion lies in the fact that though the Esahie nouns may vary in terms of the kind of singular marker(s) they select, for the plural, most of these nouns eventually select a common marker(s), suggesting that these nouns form a natural class. For purposes of distinction, however, forms which are *singularia* or *pluralia tantum* nouns are given a separate class of their own.

As we shall see, the largest class of Esahie nouns are zero-marked in their singular. This implies that grouping them according to the singular affixes might be a bit problematic. Another motivation for this criterion is that it reduces the overall number of classes to a smaller



set. In some instances, as we shall see, our groupings will appeal to some semantic motivation. As indicated earlier, morpho-phonological information enhances our understanding of the Esahie number-based classes, which are shown below. Data shown in the table were collected through elicitation from native speakers. In all, a total of 120 nouns were collected, out 100 were chosen for the table for the purposes of our analyses. The table has five columns each spelling out some information about the noun such as its stem, productivity and noun class. Productivity of a class is determined based on two parameters: the number of nouns contained in it<sup>20</sup>, and the presence of neologisms<sup>21</sup>. On these grounds, three levels of productivity are distinguished, namely low, high and very high. In what follows, I provide a description of the classes.

Table 5: Esahie Noun Classes

	Stem	Singular Form	Plural Form	Productivity
<b>Class 1</b>		(V-)	N-	<b>Very High</b>
a. A-/N-	<i>bɔŋgye</i> <i>kɔ</i> <i>tadeɛ</i> <i>nomaa</i> <i>tɛkra</i> <i>kwaadu</i> <i>koa</i> <i>kɔlaa</i> <i>brandeɛ</i> <i>pena</i> <i>fiale</i>	<i>a-bɔŋgye</i> ‘goat’ <i>a-kɔ</i> ‘fowl’ <i>a-tadeɛ</i> ‘dress’ <i>a-nomaa</i> ‘bird’ <i>a-tɛkra</i> ‘feather’ <i>a-kwaadu</i> ‘banana’ <i>a-koa</i> ‘slave/servant’ <i>a-kɔlaa</i> ‘child’ <i>a-brandeɛ</i> ‘young man’ <i>a-pena</i> ‘bat’ <i>a-fialeɛ</i> ‘hide out’	<i>m-mɔŋgye</i> ‘goats’ <i>ŋ-gokɔ</i> ‘fowls’ <i>n-dadeɛ</i> ‘dresses’ <i>n-nomaaa</i> ‘birds’ <i>n-dekra</i> ‘feathers’ <i>ŋ-gwaadu</i> ‘bananas’ <i>ŋ-goa</i> ‘slaves/servants’ <i>ŋ-gɔlaa</i> ‘children’ <i>m-mrandeɛ</i> ‘young men’ <i>m-pena</i> ‘bats’ <i>ŋ-vialeɛ</i> ‘hide outs’	

<sup>20</sup> The average numerical strength of each class is used in setting out these levels. Out of the 100 tokens, any class that has 30 and above tokens are considered as VERY HIGH, any class that contains 15 and above (but below 30) is classified as HIGH, while groups that contains 15 tokens or below are considered as LOW.

<sup>21</sup> Some sources of the neologisms include *student register* and *politics*. The student register is used at Sefwi-Wiawso Senior High School and the Wiawso College of Education.

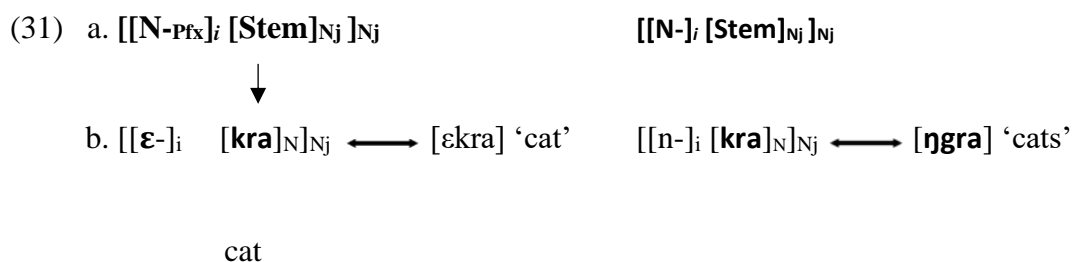
b. E-/N-	<i>kra</i> <i>woo</i> <i>tena</i> <i>bote</i> <i>nwomee</i>	<i>ε-kra</i> ‘cat’ <i>e-woo</i> ‘snake’ <i>ε-tna</i> ‘cloth’ <i>e-bote</i> ‘rabbit’ <i>ε-nwomee</i> ‘ghost’	<i>η-gra</i> ‘cats’ <i>n-woo</i> ‘snakes’ <i>n-dna</i> ‘cloths’ <i>m-mote</i> ‘rabbits’ <i>n-nwomee</i> ‘ghosts’	
c. Ø/N-	<i>pure</i> <i>kendem</i> <i>kyía</i> <i>brasua</i> <i>brenzua</i> <i>boaen</i> <i>wanzane</i> <i>sunzum</i> <i>dadee</i> <i>bakaa</i> <i>boka</i> <i>bowie</i> <i>bowie</i> <i>safoa</i> <i>pete</i> <i>kwakuo</i> <i>braa</i> <i>bεen</i> <i>kanea</i> <i>kuro</i> <i>paen</i> <i>perεgoo</i> <i>taluwa</i> <i>soa</i> <i>soe</i> <i>kyirenɱvua</i>	<i>pure</i> ‘squirrel’ <i>kendem</i> ‘basket’ <i>kyía</i> ‘dog’ <i>brasua</i> ‘female/lady’ <i>brenzua</i> ‘male/guy’ <i>boaen</i> ‘sheep’ <i>wanzane</i> ‘deer’ <i>sunzum</i> ‘spirit’ <i>dadee</i> ‘cutlass’ <i>bakaa</i> ‘tree/stick’ <i>boka</i> ‘mountain’ <i>bowie</i> ‘bone’ <i>bowie</i> ‘thorn’ <i>safoa</i> ‘key’ <i>pete</i> ‘vulture’ <i>kwakuo</i> ‘monkey’ <i>braa</i> ‘wife/woman’ <i>bεen</i> ‘bed’ <i>kanea</i> ‘light’ <i>kuro</i> ‘town’ <i>paen</i> ‘elder’ <i>perεgoo</i> ‘nail’ <i>taluwa</i> ‘lady’ <i>soa</i> ‘insult’ <i>soe</i> ‘ash’ <i>kyirenɱvua</i> ‘egg’	<i>m-bure</i> ‘squirrels’ <i>η-gendem</i> ‘baskets’ <i>ɲ-dziá</i> ‘dogs’ <i>m-mrasua</i> ‘females’ <i>m-mienzua</i> ‘males/guys’ <i>m-moaen</i> ‘sheep’ <i>n-wanzane</i> ‘deer’ <i>n-zuzum</i> ‘spirits’ <i>n-nadee</i> ‘cutlasses’ <i>m-makaa</i> ‘trees/sticks’ <i>m-moka</i> ‘mountains’ <i>m-mowie</i> ‘bones’ <i>m-mowie</i> ‘thorns’ <i>n-zafoa</i> ‘keys’ <i>m-pete</i> ‘vultures’ <i>n-gwakuo</i> ‘monkeys’ <i>m-mra</i> ‘wives’ <i>m-mεenn</i> ‘beds’ <i>η-ganea</i> ‘lights’ <i>η-guro</i> ‘towns’ <i>m-baen</i> ‘elders’ <i>m-berεgoo</i> ‘nails’ <i>n-daluwa</i> ‘ladies’ <i>n-zoa</i> ‘insults’ <i>n-soe</i> ‘ashes’ <i>n-dziirenɱvua</i> ‘eggs’	
<b>Class 2</b>		(V-)	A-	
a. V-/A-	<i>len</i> <i>mama</i>	<i>ε-len</i> ‘canoe’ <i>ɔ-mama</i> ‘prominent person’	<i>a-len</i> ‘canoes’ <i>a-mama</i> ‘prominent person’	<b>Low</b>
b. Ø-/A-	<i>koε</i> <i>sɔfo</i>	<i>koε</i> ‘war’ <i>sɔfo</i> ‘pastor’	<i>a-hoε</i> ‘wars’ <i>a-sɔfo</i> ‘pastors’	
		(V)- <i>niε</i>	A- <i>fɔε</i>	
c. A-/A Identification al/ Occupational	<i>wie</i> <i>sande</i>  <i>safo</i>  <i>ware</i>  <i>gudi</i>	<i>a-wie-niε</i> ‘thief’ <i>a-sande-niε</i> ‘an ashanti’  <i>a-safo-niε</i> ‘one from Asafo’  <i>a-ware-niε</i> ‘married person’  <i>a-gudi-niε</i> ‘athlete/player’	<i>a-wie-fɔε</i> ‘thieves’ <i>a-sande-fɔε</i> ‘ashanti people’  <i>a-safo-fɔε</i> ‘Asafo people’  <i>a-ware-fɔε</i> ‘married people’	

	<i>mapɔ</i> <i>sosi</i> <i>jusi</i>  <i>fiase</i>	<i>a-mapɔ-niɛ</i> ‘politician’ <i>a-sosi-niɛ</i> ‘a deaf person’ <i>a-jusi-niɛ</i> ‘a blind person’ <i>a-fiase-niɛ</i> ‘prisoner’	<i>a-gɔdɪ-fɔɛ</i> ‘athletes/players’ <i>a-mapɔ-fɔɛ</i> ‘politicians’ <i>a-sosi-fɔɛ</i> ‘deaf persons’ <i>a-jusi-fɔɛ</i> ‘blind persons’ <i>a-fiase-fɔɛ</i> ‘prisoners’	
d. $\emptyset$ -/A- Identification al/ Occupational	<i>kua</i> <i>nɛɛsɪ</i> <i>de</i>  <i>polisi</i>  <i>kuna</i> <i>dwadi</i> <i>sigya</i>	<i>kua-niɛ</i> ‘farmer’ <i>nɛɛsɪ-niɛ</i> ‘nurse’ <i>de-niɛ</i> ‘wealthy person’  <i>polisi-niɛ</i> ‘police officer’  <i>kuna-niɛ</i> ‘widow’ <i>dwadi-niɛ</i> ‘trader’ <i>sigya-niɛ</i> ‘bachelor/spinster’	<i>a-kua-fɔɛ</i> ‘farmers’ <i>a-nɛɛsɪ-fɔɛ</i> ‘nurses’ <i>a-de-fɔɛ</i> ‘wealthy people’ <i>a-polisi-fɔɛ</i> ‘police officers’ <i>a-kuna-fɔɛ</i> ‘widows’ <i>a-dwadi-fɔɛ</i> ‘traders’ <i>a-sigya-fɔɛ</i> ‘bachelors/spinsters’	
<b>Class 3</b>				
<b>+kinship</b>		<b>V-/<math>\emptyset</math>-</b>	<b>(<math>\emptyset</math>-) _ -mɔ</b>	<b>Low</b>
a. V-/A-mɔ	<i>liemaa</i>	<i>a-liemaa</i> ‘sibling’	<i>a-liemaa-mɔ</i> ‘siblings’	
b. $\emptyset$ -/ $\emptyset$ _ -mɔ	<i>sewaa</i> <i>wɔfa</i> <i>nana</i> <i>baba</i> <i>ye</i> <i>niɛ</i> <i>sia</i>	<i>sewaa</i> ‘aunty’ <i>wɔfa</i> ‘uncle’ <i>nana</i> ‘grand..’ <i>baba</i> ‘father’ <i>ye</i> ‘wife’ <i>niɛ</i> ‘mother’ <i>sia</i> ‘in-laws’	<i>sewaa-mɔ</i> ‘aunties’ <i>wɔfa-mɔ</i> ‘uncles’ <i>nana-mɔ</i> ‘grand....s’ <i>baba-mɔ</i> ‘fathers’ <i>ye-mɔ</i> ‘wives’ <i>niɛ-mɔ</i> ‘mothers’ <i>sia-mɔ</i> ‘inlaws’	
<b>Class 4</b>		<b>(V)- _ -niɛ/<math>\emptyset</math></b>	<b>N- _ fɔɛ</b>	<b>Low</b>
<b>-niɛ/N-</b>	<i>Kremo</i>	<i>kremo-niɛ</i> ‘Muslim’	<i>η-gramo-fɔɛ</i> ‘Muslims’	
<b>-<math>\emptyset</math>/N-</b>	<i>saman</i>	<i>saman</i> ‘ancestor’	<i>n-zaman-vɔɛ</i> ‘ancestors’	
<b>Class 5</b>				<b>Low</b>
<b>Singularia Tantum</b>		<b>ɛ- _ -lɛ</b>		
a. <b>ɛ-/-</b> No plural	<i>sɛn</i> <i>hɔm</i>	<i>ɛ-sɛn</i> ‘funeral’ <i>ɛ-hɔm</i> ‘famine’		
b. <b>ɛ- _ -rɛ/-</b> <b>(deverbal)</b> No plural	<i>wɔnzɛ</i> <i>kuro</i> <i>dwudwo</i> <i>siri</i>	<i>ɛ-wɔnzɛ-rɛ</i> ‘pregnancy’ <i>ɛ-huro-lɛ</i> ‘love’ <i>ɛ-dwudwo-lɛ</i> ‘speech’ <i>ɛ-siri-lɛ</i> ‘the act of laughing’		
c. <b><math>\emptyset</math>_ -nɛ/-</b> (derived Compound ds)	<i>nzaa,</i> ‘alcohol’ – <i>nɔ̃</i> ‘to drink’	<i>nzaa-nɔ̃-nɛ</i> ‘alcoholism’  <i>sona-hũ-nɛ</i> ‘the act of murdering’		

	<i>sona</i> 'person', - <i>kũ</i> 'kill'			
<b>Class 6:</b> Mass				<b>Low</b>
			<b>Pluralia Tantum</b>	
a. /N-	<i>frama</i> <i>futro</i> <i>kyin</i> <i>gua</i>		<i>ŋ-vrama</i> 'air' <i>ŋ-vutro</i> 'dust' <i>n-gyin</i> 'salt' <i>ŋ-gua</i> 'life'	
		<b>Singularia tantum</b>		
b. /V-	<i>ya</i> <i>těēn</i> <i>mo</i>	<i>e-ya</i> 'sun' <i>e-sraen</i> 'moon' <i>atěēn</i> 'roads' <i>ε-mo</i> 'rice'		
c. /∅-	<i>siŋ</i> <i>troo</i> <i>hãĩ</i> <i>wŭε</i>	<i>siŋ</i> 'fire' <i>troo</i> 'soup' <i>hãĩ</i> 'light' <i>wŭε</i> 'honey'		

**CLASS 1.a & 1.b: V-/N-**

This class is common in Esahie. Most nouns in this class are predominantly animate. Apart from a few exceptions, nouns in this class constitute a coherent semantic class. Plural formation in this class is easy, even for the learner, because the pattern followed is very regular. Indeed, neologisms are integrated through the pattern observed in this class.<sup>22</sup> In the singular, nouns in this class take a vowel prefix but take a (homorganic) nasal prefix in the plural. Nouns in [Class 1](#) are instantiations of the morphological schema below:



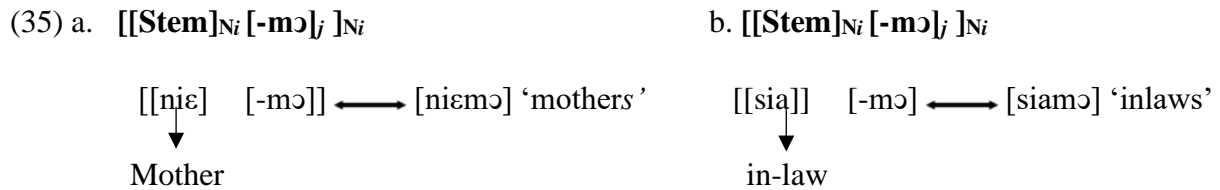
**Subclass 1.c: ∅/N-**

<sup>22</sup> For instance, *gumu* 'eating together by students in the hostel' takes the marker /n-/ in the plural to form "ŋgumu".





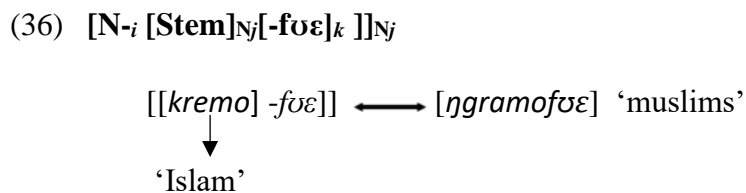
optional singular prefix marking in the singular. Semantically, this class exclusively involves kinship nouns. The plural nouns in the class always select the suffix [-mɔ]<sup>23</sup>. They typically follow the schema in (35):



The suffix *-mɔ* is a very good formal class marker since it points out the fact that, in Niger Congo languages, kinship terms belong to a subclass of the human class. It is significant that in some of the GTM languages e.g. Likpe there is a plural suffix marker *-mɛ* for a subset of kinship terms. Later in section (2.4.3), we will discuss the selectional properties of *-mɔ*.

**CLASS 4: (-niɛ)/N-\_\_\_-fʊɛ**

Members of this class are similar to the nominal forms in [Class 3](#), except for the optionality of the singular suffix *-niɛ*, as in *saman* ‘ancestor’, and the obligatoriness of the homorganic nasal prefix [N-], as in *nzamanvoe* ‘ancestors’, in plural formation in this class. The schema below captures pluralization in this class:



<sup>23</sup> The suffix *-mɔ* could be argued to be a proto-Tano suffix, comparable to the Nzema *-mɔ* as in *zè-mɔ* ‘fathers’ or *hù-mɔ* ‘husbands’, or the Akan *-nom* as in *nana-nom* ‘chiefs’ or *anua-nom* ‘brothers’.

### CLASS 5: ε- -lε/-

This class of Esahie noun forms do not mark the singular-plural distinction; i.e. it is a class whose members only come in the singular (i.e. *singularia tantum*). Based on the fact that most of the nouns here are derived from a parent verb, and also that the prefix it selects is always used in the singular, this class is conceptually and morpho-syntactically viewed as consisting of only singular forms. For instance, *εhurolε* ‘love’ and *εwonzεlε* ‘pregnancy’ originate from the verbs *kuro* ‘to love/like’ and *wonzε* ‘to impregnate’ respectively. The prefix [ε-] is inflectional (number) marker while the suffix [-lε] is derivational one which is used in this class for the purposes of nominalization.

### CLASS 6: -/N-, A-, Ø-

This class contains one set of *pluralia* and two sets of *singularia tantum* respectively. However, the nouns here are not deverbal, contrasting with some of the noun forms in [Class 5](#). The pluralia tantum, triggering number agreement on the verb and other concord phenomena, are marked with a homorganic nasal, as most plurals in Esahie. The singularia tantum are like mass nouns, mostly triggering singular agreement in the syntactic context. Morphologically, they either take a vowel ([a-] and [e -]) or surface as bare stems (zero affixation).

## **2.4.1 Noun Class System in Esahie**

Having elaborated on the various singular-plural markers that exist in Esahie, as shown in [Table 5](#), we shall now pay attention to other morpho-syntactically relevant issues. More specifically, we shall consider issues bordering on morphological and morpho-syntactic decay in order to evaluate the morpho-syntactic strength of the Esahie NCS in general. Although the noun class system in Esahie itself is syntactically inactive, number, as a syntactic feature, to some extent, triggers agreement.



Preliminarily, we shall test the strength of the Esahie NCS in the light of agreement marking. As we will show below in (37), there are hardly any distinct affixes that show up on nouns, nor morphological sets that mark agreement between nouns and their governing domain. The contrast with Tutrugbu (a GTM language, showing a syntactically active and rich system) is striking and points to the paucity of inflection marking in Esahie.

<u>Esahie</u>			<u>Tutrugbu (G-T-M)</u>				
(37) a.	<i>Baba ne</i>	<i>wɔ awuro</i>	(38) a.	<i>a-nyé-é</i>	<i>á-lé</i>	<i>bɔ-pá</i>	<i>mɛ</i>
	man DEF	be.at home		CM-man-DEF	AGR-be.at	CM-house	inside
	‘The man is at home’			‘The man is at home’			
b.	<i>Menia ne-mɔ</i>	<i>wɔ sua-n</i>	b.	<i>Ba-nɔ</i>	<i>ba-lɛ</i>	<i>bɔ-pa-m</i>	
	People DEF-PL	be.at house-inside		CM-person	AGR-be.at	CM-house-inside	
	‘The people are in the house’			‘The people are in the house’			

(Essegbey 2009: 42)

From the example (37), we notice that the Esahie construction lacks any overt form of class and agreement markers. On the contrary, in the Tutrugbu<sup>24</sup> construction in (38a), the prefix *a-* is used to cross-reference the subject pronoun on the verb when it is singular. Similarly, in example (38b), Tutrugbu uses the prefix *ba-* when it is plural in addition to the class marker, whilst Esahie shows no class nor agreement marker.

In the examples below, we provide further illustrations to highlight the paucity of inflection marking in Esahie.

<u>Esahie</u>			<u>Tutrugbu (GTM)</u>			
(39)	<i>Yamaa he te me-deɔɔ</i>		<i>o-hui</i>	<i>ɔ-lɛ</i>	<i>o-lo-nú</i>	<i>mɔ-yɛ</i>
	rope this be 1SG-POSS		CM-rope	AGR-this	RP-??-be	1SG-POSS

<sup>24</sup> Though Essegbey (2009) argues that *a-* and *ba-* are generalized agreement markers, the case of Esahie cannot be likened to it, because at least, in Tutrugbu these markers are overtly expressed.

'This rope is mine'

'This rope is mine'

- (40) a. *Kuku he te me-deɔɔ*                      b. *ki-tsikpi (é)lɛ ki-li-nú mɛ-yé*  
pot this be 1SG-POSS                      CM-pot AGR-this RP-??-be 1SG-POSS  
'This pot is mine'                              'This pot is mine'

(Essegbey 2009: 48, 50)

In the two Tutrugbu examples above, we observe that the nouns, the demonstratives, and the verbs, bear class markers, agreement markers, and resumptive pronouns, respectively. What distinguishes the Esahie sentences, however, is their conspicuous lack of these class/agreement markings, both inside and outside the DP, in contrast with the case of Tutrugbu.

Returning to my central proposal, though the NCS of Esahie *per se* is a morpho-syntactically vestigial one, number, as a syntactic feature, triggers agreement between nouns and elements (i.e. nominal modifiers). See [section 2.4.2](#) for more on agreement.

#### **2.4.1.1 Morphological Decay**

Languages are known to evolve over time. A common effect of language evolution is grammatical change. Morphology easily lends itself to grammatical change. Some morphological changes constitute a decay in the morphological richness of the language in question. A language may be said to have suffered morphological decay where certain relevant syntactic or phonological features, which were hitherto expressed morphologically, are no longer so expressed. Morphological decay may present itself in a number of ways. For nouns (nominal systems), this may include loss of some (or all) declensional affixes, as well as increase in the incidence of frozen (syncretic) nominal forms.

One notable feature of the Esahie NCS is its morphological decay<sup>25</sup> evidenced by the pervasive loss of noun prefixes in some singular nouns. Recall also that in classes (1c) and (3b) in Table 4, we found a high number of nouns that were zero-marked in the singular. As we mentioned earlier (see section 2.3.1.1.2), the Akan NCS has also suffered some amount of morphological decay (cf. Osam 1993). In example (41), we compare the degree of this kind of morphological decay in some Esahie and Akan singular nouns. We realize that all the Esahie examples are zero-marked while their Akan counterparts are overtly marked.

(41)	<b><u>Gloss</u></b>	<b><u>Esahie</u></b>	<b><u>Akan</u></b>	
	squirrel	<i>pure</i>	<i>o-purow</i>	
	dog	<i>kyía</i>	<i>ɔ-kraman</i>	
	lady	<i>brasua</i>	<i>ɔ-baa</i>	
	sheep	<i>boaen</i>	<i>o-dwan</i>	(Broohm 2017: 112)

Another evidence that points to pervasive morphological decay in the Esahie NCS is the high incidence of frozen noun forms. Again, we shall compare Esahie with Akan in example (42) with respect to this phenomenon.

(42)			<b><u>Esahie</u></b>		<b><u>Akan</u></b>	
	<b><u>Gloss</u></b>	<b><u>Sing.</u></b>	<b><u>Plural</u></b>	<b><u>Sing.</u></b>	<b><u>Plural</u></b>	
	building	<i>sua</i>	<i>sua</i>	<i>ε-dan</i>	<i>a-dan</i>	
	stone	<i>nyɔboε</i>	<i>nyɔboε</i>	<i>e-boɔ</i>	<i>a-boɔ</i>	
	rope	<i>yamaa</i>	<i>yamaa</i>	<i>a-homa</i>	<i>n-homa</i>	
	food	<i>aleε</i>	<i>aleε</i>	<i>a-duane</i>	<i>n-nuane</i>	

---

<sup>25</sup> Although this work does not consider diachronic data (for purposes of unavailability of literature) in the discussion of this phenomenon of decay, a similar (to what Osam 1993 makes for Akan) argument could be made for Esahie once we can establish that this phenomenon of morphological decay also obtains in other (sister) Kwa languages. For instance, inferences could be drawn from Akan, on which Osam (1993) establishes that, diachronically, there used to be a fully functional system.

day	<i>kyĩã</i>	<i>kyĩã</i>	<i>ε-da</i>	<i>n-na</i>
farm	<i>boo</i>	<i>boo</i>	<i>a-fuo</i>	<i>m-fuo</i>
land	<i>aseε</i>	<i>aseε</i>	<i>a-saase</i>	<i>n-saase</i>
leaf	<i>nyaa</i>	<i>nyaa</i>	<i>a-haban</i>	<i>n-haban</i>

(Broohm 2017: 112-113)

We observe that while all the Esahie examples maintain the same form in both singular and plural, the Akan equivalents are marked in both contexts.

#### 2.4.1.2 Morpho-syntactic Decay

The fact that the system in Esahie is a vestigial one is supported also by the morpho-syntactic behavior of nouns and their modifying adjectives. We shall first appeal to evidence from frozen adjectival forms and proceed to look this kind of decay beyond the scope of the DP.

In this section, we consider the form of adjectives when they modify singular and plural nouns. From examples (43) and (44), we notice that the form of the modifying adjectives remain the same irrespective of the form of the head noun. In these examples, there is no noun-adjective agreement.<sup>26</sup>

	<u>Sing.</u>	<u>Plural</u>		<u>Sing.</u>	<u>Plural</u>				
(43)	<i>boaen</i>	<i>bile</i>	<i>m-moaen</i>	<i>bile</i>	(44)	<i>bia</i>	<i>tεε</i>	<i>m-mia</i>	<i>tεε</i>
	sheep	black	PL-sheep	black		chair	faulty	PL-chair	faulty
	‘Black sheep’	‘Black sheep’				‘Faulty chair’	‘Faulty chairs’		

(Broohm 2017: 113)

<sup>26</sup> As we shall see (in section [2.4.2.2.1](#)), there are counter cases where there is N-Adj concord in Esahie.

### 2.4.1.2.1 Loss of Verbal Concord

In this section, we consider the agreement between head nouns and verb, in order to show that the choice of subject does not control the selection or choice of the agreement marker on the verb (see section [2.4.2](#) for more on agreement).

- (45) a.     *a-ko*            *ne*            *∅-ko-wu*  
          SG-fowl         DEF            AGR-FUT-die  
  
          ‘The fowl will die’
- b.     *sua*            *ne*            *∅-ko-bu*  
          building        DEF            AGR-FUT-break  
  
          ‘The building will collapse’
- (Broohm 2017: 114)

Unlike the Akan example in (30) which we saw earlier, where agreement markers in the form of pronominal clitics were used (though not concordial in form) to show agreement between the head noun and verb, in the Esahie examples (45a-b), no such markers are found. In what follows, we pay more attention to the phenomenon of agreement.

### 2.4.2 Agreement in the nominal domain of Esahie

As earlier hinted, Ameka and Dakubu (2008) observe that while there is usually number concord, there is generally no class concord. They argue, for instance, that anaphors and modifiers of the languages within the Tano fraternity never show agreement with a head noun, while Ewe with the rest of Gbe and Ga-Dangme use the bare noun stem in the singular and a generalized suffix or clitic for the plural. In what follows, we briefly examine agreement as it obtains in Esahie. We have argued earlier that the Esahie NCS is number-based one, and that while noun classes in Esahie by themselves are syntactically inactive, number (plural), as a syntactic feature, to some extent triggers agreement, despite the pervasive morpho-syntactic decay.

### 2.4.2.1 On the notion of Agreement

Alternatively referred to as *concord*, agreement has been defined as “some systematic covariance between a semantic or formal property of one element and a formal property of another” (Steele 1978: 610). Essentially, agreement has to do with the (morphological) matching of feature values between two separate elements within a certain syntactic domain. While the element which triggers or determines the agreement has been referred to as the *controller*, the element whose form is determined by the agreement, on the other hand, has been referred to as the *target*, and the syntactic context in which agreement occurs has also been referred to as *domain* (Corbett 2003: 198).

Agreement *features* refer to the specific attribute or property around which agreement revolves, i.e., the morphosyntactic property in which the agreeing elements covary. Case, as an agreement feature, could have several values including ‘nominative’, ‘accusative’, ‘dative’, ‘instrumental’, and so on, depending on the language. Figure 4 provides a summary of the relevant aspects of agreement, as discussed above.

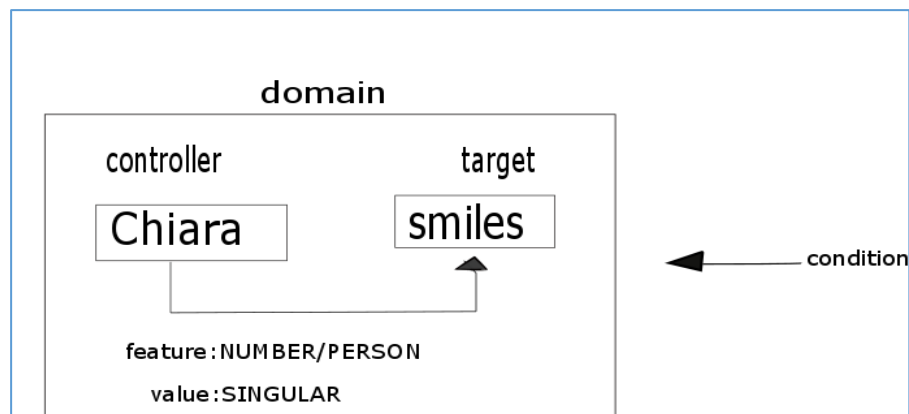


Figure 4: **Agreement model** (adapted from Corbett 2006: 5)

Having introduced some of the relevant aspects of the phenomenon of agreement, we shall now proceed to illustrate it with examples from European languages. In the English example (43), the noun *file* functions as the controller whilst the demonstrative functions as the target.

Similarly, in (44) the predicate *loves* (target) agrees with the subject *John* (controller) with respect to number and person. In the French and Italian examples below, there is *gender/number* agreement between the noun and definite article (in [45]) and *gender* agreement between the noun, indefinite article and modifying adjective (in [46]). The targets of (43-46) are characterized by concatenative morphology, the target in (46), *these*, is not: in (46) number is expressed by vowel and consonant alternations (*this* [ðɪs] SG vs. *these* [ði:z] PL; transcriptions for British English).

- |      |                     |                  |                 |                                     |
|------|---------------------|------------------|-----------------|-------------------------------------|
| (46) | <i>these</i>        | <i>file-s</i>    |                 |                                     |
|      | DEM.PL              | file-PL          |                 | -Number Agreement (English)         |
| (47) | <i>John</i>         | <i>love-s</i>    | <i>candie-s</i> |                                     |
|      | John[SG]            | love-3SG         | candy-PL        | -Number/Person Agreement (English)  |
| (48) | <i>l-a</i>          | <i>table</i>     |                 |                                     |
|      | DEF-FEM             | table.FEM        |                 | -Gender/Number Agreement (French)   |
|      | 'The table.'        |                  |                 |                                     |
| (49) | <i>un-a</i>         | <i>bell-a</i>    | <i>casa</i>     |                                     |
|      | INDF.SG.FEM         | beautiful.SG.FEM | house.SG.FEM    | - Gender/Number Agreement (Italian) |
|      | 'A beautiful house' |                  |                 |                                     |

(Broohm & Rabanus 2018: 104-105)

From the examples given above, we observe that the domain of agreement could be the DP (as in [46], [47], [48]) as well as a higher-order structure (e.g., the clause, as in [47]).

The gamut of syntactic relations that can be signaled via agreement morphology varies cross-linguistically. Since agreement varies within and across language(s), some patterns of agreement may be seen as epitomizing more “canonical” cases of agreement than others. Consequently, there has been a debate on whether anaphora relations (i.e., the determination

of the form of anaphoric pronouns) also forms part of agreement. As Corbett (2003) notes, over the years, there has been a growing consensus in the literature that anaphora relations can be analyzed in terms of agreement morphology.

Premised on this, Corbett (2006) proposes indicators that constitute the criteria for defining the relevant aspects of “canonical agreement” (i.e., prototypical cases of agreement), such that if any agreement pattern falls short of this, that pattern may be described as “non-canonical”. Corbett’s main criteria are summarized below in [Table 6](#).

**Table 6: Selection of Corbett’s Canonicity Criteria** (Corbett 2006: 8-27)

Controllers	Targets	Domains	Features	Conditions
1. Canonical controllers are present (rather than absent).	3. Canonical targets are bound (rather than free).	7. Canonical domains are asymmetric (rather than symmetric).	9. Canonical features are lexical (rather than non-lexical).	11. Features have no choice of feature value
2. Canonical controllers overtly express agreement features.	4. Canonical targets express agreement via inflectional marking (rather than via clitics or free forms).	8. Canonical domains are local (rather than non-local)	10. Canonical features having matching values (rather non-matching values).	
	5. Canonical targets obligatorily mark agreement.			
	6. Canonical targets agree with a single controller.			

In the next subsection we shall discuss agreement properties of Esahie.

#### **2.4.2.2 Agreement in Esahie**

As earlier noted in section [1.2.2.3](#), as an isolating language, Esahie is characterized by a limited system of inflection marking. A corollary of this is that, unlike languages such as Swahili and



French, where verbs overtly agree in person and number with their subjects, in Esahie, and indeed many other Kwa languages (including Akan<sup>27</sup>, Ga, Ewe, Nzema: cf. Osam 1993, Aboh and Essegbey 2010), subject-predicate agreement is not morphologically overt. We illustrate this in the examples below.

- (50) a. *Kwamina tɛ a-kɔlaa pa*  
 Kwamina COP SG-child good  
 ‘Kwamina is a good child’
- b. *Kwamina ne Attaa tɛ η-gɔlaa pa*  
 Kwamina CONJ Attaa COP PL-child good  
 ‘Kwamina and Attaa are good kids’
- (51) a. *Me krɔ nitse-sũá-nɛ*  
 1SG.SBJ love.HAB thing-learn-NMLZ  
 ‘I love studying’
- b. *O krɔ nitse-sũá-nɛ*  
 3SG.SBJ love.HAB thing-learn-NMLZ  
 ‘S/he loves studying’ (Broohm & Rabanus 2018: 107)

We notice in (50-51) that in Esahie there is no overt realization of agreement between the verbs and the subjects in terms of *number* and *person*. In (50a, b) the copular verb does not change in form independently from the singular or plural feature of the subject. In (51a, b) we observe that the verb remains the same irrespective of the person value of the subject pronoun.

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<sup>27</sup> It worth mentioning that some varieties of Akan such as Fante do show agreement though.

Turning to agreement within the DP, since Esahie is genderless and to a large extent caseless<sup>28</sup>, the foremost relevant morpho-syntactic feature that could be possibly examined is *number* (section [2.4.2.2.1](#)). However, in anaphora agreement, as we shall see later, there are further agreement features to be considered (section [2.4.2.2.2](#)).

#### 2.4.2.2.1 DP-internal Agreement (in Number)

As Ameka and Dakubu (2008) rightly observe, there is an interesting split as far as plural formation and nominal classes in Kwa are concerned. They observe that within the Tano group of languages (to which Esahie belongs), there is usually number concord. With specific reference to Esahie, Broohm (2017) confirms this observation and notes that the Esahie DP exhibits some level of agreement morphology as far as number (plural) marking is concerned. Agreement marking in Esahie may occur between the noun and the head (demonstrative) determiner, as well as between the noun and other (nominal) modifiers within the DP such as adjectives, where the noun functions as the controller while the remaining elements function as targets. In the examples that follow, we shall see how this works.

- |      |    |                 |    |                              |              |
|------|----|-----------------|----|------------------------------|--------------|
| (52) | a. | <i>bakaa hé</i> | b. | <i>m-makaa</i> <sup>29</sup> | <i>hé-mɔ</i> |
|      |    | stick DEM       |    | PL-stick                     | DEM-PL       |
|      |    | ‘This stick’    |    | ‘These sticks’               |              |

In example (52a, b), we observe that the complement noun and the head demonstrative agree in number, albeit using different markers. In the examples that follow, we shall attempt to

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<sup>28</sup> Case, on the other hand, cannot be said to be non-existent in Esahie. Its realization, however, is restricted only to the pronominal system, where it is typically marked syntactically via its position in the sentence, rather than via overt morphological exponence. However, there is also morphological exponence, see [Table 7](#) in section [2.5.1.1.1](#).

<sup>29</sup> The initial consonant /b/ in *bakaa* assimilates totally with the plural prefix /m-/.

introduce other modifiers (demonstratives) into the DP, to be able to better understand how number agreement works within the DP (cf. Broohm 2017: 20).<sup>30</sup>

- (53) a. *boaen tenden hé* *Singular (Ø-marked)*  
 sheep tall DEM  
 ‘This tall sheep’
- b. *m-moaen n-denden hé-mɔ* *Plural (nasal-marked)*  
 PL-sheep PL-tall DEM-PL  
 ‘These tall sheep’
- c. \**m-moaen tenden hé*  
 PL-sheep tall DEM
- (54) a. *bowie kwekwa~kwekwa hene<sup>31</sup>* *Singular (Ø-marked)*  
 bone RED<sup>32</sup>~dry DEM  
 ‘That (very) dry bone’
- b. *m-mowie η-kwekwa~kwekwa hene-mɔ* *Plural (nasal-marked)*  
 PL-bone PL-RED~dry DEM-PL  
 ‘Those (very) dry bones’
- c. \**m-mowie kwekwa~kwekwa hene*  
 PL-bone RED~dry DEM

<sup>30</sup> As pointed out to me by a reviewer, this type of agreement is reminiscent of what happens in Akan where there is number agreement between noun heads and adjectives. It differs from what happens in the GTM languages, for example, where adjectives are not agreement targets, but some numerals are.

<sup>31</sup> Agreeing with a reviewer, I believe that it is justifiable to posit the [ne] in the demonstrative *hene* is the (same/regular) definite marker in Esahie, and this accounts for the fact it also takes the -mɔ plural suffix. This, according to the reviewer, implies that *hene* is a very significant term in the inventory of determiners in Esahie. The reviewer suspects that *hene* could be a compound determiner, since such forms are not unheard of in other Kwa languages, where both the demonstrative and definiteness markers co-occur. Given the fact that such forms are attested in other Kwa languages, I reckon that it is not out of place to describe *hene* as a compound.

<sup>32</sup> Reduplication here has an intensifier function (INT). It is also important to point out that elsewhere in the grammar of Esahie (i.e. when they have to agree with the plural noun head), adjective reduplication signals agreement.

- (55) a. *e-woo pri hé* *Singular (vocal-marked)*  
 SG-snake big DEM  
 ‘This big snake’
- b. *n-woo m-bri hé-mɔ* *Plural (nasal-marked)*  
 PL-snake PL-big DEM-PL  
 ‘These big snakes’
- c. \**n-woo pri hé*  
 PL-snake big DEM

(Broohm & Rabanus 2018: 109-110)

In the examples (53b, 54b, 55b), we observe agreement between the controller nouns and the target modifiers (i.e., adjectives and demonstratives). More importantly, we notice that whilst the demonstrative appears to invariably select the suffix *-mɔ* in the plural irrespective of the form of plural marker (in this case a nasal prefix [n-] borne by the controller noun, the adjective (when marked for the plural), usually shares the same marker and marker distribution (i.e., prefix) with the controller noun. (Note that the plural prefix [n-] is a homorganic nasal, and therefore it assimilates in place with the consonant that follows it. This accounts for the variation in the form of the marker in different phonetic contexts.) The ungrammaticality of examples (53c, 54c, and 55c) points to the fact that agreement marking is obligatory in these contexts. In the examples (52-55) plural number agreement is always expressed by affixation, hence, the morphology can be accounted for in terms of morpheme-based morphology. In (56), things are different.

- (56) a. *Sɔ sona tɛɛ he*  
 DEM person bad DEM  
 ‘This bad person’



In (58-60) we provide further examples for constructions in which the agreement feature is not always expressed by concatenative morphology. We begin with multiple adjectival targets in (58) and (59).

- (58) a. *brasua kəkərə kama ne*  
 woman light.skinned good-looking DEF  
 ‘The good-looking light-skinned woman’
- b. *m-mrasua η-kəkərə kama-kama ne-mɔ*  
 PL-woman PL-light.skinned PL~good-looking DEF-PL  
 ‘The good-looking light-skinned women’
- (59) a. *tena bre pri ne*  
 cloth black big DEF  
 ‘The big black cloth’
- b. *n-dena bre m-bri-m-bri ne-mɔ*  
 PL-cloth black PL-PL~PL-big DEF-PL  
 ‘The big black cloths’
- c. *n-dena bre m-bri-kua ne-mɔ*  
 PL-cloth black PL-big-AUG DEF-PL  
 ‘The large black cloths’

Broohm & Rabanus (2018: 111-112)

In example (58b), the plurality feature is overtly expressed on the controller noun *brasua* ‘women’, as well as on all agreement targets (i.e. the determiner, the adjective of quality *kama* ‘good-looking’ [via reduplication], and the color adjective *kəkərə* ‘light-skinned’). Contrastingly, in example (59b,c), the plurality feature is overtly expressed on the controller

noun, the determiner, and the size adjective *pri* ‘big’ (even redundantly by concatenative morphemes and reduplication, cf. [56, 57]), but not on the color adjective *bre* ‘black’. As far as the overt expression of agreement feature on targets is concerned, color adjectives in Esahie exhibit an ambivalent behavior.

In (60) and (61) we turn to consider the behavior of quantifiers and then numerals in agreement morphology.

- (60) a. *m-mrandeε*    *η-dikaa-η-dikaa*    *pěě*  
 PL-gentleman PL-RED~PL-short                    many(PL)  
 ‘Many short gentlemen’
- b. *m-mrandeε*    *n-den-n-den*                    *ne-mɔ-mu-nyɔ*  
 PL-gentleman PL-PL~PL-tall                    DEF-PL-all-2  
 ‘Both tall gentlemen’    (Broohm & Rabanus 2018: 112)

In the (60a), the plurality feature is overtly expressed on controller noun *abrandeε* ‘gentleman’ and the adjective *tikaa* ‘short’, but it is an inherent feature of the quantifier *pěě* ‘many’. In (60b), apart from the controller noun and adjectival target overtly expressing the relevant feature, the morphological structure of the quantifier *ne-mɔ-mu-nyɔ* ‘both’ contains both morphemes with inherent plural features and the overt plural marker *-mɔ*. This observation points to the fact that Esahie quantifiers may have overt agreement markers.

- (61) a. *m-mrandeε*                    *n-den-n-den*                    *nyɔ*                    *he-mɔ*  
 PL-gentleman                    PL-PL~PL-tall                    2                    DEM-PL  
 ‘The two tall gentlemen.’

b.	<i>m-mabunu</i>	<i>anyanza-fœ</i>	<i>bru</i>	<i>n'-akoraatĩ</i>
	PL-virgin	wise-PL <sub>[+HUMAN]</sub>	10	DEF-all
	‘All the ten wise virgins.’		(Broohm & Rabanus 2018: 113)	

In the example (61)a-b we observe that Esahie numerals, by tendency, fail to participate in overt agreement morphology.

#### 2.4.2.2.2 Number, Person, Animacy, and Case Agreement of Anaphoric Pronouns

It has been noted that NPs may be extracted from various argument and non-argument positions for various  $\bar{A}$ -operations<sup>34</sup>. The effect of  $\bar{A}$ -operations varies across languages (Georgi 2014). While some languages, such as English (Salzmann 2011), allow for gaps<sup>35</sup>, other languages do not permit or require the use of the gap strategy, instead, they resort to the use of resumptive pronouns (RPs) in the various extraction sites. Additionally, there are languages that allow both RPs and gaps in certain positions (Klein 2014). In this section, we examine NP resumption as instance of agreement in Esahie. Particularly, we consider NP resumption in two types of  $\bar{A}$ -operations: relativized clauses and focalized constructions. As we shall see, in both types of constructions, RPs agree with moved antecedent NPs. We begin by examining the co-referentiality exhibited between NPs and their modifying relative clauses.

##### 2.4.2.2.2.1 Relative clauses

Relative clauses in Esahie typically have the structure in (62).

<sup>34</sup> Operations involving the extraction of elements from argument positions into non-argument positions for purposes of information structure.

<sup>35</sup> The claim for a gap strategy in English finds justification in the fact that the extraction site shows no phonetic traces of such operations.



- (62) a. [IP  $\eta$ -nwũ-ne [NP brasua<sub>i</sub> [CP bɔ [IP Aseda gya-le-ye<sub>i</sub>] ne]]]  
 1SG-see-PAST woman REL Aseda marry-PAST-3SG.ANIM.ACC DEF  
 ‘I saw the woman whom Aseda married.’
- b. [IP [NP brasua<sub>i</sub>] [CP bɔ [IP o<sub>i</sub>-gyale-le Aseda] ne] fi Boako]  
 woman REL 3SG.ANIM.NOM-marry-PST Aseda DEF be.from Boako  
 ‘The woman who married Aseda is from Boako.’

Broohm & Rabanus (2018: 114)

These examples exhibit the salient morphosyntactic properties of Esahie relative clauses. In (62a) the object of the verb *nwũ* ‘to see’ is made up of an initial NP (the antecedent or the head) followed by an embedded clause. This NP + relative-clause structure functions as the object of the sentence. In (62b) the NP + relative-clause structure functions as the subject of the sentence. In either case, the antecedent NP occurs on the left periphery of the clause and is followed by the relative clause marker *bɔ*. The relative marker is then followed by a complement IP that is in turn followed by the determiner *nen*, which is the same as the definite determiner in Esahie.

Inside the complement IP in (62a) is the RP *ye* ‘him/her’ which is co-referential with the head NP and agrees with it in *animacy*, *number*,<sup>36</sup> *person*, and *case*. The controller in this agreement relation is the head NP *brasua* ‘women’, the RP plays the role of target. The RP occupies the canonical position of the relativized element (i.e., the object position in this case).

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<sup>36</sup> Even in syncretic forms, if an antecedent singular NP is replaced with its syncretic plural counterpart, the form of the RP changes to reflect the change in number (i.e. number agreement). There is a different pronoun for stone and stones. This is illustrated in the example below:

- (1) a. *Nyɔboε<sub>i</sub> he bɔ ɔ<sub>i</sub>-tɔ-le aseεwo ne*  
 stone DEM REL 3SG.INANIM.NOM-fall-PST ground DEF  
 ‘This stone that fell on the ground’
- b. *Nyɔboε<sub>i</sub> he-mɔ bɔ bε<sub>i</sub>-tɔ-le aseεwo ne*  
 stone DEM-PL REL 3PL.INANIM.NOM-fall-PST ground DEF  
 ‘These stones that fell on the ground’

In (62b) it is the subject position in the relative clause that is relativized, and we see a subject RP *o* ‘s/he’ in the subject position in the complement clause. Functioning as the target, the resumptive pronoun, similarly, agrees with the controller (i.e. the antecedent head NP) in *animacy, number, person, and case*: {3SG, ANIM, NOM}. The domain of agreement is intra-sentential (within the clause).

#### 2.4.2.2.2 Focalizations

Another  $\bar{A}$ -operation that licenses agreement via NP resumption is focalization. In Esahie (Broohm 2014), and indeed many other Kwa languages (Akan: Korsah 2016; Yoruba: Adesola 2010), gaps are disallowed in extraction sites in certain contexts. As Broohm (2014) observes, the RP is always obligatory when the argument in focus is ‘animate’ and ‘human’. In the example(s) below, we consider both subject and object resumption as a concomitant of an  $\bar{A}$ -operation of focalization.

##### Non-focused sentence

- (63) a. *Kofi fõã-ne Yaa*  
 Kofi chase-PAST Yaa  
 ‘Kofi chased out Yaa’

##### Subject-focused version of (63a)

- b. *Kofi<sub>j</sub> yeε \*∅<sub>i</sub>/∅<sub>j</sub>=fõã-ne Yaa-∅*  
 Kofi(ANIM)[NOM] FOC \*∅/3SG.NOM.ANIM=chase-PST Yaa-CD  
 ‘KOFI [and not, say, Kwame] chased out Yaa’

**Object-focused version of (63a)**

- c.     *Yaa*<sub>i</sub>                             *yeε*     *Kofi*     *fõã-ne=\*ø<sub>i</sub>/ye<sub>i</sub>-ɔ*  
Yaa(ANIM)[ACC]     FOC     Kofi     chase-PST=\*ø/3SG.ACC.ANIM-CD  
‘Kofi chased out YAA [and not, say, Afia]’

(Broohm & Rabanus 2018: 115-116)

Returning to our discussion on agreement, we notice that the RP clitic<sup>37</sup> agrees with its referent NP (antecedent) in terms of *number*, *person*, *animacy*, and also *case* features. For instance, *Kofi* in (63b) is a singular animate NP which has been extracted from a subject position, and thus has nominative case. *Yaa* in (63c) has similar properties except that, because it is extracted from an object position, it has accusative case. The extracted antecedent NPs in this case function as the controller, while the RP clitics, *ɔ-* (nominative) and *ye-* (accusative), function as the target, and the features at play here are *number*, *person*, *animacy* and *case*. The domain of agreement here is extra-sentential (beyond the clause).

**2.4.2.3 *Canonicity of agreement in Esahie***

In this section, we consider the two kinds of agreement earlier discussed in the light of Corbett’s criteria of canonicity. The goal of this section is to test the strength of each kind of agreement, and also to compare and contrast the two kinds of agreement using Corbett’s criteria (see [Table 6](#) above for a more detailed formulation of the criteria).

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<sup>37</sup> The RP is considered a clitic because it is phonologically dependent on the verb, and, as a result, it shows the effects of vowel harmony with the verb and its other prefixes.

Table 7: **Canonicity of Agreement in Esahie**

<b>Canonicity Criteria</b>	<b>DP-internal Agreement</b>	<b>Anaphora Agreement</b>
1. Controller is present.	✓	✓
2. Controller overtly expresses agreement features.	✓	X
3. Expression of agreement on the target: <i>bound</i> > <i>free</i>	✓	✓
4. Expression of agreement on target: <i>inflectional marking (affix)</i> > <i>clitic</i> > <i>free word</i>	✓	X
5. Target obligatorily marks agreement.	✓	✓
6. Target agrees with a single controller.	✓	✓
7. Domain is asymmetric.	✓	✓
8. Domain is local.	✓	X
9. Feature is lexical (rather than non-lexical)	X	X
10. Features have matching values.	✓	✓
11. Features have no choice of feature value.	✓	✓

From the data discussed above, we notice that a DP-internal complement noun, such as *boaen* ‘sheep’ in (53), functions as the controller of (number) agreement within the DP, whilst an (antecedent) referent NP, such as *Kofi/Yaa* in (63), functions as the controller of anaphora agreement. In both instances, the controller is present, implying that both are equally canonical ([criterion 1](#)). With respect to agreement within the DP, we also observe that whilst the controller noun typically expresses the number feature overtly via the plural prefix [m-] in *mmoaen* ‘sheep’ as in (50b), on the contrary, in anaphora agreement, the controller, i.e. the referent NP, does not overtly express the relevant feature(s). DP-internal agreement is therefore more canonical ([criterion 2](#)).

In terms of the morphological distribution of the agreement marker(s) expressed on the targets, we notice that in both types of agreement, agreement markers (i.e. *affixes* in DP-internal agreement and *clitics* in anaphora agreement) are bound rather than free ([criterion 3](#)). Given the canonicity ranking: *inflectional marking (affix)* > *clitic* > *free word* (cf. Corbett 2003: 113), the expression of agreement in DP-internal agreement targets (affixes) is more canonical than expression of agreement in anaphora agreement targets (RP clitics) ([criterion 4](#)).

Relative to the obligatory expression of agreement on the target(s), we notice that while DP-internal modifiers (targets of DP-internal agreement) overtly express agreement, RP clitics (targets of anaphora agreement) covertly express the same, so either way, agreement is obligatorily expressed by/in the target, both are therefore equally canonical in this regard ([criterion 5](#)). Also, targets of both types of agreement agree with single controllers, an (antecedent) referent NP in the case of anaphora relations and a noun in the case of DP-internal agreement. The data discussed above shows no evidence of multiple controllers. They are at par in this regard ([criterion 6](#)).

The assumption of the distinctive roles of controllers and targets implies as an inherent asymmetric relation, rather than a balanced or symmetrical relation. The controllers (i.e. *antecedent referent NPs* and *DP-internal complement nouns*) determine the form of the targets (i.e. *RP clitics* and *DP-internal modifiers*) and the reverse is not possible ([criterion 7](#)). Domains: DP-internal agreement is local, since it is at the phrasal-level, while anaphora agreement is non-local since it is beyond the clause<sup>38</sup>. DP-internal agreement is therefore more canonical ([criterion 8](#)).

The features in both types of agreement are based mostly on formal assignment from outside rather than being purely lexical (with the exception of animacy) ([criterion 9](#)). Features in both types of agreement are therefore equally canonical. As expected, agreement features for types have matching values ([criterion 10](#)). Finally, we see no effect of the conditions on the choice of the values and, hence, no differences between DP-internal and anaphora agreement ([criterion 11](#)).

Given the facts summarized above, we conclude that in Esahie, DP-internal agreement (with respect to number) is more canonical than anaphora agreement. According to Corbett

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<sup>38</sup> As Corbett (2006) explains, agreement at the phrasal/clausal level is local, whilst agreement beyond the clause is non-local.

(p.c.), this conclusion fits perfectly into what is expected, “since the bonds within the DP are closer than any external ones”. Anaphora agreement, nonetheless, is more interesting because of the heterogeneity of the interacting features. In the light of the discussions provided above on the operation and canonicity of agreement in Esahie, we consider the inflectional system of the Esahie nominal domain as fairly robust.

### 2.4.3 NCS and semantically-controlled affixal selection in Kwa

As explained earlier, noun classes may manifest in the form of a gender(-like) system, where selection of markers are determined or controlled by certain inherent features (semantic, conceptual and/or formal) of a lexical noun (head/controller) nouns. In this section, we shall examine the extent to which inherent semantic properties of Esahie nouns are crucial in our in the selection of affixes and pronouns. Again, compare Esahie with Akan.

For Akan, Osam (1996) shows that nouns are (to an extent) sensitive to the semantic concept of ANIMACY. Thus, in some dialects of Akan, affixal selection could be triggered by the inherent conceptual and semantic (nominal) feature of animacy. This semantically-controlled selection manifest in the selection of nominal affixes (for the various noun classes), as well as in the pronominal system of Akan, as we shall see later. In the table below, we examine the role animacy plays in affixal selection in Akan.

Table 8: **Animacy-controlled affixal selection in Akan NCS** (Osam 1996: 154-156)

Affix	Semantic feature	Example	Exceptions
<i>o-/ɔ-</i> (Class 1)	ANIMATE	<i>o-panyin</i> ‘elder’ <i>ɔ-hɔho</i> ‘visitor’ <i>ɔ-kɔdeɛ</i> ‘eagle’	Yes
<i>e-/ɛ-</i> (Class 4)	INANIMATE	<i>ɛ-boɔ</i> ‘stone’ <i>ɛ-dan</i> ‘house’ <i>e-tuo</i> ‘gun’	No

<b>Parasynthetically marked plurals</b>	<b>+HUMAN</b>	<i>a-hen-fo</i> ‘chiefs’ <i>n-saman-fo</i> ‘ghosts’ <i>m-banyin-fo</i> ‘men’ <i>m-panyini-fo</i> ‘elders’	No
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The Akan data in [Table 8](#) shows that, without exception, the prefixes [e-/ε-] are only selected by inanimate nouns such as ε-*dan* ‘house’ and e-*tuo* ‘gun’. Similarly, parasynthetically marked plural nouns (i.e. involving the selection of discontinuous plural affixes by nominals) as in *a-hen-fo* ‘chiefs’ and *n-saman-fo* ‘ghosts’ is only characteristic of human (animate) nouns. Of the three pairs of nominal affixes shown in [Table 8](#), [o-/ɔ-] are the only affixes whose selection comes with exceptions. This means that two-thirds of the Akan nominal affixes shown in [Table 8](#) are selected strictly on the basis of animacy. From the foregoing, we realize that the role of animacy as an inherent semantic feature in the selection of nominal prefixes in Akan is one that cannot be overemphasized. The fact that two out of the three classes show no exception further buttresses the point.

Having shown what obtains in Akan, we will now consider role of animacy in the selection of declensional affixes in Esahie. This is illustrated below in [Table 9](#).

Table 9: **Animacy-controlled affixal selection in the Esahie NCS**

<b>Affix</b>	<b>Semantic feature</b>	<b>Example</b>	<b>Exceptions</b>
<i>e-/ε-</i>  ( see class <a href="#">1b</a> )	<b>ANIMATE</b>	<i>ε-kra</i> ‘cat’ <i>e-woo</i> ‘snake’ <i>e-bote</i> ‘rabbit’ <i>ε-nwomee</i> ‘ghost’	Yes
<i>-mɔ</i>  (see class <a href="#">3</a> )	<b>ANIMATE</b> <b>(+KINSHIP)</b>	<i>ye-mɔ</i> ‘wives’	No
<b>Parasynthetically marked plurals</b>  (see class <a href="#">2d</a> and <a href="#">4a</a> )	<b>ANIMATE</b> <b>(+HUMAN)</b>	<i>a-kua-fue</i> ‘farmers’ <i>a-dwadi-fɔε</i> ‘traders’ <i>η-gramo-fɔε</i> ‘muslims’ <i>a-sigya-fɔε</i> ‘bachelors/spinsters’ <i>a-kuna-fɔε</i> ‘widows’	No

The Esahie data in [Table 9](#) shows that, without exception, parasynthetically marked plural nouns (i.e. involving the selection of discontinuous plural affixes by nominals) as in *akuafue* ‘farmers’ or *adwadifoε* ‘traders’ are only characteristic of human (animate) nouns. Two out of the three sets of affixes shown in [Table 9](#) are selected without exception by nouns with corresponding semantic values. They are the affixes [*e-/ε-*] as in *εkra* ‘cat’ and [*-mɔ*] as in *yemɔ* ‘wives’. This means that two-thirds of the Esahie nominal affixes shown in [Table 9](#) are selected strictly on the basis of animacy.

Comparing Esahie to Akan in this regard, we observe that, notwithstanding the existence of exceptions for each group of noun form classes as shown in [Tables 9](#) and [8](#), respectively, affixal selection in Akan and Esahie are both strongly controlled by the semantic feature of animacy. As far as the robustness of animacy-controlled affixal selection is concerned, Esahie and Akan are at par.

We now turn to look at how animacy manifests itself in the pronominal system (i.e. the selection of resumptive/anaphoric pronouns), again comparing Esahie with Akan (Twi).

### Akan

- |      |    |                            |  |    |                           |
|------|----|----------------------------|--|----|---------------------------|
| (64) | a. | <i>abɔfra no bε-yera</i>   |  | b. | <i>dua no bε-yera</i>     |
|      |    | child the FUT-be.lost      |  |    | tree the FUT-be.lost      |
|      |    | ‘The child will get lost.’ |  |    | ‘The tree will get lost.’ |
|      |    |                            |  |    | (Osam 1996:157)           |

- |      |    |                      |  |    |                        |
|------|----|----------------------|--|----|------------------------|
| (65) | a. | <i>ɔ-bε-yera</i>     |  | b. | <i>ε-bε-yera</i>       |
|      |    | 3SG.ANIM-FUT-be.lost |  |    | 3SG.INANIM-FUT-be.lost |
|      |    | ‘S/he will be lost.’ |  |    | ‘It will be lost.’     |
|      |    |                      |  |    | (Osam 1996:158)        |



We observe that a different pronoun is selected depending on the animacy of the noun that is pronominalized, that is, in (65a) which is (64a) with the noun replaced by a pronoun, the pronoun is [ɔ-]. However, in (65b) the pronoun chosen is [ɛ-], which is the pronoun for inanimate things. This is because *dua* ‘tree’ is cross-linguistically inanimate.

In the Esahie examples below, however, things are different.

- |      |    |                           |    |                              |
|------|----|---------------------------|----|------------------------------|
| (66) | a. | <i>adoma ne ko-muni</i>   | b. | <i>dadeɛ ne ko-muni</i>      |
|      |    | baby the FUT-be.lost      |    | cutlass the FUT-be.lost      |
|      |    | ‘The baby will get lost.’ |    | ‘The cutlass will get lost.’ |
| (67) | a. | <i>o-ko-muni</i>          | b. | <i>o-ko-muni</i>             |
|      |    | 3SG.ANIM-FUT-be.lost      |    | 3SG.INANIM-FUT-be.lost       |
|      |    | ‘S/he will be lost.’      |    | ‘It will be lost.’           |

Since *adoma* ‘baby’ in (66a) is animate while *dadeɛ* ‘cutlass’ in (66b) is inanimate, we expect that, all other things being equal, they will be resumed by different pronouns. i.e an animate pronoun for *adoma* ‘baby’ in (67a) and an inanimate pronoun for *dadeɛ* ‘cutlass’ in (67b). Instead, what obtains are cases of syncretism as the form of the pronominal clitic invariably remains as [o-] whether the antecedent (controller) noun is animate or inanimate. What this means is that, unlike Akan where the selection of anaphoric pronouns is strictly controlled by animacy, in Esahie in general, the inherent semantic feature does not to trigger or control affixal selection.

## 2.5 Summary

In this section, we have discussed among other things, some general issues regarding noun classification in African languages, especially in (Akanic) Kwa languages, the role of morpho-

phonological information in the grouping of Esahie noun classes, the various Esahie noun classes in terms of their structure and unifying feature(s), number agreement within the Esahie DP, and the relationship between noun classes and (semantically-controlled) affixal selection in Esahie.

Our analysis of the Esahie NCS has shown among other things that: the Esahie NCS is number-based; that morpho-phonological information plays a crucial role in the choice of affixes; and that it has suffered some morpho-syntactic decay. The pervasive loss of (singular) number markers, the higher incidence of frozen nominal forms, and the complete loss of subject-verb agreement support the argument for morpho-syntactic decay in the Esahie nominal domain.

Our analysis has further shown that, notwithstanding the morpho-syntactic decay in the nominal system of Esahie, number, as a syntactic feature, still triggers some form of agreement, especially with within the DP. This means that, typologically, Esahie behaves just like her Central-Tano relatives such as Akan, where - though noun classes themselves are syntactically inactive-, number as a syntactic feature still triggers agreement. Comparing Esahie to Akan, the data discussed in this work point to the fact that Esahie has suffered a relatively stronger morpho-syntactic decay in the nominal inflection system.

Based on the data discussed in this work, the general typological picture of the Kwa NCS is depicted in the diagram below.



It has also been shown that the role of semantic information in setting up noun classes in Esahie is largely insignificant. The Esahie NCS is seemingly being lost, with most new nouns being zero marked. The Esahie NCS is syntactically inactive, and this is crucial since you would expect that a somewhat semantically based system would have a syntactic reflex, but this does not happen. We could, therefore, conclude that, unlike Akan, there is no semantically-controlled affixal selection in the Esahie NCS. This would, therefore, account for the fact that class assignment is largely arbitrary.

Having shown that the Esahie NCS and agreement system is not semantically based, so that class assignment and affixal selection appear to be largely arbitrary, we proceed to examine the question of how weak(-ened) the inflectional system of the Esahie nominal domain is synchronically. In answering this question, we focus on the phenomenon of syncretism. The purpose of this is to provide a comprehensive account of the inflection marking in the nominal domain of Esahie.

## PART TWO

### SYNCRETISM IN ESAHIE

#### 2.6 On Syncretism

Syncretism raises a number of issues against the fundamental assumptions of morpheme-based approaches. With syncretism, “a single form serves two or more morpho-syntactic functions” (Baerman et al. 2005: 2). Put differently, two or more cells within a word’s paradigm are occupied by a single form. Syncretism arises where the morphology of a language fails to show a distinction that is made in the syntax.

Instances of syncretism are typically found in person/number marking in verbal paradigms and case marking in nominal paradigms. In Romanian, for instance, verbs of all classes exhibit syncretism of the first person singular with the first-person plural form in the imperfect tense, hence, number syncretism, see [Table 10](#) below.

Table 10: Imperfect paradigms of Romanian verb forms (cf. Stump 2001: 215)

	<i>a cânta</i> ‘to sing’	<i>a auzi</i> ‘to hear’
1SG	<i>cântá-m</i> ‘I sing’	<i>auziá-m</i> ‘I hear’
2SG	<i>cântá-i</i> ‘you sing’	<i>auziá-i</i> ‘you hear’
3SG	<i>cântá</i> ‘She/it sings’	<i>auziá</i> ‘She/it hears’
1PL	<i>cântá-m</i> ‘We sing’	<i>auziá-m</i> ‘We hear’
2PL	<i>cântá-ți</i> ‘You sing’	<i>auziá-ți</i> ‘You hear’
3PL	<i>cântá-u</i> ‘They sing’	<i>auziá-u</i> ‘They hear’

As earlier hinted, case systems also easily lend themselves to syncretism. In the Yir-Yoront (Pama-Nyungan Australian language) data provided below, while words such as ‘foot’ or ‘leg’ have distinct forms for *absolutive*, *ergative* and *dative* case, words such as ‘arm’ and ‘armpit’,

on the contrary, fail to make the expected distinction between ergative and dative. Words in the latter category are clearly instantiations of case syncretism, see [Table 11](#).

Table 11: Case syncretism in Yir-Yoront (Alpher 1991, cited in Baerman 2007: 1)

	‘foot’	‘leg’	‘arm’	‘armpit’
ABS	<i>thaml</i>	<i>kumn</i>	<i>puth</i>	<i>ngamrr</i>
ERG	<i>thamarr</i>	<i>kumalh</i>	<i>putha</i>	<i>ngumurr</i>
DAT	<i>thamarriy</i>	<i>kuman</i>	<i>putha</i>	<i>ngumurr</i>

It is instructive to mention at this point that the typology of syncretism may be approached from a formal and/or an explanatory perspective(s). From a formal perspective, syncretism may be typologized as being simple, nested or contrary (see Baerman et. al 2005: 13-16). Due to the descriptive orientation of thesis, the subject is approached (only) from an explanatory perspective. Adopting an explanatory approach to the typology of syncretism, Stump (2016: 170-183) proposes three typologies of syncretism: *natural-class* syncretism, *directional* syncretism, and *morphomic* syncretism.

In *natural-class syncretism*, syncretic forms in a lexeme’s paradigm share a common feature and could be seen as constituting a natural-class. Instantiations of this kind of syncretism involve cells that have a common feature value (say, singular number). Let us consider the Italian example in [Table 12](#).

Table 12: Present tense paradigms of the Italian verb *ballare* ‘dance’

	PRS.IND	PRS.SBJV
1SG	<i>ballo</i>	<i>balli</i>
2SG	<i>balli</i>	<i>balli</i>
3SG	<i>balla</i>	<i>balli</i>
1PL	<i>balliamo</i>	<i>balliamo</i>
2PL	<i>ballate</i>	<i>balliate</i>
3PL	<i>ballano</i>	<i>ballino</i>

The syncretic forms of Italian verbs as shown in the shaded cells in the table all share a common value in number (singular), tense (present) and mood (subjunctive), hence, they form a natural

class. As Stump (2016) points out, instances of natural-class syncretism, as observed in the Italian verbal paradigm, may be explained either as being simply a reflection of a kind of impoverishment in the rules of exponence, resulting from the fact that the morphosyntactic distinction relevant for syntax and semantics are simply unavailable for realization by the language’s (inflectional) morphology, or preferably, as cases of underspecification, in which case the syncretic forms may be seen as being underspecified for, e.g., person (as in [Table 12](#)).

In *directional syncretism*, there is a sort of “parasitic” relation, in that one cell appears to rely on another for its realization. One member of such a relation may be seen as the determinant member of the syncretic pair while the other is seen as the dependent member. In the Italian example shown in [Table 13](#), syncretism can be said to be directional because the third person plural form (the dependent, “parasite”) is parasitic to the third person singular form (the determinant).

Table 13: Present paradigm of *magnàre* ‘eat’ in Italian, Verona dialect<sup>39</sup> (Bondardo 1972: 150)

	SG	PL
<b>1</b>	<i>màgno</i>	<i>magnémo</i>
<b>2</b>	<i>màgni</i>	<i>magne</i>
<b>3</b>	<i>màgna</i>	<i>màgna</i>

The Rumanian example shown in [Table 10](#) is another example of a directional syncretism: in this case the first-person singular form is dependent from the first person plural form, historically marked in the Romance languages (and, generally, in the Indo-European languages) by the bilabial nasal /m/.

In addition to situations where syncretic forms constitute a coherent class of morphosyntactic properties (natural-class syncretism), and situations where pairs of syncretic

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<sup>39</sup> A reviewer is of the opinion that the Verona dialect is considered by some as a sister to Italian, rather than a dialect of Italian.

forms exhibit a sort of directionality (directional syncretism), there are also instances of syncretism where the relation between pairs of syncretic forms may be seen as symmetrical, in that neither pair derives its exponence from the other pair (see [Chapter 5](#) for more on morphomic properties). This type of syncretism has been called morphomic or symmetrical syncretism (Stump 2016: 179).

As we shall see in [Chapter 5](#), syncretic forms challenge the morpheme-based approach to morphology. In order to account for the ergative/dative syncretism in Yir-Yoront ([Table 11](#)) and the third person singular/plural syncretism in Italian (Verona dialect cf. [Table 13](#)) paradigms are “irreducible” because they identify patterns in which two different paradigm cell license the same word forms. For the third person singular/plural syncretism in Italian, morpheme-based accounts would try to model the relationship between content and formal exponence in the following way:

- (68) a. *magnà* ‘eat’ +  $\emptyset$  3SG???  $\rightarrow$  ‘he eats’  
b. *magnà* ‘eat’ +  $\emptyset$  3PL???  $\rightarrow$  ‘they eat’

The assumption that there is a zero morpheme which has two different grammatical meanings (3SG vs. 3PL) is highly problematic. Contrastingly, it is perfectly fine to assume that the two different paradigm cells are associated with the same inflected word form:

- (69) a. ‘he eats’  $\rightarrow$  *magnà*  
b. ‘they eat’  $\rightarrow$  *magnà*

Hence, paradigms play a crucial role for the explication of the interaction between inflectional morphology and other modules of grammar.

## 2.6.1 Syncretism in Esahie

In this section, we examine various instances of syncretism in Esahie, and attempt to provide an analysis of these instances in the sense of Stump's (2016) typology. In particular, we consider instances of syncretism in the pronominal system (section [2.6.1.1](#)), as well as in some frozen nominal forms in Esahie (section [2.6.1.1.3](#)).

### 2.6.1.1 *Syncretism in the Esahie Pronoun System*

In this section we limit our discussion to syncretism within the pronominal system of Esahie. We first examine case, animacy, and person syncretism (section [2.6.1.1.1](#)), and then proceed to look at number syncretism (section [2.6.1.1.2](#)).

#### 2.6.1.1.1 **Case and Animacy Syncretism in Personal Pronouns**

Notwithstanding that lexical DPs are not marked for case, the Esahie pronominal system is sensitive to case. For the pronominal system, the relevant distinctions are made for nominative and accusative case. In [Table 14](#) below, we show the various case/animacy paradigms of the pronominal system. Cells with syncretic forms are shaded with the same grey-scale values for purposes of identification. From the table, we observe that there are several instances of syncretism in the pronominal system of Esahie. Chief among them are third person forms.

First, in Esahie, unlike in Akan (Asante) (cf. Korsah 2016), there is no animacy distinction in the third person paradigm. With respect to case, we notice that similarly, there is no distinction between first person nominative and accusative forms (neither in singular nor in plural number), second person plural nominative and accusative forms, as well as third person plural nominative and accusative forms: indeed, in none of the plural pronouns.



Table 14: Case and animacy syncretism in Esahie

	Nominative (Subject)		Accusative (Object)	
	Singular	Plural	Singular	Plural
1	<i>me</i>	<i>yε</i>	<i>me</i>	<i>yε</i>
2	<i>ε</i>	<i>εmɔ</i>	<i>wɔ</i>	<i>εmɔ</i> <sup>40</sup>
3 +ANIM	<i>ɔ</i>	<i>bε</i>	<i>ye</i>	<i>bε</i>
3 –ANIM	<i>ɔ</i>	<i>bε</i>	<i>ye</i>	<i>bε</i>

The syncretism in animacy, evidenced by the lack of distinction with respect to animacy across the entire third person paradigm, may be explained as instantiation of natural-class syncretism, in that each set of syncretic forms, say the set of third singular nominative forms, constitutes a coherent class of morphosyntactic properties, collectively identifiable by the feature {3SG, NOM}. Alternatively, this syncretism may also be conveniently attributed to underspecification, or as resulting from an impoverishment in the inflectional system of Esahie by which morphosyntactic distinctions that are relevant for syntax and semantics are unavailable for realization.

The syncretism in case as observed in the form pairs of 1SG nominative/accusative form, 1PL nominative/accusative, 2PL nominative/accusative, and 3PL nominative/accusative may be typologized as representing directional syncretism, because there appears to be a sort of parasitic relation. Assuming along the lines of König (2008), that in languages with an accusative (as opposed to ergative) alignment, as is the situation in case-marking African languages, nominative is the unmarked<sup>41</sup> or default case, we argue that accusative forms of each pair (in [Table 15](#)) rely on its nominative counterpart for its realization. This type of syncretism can arise as a corollary of a property mapping that causes the morphosyntactic

<sup>40</sup> A reviewer has suggested that the form for 2PL *εmɔ* could be said to be made up of the 2SG.NOM form *ε* and -*mɔ* the plural marker used on kinship nouns and determiners, so that in a sense, the second person singular is a speech act participant and a social relation in a sense. This hypothesis sounds insightful and convincing *prima facie*, however, there is the need for further investigation in order to make a strong case for this analysis.

<sup>41</sup> As König (2008) explains, the nominative case is unmarked on three levels - in morphology, function, and citation. It is morphologically unmarked because it is typically zero-marked, and functionally unmarked because it is used in a wider range of contexts.

property set: {1SG, ACC}, {1PL, ACC}, {2PL, ACC} and {3PL, ACC}, which are relevant for syntax and semantics to be realized by means of the morphology that is usual for realizing a contrasting property set: {1SG, NOM}, {1PL, NOM}, {2PL, NOM} and {3PL, NOM}, respectively.

The mapping of property that results in this kind of syncretism is illustrated in [Table 15](#) below. We see here that the cells of the content paradigm, (the requirement of syntax) outnumber the cells in form paradigm (the morphological realizations).

Table 15: **Property Mapping in Case Syncretism**

Content Paradigm	Paradigm Linkage	Form Paradigm
<ME, {1SG, NOM}>	→	<me, {1SG, NOM}>
<ME, {1SG, ACC}>		
<YE, {1PL, NOM}>	→	<yε, {1PL, NOM}>
<YE, {1PL, ACC}>		
<EMO, {2PL, NOM}>	→	<εmɔ, {2PL, NOM}>
<EMO, {2PL, ACC}>		
<BE, {3PL, NOM}>	→	<bε, {3PL, NOM}>
<BE, {3PL, ACC}>		

We now proceed to look at number syncretism still within the pronominal system. We analyze a different class of data – reflexive pronouns. The motivation for separating this section from the one earlier discussed is that, here, a different (explanatory) typology is proffered to account for this type of syncretism.

### 2.6.1.1.2 Number Syncretism in Reflexives

In this section, we consider Esahie reflexive pronouns. These reflexives are free pronouns formed via the concatenation of personal pronouns (such as ‘my/your’) and the form for ‘self’ with a  $[[\text{pronoun}_{\text{ACCUSATIVE}}] + [\text{‘self’}]_{\text{REFLEXIVE}}$  morphological structure.

Different from personal pronouns, reflexive pronouns present evidence for another kind of syncretism: number syncretism, limited to 2PL and 3PL forms, which show no distinction.

Let us consider [Table 16](#).

Table 16: Number syncretism in Reflexive Pronouns

Person	Singular	Plural
1	<i>me-nwō</i> ‘myself’	<i>ye-nwō</i> ‘ourselves’
2	<i>wɔ-nwō</i> ‘yourself’	<i>be-nwō</i> ‘yourselves’
3	<i>ye-nwō</i> ‘him/her/itself’	<i>be-nwō</i> ‘themselves’

The syncretism observed in the 2PL and 3PL reflexive forms could be described as an instantiation of morphomic syncretism, i.e., the relation between pairs of syncretic forms may be seen as symmetrical, in that neither pair derives its exponence from the other pair. None of the syncretized property sets, neither {2PL, REFL} nor {3PL, REFL}, has a stronger claim to the shared morphology than the other property set.

### 2.6.1.1.3 Number Syncretism in Nominal Forms

Another instance of syncretism in Esahie is number syncretism in nominal forms. It appears that the semantic feature of animacy plays a crucial role in accounting for this instance of syncretism. While animate nouns tend to make distinctions in number, inanimate ones are, by

tendency, syncretic<sup>42</sup>. This observation is in consonance with Osam’s (1996) *animacy hierarchy hypothesis* according to which the more animated a category – the fewer the number of syncretism. This explains why the examples in the shaded cells in [Table 17](#), which all refer to inanimate reference objects, make no distinction in number, though required by syntax. It is instructive to point out that this shows the interplay between inflectional morphology and syntax-semantics.

Table 17: Number Syncretism in Nominal Forms

Gloss	Singular	Plural
‘building’	<i>sua</i>	<i>sua</i>
‘stone’	<i>nyɔboɛ</i>	<i>nyɔboɛ</i>
‘squirrel’	<i>ebote</i>	<i>mmote</i>
‘thief’	<i>awienie</i>	<i>awiefɔɛ</i>
‘rope’	<i>yamaa</i>	<i>yamaa</i>
‘food’	<i>alie</i>	<i>alie</i>
‘war’	<i>koɛ</i>	<i>ahoɛ</i>
‘day’	<i>kyia</i>	<i>kyia</i>
‘farm’	<i>boo</i>	<i>boo</i>
‘child’	<i>akɔlaa</i>	<i>ɲgɔlaa</i>
‘land’	<i>aseɛ</i>	<i>aseɛ</i>
‘leaf’	<i>nyaa</i>	<i>nyaa</i>

This kind of syncretism could simply be attributed to a deficiency in the inflectional system of Esahie, such that the morphosyntactic distinctions relevant for syntax and semantics are simply unavailable for these lexemes. Alternatively, these instances of syncretism may be accounted for as natural-class syncretism involving underspecification. With this, the syncretic forms may be seen as being underspecified for number, since their true value becomes clear only when they are used in context. We prefer the latter account, because the former cannot be sustained in the light of the fact that, in principle, morphological number distinctions are available in the Esahie inflectional system. The two cases of syncretism in Esahie that have been considered

<sup>42</sup> The *animacy hierarchy* proposed for German (cf. Alber and Rabanus, 2011) is based on similar observations.

point out that paradigms are crucial to inflectional morphology. The Esahie data, therefore, provides empirical support for the *irreducibility hypothesis* proposed by Stump (2016), which asserts that some morphologically significant generalizations irreducibly pertain to whole word forms and their content (paradigm), rather than to stems, affixes or morphotactics. In [Chapter 5](#), these generalizations are argued to be better accounted for as ‘constructional properties.’

## 2.7 Conclusion

This chapter set out to investigate two inflectional issues in Esahie – noun classes and syncretism. Overall, the inflectional system of the nominal of Esahie could be described as fairly robust, relatively speaking. We have also shown that features including *number*, *person*, *animacy*, and *case* all enter the Esahie agreement system in various contexts. Adopting Corbett’s (2006) criteria for canonicity of agreement, this work has shown that in Esahie, *DP-internal* agreement is more canonical than the various instances of *anaphora* agreement.

## CHAPTER THREE

### NOMINALIZATION IN ESAHIE

#### 3.1 Introduction

This chapter deals with the word-formation phenomenon of nominalization. It begins with an overview of the subject of nominalization and how it was discussed in the early Generative accounts ([section 3.2](#)). Based on the type of syntactic unit that serves as the input to the nominalization operation, as well as the internal syntax of the eventual output of the nominalization operation, this chapter also discusses two types of nominalizations – *lexical* vs. *clausal* nominalizations ([section 3.3](#)). Regarding clausal nominalizations, two types of nominalizations are discussed: nominalized clauses ([section 3.3.1.1](#)) and clausal nominalizations ([section 3.3.1.2](#)). On lexical nominalization, various types of nominalizations are discussed including *personal and participant* nominalization ([section 3.3.2.1](#)), *instrumental* nominalization ([section 3.3.2.2](#)), *locative* nominalization ([section 3.3.2.3](#)), *objective* nominalization ([section 3.3.2.4](#)), *reason* nominalization ([section 3.3.2.5](#)), *abstract* nominalization ([section 3.3.2.6](#)), and *action* nominalization ([section 3.3.2.7](#)). The remainder of the chapter is dedicated to action/event nominalization as is it works in Esahie, addressing issues like prosodic features in the derivation of action nominals ([section 3.3.2.7.2](#)), morpho-syntactic features (i.e. morpho-syntactic characterization), such as synthetic compounding ([section 3.3.2.7.3](#)), as well as inflectional features of action nominals ([section 3.3.2.7.4](#)).

Finally, the chapter discusses the properties in the external ([section 3.4.1](#)) and internal syntax ([section 3.4.2](#)) of Esahie action nominals, as well event structure properties ([section 3.5](#)) of (complex) nominalizations in Esahie. A conclusion of the chapter is offered in [section 3.6](#).

### 3.2 On the phenomenon of Nominalization

In its core sense, nominalization has generally been understood as the process of deriving nouns or nominal expressions (Comrie & Thompson 2007). The input for this kind of derivation ranges from lexical units like verbs (e.g. play > player) and adjectives (e.g. sad > sadness), to clausal units (e.g. transform the economy > (the) transformation of the economy).

Nominalization has over the years been of keen interest to linguists (cf. Alexiadou and Rathert 2010, Roy and Soare 2011) because they tend to have (mixed) properties of both nominals and predicative (either verbal or adjectival) elements and consequently exhibit a tendency of ambivalence as far as categorial status is concerned. To date, the trans-categorial status of nominalizations still presents an interesting challenge to standard syntactic and morphological theories.

The study of nominalization has been approached from varied perspectives. The works of Koptjevskaja-Tamm (1993)<sup>43</sup> and Malchukov (2004), for instance, approach the subject from a typological perspective, adopting a questionnaire method in collecting data from a variety of languages. Other scholars, such as Yap et al. (2011), have approached the subject from a diachronic perspective, by collecting detailed analyses of particular languages within certain language families, in order to facilitate cross-phyla comparison of languages. Nominalizations, especially deverbal event nominalizations, differ across the languages of the world and more than one form can be attested within a specific language. Nominalizations can also vary according to the morphological process involved in their formation, the extent of the inheritance of verbal and nominal properties that is shown in their syntax, as well as the possible meanings expressed in the semantics. The fascinating nature of the interaction between the syntax, morphology and semantics of nominalizations partly explains why the subject has been of interest to linguists.

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<sup>43</sup> The typological analysis provided in Koptjevskaja-Tamm (1993)'s is based on a sample of 70 languages.

In the beginning, syntacticians, especially those working within the framework of Generative-Transformational Grammar, were primarily interested in ascertaining the specific component of grammar responsible for the derivation and computation of the properties of nominalizations. In the seminal works of both Chomsky (1957) and Lees (1960), nominalizations were generally accounted for as products of transformations that took place in syntax. In the Leesian (1960) account, for instance, nominalizations of all sorts (including derived nouns, compounds and relative clauses) were derived by applying a series of transformations (i.e. syntactic rules) to full sentences. In this account, nominalizations were seen strictly as the result of transformation operations taking place in the syntax. Let us consider the sentences below in (70).

- (70) a. John politely refused the offer  
 b. John's polite refusing of the offer

According to Lees' analysis, the derivation of example (70b) from (70a) can be accounted for by the transformational rule in (71):

$$(71) \text{ Nom-Tns-V}_t\text{-Nom}'\text{-(Adj-Ly)-Z} \rightarrow \text{X-Nom+Gen-(Adj)-ing V}_t \text{ + of + Nom}'\text{-Z-Y}$$

(Lees 1960: 68)

Similarly, Chomsky (1970), also being concerned with accounting for the structural and semantic parallelism between nominalizations and sentences, distinguishes three categories of nominalizations: *derived*, *gerundive* and *mixed* nominalizations. This distinction is exemplified below in (72).



- (72) a. John's refusal of the offer (Derived)  
b. John's refusing the offer (Gerundive)  
c. John's refusing of the offer (Mixed)

Chomsky notes, among other things, that syntactic derivation could only account for gerundive nominalizations, and that, derived nominalizations are too idiosyncratic in their semantics and restricted in productivity to be accounted for syntactically, via syntactic transformations. Since derived nominalizations were too idiosyncratic and different from the outputs of standard syntactic transformations, Chomsky (1970) explains that they cannot be treated as the results of syntactic operations. Rather, Chomsky proposes, albeit indirectly, that, derived nominalizations are part of the lexicon.

This position, alternatively referred to as the *lexicalist hypothesis* (Chomsky 1970:188), paved way for the rise of lexicalism and Generative Morphology, where scholars such as Halle (1973), Aronoff (1976), Booij (1977), Allen (1978), Lieber (1980), and Scalise (1984), understood the lexicon as a separate operational module paralleling syntax in some respects. In a more articulated view, word formation processes (and morphological processes, in general) came to be understood to take place in the lexicon, such that syntax only dealt with (already-formed) words.

Within the Generative Grammar framework, the nature, computational capacity, and function of the lexicon was conceptualized in two opposing ways: the pre-Chomsky (1970) and post Chomsky (1970). In the first view, the lexicon was understood as a repository of idiosyncrasies deployed to build linguistic expressions in the syntax. In this conceptualization, the lexicon was understood as having no structure, hence, containing no combinatorial primitives and no internal mechanisms for computation (cf. Di Sciullo and Williams 1987,

Chomsky 1981). In the post Chomsky (1970) view, the lexicon was seen as a module with its own syntax-independent principles for assembling primitives into complex objects. In other words, the lexicon was understood as having its own computational capacity (cf. Halle 1973, Aronoff 1976, Lieber 1980, Scalise 1984).

Linguists, syntacticians especially, have also sought to investigate other properties of nominalizations. They include one, whether nominalization patterns are grammatical-role driven or thematic-role driven (cf. Rappaport 1983; Giorgi and Longobardi 1991; Hoekstra 1986; Rozwadowska 1988). Two, the extent to which the internal syntax of nominalizations is either DP-like or TP-like, a hybrid category or like neither (cf. Koptjevskaja-Tamm 1993/2005; Comrie 1976/2011; Bekaert and Enghels 2017). Three, the syntactic functions of nominalizations (cf. Lehmann 1984). Four, the attested syntactic types of nominalizations based on argument structure and other diagnostics (cf. Grimshaw 1990; Rappaport Hovav and Levin 1992; Comrie and Thompson 2007). Five, the type of arguments that can occur or must occur to evoke a particular reading, as well as the type of verbs that are allowed in one configuration or the other, among other things, and six, the attested syntactic types of nominalizations based on underlying syntactic structures and derivations (Alexiadou 2001; Harley 2009; Borer 2013).

Indeed, there are several other syntactic attempts at formalizing the so-called *Event vs. Result* nominals (*E/R* nominalizations) dichotomy, especially within the framework of Distributed Morphology (DM) in recent times. In the DM framework (cf. Halle & Marantz 1993; Marantz 1997a/b; 2001; 2007; Harley & Noyer 1999; and Embick & Noyer 2007), there is a unique generative component called SYNTAX, which is responsible for the computation of both word and phrase structure. Consequently, there is no component specifically designated for word formation, neither a morphological component nor a generative lexicon. In fact, DM

denies the existence of a generative lexicon<sup>44</sup> and the properties traditionally associated with it are distributed in various components, which gives rise to the name ‘Distributed Morphology’ (see Marantz 1997a-b, for more on anti-lexicalist arguments). In Borer’s (2013) Exo-skeletal model, like other syntactic approaches to word formation in general, derivation is understood to obey same syntactic rules that phrase-level syntax follows, and contrary to the lexicalist view, there is no computational lexicon.

Morpho-semanticists have sought to explore, among other things: the semantics of nominalizing derivatives (cf. Martin 2010), the rules that govern them and how productive are they, the ways in which these derivatives compete with each other (cf. Varvara 2017), what accounts for affixal polysemy and ambiguity in nominalizations (cf. Melloni 2007/2011, Jezek and Melloni 2011, Real and Retoré 2014), and also whether or not the semantics of an input/base is enough to define the structure of nominalizations (cf. Mayo et al., 1995, Bisetto and Melloni 2007, Gurevich et al. 2008). Still on the semantics of nominalizations, some scholars have probed into the question of whether nominalizations in themselves have determinate meanings. Taking cognizance of the range of ‘forms’, the range of ‘readings’, as well as the morpho-syntactic ‘contexts’ in which nominalizations occur, Lieber (2016) argues that the range of interpretations available to one kind of nominalization is inevitably influenced and shaped by the range of other nominalizations that are available to speakers of a language, as well as by the contexts in which those nominalizations are deployed. In her egalitarian view of nominalizations, Lieber (2016: 20) contends that nominalizations “exist within a kind of derivational ecosystem where everything bears a relation to everything else.”<sup>45</sup>

Other scholars have yet approached the subject from a pragmatic and ontological angle (cf. Hamm and Kamp 2009, Brandtner and Heusinger 2010, Brandtner 2011).

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<sup>44</sup> In DM, there are 3 types of lexicons, but not in the traditional sense of the word. The discussion concerning the nature and function of these lexicons is beyond the scope of this thesis.

<sup>45</sup> Lieber ultimately argues that, to the extent that many patterns that have been claimed to be unacceptable are actually attested in corpora, the theories that have been built on other data are undermined.

### 3.3 Lexical vs. Clausal Nominalization in Esahie

The classification of nominalization into clausal and lexical is based first on the type of syntactic element that functions as the input for the nominalization process or the syntactic scope of the nominalization process. The input for the nominalization may either be a lexical item or a clausal structure. Beside the input element parameter, our treatment and classification of nominalizations in this chapter also takes into account the internal syntax of the output nominal, that is, whether the nominalization resembles a tense phrase (TP or a clause) as against a determiner or noun phrase (DP/NP). The essence of this second parameter is that, there is a general consensus in the literature that action nominals, a type of lexical nominalizations, for instance, typically exhibit some of the syntactic characteristics of both clauses and underived NPs, hence, they occupy an intermediate position between these two categories, with many scholars (cf. Comrie 1976, Koptjevskaja-Tamm 1993; 2003; 2005, Comrie and Thompson 2007) agreeing that the extent to which action nominals are verbal or nominal varies considerably from language to language.

Proceeding on this premise, it is justifiable to expect that nominalizations would exhibit some morpho-syntactic characteristics prototypical of noun phrases (or DPs). These properties may be distributional and/or structural and could be useful to determining how truly ‘noun-like’ (i.e. DP-like) or ‘clause-like’ (i.e. TP-like) nominalizations are.

Therefore, admittedly, our two-way classification of Esahie nominalizations based on input vs. (internal syntax of) output-based parameters, has a potential of yielding conflicting classifications in some instances. This implies that, what might be classified based on the input element as a case of clausal nominalization, might as well be classified as a case of lexical nominalization based on the internal syntax that the output nominalization displays. As we shall see in [section 3.3.1.1](#), this is particularly the case for *nominalized clauses* in Esahie, which

will later be re-analyzed as cases of lexical nominalizations ([section 3.3.2.7.1](#)). It is our hope that this blend in classification will enhance our understanding of Esahie nominalization.

We begin our discussion with lexical nominalization, which has to do with the creation of nouns from lexical items, typically verbs and adjectives (cf. Comrie & Thompson 2007). Nominalization in Esahie is typically a deverbalization process, since input elements are typically verbs rather than adjectives. Nouns may also serve as input elements for (further) nominalization operations. The resultant nominals may simply name the activity or state designated by the lexical input, or may represent one of its arguments. One could therefore, distinguish between a number of such nouns: names of activities or states (i.e. action nominals), on the one hand, and names of arguments (event participants, i.e. agentive nouns, instrumental nouns, manner nouns, locative nouns, objective nouns, reason nouns, etc.) on the other hand (cf. Comrie and Thompson 2007). As we shall see, the difference between the forms in the former and those in the latter category is that the former items typically retain certain properties of the verbs or adjectives they are related to, while the latter typically behave syntactically like other nouns in the language, bearing only morphological and (often unpredictable and idiosyncratic) semantic relations to the associated verb or adjective.

As far as clause-based nominalizations are concerned, two distinct sets of nominalization constructions can be distinguished, namely “nominalized clauses” and “clausal nominalizations” (cf. Post 2011, Yap et. al 2011). The former displays the syntax of a noun phrase, and typically express event nominalizations, noun complements and relative clause constructions. The latter resemble predicative clauses in that they have the tendency to retain certain verbal features such as tense-aspect-mood marking. They frequently occur as subordinate clause constructions for framing and backgrounding functions. As we shall see, Esahie clause-based nominalization resembles nominalized clauses.

The range of strategies and devices employed cross-linguistically for the purposes of nominalization are numerous and varied. They include, but are not limited to, the attachment of a nominalizing affix, the attachment or modification via an article, the attachment of nominal inflectional suffixes, the use of an *of*-phrase, as well as the use of a possessive construction (Comrie & Thompson 2007; Koptjevskaja-Tamm 1993, 2003; Malchukov 2006). Furthermore, in languages with no dedicated nominalizer(s), other categories such as classifiers, demonstrative and definiteness markers, possessive pronouns and case markers may be employed to signal the nominal status of a word or construction. As noted in the literature, this raises an interesting question: Can such noun phrase modifiers and markers be considered as nominalizers?

In what follows, we proceed to discuss these issues by focusing on two types of clause-based nominalizations that obtain in Esahie, comparing them with nominalizations in other languages.

### **3.3.1 Clausal Nominalization in Esahie**

In this section, we discuss how the two types of clause-based nominalizations elaborated above manifest in Esahie, by focusing on genitivization and relativization. We first consider “nominalized clauses” in section (3.3.1.1), and later proceed to look at “clausal nominalizations” in section (3.3.1.2).

#### **3.3.1.1 Nominalized Clauses**

As noted earlier, nominalized clauses exhibit the syntax of noun phrases and typically express event (*E*) nominalizations, noun complements and relative clause constructions. In Esahie, this type of nominalization involves both genitivization and the attachment of a nominalizing

suffix. Specifically, the morpheme *-le* (and its allomorphs) is the nominalizing suffix in Esahie, which nominalizes various types of constructions. Let us consider the following example(s).

- (73) a. *Nana Aba kenga-le nwɔmaa ne*  
 NAME read-PAST book DEF  
 ‘Nana Aba read the book’
- b. [*Nana Aba-ye nwɔmaa-kengá-le*] *tè pa*  
 NAME-POSS book-read- NMLZ COP good  
 ‘Nana Aba’s book-reading (style/habit) is good’
- (74) a. *Araba li-le alee ne nkoraatĩ*  
 NAME eat-PAST food DEF all  
 ‘Araba ate all the food’
- b. [*Araba-ye alee-lí-le*] *tè maye*  
 NAME-POSS food-eat-NMLZ COP good  
 ‘Araba’s (style/habit) of eating is courteous’

The construction in the subject slot of (73b) is a nominalized version of (73a). Although the base construction for this nominalization is a clause (i.e. instantiating clause-based nominalizations), the nominalized construction in (73b) has the syntax of a noun phrase. Similarly, the construction in the subject slot of (74b) is a nominalized version of (74a), with a clausal base construction, and yet, showing the syntax of a noun phrase. Within the whole nominalized construction in (73b) and (74b), the modifying elements stand in a genitive relation with the head noun. Although these are cases of clausal nominalization, there are a number of features that make them amenable to a lexical nominalization classification. First, in terms of semantics, this nominalization pattern instantiates event nominalization (see [section](#)

[3.5](#) for more) but more precisely *mode nominals* ‘manner or style of performing the action designated by the verb’ (cf. Koptjevskaja-Tamm 1993). This implies that *nwɔmaa-kengá-lɛ* in (73b) connotes the agent’s ‘manner/style of reading’ while *aleɛ-li-lɛ* in (74b) connotes the agent’s ‘style/manner of eating’. Second, one would not expect that a purely clausal type which be strictly transpositional would have the characterization of nouns with modified meanings, such as *manner*, which is a typical feature of lexical nominalizations. With this semantic characterization, these nominal forms approach lexical nominalizations. Third, the fact that there is no *aspect – tense – mood* preservation neither at the morphological nor semantic level also makes them akin to lexical nominalizations. Indeed, these cases of nominalizations could be conveniently re-classified as cases of lexical nominalizations (see [section 3.5](#)).

### 3.3.1.2 Clausal Nominalizations

As explained earlier, clausal nominalizations have been argued to show the semblance of predicative clauses in that they have the tendency to retain certain verbal features such as tense-aspect-mood marking. They also typically occur as subordinate clause constructions with framing and backgrounding functions. The discussion on clause-based nominalizations in this section focuses on relativization.

As far as clausal nominalization is concerned, the relation between relativization and nominalization has long been noted in extant literature as an interesting, intimate, and germane one (cf. Wheatley 1982, Herring 1991, Genetti 1992, Noonan 1997, and Bickel 1999). In Lahu, a Tibeto-Burman language, for instance, a single morpheme, [ve], functions as a nominalizer, complementizer, relativizer, and a genitive marker (cf. Matisoff 1972, Wheatley 1982). Indeed, in Tibeto-Burman languages in general, relative clauses are universally nominalizations, and have been described as a subspecies of clausal nominalizations (cf. DeLancey 2002, 2005). This is also attested in Korean, Chinese, and Japanese and several other Asian languages (cf.



LaPolla 1994, 2008; Bickel 1999; DeLancey 1999, 2005; Genetti 1992, 2011; Genetti et al. 2008; Horie 1998; Matisoff 1972; Noonan 1997, 2008; Rhee 2008; Shibatani 2009; Simpson 2008; Yap & Matthews 2008; Zeitoun 2002).

In what follows, we discuss relativization in Esahie as instance of clausal nominalization. Let us consider the following examples in (75).

- (75) a. *Benyiwa tō-ne emo anoma*  
 NAME cook-PAST rice yesterday  
 ‘Benyiwa cooked rice yesterday’
- b. *Ehoin-ku-me koso [emo bɔ ɔ-tō-ne-n]<sub>REL</sub>*  
 hunger-kill-1SG.OBJ but rice REL 3SG-cook-PAST-DEF  
*n-ye-fe*  
 NEG-COP-tasty  
 ‘I am hungry, but the rice which s/he cooked is not palatable’.

The sentence in (75b) contains a relativized version of the clause in (75a). The (modifying) relativized construction in (75b) [*ɔ-tō-ne-n*] ‘she cooked’ is nominalized by reason of the relativizer (*bɔ* ‘which’), which has nominal features that take scope over the entire construction and stands in an apposition relation to the relative head noun *emo* ‘rice’. At this point, it is instructive to introduce Ouhalla’s (2004) relativizer typology, according to which, cross-linguistically, there are two types of relativizers: the Complementizer-type (C-type) relativizer and the Determiner-type (D-type) relativizer. A language like English, for instance, has been argued to have the C-type relativizer since the relativizer *that*<sup>46</sup> is the same as the regular

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<sup>46</sup> Undeniably, English also has relative pronouns such as *WHO* and *WHICH* that have nominal features. Although such *wh*-elements are typically hosted in the C-layer, they are not C heads, but D heads.

complementizer for sentential complementation, as in ‘Salo exclaimed *that* Obed would return soon’. In Esahie, just like in Akan (Osam 1998; Saah 2010), Amharic (Mullen 1986; Ouhalla 2004) and Nuosu Yi (Liu & Gu 2011), the relativizer is different from the complementizer of sentential complementation. This difference is illustrated in the Esahie examples in (76).

- (76) a. *Aseda hã-ne kyε sona η-gã nahore*  
 NAME say-PAST COMP man NEG-say truth  
 ‘Aseda said that men are liars’
- b. *Aseda η-gro menia bɔ bε-η-gã nahore*  
 NAME NEG-like people REL 3PL-NEG-say truth  
 ‘Aseda dislikes people who lie’
- c. \**Aseda η-gro menia kyε bε-η-gã nahore*  
 NAME NEG-like people COMP 3PL-NEG-say truth

From the sentence (76) above, we notice that the role of the complementizer *kyε* and the relativizer *bɔ* are distinct and not interchangeable in their use in the grammar of Esahie. This accounts for the ungrammaticality of (76c). In consonance with the predictions of Ouhalla’s (2004) analysis, if a language lacks relative pronouns or does not employ relative pronouns in relativization, as appears to be the case in Esahie, and Akan too (Saah 2010), the relativizer introducing relative clauses and the complementizer introducing sentential complements in this language must be two different morphemes.

Following Kayne (1994) and Ouhalla’s (2004) typology of relative clauses, I propose that Esahie is a language with a D-type relativizer, where the relative clause is a DP with the [D-TP] structure. But what does it mean to say that the relative morpheme in Esahie, which is a D-type relativizer, takes a TP as its complement. I reckon that this is a nominalization process.

In other words, having the (nominal) features of a determiner, the relativizing morpheme *bɔ* could be argued to be playing the role of a nominalizer, turning a relative clause into a nominalized construction, and this nominalized relative clause then stands in apposition with the relative head noun. Alternatively, we could also simply argue that since the whole relative clause has an N head *emo* ‘rice’, the nominal feature of the head percolates<sup>47</sup> onto the entire relative clause [*bɔ ɔ-tõ-ne-n*] ‘which she cooked’, resulting in the nominalization of the whole construction [*emo ɔ-tõ-ne-n*] ‘the rice which she cooked’. Either way, this type of nominalization instantiates clausal nominalizations because it has the semblance of predicative clauses and retains some verbal features, specifically tense and polarity features.<sup>48</sup> In the relativized construction [*emo ɔ-tõ-ne-n*] ‘the rice which she cooked’ in (75b), for example, the *ne*-tense marking of the verb is retained. Similarly, in the relativized construction [*menia bɔ bε-η-gã nahore*] ‘people who lie’ in (76b), for example, the *η*-negation marking of the verb is retained.

Typical of clausal nominalizations, the Esahie relativized clause occurs as a subordinate clause construction with a backgrounding function. According to Post (2011), backgrounding clausal nominalization tends to occur clause-medially, in an “aside”-like presentation often designed to clarify a reference or otherwise support a listener’s understanding. From the

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<sup>47</sup> Percolation is a well-formedness condition which allows the features of a head to be passed up/down from node to node (cf. Lieber 1980, 1989, 1992; Selkirk 1982; Di Sciullo and Williams 1987; Appah 2013) *inter alia*. During percolation, the features of the head take precedence over the features of the non-head and so the features of the non-head are blocked from percolating.

<sup>48</sup> Other markers such as aspect and mood markers may also be retained in clausal nominalization. The aspectual marker in (Xa) is preserved in the relativization in (Xb).

(X)	a.	<i>Ama</i>	<i>kɔ-kenga</i>	<i>nwɔmaa</i>	<i>ne</i>	
		NAME	FUT-read	book	DEF	
		‘Ama will read the book.’				
	b.	<i>Nwɔmaa</i>	<i>bɔ</i>	<i>Aseda</i>	<i>kɔ-kenga</i>	<i>ne</i>
		Book	REL	NAME	FUT-read	DEF
		‘The book which Aseda will read’				

perspective of the internal syntax of the output nominalization, clausal nominalizations resemble TPs, rather than DPs.

In sum, comparing the two types of clause-based nominalizations discussed in this section, one might observe that while clausal nominalizations (i.e. involving relativization) show some clausal properties and have the internal syntax of a clause, nominalized clauses (i.e. involving genitivization and affixation), show no clausal properties and exhibit the internal syntax of lexical nominalizations.

### **3.3.2 Lexical Nominalization in Esahie**

In this section, we discuss various types of nominalizations whose input is a lexical item. The input items are typically verbs as in (78), but may also be nouns and adjectives, as we shall see in (79) and (106d), respectively.

#### ***3.3.2.1 Personal and Participant Nominalization***

Following Payne 1997 and others (cf. Appah 2003; Comrie and Thompson 2007; Bauer et al. 2013), this classification of nominalizations is used as a cover term for all kinds of nominalizations ranging from nouns denoting agents, patients, themes, and inhabitants. We will collectively refer to such nominalizations as *P/P* nominalizations. Agent and patient nominalizations appear to be the most typical cases of such nominalizations. This explains why a number of languages have productive processes whereby action and state verbs can be turned into nouns meaning ‘one who/which performs the action/state designated by the (input) verb’. We will refer to this process by the traditional label ‘agentive nominalization’ even though, strictly speaking, the noun need not be in an ‘agent’ relationship with the verb from which it is derived. In English, for example, the suffix *-er* derives nouns meaning ‘one which “verbs”’ from both agentive and non-agentive verbs:

	<u>Input</u>	<u>Output</u>
(77)	a. sing	singer
	b. hear	hearer

Interestingly, however, even in English, this process is constrained in certain ways: for example, *-er* derivation can take as its input nominal bases (e.g. *potter*, *Londoner*, etc.) and many stative verbs (e.g. *lover*), but it cannot be attached to adjectives.

For the general derivation of deverbal nominalizations in Esahie, the suffixes [-*niɛ*] and [-*fʊɛ*], which roughly correspond to the English nominalizers *-er*, *-ee*, *-ist*, *-ant* are highly productive in Esahie. Like the nominalizer *-lɛ* which typically derives E/R nominalizations, these nominalizers [-*niɛ*] and [-*fʊɛ*] (earlier discussed in [Chapter 3](#)) may attach to verbal stems, although they typically select nominal stems, and generally derive personal/participant (P/P) nominalizations.

Given the fact this pair of affixes can attach to both nominal and verbal stems, they constitute counterexamples to the *Unitary Base Hypothesis* (henceforth, UBH), which proposes that “the syntacticosemantic specification of the base, though it may be more or less complex, is always unique. (cf. Aronoff 1976: 48). The Unitary Base Hypothesis A W[ord] F[ormation] R[ule] will never apply to either this or that” (Aronoff 1976: 48).” In essence, the UBH claims that we should never expect to find in a language a morpheme that attaches to bases of different categories, say noun and verb, or verb and adjective. To the extent that the operators [-*niɛ*] and [-*fʊɛ*] attach to both nominal and verbal stems, Aronoff’s (1976) UBH does not hold for Esahie.

The operators [-*niɛ*] and [-*fʊɛ*] respectively constitute a singular-plural pair of allomorphs, hence are in a sort of morpho-syntactically conditioned complementary distribution (i.e. based on NUMBER). While the operator [-*niɛ*] typically adds the ‘singular’

meaning to the form to which it attaches, [-*fʊɛ*], on the other hand, typically adds a ‘plural’ meaning to the form to which it attaches.

Lexical items are generally regarded in the literature as the selecting elements/heads in complex words, so that *head selection* (i.e. selection controlled by the head) is also *lexical selection* (see [section 4.3.2](#) of [Chapter 4](#) for more). However, in word-syntactic (lexicalist) models, affixes have also been considered as heads, with a similar capacity for selection (i.e. *affixal selection*). Indeed, affixal selection has been acknowledged in the literature (cf. Aronoff 1976; Bauer 1990) to account for the fact that the English affix [*in-*] selects [+*linate*] stems such as *inedible*, while [*un-*] selects [-*linate*] bases such as *uneatable*.

Unlike the English [*in-*] and [*un-*], the Esahie operators [-*niɛ*] and [-*fʊɛ*], in terms of their selectional properties, appear to attach to the same range of forms. An implication that follows from this is that one cannot predict which one of the operators attaches to one stem or the other. Their selection is based on morpho-syntactic (i.e. number) context in which they are used. Let us consider the following examples.

	<u>Input</u>	<u>Output</u>
(78) a.	<i>ware</i>	<i>a-ware-niɛ</i>
	marry	SG-marry-NMLZ <sub>P/P</sub>
		‘one who is married/married person’ <sup>49</sup>
b.	<i>sũã</i>	<i>a-sũã-fue</i>
	learn	PL-learn-NMLZ <sub>P/P</sub>
		‘students/disciples (one who learns)’
c.	<i>kyere</i>	<i>kyere-kyere-niɛ</i>
	teach	RED <sup>50</sup> -teach-NMLZ <sub>P/P</sub>

<sup>49</sup> The verb *marry* here is in its intransitive meaning/use, hence the possibility of dropping the internal argument.

<sup>50</sup> The reduplication here appears to nominalize the verbal base.

		‘teacher’
d.	<i>bu</i>	<i>bu-bua-niε</i>
	break	RED-break-NMLZ <sub>P/P</sub>
		‘cripple’ <sup>51</sup>
e.	<i>pata</i>	<i>pata-fœ</i>
	stop.a.fight	stop.a.fight-NMLZ <sub>P/P</sub>
		‘one who intervenes to stop a fight’

The examples in (78) are all instances of deverbal nominalization via the attachment of the nominalizing suffixes.<sup>52</sup> Having the general meaning of ‘one who performs/engages in the action designated by the verb’ and, a few times, ‘one who is in the state designated by the verb’. The forms in (78) mostly constitute instances of ‘agentive’ nominalizations, in the sense indicated above. In (78b), for instance, the noun *asũãfue* derives from the verb *sũã* ‘to learn’ through the attachment of the affix [-*fue*] and has the meaning ‘student/disciple (one who learns)’.

We proceed to consider another kind of agentive nominalizations.

	<u>Input</u>	<u>Output</u>
(79) a.	<i>paa</i>	<i>a-paa-fœ</i>
	labour	PL-labor-NMLZ <sub>P/P</sub>
		‘laborers’
b.	<i>kua</i>	<i>kua-niε</i>
	farming	farming-NMLZ <sub>P/P</sub>
		‘farmer’

<sup>51</sup> Here, the meaning is sort of unaccusative since literally a cripple is one who is “broken” in the legs.

<sup>52</sup> One may also argue that the prefix also plays nominalizing roles, but it certainly does not contribute to the agentive meaning. This would also imply a pre-nominalization that turns the verbs into nominal bases.

- c.     *nwore*           *nwore-fʊɛ*  
           wisdom           wisdom-NMLZ<sub>P/P</sub>  
                               ‘wise person’
- d.     *ɲɔmhyɛ*          *ɲɔmhyɛ-niɛ*  
           prophecy       prophecy-NMLZ<sub>P/P</sub>  
                               ‘one who prophesies/prophet’

It appears that most of the examples in (78) and (79) are borrowed from Akan.<sup>53</sup> Unlike the examples in (78) whose inputs were verbs, the examples in 79 (a-d) have nouns as their bases, implying that they are noun-based nominalizations. The input elements for these nominalizations are simplex nouns. This word-formation phenomenon is reminiscent of the English word-formation process that derives *keyboardist* from *keyboard*, *bigamist* from *bigamy*, *decker* from *deck*, *Londoner* from *London*, and *potter* from *pot*. The Esahie forms *apaafʊɛ* ‘laborers’ and *kuanie* ‘farmer’ are derived from *paa* ‘labor’ and *kua* ‘farming’, respectively, via the attachment of [-fʊɛ] and [-niɛ]. Let us examine the Esahie examples in (80).

	<u>Input</u>	<u>Output</u>
(80) a.	<i>awie</i>	<i>awie-niɛ</i>
	theft	awie-NMLZ <sub>P/P</sub>
		‘thief’

<sup>53</sup> In the table below, we provide a parallelism between these example and the potential Akan source words.

Akan	Esahie
<i>(o-)kuani</i> ‘farmer’	<i>kuanie</i> ‘farmer’
<i>nkɔmhyɛni</i> ‘prophet’	<i>ɲɔmhyɛniɛ</i> ‘prophet’
<i>apaafɔɔ</i> ‘laborers’	<i>apaafʊɛ</i> ‘laborers’
<i>ɔwarani</i> ‘a married person’	<i>awarenie</i> ‘a married person’
<i>asuafɔɔ</i> ‘disciple/student’	<i>asuafʊɛ</i> ‘disciple/student’



b.	<i>agudi</i>	<i>agudi-niε</i>
	athletics	athletics-NMLZ <sub>P/P</sub>
		‘athlete/player’
d.	<i>nyaatwom</i>	<i>nyaatwom-fʊε</i>
	hypocrisy	hypocrisy-NMLZ <sub>P/P</sub>
		‘hypocrites’
e.	<i>awue</i>	<i>awu-fʊε</i>
	death	death-NMLZ <sub>P/P</sub>
		‘the dead/dead people’
f.	<i>ahyerε-le</i>	<i>ahyerε-le-fue</i>
	write-NMLZ	writing-NMLZ <sub>E/R</sub> -NMLZ <sub>P/P</sub>
	‘writings’	‘write/scribe’
g.	<i>kwata</i>	<i>kwata-niε</i>
	leprosy	leprosy-NMLZ <sub>P/P</sub>
		‘leper’

The bases for the nominalizations in (81) are all complex nouns formed either via affixation or compounding. They all have P/P readings. The pattern of nominalization exhibited below in the examples in (81) conforms to standard synthetic compounding, like *truck-driver* in English. Having bases that are deverbal nouns, they are more complex in structure than examples we saw in (80) whose input elements are mostly simplex forms. This class of nominalization is productive.

(81) *Agentive nominalization via Compounding*

	<u>Input (VP)</u>		<u>Output</u>
a.	<i>sesã</i>	<i>sikaa</i>	<i>sika-sesã-fʊε</i>
	change	money	money-change-NMLZ <sub>P/P</sub>
	‘change money’		‘money-changers’

b.	<i>si</i>	<i>sua</i>	<i>sua-si-fʊɛ</i>
	build	house	house-build-NMLZ <sub>P/P</sub>
			‘builder(s)/mason(s)’
c.	<i>de</i>	<i>ɛtoɔ</i>	<i>ɛtoɔ-di~dé-lɛ-niɛ</i>
	take	tax	tax-take-RED-NMLZ-NMLZ <sub>P/P</sub>
			‘tax collector’

### 3.3.2.2 Instrumental nominalization

In some languages, there is usually a morphological process for deriving nouns from verbs where such nouns have a general meaning of ‘an instrument used for performing the action designated by the input verb’. In Wappo, an indigenous language of California (as well as in a number of other languages of the Americas), this process is very productive (cf. Comrie and Thompson 2007). A suffix [-(e)ma] ‘for the purpose of’ is added to the verb root to form an instrumental nominalization in Wapo as in (82).

(82) *Wappo*

	<u>Input</u>	<u>Output</u>	<u>Instrument</u>
a.	<i>yoʔ-</i>	<i>yok’ema</i>	
	sit	for the purpose of sitting	chair
b.	<i>kač</i>	<i>kačema</i>	
	to plough	for the purpose of ploughing	plough
c.	<i>lat’-</i>	<i>lat’ema</i>	
	to whip	for the purpose of whipping	whip

(Comrie and Thompson 2007: 338)

Similarly, in English, such instrumental nouns may be derived from verbs and adjectives via various morphological operators. Let us examine the examples below in (83) with the suffixes *-er* and *-ant*.

(83) English:

	<u>Affix</u>	<u>Input</u>	<u>Output</u>
a.	<i>-ant</i>	seal	sealant
b.	<i>-ant</i>	cool	coolant
c.	<i>-er</i>	mow	mower
d.	<i>-er</i>	cut	cutter
e.	<i>-er</i>	dispense	dispenser

As noted in the English literature (cf. Kamp & Roßdeutscher 1994; Alexiadou & Schäfer 2006; Alexiadou 2008/2010), instrumental readings are possible only for the *-er* nominals derived from verbs for which the expression of an instrumental performing a ‘subject’ role is available. Two kinds of instrumental *-er* nominals are distinguished in the literature. The instrumental nominals in (84), for example, and differ from those in (85), in that the instrumental noun in (84a) can occur as the subject of a corresponding sentence (84b), while this is not possible for the instrument in (85a) (see 85b). Let us examine the example (84) and (85) below.

- (84) a. Mary opened the can with the *new gadget*. (intermediary)  
 b. The *new gadget* opened the can.
- (85) a. Bill ate the food with a *fork*. (facilitating)  
 b. \*The *fork* ate the meat.

The instrument *new gadget* in (84) has been referred to as an *intermediary instrument*, because it can be understood to perform the action expressed by the verb (to some extent) independently, a property that qualifies them as subjects of these verbs in as in the instrument in (84b). The instrument *fork* in (85a), on the other hand, is referred to as *facilitating* or *enabling* instrument. Crucially, the corresponding instrumental *-er* nominals is only possible for verbs that combine with intermediary instruments. This accounts for the functional difference between the examples in (86).

- (86) a. opener (agent or instrument).  
 b. eater (agent but *not instrumental*).

In other languages, however, this instrumental nominalization may take the form of a compounding operation, as in Romance languages where instrument nouns are often formed via V+N compounding (e.g. Italian. *apribottiglie* ‘open-bottle(s), bottle opener’).

In Esahie, instrumental nouns can be derived from verbs via the operator [-*lee*] as in (87), or via compounding as in (88).

**Affixation**

- (87) *za*                    *n-za-lee*  
 hang                    PL-hang-NMLZ<sub>INST</sub>  
                                  ‘sticks used to stake yam plant [so that it climbs around]’

**[V-N]<sub>N</sub> compounding**

- (88) a.        *songyi turoo*  
                  sieve soup  
                  ‘colander (an item used to sieve soup)’

- b.     *sesa wura*  
           pick   rubbish  
           ‘dustpan (a flat container with a handle into which you brush dust and dirt)’

**[N-N]<sub>N</sub> compounding**

- c.     *bangu         bakaa*  
           banku       stick  
           ‘a stick used for preparing *banku* (a dough meal)’

**3.3.2.3 Locative nominalization**

Some languages have devices for deriving nouns that mean ‘a place where “verb” happens’ from verbs. Many Bantu languages have such a device; here are examples from Si-Luyana (Givón (1970)).

- (89) a.     *lóta             li-lot-elo*  
           dream           cl5/6-dream-obl  
                               ‘place of dreaming’
- b.     *móna            li-mon-eno*  
           see             cl5/6-see-obl  
                               ‘place of seeing’

(Si-Luyana: Comrie and Thompson 2007: 340)

In Sundanese, an Austronesian language of West Java, a circumfix *paŋ- . . . -an* is used for this function (cf. Robins 1959: 358).

- (90) a. *diuk paṅdiukan*  
 sit place of sitting (seat)
- b. *sare paṅsarean*  
 sleep place of sleeping (bed)

(Sundanese: Comrie and Thompson 2007: 340)

In English and Italian, for instance, locative nouns may be derived from verbs and nouns too, as shown in (91) and (92), respectively. Also, in some cases, the locative meaning is expressed by an affix which has another main function/meaning, as in the *-ance* in *entrance* or the *-er* diner.

(91) *English:*

	<u>Input</u>	<u>Output (N)</u>
a.	enter	entrance
b.	register	registry
c.	eat	eatery
d.	nun	nunnery
e.	dine	diner
f.	orphan	orphanage

(92) *Italian:*

	<u>Input</u>	<u>Output (N)</u>
a.	<i>entrare</i> ‘enter’	<i>entrata</i> ‘entrance’
b.	<i>uscire</i> ‘exit’	<i>uscita</i> ‘exit’
c.	<i>paste</i> ‘pastry’	<i>pasticceria</i> ‘pastry shop’
d.	<i>macellare</i> ‘to slaughter’	<i>macelleria</i> ‘slaughter house/butchery’
e.	<i>oste</i> ‘host’	<i>osteria</i> ‘tavern/pub’
f.	<i>gelato</i> ‘ice cream’	<i>gelateria</i> ‘ice-cream shop’

The nominalizing locative suffix in Esahie is [-*leε*], the same form which is used for deriving instrumental nominalization as discussed earlier in (87).<sup>54</sup> This locative operator tends to attach to verbal stems. Let us examine the following examples.

(93)	<u>Input</u>	<u>Output</u>
a.	<i>bia</i>	<i>a-bia-leε</i>
	bath	SG-bath-NMLZ <sub>LOC</sub>
		‘bathroom’
b.	<i>sie</i>	<i>a-sie-leε</i>
	bury	SG-bury-NMLZ <sub>LOC</sub>
		‘cemetery’
c.	<i>bɔ</i>	<i>a-bɔ-leε</i>
	crack	SG-crack-NMLZ <sub>LOC</sub>
		‘a place where harvested cocoa pods are cracked’
d.	<i>tena</i>	<i>a-tena-leε</i>
	sit	SG-sit-NMLZ <sub>LOC</sub>
		‘seat/sitting place’

The nominal forms in (93) (typically) have a parasynthetic structure since there is usually both a prefix and a suffix. They name the location where the action designated in the base verbs from which they are derived take place. The forms in (94) also follow this pattern.

(94)	a.	<i>fia</i>	<i>a-fia-leε</i>
		hide	SG-hide-NMLZ <sub>LOC</sub>
			‘hideout’

---

<sup>54</sup> The multifunctional role of locative affixes is richly attested in the nominalization literature.





‘hospital (sickness-healing place)’

### 3.3.2.4 Objective nominalization

Some languages have an affix that forms nouns designating the result, or the typical or ‘cognate’ object of an action, such as *-um* in Diola (Sapir 1965).

	<b><u>Input</u></b>	<b><u>Output</u></b>
(97)	<i>lib</i> to make slices	<i>libum</i> ‘cuts, slices’

Many Bantu languages have a similar device for creating a noun from a verb, where that noun means the object that results from an action. In Zulu, and in Si-Luyana, for example, a prefix for nouns in one of the nonhuman noun classes and the suffix [-o] will turn a verb into such a noun (Kunene 1974; Givon 1970).

(98) Zulu:

	<b><u>Input</u></b>	<b><u>Output</u></b>
a.	<i>-cabanga</i> think	<i>um-cabang-o</i> CL-think-NMLZ ‘thought’
b.	<i>-cula</i> sing	<i>i- cul -o</i> CL-sing-NMLZ ‘choir’

(99) Si-Luyana:

	<b><u>Input</u></b>	<b><u>Output</u></b>
a.	<i>-lóta</i> dream	<i>lu-lot-o</i> a dream
b.	<i>-imba</i> sing	<i>lw-imb-o</i> ‘a song’

In Sundanese, the suffix [-an] is one affix that performs this function (Robins 1959: 347):

	<u>Input</u>	<u>Output</u>
(100)	a. <i>inum</i>	<i>inum-an</i>
	‘to drink’	‘drink/alcohol’
	b. <i>omoy</i>	<i>omoy-an</i>
	‘to say’	‘word/saying’
	c. <i>ijət</i>	<i>ijət-an</i>
	‘to think’	‘thought’

In some languages, there is a process for taking a verb and forming a noun from it which names not the typical object nor the result of the activity denoted by the verb, but a noun with the passive meaning, that is ‘thing/person that is “verbed”’. In Si-Luyana, for example, either a human or a nonhuman noun class prefix may be added to a passive verb to form an objective noun (Givón 1970b: 74–5).

	<u>Input</u>	<u>Output</u>
(101) a.	<i>móna</i>	<i>mu-mon-wa</i>
	see	CM1/2-see-pass
		‘one who is seen’
	b. <i>móna</i>	<i>si- mon -wa</i>
	see	CM7/8-see-pass
		‘thing which is seen’

In what follows, we examine some object(-ive) nominalizations in Esahie. As we shall see later in (section [3.4](#)), these nominalizations have the same morphological structure as E/R nominalizations and could actually be reanalyzed as *result nominals*.

(102) Esahie:

a. *hyerε*            *a-hyerε-le*  
write                PL-write-NMLZ<sub>R</sub>  
                                 ‘writings’

b. *pε*                *ε-pε-le*  
fall                 SG-fall-NMLZ  
                                 ‘epilepsy’

(103) a. *kyerε*            *η-gyerε-kyerε*  
teach                PL-teach-RED  
                                 ‘teachings’

c. *yie*                *a-yie-leε*  
finish                SG-finish-NMLZ  
                                 ‘the end (of a situation/event)’

### 3.3.2.5 Reason nominalization

Reason nouns are nominalizations that indicate or explain the reason for a certain action, state or event. Sundanese is an example of a language in which a noun meaning ‘the reason for “verbing”’ can be created from a verb (Robins 1959:351).

	<b><u>Input</u></b>	<b><u>Output</u></b>
(104) a.	<i>dataŋ</i> arrive	<i>paŋdataŋ</i> ‘reason for arrival’
b.	<i>daek</i> be willing	<i>paŋdaek</i> ‘reason for being willing’
c.	<i>indit</i> leave	<i>paŋindit</i> ‘reason for leaving’

In example (104a), for instance, a reason nominalization is derived from the verb *datan* ‘arrive’ via the attachment of the prefix [*pan-*]. This affixation operation is not only transpositional but also affects the meaning of the nominalization, which the nominalization indicates the reason for the performing or undergoing the meaning of base verb from which it is formed.

In Esahie, we could have nominalizations that name ‘the goal of the action described in the verb’. This class is unproductive one with members that are potentially borrowed.

- (105) *nate*                    *nate-seε*  
           walk                    walk-NMLZ  
    ‘reason for coming (lit. reason for walking)’

The next class of nominalization we look at is the abstract class.

### 3.3.2.6 Abstract nominalization

Nominalizations may denote abstract and non-concrete and intangible concepts. The input element of this class of lexical nominalizations may be verbs, as in (106a-c), or adjectives, as in (106d).

- (106) Esahie:
- a.     *kuro*                    *e-huro-lε*  
           to love                    SG-love-NMLZ<sub>E/R</sub>  
    ‘(the feeling of) love’
- b.     *sere*                    *ε-sere-lε*  
           to laugh                    SG-laugh-NMLZ<sub>E/R</sub>  
    ‘laughter’

- |    |                |                   |
|----|----------------|-------------------|
| c. | <i>wu</i>      | <i>a-wue</i>      |
|    | to die         | SG-die            |
|    |                | ‘death’           |
| d. | <i>nyemene</i> | <i>nyemēnē-nε</i> |
|    | beautiful      | beautiful-NMLZ    |
|    |                | ‘beauty’          |
- 
- |          |           |                         |
|----------|-----------|-------------------------|
| (107) a. | <i>la</i> | <i>la-leε</i>           |
|          | sleep     | sleep-NMLZ <sub>R</sub> |
|          |           | ‘dream’                 |
| b.       | <i>yɔ</i> | <i>yɔ-leε</i>           |
|          | do        | do-NMLZ <sub>R</sub>    |
|          |           | ‘deeds/actions’         |

We now begin our discussion of what appears to be the largest and the most productive class of lexical nominalization, namely action nominalization. The rest of the chapter is dedicated to this subclass of lexical nominalizations.

### **3.3.2.7 Action/Event nominalization**

Action nominals have traditionally been defined as “nouns derived from verbs with the general meaning of an action or process” (Comrie 1976: 198). Payne (1997) explains that an action nominal may refer to the action (process or occurrence), designated by the verb, as shown in (108). In the other words, while nouns prototypically refer to persons, places, things, and more of less concrete nouns, and usually, introduce participants and “props” and deploy them (Hopper & Thompson 1984: 708), action nominals, typically make reference to events (either

directly or as part of a larger proposition/fact). Verbs typically refer to events, but whereas verbs “assert the occurrence of an event of the discourse” (Hopper & Thompson 1984: 708), action nominals name them.

(108) examine (V) → examination (N)

Action nominals (*henceforth* ANs) typically express events (dynamic processes) or states, depending on the event structure (i.e. *aktionsart*) of the base verb. As noted in the literature, it is possible to extend the core eventive meaning of ANs to additionally connote the end-product or the results of the event designated by the base verb, such that, while ANs such as *deception* or *misappropriation* and *hatred* or *belief* designate events and states (the ‘eventive’ reading), others like *construction*, *translation*, and *destruction* do not only designate events, but could also refer to the products or the resultative state of the events themselves (result object or result state readings, respectively).

Most languages of the world make use of one or more devices for creating ANs from action verbs and state nouns from stative verbs or adjectives, referring to the fact, the act, the quality<sup>55</sup>, or occurrence of that verb or adjective. English has a rich array of suffixes for this purpose, a few of which are illustrated below:

	<b><u>Input</u></b>	<b><u>Output</u></b>
(109) a.	react	reaction
b.	dismiss	dismissal
c.	frugal	frugality

---

<sup>55</sup> Quality nouns, however, are typically de-adjectival items.

d. tender            tenderness

It is instructive to mention that the examples in (109c-d) are *quality nouns* which are typically treated distinctly in the literature since they are de-adjectival, and not de-verbal. We treat them together here because, as we shall see, the general transposition of both of verb and adjectives in Esahie employs one and the same word formation rule (WFR).<sup>56</sup>

Another notable mechanism and productive strategy for forming ANs in English is synthetic compounding (cf. Comrie and Thompson 2007). Synthetic compounding is a mechanism involving both compounding and derivation simultaneously (we shall give a closer look at this in [section 3.3.2.7.3](#)). As shown in (110), such compounds are formally headed by verbs, though resulting in non-existing NV compounds.

(110) write a letter    →    letter-writing (\*to letter-write)

find a fault        →    fault-finding (\*to fault-find)

plan a city         →    city-planning (\*to city-plan)

Comrie and Thompson (2007) also note that it is possible for some languages to have special affixes dedicated solely to the signaling of an eventive reading, distinct from affixes designating non-eventive meanings. Citing Thai as one such language, they show that while the nominalizer *kaan* is only found when an eventive reading is required, *khwam* only evokes a non-eventive (i.e. stative/referential) reading. This is exemplified below.

---

<sup>56</sup> WFR in the sense of Aronoff (1976).

- (111) a. *chyâ* ‘to believe’  
 b. *kaan chyâ* ‘the process/art of believing’  
 c. *khwam chyâ* ‘belief (non-process)’

(Comrie and Thompson 2007: 336)

This is also the case for Dutch where the deverbal suffix [-*ing*] strictly derives action nominals while the suffix [-*sel*] derives only referential nouns (cf. Ackema and Neeleman 2004: 2).

- (112) a. *kaap-ing*  
 hijack-NMLZ<sub>E</sub>  
 ‘a hijack’  
 b. *poog-ing*  
 try-NMLZ<sub>E</sub>  
 ‘attempt’  
 c. *zaag-sel*  
 saw-NMLZ<sub>R</sub>  
 ‘sawdust’  
 d. *bouw-sel*  
 build-NMLZ<sub>R</sub>  
 ‘building’

Based on a cross-linguistic sample of sixty languages, action nominalization in European languages has been studied from an areal or genetic perspective by Koptjevskaja-Tamm (2005). Action nominalization, as it obtains in some West African languages has also received some attention in recent years, including *Ewe*: Ofori 1988, Akorli 2017, *Akan*: Appah (2005), *Leté*:



Akrofi Ansah (2012a), *Wan*: Nikitina (2009), *Edo*: Adéníyì (2010), *Igbo*: (Maduagwu 2010, and *Tee*: Anyanwu and Omego 2015). While the works on Akan (Kwa, Central-Tano) and Lete (Kwa, Guang) are crucial to the present analysis on typological grounds, because of their genetic affiliation with Esahie, the strength and relevance of the works on Edo and Tee, lies in the argument they make for the role of tone in deverbal nominalization.

The subsequent sections explore the derivation of ANs and their morpho-syntactic properties in Esahie.

### **3.3.2.7.1 Action/Event Nominalization in Esahie**

In this section, we focus on prosodic and morphological features of action nominalization in Esahie. Specifically, we argue that action nominalization in Esahie primarily involves a composite strategy: a morpho-phonological operation, invariably involving affixation and a resultant change in tonal melody. Concerning the realization of argument structure, nominalization may or may not be coupled with incorporation of the internal argument, resulting in what is acknowledged as *synthetic compounding*. Following Grimshaw (1990), we shall also demonstrate the attested types of nominals in Esahie, paying attention to the role of argument structure.

We first discuss the condition that triggers the modification in tonal melody in the derivation of ANs in [section 3.3.2.7.2](#), and then proceed to discuss cases of action/event nominalization involving synthetic compounding in [section 3.3.2.7.3](#). We conclude by describing some inflectional features of the class ([section 3.3.2.7.4](#)).

### 3.3.2.7.2 Prosodic features: AN-derivation via Affixation and Modification in Tonal

#### Melody

ANs in Esahie are typically derived from verbs, mainly monosyllabic CV roots, through affixation (i.e. suffixation) concomitant with a conditioned change in the underlying tonal melody of the base verb. With the affixation strategy, a nominalizing suffix is attached to the verbal base. The prefix is typically a vowel signaling the declension class of the noun, while the suffix [-lɛ], which appears to be the most regular and productive nominalizing affix in Esahie, has three allomorphs [-lɛ], [-rɛ] and [-nɛ]<sup>57</sup>. Like the English *-ing* and *ATK-* derivatives,<sup>58</sup> the Esahie nominalizing affix [-lɛ], as we shall see later, is semantically multifunctional as it derives both eventive and resultative nominals, E/R nominalizations henceforth. For the derivation of deverbal nominalizations, however, other affixes such as *-niɛ* and *-fʊɛ*, which correspond to the English *-er*, *-ee*, *-ist*, *-ant*, nominalizers are also productive in Esahie. The difference between these nominalizers and *-lɛ* is that the latter derives E/R nominalizations whilst the former derive personal/participant (P/P) nominalizations. In (113) are base verbs from which ANs are derived via suffixation.<sup>59</sup>

(113) CV structure

	<u>Input</u>	<u>Output</u>	<u>Input</u>	<u>Output</u>
a.	sú	e-sú-nɛ	gó	e-gó-lɛ
	cry	SG-cry-NMLZ <sub>E/R</sub>	dance	SG-dance-NMLZ <sub>E/R</sub> <sup>60</sup>

<sup>57</sup> While [-rɛ] appears to be a mere free variant of [-lɛ], [-nɛ] appears in contexts where the vowel(s) in the base verb has a nasality feature. Therefore, the distribution of [-lɛ]/[rɛ] and [-nɛ] appears to be phonologically conditioned.

<sup>58</sup> An acronym coined by Borer (2013) in collective reference to “-ation and kin” nominalizing affixes of English, which have the capacity to derive both eventive and resultative nominals.

<sup>59</sup> The prefixes in (113), which function as declension markers, appear to have a lexically-determined distribution.

<sup>60</sup> Regarding the order of the affixation operation in AN-derivation, I would argue that derivation by suffixation precedes the attachment of the inflectional prefix. Following the relative order of inflection vs. word-formation as discussed in section (2.2), it is justifiable to argue that the nominal stem has to be formed first and then the class prefix added.

‘crying’

‘dancing’

**CVC (C)V structure**

	<b><u>Input</u></b>	<b><u>Output</u></b>
b.	<i>nwãtĩ̀</i>	<i>nwãtĩ̀-<i>nɛ</i></i>
	run	run-NMLZ <sub>E/R</sub>
		‘(the act of) running’
c.	<i>nàtè</i>	<i>nàtè-<i>lɛ</i></i>
	walk	walk-NMLZ <sub>E/R</sub>
		‘(act of) walking’

In examples 113 (a-c.), the two different verb structures with their underlying tonal patterns have been used to demonstrate the obligatoriness of the affixation operation as well as the tonal changes that occur in the derivation of ANs. The modification in the tonal melody of the base verb when it is disyllabic is shown in 113(b-c), where the prosodic change occurs, at least, in the ultimate syllable of the disyllabic base(s). As earlier observed, affixation in AN-derivation is accompanied by a modification in tonal melody, specifically, by tone raising.

As we shall see from other sister languages including Akan (Appah 2005), Gã (Korsah 2011), Lete (Akrofi-Ansah 2012a), and Ewe (Ameka 1996, 1999, Akorli 2017), it appears that in Kwa, tone raising is not a phonologically conditioned prosodic effect, but plays a morphemic role in the derivation of action nominals. Let us consider the examples in [Table 18](#).



	<i>sɛkyɛ</i> <i>agyaa</i> destroy     marriage ‘to commit adultery’	<i>agyaa-sɛkyɛ-lɛ</i> marriage-destroy-NMLZ ‘(act of) adultery’
	<i>dɪ</i> <i>awùé</i> ICV             death ‘to murder’	<i>awùé-li-lɛ</i> death- ICV-NMLZ ‘(act of) murder(-ing)’
	<i>hyɛ</i> <i>ehóèn</i> ICV            hunger ‘to fast’	<i>ehóèn-hyɛ-lɛ</i> hunger- ICV-NMLZ ‘(act of) fasting’
	<i>bɔ̀</i> <i>mbáé</i> ICV            prayer ‘to pray’	<i>mbáé-bɔ̀-lɛ</i> prayer- ICV-NMLZ ‘(act of) praying/prayer’

The Akan and Lete examples in (a) and (b), respectively, involve what has been described as ‘conversion’, where the categorial status of the relevant verbal bases are transposed without the use or introduction of any segmental element (Beard 1995). Rather, the transposition is signaled prosodically via tone raising in the relevant tone bearing units (TBUs), the syllables. In some cases, as in the Akan and Lete examples in (a) and (b), the prosodic change (tone raising) spreads even onto the penultimate syllable or the entire word. In the Gã example in (c), on the other hand, the transposition is signaled both prosodically and morphologically, through suffixation. In the Akan, Gã, Lete and Esahie examples in (e), (f), (g), and (h) in [Table 18](#), respectively, nominalization involves a kind of synthetic compounding. Again, the Akan and Lete examples do not involve any kind of overt affixation; instead, the synthetic compound derives from a re-ordering of elements within a VP in addition to the usual prosodic signaling, through tone raising. In the Gã and Esahie examples in (f) and (h), nominalization involves overt suffixation, coupled with tone raising, and ante-position of the noun stem playing the role of the verb internal argument, as in (standard) synthetic compounding. The crucial difference

between Esahie and Gã as against the other Kwa languages is that, in Esahie, deverbal nominalization obligatorily requires both overt affixation and tone raising.<sup>62</sup>

In consonance with what has been observed for other African languages, such as Edo (Adéníyì 2010) and Tee (Anyanwu and Omega 2015), the Esahie data, as discussed above, presents yet another piece of evidence in support of the view that tone plays a crucial role in the derivation of (deverbal) nominals. Interestingly, however, unlike some Kwa languages such as Akan and Lɛtɛ, where ANs have been argued to be (typically) derived via a zero operator, in Esahie this is not possible. Attempting to derive ANs in Esahie solely through change in tonal pattern leads to unacceptable structures as shown in (114).

	<u>Input</u>	<u>Nonce</u>
(114) a.	<i>wònzè</i> ‘to impregnate’	* <i>wònzé</i>
b.	<i>kùrò</i> ‘to love’	* <i>kùró</i>

The unacceptability of both examples in (114) as possible nominals points to the fact that AN-derivation in Esahie obligatorily requires the use of the nominalizing suffix, even with tone raising. It is instructive to clarify that “zero operator” *à la* Appah (2005) and Akrofi Ansah (2012a) means category-changing derivation without (overt) affixation.

Given the ubiquity of this phenomenon, it would not be out of place to argue that, as far as AN-derivation is concerned, the nominalizing toneme (i.e. the floating high tone) plays a morphemic role. Given the morphemic role of the toneme in AN-derivation in Kwa, we reckon that it is inaccurate to describe AN-derivation in Akan and Lɛtɛ as involving a “zero operator”. It is therefore justifiable to take to task earlier accounts such as Appah (2005) and Akrofi-Ansah (2012a), as far as zero-derivation is concerned.

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<sup>62</sup> This implies that in Esahie, every nominalized element is distinguished by its nominalizing affix and an ultimate syllable with high tone.

### 3.3.2.7.3 Morphosyntactic features: AN-derivation via Synthetic Compounding

As mentioned earlier, synthetic compounding is one cross-linguistically notable strategy available for deriving ANs. Synthetic compounds (also called *verbal/verbal-nexus* compounds) are the products of the simultaneous application of both derivation and compounding, and they are headed by deverbal nouns (cf. Olsen 2015, Iordăchioaia et al. 2017). In effect, English synthetic compounds derived with *-ing* or *-er* are like reversed active verb phrases with equivalent components. Let us refresh our memories with example below.

- (115) brand a product → product-branding  
read a Bible → Bible-reading  
drive a bus → bus-driving

As Grimshaw (1990: 70) points out, “[t]he essential difference between the root and synthetic compounds, then, is the argument-taking properties of their heads. The characteristic differences between the two kinds of compounds follows from this”. Generally speaking, however, synthetic compounds have been argued to typically inherit argument structure from the base verb and realize only the verb’s lowest (i.e., internal) argument (cf. Roeper & Siegel 1978, Grimshaw 1990, Ackema & Neeleman 2004, Harley 2009, McIntyre 2015). We shall now take a look at synthetic compounding in Esahie in the light of AN-derivation.

Analogous to what was shown for English earlier, synthetic compounding in Esahie involves a re-ordering of the constituents of an underlying verb phrase through noun incorporation into the verb and affixation, namely, suffixation of the verbal constituent. Verb phrases (henceforth VPs) that undergo the process are typically made up of a transitive action verb and its internal argument. Like the case of nominalized clauses discussed earlier in [section](#)

3.3.1.1, the output of this type of nominalizations has the internal syntax of lexical nominalizations, thus resembles DPs.

At the morpho-syntactic level, the nominalization of transitive verbs invariably gives rise to synthetic compounding, since the complement (internal argument) typically gets incorporated into the verb (as a stem/root). The N–V complex is nominalized by means of the nominalizing suffix and the corresponding tonal changes. The [N–V] complex structure of Esahie synthetic compounds is in conformity with Roeper and Siegel’s (1978: 208) *First Sister Principle* which predicts that all verbal (synthetic) compounds are formed by incorporation of a word in first sister position of the verb. This observation is also somewhat captured in the *First Order Projection Condition* proposed by Selkirk (1982: 37) which stipulates that all non-SUBJ[ect] arguments of a lexical category  $X_i$  must be satisfied within the first order projection of  $X_i$ .

Let us consider the Esahie synthetic compounds in (116).

	<u>Input (VP)</u>	<u>Output (AN)</u>
(116) a.	<i>kù</i> sona	<i>sóná-hù-nè</i>
	kill person	man-kill-NMLZ <sub>E/R</sub>
		‘murdering’
b.	<i>nù</i> nzaa	<i>nzaa-nù-nè</i>
	drink alcohol	alcohol-drink-NMLZ <sub>E/R</sub>
		‘alcoholism’
c.	<i>dì</i> alee	<i>alee-lí-lè</i> <sup>63</sup>
	eat food	food-eat-NMLZ <sub>E/R</sub>

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<sup>63</sup> As noted in Frimpong (2009) /d/ becomes /l/ in certain phonologically conditioned contexts.



			‘eating’
d.	<i>b̀̀</i>	<i>ndire</i>	<i>ndire-b̀̀-l̀̀</i>
	hit	weeds	weeds-hit-NMLZ <sub>E/R</sub>
			‘(act of) weeding’
e.	<i>s̀̀</i>	<i>nitse</i>	<i>nitse-s̀̀-ǹ̀</i>
	learn	thing	thing-learn-NMLZ <sub>E/R</sub>
			‘(act of) learning’
f.	<i>t̀̀</i>	<i>atẽẽ</i>	<i>atẽẽ-t̀̀-ǹ̀</i>
	fly	road	road-fly-NMLZ <sub>E/R</sub>
			‘journey’

In consonance with the *First Sister Principle*, complements which are not internal arguments are also admissible in such non-head positions once they are the first sister of the verbal head in the corresponding verb phrases, as can be seen with *atẽẽ* ‘road’<sup>64</sup> in (116f), where the complement is a locative and the verb *tu* ‘fly’ is intransitive.

A crucial observation is that, Esahie typically appears not to permit nominalization of transitive verbs and inherent complement verbs (ICVs)<sup>65</sup> without their internal arguments. In consonance with what has been observed for other Kwa languages (cf. Akan: Anderson 2013, Appah 2013; Appah et al. 2017; Lete: Akrofi-Ansah 2012a), Esahie (strictly) transitive verbs obligatorily incorporate their objects when they undergo nominalization, especially if the verbs are ICVs (see Essegbey 1999; Korsah 2015). This is exemplified below, where it is shown that the nominalizations of transitive verbs without their internal arguments are impossible.

<sup>64</sup> Lieber (1982) calls them *semantic arguments* and specifies the conditions under which they become part of the compound.

<sup>65</sup> “...verbs the citation form of which includes a nominal element which may or may not be cognate with the verb.” (Nwachukwu 1984: 109). As Korsah (2015) points out, this feature is pervasive in many Kwa verbs.

- (117) a. *kù* ‘to kill’ → *\*hù̀nè*
- a.1 *kù* *sònà* → *sòná-hù̀-̀nè* ‘murdering’  
kill person
- b. *b̀̀* ‘to hit’ → *\*b̀̀lè*
- b.1 *b̀̀* *ndirè* → *ndirèb̀̀lè* ‘style/act of weeding’  
hit weeds

On the basis of the expression of the internal arguments which apparently get incorporated into the verb, within the nominals in (117), we can conclude that the synthetic compounding strategy in Esahie typically derives argument-supporting nominals.

In the table below, we show instances of ANs (involving synthetic compounding) where the incorporated argument is an external one. The arguments of these verbs appear to be arguments of unaccusative verbs<sup>66</sup>, and their thematic role makes them compatible with internal arguments. Let us consider the data in [Table 19](#).

Table 19: AN / VP correspondence

Morphemic Makeup	Base/Source Construction
<i>anye-boro-lè</i> eye-ripe-NMLZ <sub>E/R</sub> ‘the state of being/getting serious (seriousness)’	<i>X (a)nye a-boro</i> X eye PERF-ripe ‘X is serious (lit. X’eye has ripened)’
<i>anye-bukye-lè</i> eye-open-NMLZ <sub>E/R</sub> ‘civilization (lit. opening of the eye)’ <sup>67</sup>	<i>X anye a-bukye</i> X eye PERF-open ‘X is civilized (lit. X’s eyes are open)’

<sup>66</sup> This is a hypothesis that may be tested with more appropriate tests.

As we have shown above with example in (116f), not only internal arguments are incorporated in Esahie synthetic compounds. There are also instances where the incorporated noun is actually one that might be considered an adjunct in the corresponding VP. Indeed, as Lieber (2004), relying on data from English, points out, it is possible for some complements in synthetic compounds to be interpretable as semantic arguments/participants in the event expressed by the verb, i.e. as a locative, manner, agentive, instrumental, or benefactive argument, if the verbs in question lack an obligatory internal argument. Let us consider the examples in (118).

- (118) a. *city employee*            ‘one employed by the city’<sup>68</sup>  
       b. *dog attack*                ‘a disease that results from dog bites’  
       c. *snake bite*                 ‘a wound inflicted from the bite of a snake’

The Esahie examples in (119) are analogous to the English examples in (118), in that their incorporated nouns are not interpretable as direct objects but are instead complement of the corresponding intransitive verbal heads. The possibility of having locative and similar complements as non-heads is not restricted to *E/R* nominals but can be found with agent nominals too, as (119c) shows.

	<u>Input</u>	<u>Output</u>
(119) a.	<i>kò</i> <i>fieso</i>	<i>fieso-hó-lɛ</i>
	go    farm	farm-go-NMLZ <sub>E/R</sub>
		‘act of going to the farm/farming’

---

<sup>68</sup> It is worth mentioning that these examples (cf. Roeper and Siegel (1978), Selkirk (1982), Lieber (1983) and Grimshaw (1990) Lieber 2016: 24) could be conveniently reinterpreted as instances of root compounding, not implying an argumental relationship between head and modifier, which is very productive in English.

- b. *kò dwanu dwanu-hó-lɛ*  
 go market market-go-NMLZ<sub>E/R</sub>  
 ‘act of going to the market’
- c. *kò asɔre asɔre-kó-niɛ*  
 go church church-go-NMLZ<sub>E/R</sub>  
 ‘church-goer (unserious Christian)’

In examples (119)a-c, the elements in *First Sister* position, i.e. the non-head elements, are all interpretable as semantic arguments functioning as locatives. Also, we notice the resultant synthetic compound in (119)c may be semantically classified as an *agent noun* or what conforms to *personal/participant noun* in Lieber’s (2016) classification.

#### 3.3.2.7.4 Inflectional features of ANs

Typical morpho-syntactic categories for which nouns may be specified include *case*, *number*, *gender*, *declension class*<sup>69</sup> and *definiteness*. Of these possible categories, only *number* and *definiteness* are applicable to prototypical nouns in Esahie, which lack the other morphosyntactic categories (see Broohm 2017). It is instructive to point that definiteness is, however, expressed through the use of determiners, and not necessarily in the nouns themselves. Let us consider the distinctions in the relevant features as outlined in [Table 20](#).

Table (20): **Distinction in Inflectional features**

Gloss	Number Distinctions	
	Singular	Plural
woman	<i>brasua</i>	<i>m-mrasua</i>

<sup>69</sup> This category, unlike the others, is purely morphological since it is irrelevant for syntax.

canoe	<i>ε-lɛn</i>	<i>a-lɛn</i>
sibling	<i>aliemaa</i>	<i>aliemaa-mɔ</i>
	<b>Definiteness distinctions</b>	
	<b>Indefinite</b>	<b>definite</b>
lady	<i>brasua (bie)</i>	<i>brasua ne</i>
canoe	<i>ɛlɛn (bie)</i>	<i>alɛn ne</i>
sibling	<i>aliemaa (bie)</i>	<i>aliemaa ne</i>

The derived nouns are not marked for number because they are typically abstract nouns showing the properties of mass nouns (see Appah et al. 2017). In the examples in (120) and (121) below, we find examples of ANs and their corresponding ungrammatical plural forms.

- (120) a. *e-sú-nɛ*                      b. *\*n-sú-nɛ*                      c. *\*sú-nɛ-mɔ*  
 SG-cry-NMLZ<sub>E/R</sub>                      PL-cry-NMLZ<sub>E/R</sub>                      cry-NMLZ-PL  
 ‘(act of) crying’

- (121) a. *e-hùró-lɛ*                      b. *\*n-hùró-lɛ*                      c. *\*hùró-lɛ-mɔ*  
 SG-love-NMLZ<sub>E/R</sub>                      PL-love-NMLZ<sub>E/R</sub>                      love- NMLZ<sub>E/R</sub>-PL  
 ‘(act/state) of love’

Regarding the form of the verb in this nominalization, it is worth noting that the verb appears in its root/stem form, and it does not preserve the tense/aspect and/or agreement morphology typical of verbs functioning as predicates in ordinary simple sentences (see Comrie and Thompson 2007 for some typological remarks on this frequent property of ANs). We observe from the example below that, an AN form *nwomaa-kenga-lɛ* ‘(the act of) book-reading’ in (122b) is formed from an underlying VP in (122a). We also notice that the resultant AN loses

all the verbal features (i.e. the tense-aspect marking) which are present in the underlying sentence in (122a). Most striking is the ungrammatical AN form in (122c), whose unacceptability arises from the presence of the tense marker [-*le*].

- (122) a.    *Nkuah*        *kengà-le*        *nwɔmaa*        *ne*  
                  NAME            read-PAST        book            DEF  
                  ‘Nkuah read the book’
- b.    *nwɔmaa-kengá-le*    *yeɛ*    *Nkuah*        *kro-ɔ*  
                  book-read-NMLZ<sub>E/R</sub>    FOC    NAME            like-CD  
                  ‘(the act of) book-reading is what Nkuah likes’
- c.    \**nwɔmaa-kengá-le-le*    *yeɛ*    *Nkuah*        *kro-ɔ*  
                  book-read-PAST-NMLZ<sub>E/R</sub>    FOC    NAME            like-CD

### 3.4 Syntactic properties of Esahie ANs

In the next two sections, we discuss some of the distributional properties shared by Esahie prototypical nouns and ANs in [section 3.4.1](#) will assess the typological features of Esahie ANs (see [section 3.4.2](#)) against the seminal categorization proposed by Koptjevskaya-Tamm (1993).

#### 3.4.1 External Syntax of ANs (Distributional Properties)

Distributional properties have to do with where a word occurs and with what it occurs in a phrase or in a sentence; restricting this brief overview to nouns, it is worth noticing that prototypical Esahie Determiner/Noun Phrases, for instance, can function as subjects and objects of verbs and either precede or follow the verb. Furthermore, looking at the structure of the Esahie DP, like many Kwa languages, the noun in Esahie precedes all its modifiers. The relative order of elements in Esahie DP follows after the pattern in (123):

(123) 0 modifier on the left/3 on the right.

N–Adj–Numeral–Dem (e.g., Selepet, Yoruba)

Hawkins (1983:119)

This is illustrated in the examples provided below in (124) and 125).

(124) Noun–Adjective–Demonstrative

*Sua tenden hé*

building tall DEM

‘This tall building’

(125) Noun–Adjective–Numeral–Demonstrative

*m-mrokua fufue nza hé-mɔ*

PL-squirrel white three DEM-PL

‘These three white squirrels’

From the data shown above, we notice that for non-derived NPs in Esahie, dependents typically follow the head.

Regarding DPs made up of simple nouns containing post-nominal genitives such as “*a bag of rice/un sacco di riso*” or “*a box of chocolate/una scatola di cioccolato*”, in English and Italian as exemplified respectively, it is important to point out that, unlike such Indo-European languages, where post-nominal genitives may be expressed as independent PPs (*of*-phrases) following the noun, in Esahie (and indeed in Kwa in general), nominal genitives may occur but not as independent *of*-phrases, and not post-nominally. Let us consider the example below:

- (126) *emõ bɔtɔ (ko)*                      (127) *baana betre (ko)*  
 rice    bag    (one)                              plantain    bunch (one)  
 ‘a bag of rice’                                      ‘a bunch of plantain’

In the example above, we notice that though the dependents of the non-derived NPs (i.e. the pseudo-genitives) occur pre-nominally, contrary to the typical distribution of other nominal modifiers, they do not occur as independent genitival phrases (as in the English *of*-phrase). Let us consider the following example.

- (128) a.    *kwaadu        betre (koma)*  
           banana        bunch one  
           ‘a bunch of banana’
- b.    *\*betre kwaadu        (koma)*  
           bunch banana        one
- c.    *\*kwaadu-ye    betre (koma)*  
           banana-POSS    bunch one

The crucial point to be noted here is that, as far as underived nouns in Esahie are concerned, genitives (out of the range of nominal modifiers) behave differently from other modifiers in the DP phrase. They must always occur pre-nominally, as shown by the ungrammaticality of (128b). Another crucial point worthy of note is the unavailability of the *of*-genitivization modification operator in Esahie.

The impossibility of expressing nominal genitives post-nominally and/or via an independent *of*-phrase appears to extend also to derived (complex) event nominals. This is demonstrated below.



(129)	<i>baabro-kengá-le</i>	<i>ne</i>	(130)	<i>aleε-tó-ne</i>	<i>ne</i>
	Bible-reading-NMLZ <sub>E/R</sub>	DEF		food-cook- NMLZ <sub>E/R</sub>	DEF
	‘The reading of the Bible’			‘the cooking of food’	

Unlike English *the construction of the house* or Italian *la costruzione della casa*, where internal arguments of (deverbal) eventive nominals may be expressed post-nominally as independent genitival phrases, in Esahie, internal arguments of eventive nominals as in *Baabro* ‘Bible’ in (129) and *aleε* in (130) are licensed via incorporation in the corresponding deverbal nominal, resulting in synthetic compounding. In derived ANs, modifiers in the form of internal arguments precede the deverbal noun in the resultant compound. This implies that the distribution of elements in the ANs is analogous to that of non-derived (genitivized) NPs, in that, in both type of nominal constructions, modifiers precede the head nouns. The ban on the licensing of internal arguments as post-nominal arguments in Esahie ANs, and their possible, though restricted, word-internal licensing in compounds, stems from the fact the post-nominal genitives are simply disallowed in Esahie, and Kwa in general (Akan: Appah 2013, Appah 2016; Lεtε: Akrofi-Ansah 2012b; Dangme: Lawer 2017), as discussed in [section 3.3.2.7.4](#).

Like prototypical nouns, the derived ANs take descriptive modifiers, and may also be modified by relative clauses. Prototypical Esahie nouns may be modified by adjectives attributively and predicatively. Examples (131a) and (131b) demonstrate that ANs may be modified by both adjectives (either attributively or predicatively) and definiteness markers.

(131)	a.	<i>kengá-le</i>	<i>tεε</i>	<i>nen</i>
		read-NMLZ <sub>E/R</sub>	bad	DEF
		‘The bad reading.’		

- b. *dwire-bisá-le he tè suro*  
 matter-ask-NMLZ<sub>E/R</sub> DEM COP fearful  
 ‘This question is intimidating’,<sup>70</sup>

The derived nominal may also be modified by a relative clause (i.e. *bɔ osile dɔ* in (132)).

- (132) *aseɛ-wosó-le bɔ o-si-le dɔ ne té*  
 Earth-shake-NMLZ<sub>E/R</sub> REL 3SG-happen-PAST there DEF COP.NEG  
*angore*  
 play  
 ‘The earth-quake which happened there is no joke’

Furthermore, for pragmatic reasons, a noun which occurs as the object argument of a clause may be focalized by means of fronting in the left periphery of the sentence and by the focus marker *yeɛ*. With examples (133) to (134), we show that derived ANs also possess these distributional properties. The AN may function as subject of a clause as found in (133), and object as demonstrated in (134).

- (133) *e-sú-ne η-gɔ-boka wɔ kekesaala*  
 SG-cry-NMLZ<sub>E/R</sub> NEG-FUT-help 2SG.OBJ now  
 ‘Crying will not help you now’

- (134) *Salo η-gro dwùdwó-le*  
 Salo NEG-like talk-NMLZ<sub>E/R</sub>  
 ‘Salo dislikes talking’

<sup>70</sup> As we shall in [section 3.5](#), this structure has a result/referential reading.

As in English, Agents can be encoded as prenominal possessives, still playing the role of arguments in the nominal's a-structure (argument structure). So, in (135), *Kwamina* does not necessarily possess the reading, rather he does the reading, hence he is an Agent.

- (135) *Kwamina-ye*                      *kengá-le*                      *té*                      *maye*  
 Kwamina-3.SG.POSS                      read-NMLZ<sub>E/R</sub>                      COP.NEG                      good  
 'Kwamina's reading is terrible'<sup>71</sup>

Furthermore, an AN may be preposed into an extra-sentential slot for the purposes of focalization. As Broohm (2014) observes, in Esahie, when verbs are focalized, a nominalized copy of the predicator is fronted to the left periphery and is immediately followed by the focus marker.<sup>72</sup> When the (transitive) verbs in (136a) and (137a) are preposed for the purposes of focalization, they show up, as in (136b) and (137b), together with their respective internal arguments, as deverbal nominals (synthetic compounds). These deverbal nominals are hosted in a pre-sentential position (cf. Broohm 2014).

- (136) a. *Kwadwo kro mmrasua*  
 NAME                      love.HAB                      ladies.  
 'Kwadwo loves women/ Kwadwo womanizes'
- b. *M-mrasua-hró-le yéye Nyameε kyì ɔ*  
 PL-woman-love-NMLZ<sub>E/R</sub>                      FOC                      God                      dislike.HAB                      CD  
 'Womanizing is what God abhors'
- (137) a. *Kofi<sub>i</sub> kù<sup>̇</sup> sona*

<sup>71</sup> This AN evokes a mode/manner reading (cf. Koptjevskaja-Tamm 1993). As Levin and Rappaport Hovav (2005) observe, this manner interpretation is typical of verbal roots classified as 'manner' roots (or constants, in previous works).

<sup>72</sup> Indeed, as Ameka (2010) observes, verb/VP nominalization as a means of predicate focalization is a common feature of Kwa languages.

Kofi	kill.HAB	person		
'Kofi murders'				
b. <i>sona-hú-nék</i>		<i>yeyε</i>	<i>ɔk-fa</i>	<i>ye</i>
person-killing-NMLZ <sub>E/R</sub>	FOC	3SG.SUBJ-take		3SG.OBJ
<i>hɔ-le</i>	<i>afiase-ɔ</i>			
go-PAST	prison-CD			
'Murdering is what sent him to prison.'				

Both examples given above corroborate the argument that nominalization of transitive verbs in Esahie obligatorily requires the incorporation of the internal argument.

#### 4.4.2 Internal Syntax of ANs: typological considerations

As Koptjevskaja-Tamm (1993; 2005) argues, cross-linguistically, three options are available for signaling the syntactic relations within action nominal constructions. They are *head-marking*, *dependent marking*, and *word order*. In the literature, these modes of signaling syntactic relations have alternatively been referred to as 'locus' or 'locus of marking' (cf. Aikhenvald 1999a; 1999b; Buch 2013; Nichols and Bickel 2013).

Koptjevskaja-Tamm (1993/2005) explains that while head-marking involves overtly distinguishing the head of the construction, so that its relation with its dependents becomes obvious, dependent-marking, involves overtly distinguishing the dependent of the construction, such that its relation with its head becomes obvious. The word order criterion applies where the language-specific constituent order can be employed in distinguishing the syntactic relations between elements within a construction. In this section, we shall see how these criteria are applicable and useful in Esahie. Let us consider the possessive noun phrase in (138).

(138) *Asantewaa-ye dwùdwó-le tè pa*  
 Asantewaa-POSS talk-NMLZ<sub>E/R</sub> COP good  
 ‘Asantewaa’s (manner of) speaking is good/polite’

(139) *Nii krò Ama-ye alee-tó-ne soma*  
 Nii admire.HAB Ama-POSS food-cook-NMLZ<sub>E/R</sub> much  
 ‘Nii really admires Ama’s cooking (style)’

From the NPs in (138) and (139), we notice that the syntactic relation between ANs and their dependents (i.e., external arguments) is spelled out via the genitival/possessive marking borne by the dependents. We could therefore argue that in Esahie, dependent-marking is primarily a mechanism for expressing of external arguments. Indeed, this mechanism of signaling external arguments via possessives also features in other Kwa languages such as Akan, Ewe, Nupe (Hyman 1975), and Ifè (Koptjevskaja-Tamm 1993).<sup>73</sup>

We also observe that the verb which functions as the head of the AN is also invariably formally marked via the nominalizing affix */-le/*. This, to a marginal extent, approaches Koptjevskaja-Tamm’s (1993) head-marking, although not *sensu stricto*. In Koptjevskaja-Tamm’s characterization of the various mechanisms for signaling the syntactic relations between ANs and their dependents (i.e. subject and objects), *head-marking* is used in reference to morphologically rich languages such as Russian, where aside the attachment of a nominalizing affix, there is also the use or presence of rich alignment morphology (i.e. case marking) in signaling syntactic relations between ANs and their dependents.<sup>74</sup> Head-marking

<sup>73</sup> Koptjevskaja-Tamm (1993) notes that this mechanism constitutes the most common, though not the only case in nominalizations of the *INCORPORATING* type.

<sup>74</sup> As Koptjevskaja-Tamm (1993) notes, where both the subject and (direct) object of a transitive verb are retained in a Russian ANC (action nominal construction), the (direct) object takes a *genitive* case while the subject takes an *instrumental* case.

in Esahie does not involve alignment morphology, because case markers are simply unavailable in the grammar of Esahie.<sup>75</sup> Having considered the mechanism for signaling the syntactic relations of external arguments (i.e. via dependent marking) and heads (i.e. via head-marking) in Esahie, we now turn to the signaling of syntactic relations of internal arguments.

Koptjevskaja-Tamm (1993) distinguishes between eight typological categories of languages, based on a cross-linguistic sample of patterns of action nominal constructions. The defining criterion for this typological classification is the manner in which the languages of the world encode the arguments of their nominalizations. These eight cross-linguistic patterns fall into two broad categories: the more frequent (major) type, namely, the SENTENTIAL, POSSESSIVE-ACCUSATIVE, ERGATIVE-POSSESSIVE, NOMINAL languages, and the less frequent (minor and restricted) type, namely, the MIXED, INCORPORATING, RELATIVE, ARGUMENT-REDUCING languages. In what follows, we give a gist of the characterization of the various syntactic typologies of nominalizations and the languages that fall within each typology as outlined in Koptjevskaja-Tamm's (1993; 2003; 2005).<sup>76</sup>

### **Major and frequent types**

1. Sentential type (SENT): argument marking is signaled in the same way as in the corresponding finite clause. Languages including Godoberi (Daghestanian), Basque, Italian, Spanish, Korean, and Tamil all exemplify this pattern.
2. Possessive-Accusative type (POSS-ACC): the subject (both of transitive and intransitive verbs) genitivize, while the direct object retains the case assigned in finite clause (the relation between the subject and the nominalization is expressed

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<sup>75</sup> As a reviewer points out, in Esahie (as in many other Kwa languages), it is constituent order that defines grammatical relations both in phrases and in clauses. This, according to him, is consistent with the typology of Kwa languages. Alignment morphology and case markers are inconsistent with the language type.

<sup>76</sup> Note that languages that have different nominalization characterizations may belong to more than one typology.

in the same way as the relation between the possessor and the possessum in a non-derived NP, KoptjevskajaTamm, 2003: 728). Languages that behave this way include Armenian, Turkish, Arabic, Amele, Amharic, Nenets (Samoyedic), Mongolian, Thai, and Bantu languages in general.

3. Ergative-Possessive type (ERG-POSS): the subject of intransitive verbs and the object of transitive ones are encoded in the same way (as in ergative language, e.g. Dixon), i.e. by genitivization, while the subject of transitive verbs is realized in the instrumental case. Italian, German, Russian, Welsh, and Abkhaz all exemplify this pattern.
4. Nominal type (NOMN): in the first sub-type, called Double-Possessive, all the subjects and objects are realized in the genitive case; in a second sub-type, called Possessive-Adnominal, the subjects are genitivized, while the direct object gets the same marking as oblique NPs. Estonian, Finnish, Lithuanian and Latvian resort to this pattern.

**Minor and Restricted types**

5. Mixed type (MIX): this pattern is characterized by the genitivization of Subject, the assimilation of Agent into some oblique (i.e. as in the agents in passives), and the retention of sentential marking for Patient. Bulgarian, for instance, has this characterization.
6. Incorporating type (INC): the Patient forms a part of the complex AN, while the Subject retains its sentential marking. There are three sub-groups of languages within this type: (a) *Sentential-Incorporating* (SENT-INC); (b) *Oblique-Incorporating* (OBL-INC). (c) *Possessive-Incorporating* (POSS-INC): Ewe, Ifè, and Akan and (West) African languages generally tend to follow the pattern exhibited by the (POSS-INC) subgroup of the INC type.

7. Relative type (REL): here, the Subject and Patient genitivize or, at least, appear as adnominal dependents, while the Agent is expressed within the relative clause referring to the AN. Languages including Hausa (Africa) and Hungarian manifest this nominalization pattern.
8. Argument-Reducing type (ARG-RED): here, transitive ANs never combine with both the Agent and the Patient at the same time. There are languages like Chuckee which exhibit this pattern, and in which the nominalization pattern is only marginal or questionable.

As Koptjevskaja-Tamm's (1993: 62) generally notes, compared to the other nominalization patterns, the INC and REL types are both 'valency-lowering' because even ANs derived from transitive verbs encode only one overt argument (the internal one), though the corresponding finite verbs have two. However, in the case of transitive ANs, both the Agent and the Patient may be expressed at the same time, although one of them either builds a part of the compound AN, or constitutes a part of the relative clause referring to the AN.

In Esahie, an AN's syntactic relation with its internal argument is expressed by means of word order, as we have seen earlier in *section* (3.3.2.7.4). Recall that, unlike English and other languages, where the internal argument can be expressed as a phrase, we have shown that in Esahie, it cannot be expressed by an independent phrase (an "of-phrase", as in English or Italian). Instead, the internal argument has to be realized as the non-head of a synthetic compound and the relation between the AN and its internal argument within the compound is expressed via incorporation. Hence, as in standard compounding, the noun is obligatorily non-referential (it acquires a generic interpretation) and cannot be modified internally to the compound. As a result of the incorporation, the internal argument gets preposed to the verb,



resulting in an  $[[N + V]_{\text{SUFF}}]_N$  order, while the corresponding underlying sentence has an SVO order. Let us consider (140).

(140) Sentence (with canonical SVO order):

a. *Ama taa kenga Baabroo*

Ama often read Bible

‘Ama often reads the Bible’

Nominalization with full argument structure:

b. *(Me-nye-gye) Ama-ye daaadaa Baabroo-kenga-le*

(1SG-eye-take) Ama-POSS frequent **Bible-read-NMLZ<sub>E/R</sub>**

‘(I admire) Ama’s frequent Bible-reading’

Nominalization with internal argument:

c. *(Daadaaaa) Baabroo-kenga-le*

‘(frequent) **Bible-read-NMLZ<sub>E/R</sub>**

‘(frequent) Bible-reading’

d. \* *Baabroo-ye kenga-le*

**Bible-POSS** read-NMLZ<sub>E/R</sub>

The canonical (S)VVO order is reversed in synthetic compounds such that the internal argument now precedes the verb, as seen in (140b). Since this reversal of order invariably characterizes synthetic compounds, it is possible to predict that the left-hand member of any synthetic compound in Esahie is the internal argument or a complement in the case of some intransitive verbs. Word order therefore provides a cue in determining the relation between an AN and its internal argument, at least in synthetic compounds. From (140d), we also realize that unlike

English, where an internal argument may be expressed as a possessive in a passive construction such as *Rome's destruction by the enemies*, in Esahie the internal argument cannot be expressed as a possessive, while this option is restricted to external arguments.

Typologically, the synthetic compounding mode of AN-derivation, as discussed above, puts Esahie in Koptjevskaja-Tamm's (1993) INCORPORATING (INC) type of languages, where the patient (or internal argument) constitutes the first part of the complex AN and the external argument may be expressed through a preposed possessive. In consonance with Koptjevskaja-Tamm's (1993: 184) observation, this type of AN-derivations via synthetic compounding makes action nominalization in Esahie a valency-lowering operation, as a result of the fact that their head nominals, derived from transitive verbs, have only one argument (of the Agent/Patient set), as compared with the corresponding verbs which have two.<sup>77</sup> Here, the other argument (the internal/patient argument) is compounded with the action nominal to give rise to a larger and more complex action nominal. As Koptjevskaja-Tamm (1993) rightly notes, this process is reminiscent of noun incorporation, in which compounding a nominal stem together with a verbal stem results in a larger verbal stem.

With this pattern of AN-derivation, Esahie would more precisely instantiate the POSSESSIVE-INCORPORATING subtype of the INCORPORATING languages. As such, the behaviour of Esahie is analogous to that of Kwa languages such as Ewe<sup>78</sup>, Ifè (Yoruba) and Nupe (cf. Hyman 1975, Koptjevskaja-Tamm 1993: 186), and Akan where, although in non-derived NPs dependents follow the head, in derived complex ANs, internal (patient) arguments precede the deverbal noun in the resultant compound.

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<sup>77</sup> In *valency-lowering* languages, an incorporated noun satisfies one of the argument positions of the verb, thus reducing its valency.

<sup>78</sup> In the case of Ewe and Ifè, as Koptjevskaja-Tamm (1993) rightly points out, the deverbal head of these (synthetic) compounds are formed via reduplication, and are quite distinct from the corresponding finite verbs, as well as the typical cases of synthetic compounding involving affixation.

Given the syntactic characterization of ANs in Esahie, that is, the fact that the Agent argument is encoded via dependent-marking, coupled with the fact that AN-derivation in Esahie is a valency-reducing operation, the Esahie AN resembles a DP rather than TP. This is in keeping with Koptjevskaja-Tamm's (2006) AN structure hierarchy.

Having discussed both the external and internal syntax of Esahie ANs, we shall proceed to discuss Esahie ANs in the light of event structure. In the next section, we shall (re)consider Grimshaw's (1990) diagnostics in the light of Esahie.

### 3.5 Event structure properties of Esahie ANs

In this section, we discuss the role that event structure plays in the realization or inheritance of arguments in nominalizations.

Being 'construals' of the happenings or states in the world (situation-ontology), verbs are event predicates (cf. Parsons 1990). The semantic decomposition of a predicate has both structural and idiosyncratic components, which together constitute the *event structure* of the predicate. The event structure of a predicate is also made up of two important distinct components, namely, the *event structure template* (i.e. the grammatically relevant component), and the *root* (i.e. the component which captures the more idiosyncratic meaning aspects of a predicate and gives it a name, since each root is associated with a name, i.e. a phonological string). This is elaborated in the [Table 21](#) below, where  $[x]$  and  $[y]$  represent semantic participants:

**Table 21: Event Structure Templates**

EVENT STRUCTURE TEMPLATES	EXAMPLES	SITUATION TYPES
[x ACT <sub>&lt;MANNER&gt;</sub> ]	<i>sweep</i>	ACTIVITY
[x <STATE>]	<i>Contain</i>	STATE
[BECOME [x <STATE>]]	<i>Die</i>	ACHIEVEMENT
[[x ACT <sub>&lt;MANNER&gt;</sub> ] CAUSE [BECOME [ y <STATE>]]]	<i>build / kill</i>	ACCOMPLISHMENT-CAUSATIVE

(Rappaport Hovav & Levin 1998)

As shown above in [Table 21](#), event structure defines the event type of the predicate and any sub-eventual structure it may have. This accounts for the difference in argument realization between pure accomplishment predicates (such as *eat*, *build*, *sing*) and lexical causative predicates (such as *open*, *break* and *kill*), as the former tend to allow object drop while the latter are obligatorily transitive.

Just as sentences are syntactically analyzed as being *simple* or *complex* (i.e., themselves embedding a well-formed sentence), the linguistic representations of events have also been argued to be analyzable as being simple or complex (i.e., embedding the representation of an event). The interpretation of the simple/complex event distinction is explained below descriptively in (141), and diagrammatically in (142), where *[x]* and *[y]* represent (semantic) participants:

(141) a. A **COMPLEX EVENT** consists of two subevents, each with a well-formed event structure.

b. A **SIMPLE EVENT** consists of a single subevent.

(142) a. **Complex event structure:**

[ [ x ACT<sub><MANNER></sub>] CAUSE [ BECOME [ y <RES-STATE>]]]

**b. Simple event structure:**

[ x ACT<MANNER>]

[ x <STATE>]

[ BECOME [ x <STATE>]]

Like verbs, event/action nominalizations refer to events and correspond to *second-order entities* (cf. Lyons 1977: 443).<sup>79</sup> Indeed, ever since the works of Lees (1960) and Chomsky (1970), the vexatious relation between constructions like the hackneyed examples in (143) has been widely investigated.

(143) a. The enemy destroyed the city.

b. The enemy's destruction of the city.

The nominalization in (143b) shares the arguments of the corresponding base in (143a), even if it expresses them in different form. The mode in which these arguments are realized has been one of the most investigated aspects of nominalization, since the seminal work of Grimshaw (1990).

In her influential study on argument structure, Grimshaw (1990) argues that both verbs and nouns are associated with a lexical conceptual structure (LCS), which defines the set of participants involved in the meaning of a lexical item. On the basis of event structure, Grimshaw contends that three types of nominals can be distinguished: *complex event* nouns, *simple event* nouns and *result* nouns.

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<sup>79</sup> Non-prototypical nouns which denote abstract concepts ('*freedom*', '*intelligence*', '*fear*'). They are located in time and space, they are perceivable by senses, but their perceptual properties are not constant and stable over time.

In complex event nouns, the properties of the verbal base are still transparent, because, like verbs, complex event nouns project participants into their a-structure (i.e. argument-structure), and this makes their participants grammatical arguments. As shown in (144), for complex event nouns, the expression of the (internal) argument is always obligatory.

(144) Hillary's construction of the dome took a long time.

Simple event nominals are similar to complex event nominals to the extent that are eventive (i.e. refer to dynamic processes/eventualities), however, they differ crucially from complex event nouns because they do not take obligatory arguments. Although they typically appear as underived nouns as in *game, play, movie, crime, race, trip*, they may also take the form of derived nominals as in *meeting, jubilation, competition*, and may be accompanied by syntactic satellites corresponding to LCS participants.

The most crucial syntactic feature of result nominals is the fact they typically lack *a-structure*. Result nominals typically denote the products or the resultative state of the events and evoke the *so-called* 'result reading'. Apart from the usual result reading, other non-eventive interpretations have been attested as possible semantic extensions of result nominals. Melloni (2007) and Lieber (2016), for instance, propose the term *referential readings* to cover the wide range of non-eventive meanings associated with nominalizations. These include *result* as in (145a), *instrument* (b), *location* (c), *path* (d), *manner* (e) *fact* (f) and *measure* (g) nominalizations.

- (145) a. The *clip* is efficient.  
b. For *decoration*, three turquoise seahorses descended the wall at a forty-five-degree angle. (Happinees Key 2009, COCA corpus, Bauer et al., 2013: 210)

- c. It is in the same *building* as the *dwelling* of Irving Kristol and Gertrude Himmelfarb. (American Spectator 2009, COCA corpus, Bauer et al., 2013: 211)
- d. In 1924, the United States claimed the North Pole was an underwater *continuation* of Alaska.  
(Journal of International Affairs 2008, COCA corpus, Bauer et al., 2013: 211)
- e. The professor's *demonstration* of the technique was deft.  
(Bauer et al., 2013: 207)
- f. The professor's *demonstration* of the technique was a scandal.  
(Bauer et al., 2013: 207)
- g. A *pinch* of salt.

As Grimshaw (1990) notes, apart from denotation, the properties of simple event nouns parallel those of result nominals. The foregoing implies that, in complex event nominals, arguments are fully realized or expressed, while simple event and result nouns, lack full realization of arguments since the properties of the verbal base are no longer transparent.

This is further illustrated by the following English examples, highlighting the contrast between complex *event* and *result* readings.

- (146) a. The judgement of the case took five years. (event)
  - b. The judgement has been published. (result)
  
  - (147) a. The construction took eight months thanks to our volunteers and staff. (event)
  - b. As you can see the majority of the construction is of traditional style. (result)
- (Real and Retoré 2014: 2)

From a lexicalist perspective, Grimshaw (1990) claims that the distinction between an event reading and a result reading of nominalizations depends on the properties of the suffixes and is associated with a difference in argument structure, where a-structure is understood as a separate level (interface) connecting lexical conceptual structure and syntax: whereas process nouns (i.e. complex event nouns), like *examination*, must take internal arguments, simple event like *competition* and result nouns like *construction* or *judgement* under the reading in 143-144(b), are like object/entity nouns and do not (need to) select arguments (Grimshaw 1990). To reinforce her theory of nominalizations, Grimshaw (1990) proposes some diagnostics to distinguish event and result nominals, as summarized below in [Table 22](#).

Table 22: Grimshaw's (1990) diagnostics

Complex Event Nominals (CENs)	Result Nominals (RNs)
<p>1. <math>\theta</math>-assigners (i.e. they obligatorily license the expression of internal arguments).</p> <p><u>Example:</u></p> <p>a. <i>The destruction of the city by the enemy</i></p> <p>b. <i>Their building of new quarters</i></p> <p>c. *<i>The examination of the students was printed on pink paper</i></p>	<p>1. non-<math>\theta</math>-assigner (i.e. they do not have to obligatorily express arguments).</p> <p><u>Example:</u></p> <p>a. <i>A complete destruction</i></p> <p>b. <i>An impressive building</i></p> <p>c. <i>The examination was printed on pink paper</i></p>
<p>2. event reading (i.e. they express processes which can be situated in time)</p> <p><u>Example:</u></p> <p>a. <i>The examination of the students by the teacher</i></p>	<p>2. no event reading (i.e. they have referential readings and denote (concrete) entities)</p> <p><u>Example:</u></p> <p>a. <i>A difficult two page long exam</i></p>



<p>3. agent-oriented modifiers</p> <p><u>Example:</u></p> <p>a. <i>The Professor's deliberate examination of the papers took a long time.</i></p> <p>b. <i>The CIA's intentional interrogation of the suspects proved useful.</i></p>	<p>3. no agent-oriented modifiers</p> <p><u>Example:</u></p> <p>a. <i>*The Professor's deliberate exam.</i></p> <p>b. <i>*The CIA's intentional interrogation.</i></p>
<p>4. compatible with aspectual modifiers like <i>in two hours, in one day</i></p> <p><u>Example:</u></p> <p>a. <i>The total destruction of the city in only two days appalled everyone.</i></p> <p>b. <i>The observation of the patient for several weeks can determine the most likely.</i></p> <p style="text-align: right;">Lieber (2016: 34)</p>	<p>4. incompatible with aspectual modifiers</p> <p><u>Example:</u></p> <p>a. <i>*The examination for three hours.</i></p> <p>b. <i>*Ama's translation in five hours.</i></p>
<p>5. allow temporal modifiers like <i>frequent, constant</i></p> <p><u>Example:</u></p> <p>a. <i>The constant assignment of unsolvable problems is to be avoided.</i></p> <p>b. <i>The frequent examination of the dossier proved futile.</i></p>	<p>5. do not allow temporal modifiers like <i>frequent, constant</i>, except when plural</p> <p><u>Example:</u></p> <p>a. <i>*The constant assignment.</i></p> <p>b. <i>*The frequent exam.</i></p>

<p>6. only take the determiner <i>the</i></p> <p><u>Example:</u></p> <p>a. <i>The construction of the building took three years.</i></p> <p>b. <i>*This construction of the building took three years.</i></p>	<p>6. take determiners like <i>a(n), this, that,</i> and <i>the</i></p> <p><u>Example:</u></p> <p>a. <i>This new construction is ugly.</i></p>
<p>7. are mass nouns (cannot be pluralized) because they must be singular.</p> <p><u>Example:</u></p> <p>a. <i>*The destructions of the file.</i></p> <p>b. <i>*The constructions of the building.</i></p>	<p>7. are count nouns (i.e. can be pluralized)</p> <p><u>Example:</u></p> <p>a. <i>The drawings were spectacular.</i></p> <p>b. <i>The sight-seeing trips were amazing.</i></p>
<p>8. <i>by</i>-phrase is an argument</p> <p><u>Example:</u></p> <p>a. <i>The (frequent) examination of the students by the teachers.</i></p> <p>b. <i>The (regular) distribution of the products by the company.</i></p>	<p>8. <i>by</i>-phrase is not an argument</p> <p><u>Example:</u></p> <p>a. <i>*The preoccupation (with John) by Lucy.</i></p> <p>b. <i>*The jump /fell by Lucy.</i></p> <p style="text-align: right;">Melloni (2007: 45)</p>

We shall now rely on Grimshaw's (1990) diagnostics to test and show the extent to which these two types of nominals are realizable in Esahie. In what follows, we examine the applicability and implication of each of Grimshaw's diagnostics to nominalization in Esahie. From this point, we will reanalyze and refer to ANs either as *complex event nominals (henceforth CENs)*

or as *result nominals* (henceforth RNs), as and when necessary, following Grimshaw’s nomenclature.

We begin our discussion of Grimshaw’s (1990) diagnostics with the *obligatory/optional expression of arguments* criterion. As illustrated in [Table 22](#), Grimshaw predicts that while complex event nominals obligatorily express the internal argument, result nominals, need not express the internal argument. The internal argument of the verb in (148a) is also expressed or preserved in the CEN in (148b), just as Grimshaw predicts.

- (148) a.    *Yoofi*            *tò̃-ne*            *aleε*  
               NAME            cook-PAST        food  
               ‘Yoofi prepared food’
- b.    *Yoofi-ye*        *aleε-tò̃-ne*                            *tè*        *kama*  
               NAME-POSS    food-cook-NMLZ<sub>E/R</sub>                COP    nice  
               ‘Yoofi’s cooking (style) is impeccable’

Nominalizations derived from verbs of creation (such as *build*, *create*, *generate*, and *form*) in Indo-European languages, in particular, have been noted in the literature to be interesting because, once the internal argument is expressed in such nominalizations, the result reading is completely lost or simply unavailable. This explains why the English nominalizations in (149) cannot express a result reading.

- (149) a.    The construction of the house.  
           b.    The generation of file.  
           c.    The creation of the district.

The examples in (149) can only evoke complex event readings and not result readings because they are eventive and argument-taking. This characterization of nominalizations involving verbs of creation provides a reliable empirical support to Grimshaw’s (1990) diagnostics in terms of argument realization since the internal arguments of these verbs are expressed in the nominalizations.

We will now examine the manifestation of such verbs in Esahie. The verbs-of-creation-based nominalizations in (150) pattern after the English examples in (149) in terms of argument realization.

- |          |                                  |            |
|----------|----------------------------------|------------|
| (150) a. | <i>sua-sí-le</i>                 | <i>ne.</i> |
|          | house-build NMLZ <sub>E/R</sub>  | DEF        |
|          | ‘The house-building’             |            |
| b.       | <i>kué-té-le</i>                 | <i>ne.</i> |
|          | group-create-NMLZ <sub>E/R</sub> | DEF        |
|          | ‘The group-creation’             |            |
| c.       | <i>dwein-pé-le</i>               | <i>ne.</i> |
|          | song-compose-NMLZ <sub>E/R</sub> | DEF        |
|          | ‘The song-composition’           |            |

In the nominalizations in (150), the licensing of the internal arguments blocks a result reading so that (150a) *suasíle ne* ‘the building of the house’ cannot denote ‘the (built) house’, and *kuetéle ne* ‘the creation of the group’ in (150b) cannot denote ‘the (created) group’, neither can *dweinpéle ne* ‘the composition of the song’ denote ‘the (composed) song’. Given the presence of the internal arguments, these nominalizations have eventive meanings, and perfectly fit

Grimshaw’s (1990) characterization of CENs. To this extent, Grimshaw’s criterion of argument realization is useful in distinguishing the two sets of nominals in Esahie.

Although *argument realization* constitutes a crucial diagnostic in Grimshaw’s criteria, as we shall see, this criterion does not always provide a useful and reliable benchmark for distinguishing between CENs and RNs in Esahie. Regarding RNs, the manifestation of this criterion in Esahie is interesting, because, as we hinted earlier, for ICVs<sup>80</sup> and most transitive verbs, nominalization invariably requires the realization of internal arguments.<sup>81</sup> This is linked to the general incorporating typology of Esahie nominalizations. This implies that even in RNs the internal argument could be present. Considering the *ICV*-nominalization in (151) and (152) which are RNs, we notice that ICVs are always nominalized with their internal argument, *contra* Grimshaw.

**ICV Nominalization**

- (151) a.     *Kofi*           *bɔ̀-le*           *afɔ̀leɛ*  
               NAME           ICV-PAST       sacrificial.gift  
               ‘Kofi sacrificed.’
- b.     *afɔ̀leɛ-bɔ̀-le*           *bie*  
               sacrifice- ICV-NMLZ<sub>E/R</sub>       INDEF  
               ‘A(n) sacrifice/offering.’

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<sup>80</sup> It is worth mentioning that a reviewer prefers to call such predicates **Obligatory Complement-taking verbs** (OCVs), since according to him, the internal argument together with the verb express a predicate meaning and so that the nominalization involves the internal argument. It is not just verb nominalization, it is actually a VP nominalization. This is a point that I tend to agree with. Actually, this has been my position in general, that nominalizations, particularly those involving synthetic compounding, are nominalizations of VPs (i.e. verbs and their internal arguments).

<sup>81</sup> A reviewer points out to me that, from an Esahie perspective, ICVs (or OCVs, as he prefers to call them) are transitive and are not different from the class of transitive verbs. If anything, they form a subclass of transitive verbs. I do not see how they can yield something different and I do not understand how the way the so-called transitive verbs are used makes them resultative.

- c. *Yaa*            *tù-le*            *atěě*  
 NAME            ICV-PAST            road  
 ‘Yaa travelled.’
- d. *atěě-tù-le*                            *bie*  
 road-ICV-NMLZ<sub>E/R</sub>                    INDEF  
 ‘A journey’
- (152) a. *Baabroo*        *tù*        *foε*  
 Bible            ICV        advice  
 ‘The bible advises’
- b. *foε-tù-le*                            *bie*  
 advice-ICV-NMLZ<sub>E/R</sub>                    INDEF  
 ‘An advice’
- c. *Me-η-gɔ*                            *bua*        *atεen*  
 1SG.SUBJ-NEG-FUT        ICV        judgement  
 ‘I will not judge.’
- d. *ndεen-bua-le*                            *bie*  
 judgement- ICV-NMLZ<sub>E/R</sub>                    INDEF  
 ‘A judgement’

Similarly, in the *transitive-verb* nominalization examples in (153) which are also RNs, contra Grimshaw, we notice that transitive verbs are typically nominalized with their internal argument. The context in which these nominalizations are used makes them resultative.

**Transitive verb Nominalization**

- (153) a. *agyaa-sèkyé-lɛ*                      *nwo*    *ɲ-gyerɛngyerɛ*  
marriage-destroy-NMLZ<sub>E/R</sub>    about    PL-teaching  
‘Teachings about adultery’                      (Matthew 5, p. 10; Esahie NT Bible)
- b. *foɛ-tu-lɛ*                      *bɔ*    *ɔ-fa*                      *asuafoɛ*                      *buru-ne-nyɔ*  
advice-give-NMLZ<sub>E/R</sub>                      REL    3SG-concern    disciples                      10-CONJ-2  
*ne-dwumadie*                      *nwo*.  
POSS-work                      about  
‘The advice concerning the twelve disciples’ ministry.’  
(Matthew 10, p. 1; Esahie NT Bible)

Interestingly, however, contrary to Grimshaw’s claim, CENs do not always obligatorily take internal arguments. Let us examine the English examples below:

- (154) The discussion lasted two hours.<sup>82</sup>

On the other hand, RNs can retain argument structure properties. Examples of this sort are attested across many languages:

- (155) **Italian (RNs and CENs)**

*La tua traduzione del testo di Prisciano, che è stata più volte corretta*<sub>[EVENT]</sub>,

*è stata messa sulla scrivania*<sub>[RESULT]</sub>.

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<sup>82</sup> Admittedly, Grimshaw (1990: 49) might classify this as a *simple event* noun, or as she explains, optionality is *lexically-determined* and can take place in nouns as well as in verbs. An implication of this is that *obligatoriness* should be taken in a loose sense.

‘Your translation of Priscian’s text, which has been revised many times, was placed on the desk.’ (Melloni, 2007: 101)

(156) **Catalan (RN)**

*La discussió de les dades es va publicar a la revista.*

‘The discussion of the data was published in the journal.’ (Picallo 1991: 24)

(157) **Portuguese (RN)**

*A análise do texto pelo aluno enriqueceu o conhecimento dos colegas.’*

‘The analysis of the text by the student enriched the knowledge of the colleagues.’

(Sleeman and Brito 2007: 16)

In the Italian example in (155), *traduzione* ‘translation’ has both readings (resultative and eventive one), even with the internal argument (*del testo di Prisciano*) present. In the Catalan example (156), also the sentence is felicitous keeping the resultative reading of *discussió* ‘discussion’ and the presence of its arguments. In the Portuguese example (157), the arguments, *do texto* (theme) and *pelo aluno* (topic), of the nominalization (*análise*) are present and the sentence is still felicitous. This discussion shows that the behavior of deverbal nominalizations cannot be completely inferred from verbs and that similar deverbals from different related languages may behave differently.

Having discussed the realization of internal arguments in Esahie nominalization, we proceed to examine the criterion of *by*-phrases, which relates to the expression of the external argument. Grimshaw (1990: 61) posits that *by*-phrases in CENs are authentic arguments, while *by*-phrases in RNs are not authentic arguments. This criterion is generally inapplicable in Esahie, and indeed, in other Kwa languages. This is because, unlike English, there is no such



clearly dedicated means of expressing the external argument in Esahie. This accounts for the lack of distinction in the expression of the *possessor* in the RN in (158a) and the expression of the *agent* in the CEN in (158b).

- (158) a.    *Ama-ye*                      *e-dwudwo-le*                      *tè*                      *Esahie.*  
                     NAME-POSS                      SG-talk-NMLZ<sub>E/R</sub>                      COP                      Esahie  
                     ‘Ama’s language is Esahie.
- b.    *Ama-ye*                      *e-dwudwo-le*                      *té*                      *maye.*  
                     NAME-POSS                      SG-talk-NMLZ<sub>E/R</sub>                      COP.NEG                      good  
                     ‘Ama’s (manner of) of talking is uncivilized.’<sup>83</sup>

Since possessors and agents are expressed in the same way in Esahie, the *by*-phrases criterion is not helpful in dealing with the Esahie data. The *by*-phrase criterion is too language-specific to be cross-linguistically applicable.

From the foregoing, it is clear that as far as the expression of both internal and external arguments in nominalizations is concerned, Grimshaw’s criterion of *argument structure* (i.e. argument realization) does not prove useful or applicable in distinguishing between CEN and RN constructions in Esahie.

We now proceed to consider the *reading/meaning* criterion. Grimshaw’s account predicts that CENs have an *event reading* (i.e. they express processes which can be situated in time) and RNs have no event reading (i.e. they have referential readings and denote (concrete) entities). Let us consider the following examples:

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<sup>83</sup> A reviewer has drawn my attention to the fact that, by strictly following these (Grimshaw’s) tests, we run the risk of ignoring other crucial things such as context, which have the potential of determining the interpretation of an AN. This is a fair observation.

(159) **CENs with eventive readings**

- a. *Biãã ne η-gro Baabroo-kengá-le*  
 man DEF NEG-like Bible-read-NMLZ<sub>E/R</sub>  
 ‘The man dislikes (the act of) reading the Bible.’
- b. *Akɔlaa he η-gro nikyē-sũá-ne*  
 child DEM NEG-like thing-learn-NMLZ<sub>E/R</sub>  
 ‘This child does not like (the act of) studying.’

The CENs *baabroo-kengá-le* ‘(act of) reading the Bible’ in (159a) and *nikyē-sũá-ne* ‘(act of) studying’ in (159b) both have eventive readings. As such, they corroborate Grimshaw’s prediction that CENs evoke an eventive reading. Let us now consider some RNs in the light of Grimshaw’s prediction of referential readings.

(160) **RNs with referential readings**

- a. *...na e-dwudwó-le bie fi*  
 CONJ SG-talk-NMLZ<sub>E/R</sub> INDEF come.from  
*munumgum hã-ne kyε.....*  
 cloud say-PAST COMP  
 ‘.. and a voice from heaven exclaimed that ....’

(Matthew 17:5, Esahie NT Bible)

- b. *Yiti nyanza-sũá-ne beni yeε e-sũá-ne*  
 So wisdom-learn-NMLZ<sub>E/R</sub> QP FOC 3SG.SUBJ-learn-PAST  
*fi bɔ o-sili-ne n-anu*  
 from REL 3SG-happen DEF-inside  
 ‘So what lesson did you learn from what happened?’

Both RNs *edwudwólε* ‘voice’ in (160a), and *nyanza-súá-ne* ‘lesson’ in (160b) have referential readings. As such, they corroborate Grimshaw’s prediction that nominals can evoke referential/result readings, although formally these nominals cannot be distinguished from the CEN ones.<sup>84</sup>

Grimshaw’s criterion of admissibility of agent-oriented modifiers (such as *intentional*, *purposeful*, *deliberate*) does not appear to be applicable in Esahie because such adjectives do not exist in Esahie, and their closest equivalents can hardly be used attributively. However, even in English, it is possible for RNs to admit agent-oriented modifiers, contra Grimshaw. Let us examine the following examples.

- (161) a. the **intentional retro-utopian town**.<sup>85</sup> (Lieber 2016: 125)
- b. I learned to knit not just from **my mother’s intentional instruction**, but in the hours I simply sat and watched her flashing needles. (Lieber 2016: 53)
- c. The road and the canyon and the mountain around them are inside the Toiyabe National Forest, the target of **Carver’s deliberate provocation**. (Lieber 2016: 53)
- d. The main issue is the **intentional insult**, the intent to incite . . . (Lieber 2016: 54)

In the example (161) above, we notice that all the RNs admit agent-oriented adjectives, implying that, per Grimshaw, they behave just like CENs. The nominalizations *provocation*, *instruction*, *insult* all are truly polysemous, since the encoded event implies the corresponding

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<sup>84</sup> These nominalizations are polysemous and have both E and R readings, hence the  $E/R$  indexation.

<sup>85</sup> Although *town* per se is not a nominalization, being built as *retro-utopian* is intentional.



**RNs with no aspectual modifiers**

- (163) a. *E-dwudwo-lɛ*            *ne*    (\*wɔ̃ *dɔnhwɛɛ*    *nza*    *nu*)  
SG-talk-NMLZ<sub>E/R</sub>            DEF    in    hour            three    in  
‘The language (\*in three hours).’
- b.    (\**afoɛ nyɔ̃*)    *edwudwo-lɛ*            *ne*  
year    two    SG-talk-NMLZ<sub>E/R</sub>            DEF  
‘(\*for two years) the language/the language (\*for two years).’
- (164) a. *a-hyɛɛ-lɛ*            *ne*    (\*wɔ̃ *dɔnhwɛɛ*    *kõ*    *nu*)  
PL-write-NMLZ<sub>E/R</sub>            DEF    in    hour            one    in  
‘The writings (\*in one hour).’
- b.    (*dɔnhwɛɛ*    *kõ*)    *a-hyɛɛ-lɛ*  
hour            one    PL-write-NMLZ<sub>E/R</sub>  
‘(\*one hour) writings.’

As the Esahie nominals with referential denotations such as *edwudwole* ‘language’ in (163) and *ahyɛɛle* ‘writings’ in (164) clearly show, RNs do not admit aspectual modifiers such as *in three days*, in consonance with Grimshaw’s account. In this regard, the Esahie data conforms to Grimshaw hypothesis.

According to Grimshaw (1990), singular CENs allow temporal modifiers such as *frequent*, *constant*, while singular RNs do not allow such modifiers. In the example (165) below, the prediction holds.

**CEN with the temporal modifiers ‘frequent’**

- (165) a.    *daa*            *e-dwudwo-le*            *yε*    *yaa*  
frequent        SG-talk-NMLZ<sub>E/R</sub>        COP    painful  
‘Frequent talking is painful.’

**RN without the temporal modifiers ‘frequent’**

- b.    (\**daa*)            *dwein ne*  
frequent        song    DEF  
‘The (\*frequent) song.’

Grimshaw also argues that while CENs only take the determiner *the*, RNs take determiners like *a(n)*, *this*, *that*, and *the*. We notice that the CENs in examples (166), apart from clearly having an event reading, can also allow the determiner *the*.

- (166) *ɔ-hyε-le*                      *ngondaa-bú-le*                      *n’abo*  
3SG.SUBJ-begin-PAST    account-break-NMLZ<sub>E/R</sub>                      DEF-under  
‘He began the account-rendering’.

The internal argument-taking property of the AN further confirms its status as an eventive nominal. In example (167), however, we observe that the AN *edwudwole*, albeit derived from an intransitive verb, could have both an eventive and a result reading depending on the context. In (167a-b), the context triggers a referential reading, while (167c-d) evokes an eventive reading. In the former cases, the form of the AN, although invariable, gets a plural reading, as a result of the presence of the plural modifier *pžž* ‘many’, rendering it amenable to a result interpretation.

- (167). a. *Ba* *yε* *Baabroo* *ne* *wɔ* *e-dwudwo-lε*<sup>86</sup> *pěě* *nu*.  
 3PL make Bible DEF in SG-talk-NMLZ<sub>E/R</sub> many in  
 ‘The Bible has been translated into many languages’
- b. *Yiti* *sε* *me-n-de* *e-dwudwo-lε* *bie* *bo*  
 Therefore COND 1SG-NEG-understand SG-talk-NMLZ<sub>E/R</sub> INDEF under  
*a*  
 COND  
 ‘Therefore, if I cannot understand a language...’
- c. *daa* *e-dwudwo-lε* *yε* *yaa*  
 frequent SG-talk-NMLZ<sub>E/R</sub> COP painful  
 ‘Frequent talking is painful’.
- d. *Gloria* *krò* *e-dwudwo-lε* *soma*<sup>87</sup>  
 Gloria love.HAB SG-talk-NMLZ<sub>E/R</sub> much  
 ‘Gloria really likes talking’

The form of the ANs in examples provided in (167c-d) are in the singular, hence, they are neither plural-marked nor modified by a plural determiner/quantifier. Grimshaw proposes that, unlike RNs, CENs cannot be pluralized. This way, CENs are akin to non-count nouns, while RNs on the other hand, are akin to count nouns. We observe that the nominals in (167)c-d apart from evoking an eventive interpretation, actually corroborate Grimshaw’s diagnostics relative to CENs, in that, (167)c for instance, admits a modifier like *frequent*, which, according to Grimshaw, is only admissible by eventive nominals in the singular (as in *a frequent*

<sup>86</sup> In terms of NUMBER, this nominal is a *singularia tantum*, hence the singular affix (cf. Broohm 2017). As a mechanism against vowel hiatus, however, the singular affix [e-] in *e-dwudwo-lε* is usually dropped resulting in *dwudwo-lε*, if the preceding word ends in a vowel.

<sup>87</sup> The scope of *soma* is on the event expressed by the AN.

*construction of the road*). It is worth noting, however, that, although this observation is true, it not without question because, since the noun is a *singularia tantum* independently of its interpretation, it is difficult to conclude that the non-pluralizability of CEN *edwudwole* is due to the fact that it is eventive. Furthermore, CENs may also be modified by definite demonstrative determiners, *contra* Grimshaw.

- (168) *Bè sɛkyè mǎēnpaen ne dumaa, sɔ dumaa-sɛkyé-le*  
 3PL destroy President POSS name, DEM name-destroy-NMLZ<sub>E/R</sub>  
*he tɛ aworabɔ*  
 DEM COP saddening  
 ‘They are destroying the name of the President, this (act of) defamation is tragic/saddening’

Moreover, CENs may also be modified by indefinite demonstrative determiners, *contra* Grimshaw. Let us consider example (169) below.

- (169) a. *Ama ne Asantewaa wɔ gyaade bɔɔ bɛ tɔ́*  
 Ama CONJ Asantewaa be.LOC kitchen CONS 3PL cook  
*alee*  
 food  
 b. *alee-tɔ́-nɛ tɛɛ~tɛɛ bie*  
 food-cook-NMLZ<sub>E/R</sub> bad~INT INDEF  
 ‘Ama and Asantewaa are cooking in the kitchen, a (certain) really terrible cooking’

These counterexamples work in English as well,<sup>88</sup> and do not constitute a difference between English and Esahie. The crucial difference in Esahie lies in the restriction on the expression of

<sup>88</sup> See Lieber (2016) for more on this.



the internal argument to a form of noun incorporation. The difficulty to clearly distinguish between *E* and *R* nominals in Esahie follows from these facts. In Romance and Germanic languages, however, the possibility of pluralizing CENs is easily attested. In the English example in (170), this is illustrated.

(170) The *translations* took many hours of hard, slogging work, often with material which, because of its archaic and technical nature, was extremely difficult.

(Real and Retoré 2014: 4)

The foregoing shows that not all of Grimshaw’s diagnostics can be applied to Esahie, and that some of the applicable diagnostics come with many questions and counterexamples. As far as the Esahie data is concerned, the criterion of the (contextual) meaning appears to be the most reliable of Grimshaw’s diagnostic. Below in [Table 23](#), we make an attempt at summarizing the (extent of) applicability of Grimshaw’s diagnostics to the Esahie data.

**Table 23: Applicability of Grimshaw’s diagnostics to the Esahie data**

<b>Criterion</b>	<b>Applicability</b>	<b>Counterexamples</b>
<i>1. Argument Structure</i>	Inapplicable	X
<i>2. E/R readings</i>	Applicable	No
<i>3. Admissibility of agent-oriented modifiers</i>	Inapplicable	X
<i>4. Compatibility with aspectual modifiers</i>	Applicable	No
<i>5. Admissibility of temporal modifiers</i>	Applicable	Yes
<i>6. Determiner selection</i>	Applicable	Yes
<i>7. Pluralizability</i>	Applicable	Yes
<i>8. By-phrases</i>	Inapplicable	X

Overall, Grimshaw's (1990) work, though based solely on English, represents a crucial milestone in the analysis and theorization of nominalization. Indeed, as Melloni (2007:42) notes,

[H]er work addresses significant issues and suggests remarkable solutions: the notion of argument structure as a separate level connecting the syntactic and the semantic modules, the (morpho-)syntactic distinctions among three classes of nominals (complex event, simple event and result nouns), the role of LCS, mediated by argument structure, in determining the projection of syntactic satellites (cf., concerning these latter, Grimshaw's definition of arguments, adjuncts, and modifiers). Strictly concerning nominals, the most relevant aspect of Grimshaw's analysis has been her systematic account of the distribution of arguments in nominal constructions in terms of the opposition of complex event vs. simple event and result nominals.

From the discussion on Esahie nominalization as argued above, however, we notice that while Grimshaw's (1990) diagnostics have proven useful and insightful, they do not always apply, as abundantly discussed in the literature, concerning English and many other languages. Crucially, the distinction between *E* vs. *R* based on argument structure dissolves in Esahie, where the Poss-Incorporating typology of nominalization disallows the independent expression of the internal argument as a postnominal genitive and forces its expression as an incorporated noun whenever the verb requires it.

### **3.6 Conclusion**

The discussion offered in this chapter points to the fact that, the form and function of nominalization in the grammar of Esahie enriches our understanding of nominalization and word-formation in general.

We have argued that Esahie has both lexical and clausal nominalizations, adding that while the latter retains some verbal features, the former loses verbal features. The characterization of nominalization as discussed in this chapter, however, shows that Esahie nominalization is predominantly a case of lexical nominalization, because, it is typically not a case of the *so-called* clausal nominalizations, where a VP or TP turned into a DP-structure nominal construction via the addition of an article. Rather, what we typically have is something close to what exists in English, in terms of nominalizations which are fully fledged nouns, having lost a lot or all of their verbal properties (such as verbal inflection).

Action nominalization, as a classic case of lexical nominalization, has been argued to be a productive derivational process in Esahie. Action nominals play significant roles in morpho-syntactic processes in Esahie. The derived noun represents the event or state denoted by the verb root and may express other more or less concrete meanings (the ‘result’ reading). This chapter has shown that action nominalization in Esahie primarily involves a composite strategy: a morpho-syntactic operation, invariably involving affixation and a resultant change in tonal melody, which may or may not be coupled with synthetic compounding (when the verb in question is argument-taking). Synthetic compounding, as mode of nominalization, has been observed to be highly productive in the grammar of Esahie.

We have also observed that nominalizing affixation must be overt, so that unlike Gã, Akan, and Lete, action nominals in Esahie cannot be derived through a zero operator. On the role of prosodic morphology in AN-derivation, it appears that in Kwa, and in tonal languages (cf. Edo: Adéníyì 2010 and Tee: Anyanwu and Omega 2015), tone raising is a nominalizing marker or cue (toneme) that may be used independently or in addition to affixation to signal nominalization.

Furthermore, we have shown that ANs and prototypical nouns in Esahie have a lot in common with respect to morpho-syntactic properties, to the extent that the derived ANs may occur in various A/ $\bar{A}$ -positions, and may in addition take some descriptive nominal modifiers.

In a typological perspective (cf. Koptjevskaja-Tamm 1993), AN-derivation, as discussed in this work, puts Esahie within the POSSESSIVE-INCORPORATING subtype of the INCORPORATING languages. This accounts for the behavior of Esahie relative to that of the INCORPORATING languages. This accounts for the behavior of Esahie relative to that of some Kwa languages such as Ewe, Ifè (Yoruba) and Nupe (cf. Hyman 1975, Koptjevskaja-Tamm 1993: 186), and Akan, where there is a parallelism between underived and derived nouns, in that, in underived NPs like *emo bɔtɔ* ‘bag of rice’, dependents precede the head, just as dependents precede heads in ANs like *nikye-sùánɛ* ‘education/learning (lit. thing learning)’. This implies that although other elements like *D*-elements and adjectives may follow the noun, the ‘internal argument’ of the noun apparently uniformly precedes it.

Finally, this chapter has also shown that Grimshaw’s (1990) diagnostics for distinguishing *eventive nouns* (CENs) from *result nouns* (RNs) do not always hold when tested against the Esahie data, as well as English and other languages, as previously noted by other scholars.

## CHAPTER FOUR

### COMPOUNDING IN ESAHIE

*There are probably no languages without either compounding, affixing, or both. In other words, there are probably no purely isolating languages. There are a considerable number of languages without inflections, perhaps none without compounding and derivation.*

(Greenberg 1963: 92)

#### 4.1 Introduction

This chapter deals with the word formation phenomenon of compounding as it obtains in Esahie. Our discussion of Esahie compounding will seek to answer questions such as: what types of compounds are attested in Esahie, what their structural properties (headedness issues, internal inflection, recursion, input and output constraints, etc.) and semantic properties (compositionality, lexicalization and idiomaticity issues, etc.) are, and, to what extent these phenomena are productive in the morphological system of Esahie.

To situate our discussion of Esahie compounding in its proper theoretical and empirical setting, the chapter begins with a review of some of the core issues in the study of compounding: definition-related issues ([section 4.3.1](#)), formal/structural issues such as *headedness* and *lexical selection* ([section 4.3.2](#)), semantic issues such as *compositionality* ([section 4.3.3](#)), as well as *classificatory* issues ([section 4.3.4](#)). Having set the stage through the discussion of these pertinent issues, we set out to deal with compounding in Esahie in [section 4.4](#). We begin with various forms of N-N compounds ([section 4.4.1](#)), and proceed to discuss other types of compounding, including N-A compounds ([section 4.4.2](#)), N-V compounds ([section 4.4.3](#)), as well as V-N compounds ([section 4.4.4](#)). We then proceed to argue that

compounding in Esahie and other Kwa languages is a nominalization strategy, an operation that is blind to the syntactic category of the input elements ([section 4.5](#)). In [section 4.6](#), we summarize and conclude the Chapter.

## 4.2 On the phenomenon of compounding

There have been longstanding debates on what exactly a compound is, and even on whether compounds exist as distinct species of word formation (cf. Guevara & Scalise 2009; Lieber & Štekauer 2009; Montermini 2010; Scalise & Vogel 2010; Štekauer et al. 2012). This is partly due to the nature and class of the elements that make up compounds. While compound-forming elements in some languages are free forms, others are stems or roots (i.e. not free-forms). Another related complication has to do with the fact that the terms *stem*, *root*, and *word* per se, are not well-delineated concepts on both language-specific as well as cross-linguistic levels.

Beyond this, there is also the issue of the difficulty in drawing a clear and clean distinction between compounds, on the one hand, and derived words or phrases, on the other hand. These vexed issues, according to Lieber and Štekauer (2009), culminate into a challenge in arriving at a suitable and cross-linguistically applicable definition of compound(ing). In what follows, we attempt to highlight some of the germane issues on the subject of compounding.

## 4.3 Core issues in compounding

In this section, we take a look at some of the pertinent issues in the study of compounding as discussed in the literature. They include definition-related issues ([section 4.3.1](#)), formal/structural issues such as *headedness* ([section 4.3.2](#)), semantic issues as *compositionality* vs. *idiomaticity* ([section 4.3.3](#)), as well as *classification-related* issues ([section 4.3.4](#)). The discussion of the aforementioned issues will set the stage for our analysis of compounding in Esahie. We begin with the definitional problem. For purposes of space, other morphologically

relevant issues such as *productivity* will not be discussed in this introductory section (see Hockett 1958; Aronoff 1976; Booij 2002; Bauer 2005; Dressler 2006; Plag 2006 Booij 2007b; *inter alia*, for more).

### 4.3.1 Defining Compounds/Compounding

As the discussion in [section 4.2](#) suggests, the parameters and properties that a linguistic expression requires to suffice to be considered as a compound are highly controversial in the linguistics literature (cf. Ziering 2018; Nakov 2013; Lieber and Štekauer 2009; and Štekauer and Lieber 2005, Lawer 2017). To date, as far as the definition of compounds (or compounding) is concerned, there are hardly any globally accepted criteria. Below in [Table 24](#), we provide an overview of the gamut of views on the word formation phenomenon of compounding (or compounds) and some of the shortcomings that they are saddled with.

Table (24): **Various Definitions of Compounding**

Scholar	Definition	Problem
Marchand (1960: 11)	“when two or more words are combined into a morphological unit”	1. Elements in compounds may be roots and stems.
Downing (1977: 805)	“a sequence of nouns which function as a single noun”.	1. Cannot account for compounds whose output categories are not nouns.  2. there are words that are ambiguous with respect to their category, e.g., adjective vs. noun for the modifiers in <i>adult male rat</i> .

Levi (1978: 12)	<p>defines three types of complex nominals:</p> <ul style="list-style-type: none"> <li>• nominal compounds: <i>database</i>, <i>chocolate cake</i>, . . .</li> <li>• nominalizations: <i>dream analysis</i>, <i>truck-driver</i>, . . .</li> <li>• non-predicate NPs: <i>electric shock</i>, <i>musical criticism</i>, . . . (i.e., adjective noun sequences, where the adjective cannot be used predicatively)</li> </ul>	<p>1. Many empirically attested compound types are unaccounted for.</p>
Trask (1993: 55)	<p>“the process of forming a word by combining two or more existing words: <i>newspaper</i>, <i>paper-thin</i>, <i>babysit</i>, <i>video game</i>”</p>	<p>1. Elements in compounds may be roots and stems.</p> <p>2. Certain stems in compounds are not autonomously attested.</p>
Katamba (1993: 291)	<p>“a prototypical compound is a word made up of at least two bases which can occur elsewhere as independent words.”</p>	<p>1. Compounds may be phrasal.</p>
Bauer (2003: 40)	<p>“the formation of a new lexeme by adjoining two or more lexemes”</p>	<p>1. The challenge in defining what constitutes a lexeme.</p>
Booij (2007a: 75)	<p>“the combination of lexemes into larger words.”</p>	<p>1. Cannot account for the so-called phrasal compounds.</p>
Nagy et al. (2013: 225)	<p>“a compound is a lexical unit that consists of two or more elements that exist on their own.</p>	<p>1. Cannot account for the so-called phrasal compounds.</p> <p>2. Not all elements in a compound exist on their own.</p>



Appah (2013: 15)	“the process by which a new lexeme is formed by combining two or more bases, each of which potentially occurs alone elsewhere in the grammar as free forms.”	
Lawer (2017:	“a lexeme that consists of two lexemes where a lexeme in this regard is a linguistic form with a specific meaning and can stand on its own in an acceptable phrase or sentence in the language.”	

Beyond the definitional controversy, the existence of compounding as a type word formation phenomenon has also been questioned. While Bauer (2003) defines a compound as “the formation of a new lexeme by adjoining two or more lexemes”, Marchand (1967) indirectly denies the existence of a compounding word formation type besides *expansion* and *derivation*. For Marchand (1967), the independence of the right-most constituent (i.e., the head) is the most important distinguishing feature. Where the head is a free morpheme, the relevant word formation is classified as *expansion* (e.g., prefixed constructions such as *reheat* and compounds such as *steamboat*), and where the right-most element is a bound morpheme, it is considered as an instance of *derivation* (e.g., suffixed constructions such as *blindness*).

As Lieber and Štekauer (2009) explain, the controversy about the kind of units that can be used or considered as elements in a compounding operation constitutes the “micro question” in the study and analysis of compounds. Taking cognizance of the existence and characterization of compounding in morphologically rich languages such as Russian, Ukrainian, Hebrew, Amharic, Arabic, or Slovak, where compound constituents may fall within the class of bound morphemes that cannot be considered as independent words, we can

justifiably take to task the claim that “[w]hen two or more words are combined into a morphological unit, we speak of a compound” (Marchand 1960). In Slovak, for example, the modifier in the compound *rýchlovlak* ‘express train’ begins with a stem of the adjective *rýchly* ‘fast’ (as in the phrase *rýchly vlak* ‘fast train’): *‘rýchl’* (followed by a linking element *o*). The paucity of inflection in an isolating language like English has the potential of masking the distinction between composite (i.e. compounds) and phrasal structures. For example, *blackbird* (compound) vs. *black bird* (phrase).

A possible solution is offered in Katamba (1993) and Bauer’s (2003) definition, where instead of words, *bases* and *lexemes*, respectively, are considered as the units that compounds are composed of. The terms ‘base’ and ‘lexeme’ seem more appropriate for capturing both free and bound morphemes of lexical units, and simultaneously excluding derivational and inflectional affixes. Interestingly, however, this alternative approach to the definition of compounds is also not without issues. Bauer’s (2003) definition restricts compound units to lexemes and brings up the issue of defining what exactly constitutes a “lexeme”. Lieber and Štekauer (2009) identify some problems associated with finding a universally valid definition of a ‘lexeme’. They include the following question: how can bound lexical roots be distinguished from derivational affixes? A potentially reliable criterion is the amount of semantic content each bear. Typically, lexemes bear more semantic content than derivational affixes. As Mithun (1999) notes, however, in some languages, especially Native American languages, the so-called “*lexical affixes*” tend to have as much semantic content as lexical roots. An alternative criterion for the lexeme definition is the possibility of occurring isolated (as an inflected form). However, this criterion allows English particle verbs such as *overfly* or *outrun* to be considered as compounds, which is problematic since the particles *over* and *out* have a function different from what they have in the *proof* in *proofread* as exemplified in example (171).

- (171) a. The jet overflowed the field.
- b. \*The jet flew the field.
- c. The reviewer proofread the article.
- d. The reviewer read the article.

The difficulty in drawing a clear and fine distinction between compound words and derived words or phrases constitutes what Lieber and Štekauer (2009) label as the “macro question” in the study and analysis of compounds.

For Bauer (2003), a compound is a ‘new lexeme’. This conceptualization holds for lexicalized compounds such as *blackboard*, which appear to be different from the phrase *black board*: the lexicalized word *blackboard* can even be modified with other colors as in *green blackboard*, while the phrase *black board*, as in *\*green black board*, cannot. The so-called deictic compounds (Downing 1977), which are used in reference to objects in the situation of utterance; for example, a *tomato bowl* that just happens to hold tomatoes at the moment of utterance, however, cannot be regarded as single lexemes. Furthermore, many German *adjective-noun* compounds have been shown to be semantically equivalent to their phrasal counterparts, e.g., *Optimallösung* ‘optimal solution’ vs. *optimale Lösung* (Ziering 2018: 10; Schlücker and Hüning 2010).<sup>89</sup> Should such constructions be considered as compounds, since they have some of the properties which are often encountered in compounds, such as *prosodic stress* in English or spelling in German?

Another yet contentious issue involves phrasal compounds (or the so-called *multi-word expressions*) such as the hackneyed *ate-too-much headache*, *around-the-clock surveillance*, or

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<sup>89</sup> As pointed out to me by a reviewer, in German the distinction between a compound and a phrase is not simply a matter of the spelling, but also one of inflection. This criterion licenses the distinction between *optimal* (without inflection) and *optimal-e* (with inflection).

a *wouldn't-you-like-to-know-sneer* examples, which cannot be considered as lexemes, while still being classified as compounds in the literature. In an attempt to address these vexed issues, Donalies (2004), for instance, proposes some definitive criteria for compound-hood and they are summarized below in (172).

(172) *Quasi-definitive criteria for compound-hood*

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

A critical consideration reveals that Donalies' (2004) criteria are far from being adequate. For instance, it appears that some of the properties ((172) i-vi) are too language-specific to be cross-linguistically applicable, while others are based on generalizations that have overtime been empirically invalidated. Property ((172) i), for instance, is reminiscent of Williams' (1981a) *Right-hand Head Rule* (RHR), which claims that the head of a complex morphological structure is the right-hand constituent. However, even for English based on which it was initially formulated, as well as many other languages including Catalan (Padrosa-Trias 2010),

and most Romance languages in general, as well as Lɛtɛ (Akrofi Ansah 2012b), Akan (Appah 2013) and Dangme (Lawer 2017), the RHR has been shown to be spurious.

As for Esahie, the derivation and compounding examples in (173) and (174), respectively, are also in contrast with the RHR (see [section 4.3.2](#) for more on *headedness*).

	<b><u>Input</u></b>		<b><u>Output</u></b>
(173) a.	<i>wia</i>		<i>a-wie</i> <sup>90</sup>
	steal		NMLZ-steal
			‘theft’
b.	<i>gya</i>		<i>a-gyaa</i>
	marry		NMLZ-marry
			‘teachings’
(174) a.	<i>akoa</i>	<i>tia</i>	<i>akoatia</i> ‘dwarf’
	person	short	
b.	<i>nyɔboɛ</i>	<i>taen</i>	<i>nyɔbotaen</i> ‘rock’
	stone	parent	

In the complex nominal in (173a), for instance, it is the left-hand member (i.e. the nominalizing prefix [*a-*]) which heads the complex, just as in (173b), where the left-hand member (i.e. the same nominalizing affix [*a-*]) heads the complex. Also, in the [N-A] compound in (174a), the left-hand member *akoa* ‘person’ is the head of the entire compound, while in (174b), the left-hand member *nyɔboɛ* ‘stone’ is the head of the compound.

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<sup>90</sup> Here (and also in example 173b), in addition to the prefixation operation, vowel mutation (processual morphology) may also partly account for the nominalization since the final vowel /a/ in the verb *wia* ‘steal’ changes to /e/ in the nominalization *awie* ‘theft’.

It is instructive to admit that the conceptualization of the right-hand member as the head of complex words predates Williams (1981a). The same idea is captured in Allen's (1978: 105) lexicalist-based *IS A* Condition, illustrated below in (175).

(175) *IS A* Condition

In the compound  $[X Y]_Z$ , Z "IS A" Y.

In essence, this condition also proposes that the right-hand member Y of the [XY] complex is the head of the complex so that the compound *car-key* IS A (type of) *key*.

The foregoing affirms Montermini's (2010: 79) observation 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."

On grounds of scope and language-specific applicability, however, I adopt Bauer's (2006: 719) definition of compounds as follows:

A compound is usually defined (somewhat paradoxically) as a word that is made up of two other words. This basic definition requires a certain amount of modification, some of it for all languages, some of it for specific languages. For example, there may be more than two 'words' involved in the formation of a compound, though there must be at least two. [...] the forms in which the individual subwords appear may be differently defined in different languages: a citation form in one, a stem in another, a specific compounding form in yet a third, a word form in a fourth. [...] Perhaps the rider should be added that the construction created by the two or more lexemes should not be a normal noncompound phrasal structure of the language [...].

Of crucial relevance is Bauer's introduction of term *subwords* in the definition compounding. The idea of subwords is both meticulous and measured since it essentially proposes that, the basic units of compounding should be identified on idiolinguistic basis, that is, depending on

type of units which are most characteristic of the language in question (cf. Arcodia 2018). This means that in a language like Italian, where elements in compounds are usually inflected (cf. Bisetto and Scalise 2005<sup>91</sup>), stems rather than roots, could be typologized as the basic units of compounding in Italian. As Bisetto and Scalise (2005: 320), the notion of root compounds cannot be applied to all languages. This could also mean that for Kwa languages, which are largely isolating, the base could be identified as the basic unit of compounding (i.e. the subword).

### 4.3.2 Headedness

In the syntax literature, an element is understood as the *head* of a construction where the element stands as the dominant member in an asymmetrical relationship within the construction (cf. Croft 2001).

The notion of *head*, which plays an important role in syntax can also be applied to the analysis of the internal morphological structure of words. The existence of heads has long been noted in the morphology literature (cf. Williams 1981a, 1981b Selkirk 1982, Scalise 1984, 1988, Di Sciullo & Williams 1987, Hoeksema 1988, 1992.), and most recent works in morphology assume their existence (e.g. Ackema 1999, Bauer & Renouf 2001, Pérez Saldanya et al. 2004, Scalise 2008, Appah 2013, Varvara 2017, Ziering 2018). The existence, presence, categorial label, position, and function of the head in a compound have been collectively treated under the heading of *headedness* or *headhood* in literature (cf. Bloomfield 1933; Zwicky 1985; Croft 2001; Scalise and Fábregas 2010).

Regarding the criteria used for identifying heads, a number of scholars agree that *syntactic category* is the most relevant criterion, or at least one of the relevant criteria for

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<sup>91</sup> As they note, the notion of 'root compound' is problematic, especially to inflecting languages where compounds are made of fully-fledged words or bound stems.

determining headedness in morphology (cf. Williams 1981a, Bauer 1990, Scalise & Guevara 2006). It is generally assumed that the head provides the construction of which it is a part with its lexical category through percolation, a mechanism which allows the syntactic category of the head to spread up (or down) to the entire construction (cf. Lieber 1982; Bauer 2003; Plag 2003; Booij 2005; Scalise & Guevara 2006).

In compounds, there are typically two main categories of constituents, namely the *head* and the *modifier* (also called the *non-head*). Most compounds have a head which functions as the lexical core and typically bears (or determines) the essential semantic information, the word category (i.e. syntactic category) as well as all morpho-syntactic features like *case*, *gender* or *number* (cf. Neef 2009). The order of constituents in a compound bears on the meaning of the compound. In other words, the linear positioning of constituents in a compound is relevant to the classification (as modifier or head) and the function of the individual constituents. While the modifier specifies meaning, the head, determines the main category of the compound. The significance of the relative order of constituents in compounds is what accounts for the meaning difference in *bird-cage* and *cage-bird*, where the former denotes ‘a cage for birds’, and the latter ‘is a pet bird living in a cage’.

In identifying the head of a compound, one may resort either to a morphological criterion, a syntactic criterion, or a semantic criterion, or a combination of all three criteria. The constituent to be selected as the head of a compound may vary depending on the criterion selected. This implies that a compound’s syntactic head may not be the same as its semantic or formal head. This explains why the discussion of headedness in the literature distinguishes at least between a formal (morphological) head, syntactic head, and a semantic head, since they may not necessarily coincide, although they typically do in endocentric compounds (cf. Bauer 1983; Guevara & Scalise 2009; Katamba 1993; Scalise; Bisetto & Guevara 2005; Scalise & Guevara 2006).



At the syntactic level, virtually every compound may be regarded as headed (cf. Katamba 1993; Appah 2013), such that in almost every compound we can find a syntactic head and a modifier, but same cannot be said for the semantic head. The syntactic head of a compound is the constituent that percolates its syntactic properties (including lexical category and subcategorization frame) to the whole compound. Therefore, a compound typically has the same syntactic category (as well as phi-features) and distribution as its syntactic head, though some variations are possible. Where the immediate constituents of a compound share a common syntactic category, it is often possible to determine the syntactic head by looking at other phi-features features like *gender*. In the Italian compound in (176), where both constituents are nouns, the syntactic category criterion alone does not suffice in determining the syntactic head. There is, therefore, the need to look beyond the form-class to other finer properties such as *gender*, to be able to tell that the [+fem] gender of the compound in (176) comes from the left-hand constituent, *pizzeria* ‘pizza shop’, so it must be the syntactic head of the compound.

(176) *pizzeria*            *ristorante* => [N+N]<sub>N+fem.</sub>    (*la pizzeria*<sub>[+fem.]</sub>, *il ristorante* <sub>[+masc.]</sub>)  
           pizza-shop      restaurant

In German also, the gender of the head noun is identical to the gender of the entire compound. This explains the pattern of gender percolation which ensures that the (definite) determiner selected shares the same gender with the head noun.

(177) a. *das Recht* ‘the right’ (neuter)                    *das Menschenrecht* ‘the human right’  
           b. *der Mann* ‘the man’ (masculine)                *der Hauptmann* ‘the head-man, captain’  
           c. *die Heizung* ‘the heating’ (feminine)            *die Zentralheizung* ‘the central heating’

It is instructive to note that, due to the paucity of inflection marking in Esahie (as discussed in [Chapter 2](#)), morpho-syntactic features like *gender* and *number* are not reliable or useful cues in determining headedness. As we shall see, the grammatical properties of the constituents of most Esahie compounds hardly involve any morpho-syntactic features (i.e. inflectional/agreement morphology) that are useful in signaling formal headedness. This implies that in most cases, the determination of headedness would require resorting to other criteria, such as the *semantic head*. 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).<sup>92</sup>

Dressler (2006) attempts to tease apart the difference between these three sets of heads (i.e. syntactic, morphological, and semantic). He illustrates this distinction with the compound *pickpocket*, as exemplified in (178). Dressler (2006) 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. This accounts for the grammaticality of *[[pick] [[pocket]-s]]*, as well as the ungrammaticality of *\*[[[pick]-s] [pocket]]*. The compound is syntactically headed by *pick* whose internal argument is *pocket*.

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<sup>92</sup> The kind of properties that are assumed to percolate from the head onto the compound is a function of the type of head in question (i.e. is it semantic or syntactic?). Furthermore, the function that a syntactic head may have in a compound is also a function of whether it is also a semantic head. Thus, if the formal head is also the semantic head, then its meaning 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 (Appah 2013: 213).

(178) Compound: *pickpocket*

a. Semantic head: none

b. Syntactic head: *pick* [ \_\_ *pocket*]

c. Morphological head: *pocket* [ \_\_ *PLU*]

It is instructive to point out that, since the position of a plural marker may be the default pattern in a particular language, the use of plural marking to distinguish between a morphological head and a syntactic head could be misleading in cases where its positioning is merely just by chance (Bauer 2009; Appah 2013).

The observation that compounds may be characterized by different kinds of heads (i.e. semantic head, categorial head and/or a morphological head), which may not necessarily coincide (cf. Scalise et al. 2009; Scalise and Fábregas 2010; Scalise 1994), somewhat resonates with Di Sciullo and Williams' (1987) notion of *relativized head*<sup>93</sup> which essentially entails that a constituent could be the head of a complex word with respect to a particular feature but a non-head with respect to another feature.<sup>94</sup>

As briefly hinted in *section 3.3.2.1* of [Chapter 3](#), another related issue in the discussion (of headedness) has to do with the distinction between the syntactic head and a selecting element of a compound. *Lexical selection* has been noted as the mechanism through which the properties associated with a selecting constituent determine the array of elements that can be licensed as (potentially) suitable modifiers (i.e. complements of the selecting element) in a compound (cf. Scalise, Bisetto & Guevara 2005). Since the selecting element is usually a (lexical) head, lexical selection is equal to head selection (cf. Appah 2013: 157). In this thesis,

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<sup>93</sup> Selkirk (1982) actually offers a similar proposal using a different terminology.

<sup>94</sup> The notion of the *relativized head* was introduced as rejoinder to the criticisms levelled against the earlier notion of the head as argued in Williams' RHR. The relativized head was proposed as a replacement or improvement to the initial definition of the head in Williams (1981a).

we shall refer to the syntactic and morphological head collectively as the *formal head*, following the traditional nomenclature.

The criterion of headedness has been acknowledged in the literature to bring about a distinction between two kinds of compounds, namely *endocentric* and *exocentric* compounds (see [section 4.3.4](#) for more on classification). In endocentric compounds, the syntactic head is analogous to the semantic head (e.g., a *fireman* is a man). In exocentric compounds, on the contrary, the syntactic head is different from the semantic head, which is not explicitly expressed (e.g., *white-elephant* is commonly understood as something that cost a lot of money but has no useful purpose, rather than an elephant which is white-colored). In endocentric coordinate compounds like *driver-mechanic* ‘a driver who is also a trained mechanic’, one could argue for two heads or no head at all (cf. Lieber, 2009).

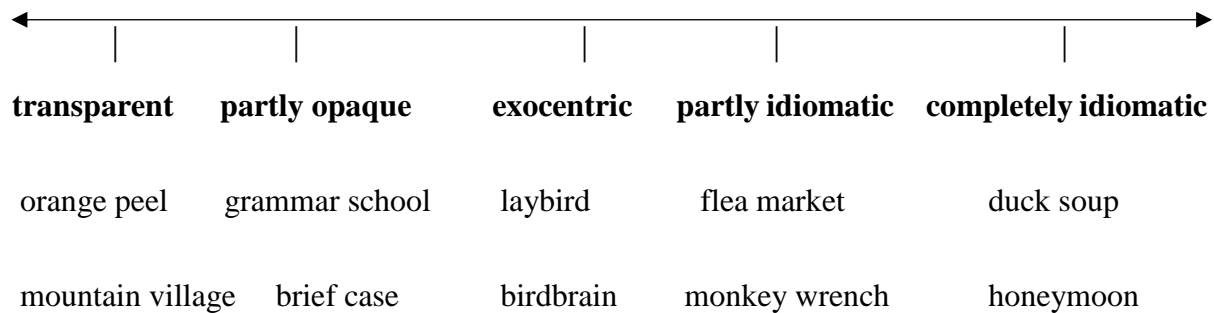
Thus far, we have shown that the notion of headedness plays a crucial role in the studying of compounding. The presence, position, and general characterization of the head is central in the description and analysis of compounds.

### **4.3.3 Compositionality**

One of the fiercely debated issues in the compounding literature is the issue of compositionality (cf. Katz 1973; Levi 1978; Langacker 1990; Jackendoff 1997; Sweetser 1999; Fodor & Lepore 2002; Taylor 2002; Aronoff 2007; Jenssen 2012; Szabó 2012; Ziering 2018). A compositional compound is semantically transparent with respect to its constituents, that is, each constituent contributes to the intended meaning of a compound. In other words, the sum of the individual meanings of the constituents of the compound determines the meaning of the whole compound. This implies that lexicalized compounds such as *ivory tower* with idiomatic or idiosyncratic meanings or whose constituents’ composition only becomes transparent where there is sufficient etymological or linguistic background could be considered as being non-

compositional or semantically opaque. For example, the compound *hotdogs* (i.e. sausages) is usually interpreted metaphorically, thus, it is non-compositional.

As Nakov (2013) notes, compositionality has to be considered as a continuum rather than a clear classification. Levi (1978) argues for five degrees of compositionality. This is illustrated in figure 5.



*Figure 5: Compositionality scale*

As shown in figure 5, compounds vary in their degree of compositionality. This also implies that the meaning of a compound is not always inferable from the meaning of the input elements, hence, we should expect to find compounds that have non-compositional properties. As we shall see, Esahie compounds can be compositional or non-compositional.

#### 4.3.4 Classification of Compounds

Beyond headedness, another crucial issue in the study of compounding is the typology, taxonomy and classification of compounds. Existing approaches to the classification of compounds are varied and numerous (cf. Bloomfield (1933); Bally (1944); Marchand (1960); Bauer (2001); Booij (2005); Haspelmath (2002); Olsen (2000; 2001); Spencer (1991)).

As Appah (2013) points out, one way of categorizing compounds is by simply opting for an input-category based classification. This way, compounds are classified based on the word-class of the input elements, giving rise to: noun-noun (N-N), noun-adjective (N-A), verb-

verb (V-V), verb-noun (V-N), or even noun-verb (N-V), or any other plausible permutations. Alternatively, an output-based classification would not be far-fetched, so that the output category of the compound, be it nominal, verbal, adjectival, etc., becomes the locus of classification. A merger of the two strategies works perfectly.<sup>95</sup> Indeed, this classification of compounds appears to be a preferred option because it spells out the full (both input and output) morphological structure of the compound, so that a compound such as *jailbird* would have an [N-N]<sub>N</sub> structure. Our classification of Esahie compounds follows this two-sided classification.

As earlier noted, another notable approach to the classification of compounds relies on the presence and position of the head element, which yields *endocentric* vs. *exocentric* compounds. Indeed, this classification dates as far back as Bloomfield (1933). This criterion is also adopted in our classification of Esahie compounds (see [section 4.4](#)),

The strengths and weaknesses of the various to the classification of compounds are discussed extensively by Bisetto and Scalise (2005), who propose what appears to be a universally applicable taxonomy for compound classification (cf. Ziering 2018). As Lieber (2009: 564) avers, “this seems to be the best thought-out and most cross-linguistically applicable classification available.” Revised in Scalise and Bisetto (2009), their classificatory framework, which has been widely acknowledged in the compounding literature, identifies some major problems with extant classification systems. As they note, “the classifications of compounds that appear in current linguistic literature often lacks inter-linguistic homogeneity ...” (cf. Scalise and Bisetto (2009: 35-6)). In what follows, we summarize some of the shortcomings they identify:

- (179) a. often, the terminological criteria used are too languages-specific to be cross-linguistically relevant. The ‘*root*’ and ‘*synthetic*’ compound distinctions are often associated with Anglo-Saxon linguistics while *verbal compounds* are

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<sup>95</sup> This approach resonates with our dual-parametric treatment of Esahie nominalizations in [Chapter 3](#).

often associated with Romance languages.

- b. many studies treat compounds formed by certain lexical categories (especially N-N compounds) to the neglect of many others. Pre-particle/phrasal verbs (e.g. *make up*) and verbal compounds prominent in Romance languages (e.g. It. *portacenere* ‘ash tray’) are ignored.
- c. some classifications are based on inconsistent criteria, and the resulting indeterminacy makes it difficult to compare and to generalize.

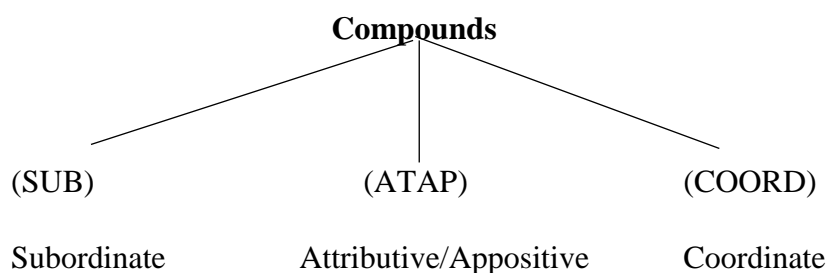
As Scalise & Guevara (2006: 186) note, the ripple effect of this state-of-affairs is that the array of traditional classifications represents “a mere nomenclature of types defined on the basis of heterogeneous criteria.”

Premised on the shortcomings enumerated above, Bisetto and Scalise (2005) and Scalise and Bisetto (2009) propose a new classification. As Scalise and Bisetto (2009) observe, the distinctiveness of compounds lies in the fact they are word-forms whose constituent elements are connected by the same grammatical relation that exists between elements of phrases where this relation is not overtly expressed, hence the similarity between the compound *apron string* and the phrase *string of the apron*.

Hence, the crucial criterion for Scalise and Bisetto’s (2005/2009) classification is the grammatical relation that holds between the constituents of the compounds. These relations include *subordination*, *attribution* and *coordination*; and become the first level of compound classes. This translates into three macro types – *subordinate* compounds, *attributive* compounds, and *coordinative* compounds.<sup>96</sup>

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<sup>96</sup> As Appah (2013) notes, the idea of these three types of relations characterizing compounds predates Bisetto and Scalise’s classification. Spencer (1991:310), for instance, makes reference to these three types of relations, using different terminologies, but maintaining the basic idea. According to Spencer, the three important relations are *head-modifier*, *predicate-argument*, and *apposition*.



**Figure 6**

We begin with subordinate (SUB) compounds. In SUB compounds, the relation between the modifier and head is one of a *complement relation*, as shown in the compounds *alarm clock* (a clock with an alarm system) or *bus-driver* (the driver of a bus), which instantiate two micro categories of SUB compounds, *ground* and *verbal-nexus* compounds, respectively.

In ground compounds, which correspond to the traditional *root/primary* compounds such as *lavapiatti*, *wind-mill*, *cookbook-author*, *gas price* and *mushroom soup*, “[t]he semantic relation is determined by the semantic-encyclopedic information associated with the component lexemes” (cf. Lieber 2009: 50-52).

The verbal-nexus subgroup, alternatively referred to as *synthetic compounds* (discussed in [Chapter 3](#)) are characterized by the argument-taking property and presence of a (de)verbal noun as in *truck-driver*, *fresh-baked* or *well-preserved*. This constitutes a prominent subgroup that has been attested to be very productive in English, for instance. Another class of verbal-nexus compounds have a (de)verbal modifier: *skate park*, *call girl*, *attack dog*, or *kick ball* (Lieber, 2009). Other English verbal-nexus compounds in this subgroup include: *to sugar-coat*, *to baby-sit*, *to color-code*, or *to pepper-spray*. Whereas the earlier-cited compounds are typically endocentric, there are a few instances of subordinate exocentric compounds in English. They include *pickpocket*, *cut purse* or *spoil sport*. Though they are more pronounced in Romance languages as in the French *porteparole* ‘spokesperson’ (lit: ‘carry-speech’), SUB exocentric compounds are not that productive in English (Marchand 1969; Lieber 2009).



Since we already discussed synthetic compounds (in *section 3.3.2.7.3* of [Chapter 3](#)), our discussion of compounding in this chapter will not involve cases of such compounds that follow the [[N+V]-SUFF]] pattern discussed in [Chapter 3](#), except for instances where they are cited for purposes of comparison or argumentation.<sup>97</sup>

The two micro classes may also be sub-classified into endocentric (e.g., *tin-cutter*) or exocentric (e.g., *killjoy*) SUB compounds. In English, this is quite a productive class (Lieber 2009).

The next class of compounds we deal with is the *attributive* and *appositive* (ATAP) class. This class is an amalgamation of two related types of compounds, namely attributive and appositive compounds, both of which generally encode an *attribution relation* of sort, and this relation is signaled differently. Attributive compounds are characterized by a relation where the modifier in the compound describes a property or quality of the head. The modifier in an ATAP compound could be either an adjective as in *blue kiosk*, *long term*, *heavy weight*, and *barefoot* in which case it plays an attributive role (i.e. *attributive compounds*)<sup>98</sup> or a noun which is used in a metaphorical sense as in *snail mail* ‘a slowly delivered mail’, in which case it plays an apposition role (i.e. *appositive compounds*). As Scalise and Bisetto (2009: 77) point out, the metaphoricity feature of the non-head constitute the most reliable and distinctive criterion for distinguishing between [N-N] SUB compounds such as *mushroom soup* and ATAP compounds *mushroom cloud*, where *mushroom* is not interpreted in metaphoric sense, being construed as a “representation of the mushroom entity” (Wisniewski 1996 and Scalise, Bisetto & Guevara 2005) whose relevant feature in the compound under observation is shape. Other attributive

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<sup>97</sup> Looking at the overall picture of the dataset, it appears that in Esahie, just like root compounds which have been noted in the literature to be the most cross-linguistically regular and productive form of compounding, synthetic compounds also constitute one of the most productive forms of compounding and word-formation at large. Admittedly, this is not so surprising since, in essence, synthetic compounds have been argued to be amenable to N-N structural analysis in the literature.

<sup>98</sup> In ATAP compounds, apart from the typical situation of having adjectives and nouns, the non-head member may also be a verb.

compounds include adjectival compounds such as *funny peculiar*, *life-long* and *dog tired* (Lieber, 2009). Since most nominal compounds in English like *key word*, *sister node*, and *satellite nation* have a nominal modifier (i.e., appositive N-N compounds), ATAP compounds have been argued to constitute perhaps the most productive class (Lieber, 2009). As Booij (1992) explains, the mechanism of forming exocentric attributive compounds such as *red herring* is best conceptualized as a process of “metonymy at work in languages”. Like SUB compounds, ATAP compounds have both endocentric and exocentric types (Lieber, 2009). The compound *birdbrain* is exocentric when it denotes ‘a foolish person’ and endocentric when it denotes the organ of a bird’. Particularly, the treatment of attributive compounds containing participle heads of body parts such as *dark-hooded*, *grey-bearded*, *blue-eyed*, *long-legged* in literature has been puzzling and controversial for the reason that their heads cannot occur alone as in *\*the man is eyed* vs. *the man is blue-eyed*. Whereas Marchand (1969), for instance, considers such formations like *[[grey-beard]+ed]]* as (suffixed) exocentric compounds, Hudson (1975) and Ljung (1976), opine that they are endocentric.

The third class of compounds Scalise and Bisetto (2009) propose is the coordinate (COORD) class. Here, the relation between the constituents of the compound is considered to be one of *conjunction*. The compound *poet painter* refers to an entity which is both poet and painter, and the compound *singer songwriter* refers to an entity which both singer and songwriter. As discussed by Lieber (2009), coordinate endocentric compounds are not common in English. Examples of this class include *spiderman*, *comedy drama* or *king emperor* for nouns, *blue green* and *deaf mute* for adjectives and *slam dunk* for verbs. A more productive class is coordinate exocentric compounds. As Lieber (2009) notes, in this class, the constituents are kind of co-hyponyms (e.g., humans or grammatical relations). Examples of this class include *doctor patient (discussion)*, *subject verb (agreement)* or *father daughter (dance)*. The

classification of compounds adopted in this thesis follows Bisetto and Scalise's (2005) classification as summarized in the figure below.

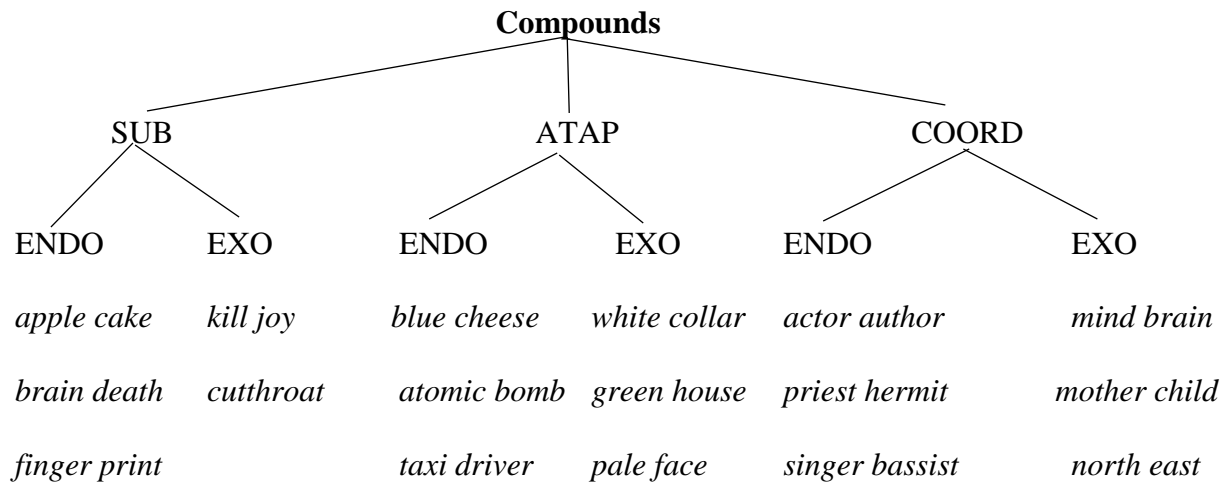


Figure 7: Compound taxonomy by Bisetto and Scalise (2009)

To the extent that it provides what appears to be a universally applicable taxonomy, the cutting-edge classification of compounding presented in the works of Scalise and Bisetto (2005) and Bisetto and Scalise (2009) is insightful. Bisetto and Scalise's (2009) classification, in particular, is very useful in categorizing the various types of Esahie compounds. Following this classification, we discuss various macro-types of Esahie compounds such as subordinate, attributive-appositive and coordinate compounds, as well as the various micro-types such as endocentric and exocentric compounds. To the extent that the compound classes proposed in Bisetto and Scalise's (2009) work are well attested in Esahie, their taxonomy is helpful and applicable to the Esahie dataset discussed in this chapter. In addition to Bisetto and Scalise classification system, we also resort to the structural input-output  $[X+Y]_Y$  classification in our analysis of the Esahie data.

#### 4.4. Compounding in Esahie

In this section, we will concern ourselves with both the semantic and structural properties of various kinds of compound formations in Esahie, comparing them with other African as well as Indo-European languages, in the interest of cross-linguistic typologization. We begin with the N-N class of compounds ([section 4.4.1](#)) which have received enormous attention in the compounding literature, and proceed to discuss other types of formations including N-A compounds ([section 4.4.2](#)), N-V compounds ([section 4.4.3](#)), as well as V-N compounds ([section 4.4.4](#)). Other types of compound formations will be briefly discussed to serve as further empirical support to corroborate the argumentation that, in Esahie, just like Akan (Appah 2013; 2015), Dangme (Lawer 2017), and Lɛtɛ (Akrofi Ansah 2012b), compounding is predominantly a nominalization strategy. These formations which include coordinate N-N compounds, V-V compounds, as well as V-A compounds, as we shall see in [section 5.4.2](#) are better analyzed from a product-oriented, rather than a source perspective.

##### 4.4.1 N-N Compounds

Cross-linguistically, N-N compounds have been argued to constitute the most productive category of compounds. Booij (2018a) illustrates this point with the compound word for ‘blood pressure’ as it obtains in some Germanic languages:

- |       |    |           |                        |
|-------|----|-----------|------------------------|
| (180) | a. | Afrikaans | <i>bloed-druk</i>      |
|       | b. | Danish    | <i>blod-tryk</i>       |
|       | c. | Dutch     | <i>bloed-druk</i>      |
|       | d. | English   | <i>blood-pressure</i>  |
|       | e. | Frisian   | <i>bloed-druk</i>      |
|       | f. | German    | <i>blut-druck</i>      |
|       | e. | Icelandic | <i>blóð-þrýstingur</i> |
|       | g. | Norwegian | <i>blod-trukk</i>      |

h. Swedish *blod-tryck* (Booij 2018a: 2)

In this section, we discuss various subtypes of N-N compounds in Esahie. They include right-headed SUB compounds ([section 4.4.1.1](#)), left-headed N-N ATAP Compounds ([section 4.4.1.2](#)), as well as Exocentric N-N (ATAP) compounds ([section 4.4.1.3](#)). As we shall see, the formal properties of N-N compounds are generally not robust. Therefore, we focus on those that are worth highlighting including headedness, internal inflection, argumenthood, recursion and productivity. We provide examples of subtypes of compounds, pointing out the nature of the semantic relation that obtains between the constituents and the compound as a whole. We also discuss the interpretation of these compounds. We begin with endocentric N-N compounds.

#### *4.4.1.1 Right Headed N-N Subordinate Compounds*

This category of Esahie compounds are regular and typically compositional. They constitute the commonest subtype of N-N compounds. They include forms such as those in (181) and (182).

	<b><u>Output</u></b>	<b><u>Input forms</u></b>
(181) a.	<i>ngaen-anwa</i> ‘petrol’	<i>ngaen</i> <i>anwa</i> machine      oil
b.	<i>afofi-kyěã</i> ‘holiday’	<i>a-fofi</i> <i>kyěã</i> SG-celebration day
c.	<i>atomvole-braa</i> ‘bride’	<i>a-tomvole</i> <i>braa</i> SG-wedding      woman
d.	<i>atomvole-biãã</i> ‘groom’	<i>a-tomvole</i> <i>biãã</i>

		SG-wedding	man
(182) a.	<i>εwɔfoεsua</i> ‘guest house/hotel’	<i>ε-wɔfoε</i>	<i>sua</i>
		SG-guest	house
b.	<i>nyɔfone-nzue</i> ‘breastmilk’	<i>nyɔfone</i>	<i>nzue</i>
		breast	milk
c.	<i>bakaa-baa</i> ‘seed’	<i>bakaa</i>	<i>baa</i>
		tree	child
d.	<i>amanyɔ fekue</i> ‘political party’	<i>a-manyɔ</i>	<i>fekue</i>
		PL-politics	group

In terms of structural properties, as (181) and (182) show, this subset of compounds is formed via the concatenation of nominal stems, and the resultant forms are nominal compounds, so that they have an [N+N]<sub>N</sub> morphological structure. Since the constituent elements of the compounds in (181) and (182) hardly show any inflectional marking, as earlier noted, it is difficult to determine formal headedness since both elements are nouns. However, as examples (181 b, c, & d) (182 a&d) show, the elements may sometimes bear inflectional affixes, but this is restricted to only few examples. Given this paucity of inflection, semantic headedness, remains the only potentially reliable criterion for identifying the head in this class, since all the [N-N] compounds forms in (181) and (182) are semantically headed.

Much in agreement with the universally preferred head position in compounds (cf. Williams 1981a; Dressler 2006), the compounds in (181-182) are right-headed<sup>99</sup>. In (181a), for instance, the relation between *ngaen* ‘machine’ and *anwa* ‘oil’ is one of subordination since the left-hand member (the modifier) *ngaen* ‘machine’ is complement of the right-hand member

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<sup>99</sup> This is in contrast with [N-N] compounds in Bemba (Bantoid) and Italian (Romance) compounds which are left-headed, and in consonance with Chinese (Basciano et al. 2011).

*anwa* ‘oil’ (the head). The whole compound *ngaen-anwa* is a hyponym of the semantic head *anwa* ‘(crude) oil’. This means that the compound *ngaen-anwa* ‘petrol’ is semantically endocentric. As a typical root/primary compound, the semantic relation in *ngaen-anwa* ‘petrol’ is determined by the semantic-encyclopedic information associated with the component lexemes. Other examples of this subtype of compounds are provided in [Table 34](#) (see [appendix](#)).

Given the isolating morphology of Esahie, the pattern it displays typically involves the bare concatenation of two nouns, unlike N-N compounds in German and Dutch (cf. Booij 2010c; 2018b), which are highly inflecting languages, especially in the nominal domain. In such inflecting languages, compounds typically contain the so-called *Linking Elements*<sup>100</sup>, i.e. *case* and *number* suffixes on the non-head (see the morpheme [-e-] in *Hund-e-futter*).

### **German**

(183) *hund-e-futter*

dog-LE-food

‘dog food.’

Similarly, in Italian compounds, for instance, besides the root and one or more derivational affixes, we usually find an inflectional morpheme too, in the form a final vowel, which is generally analyzed in relation with *gender/number* features.

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<sup>100</sup> See Booij (2018a-b) for more on Linking Elements.

### Italian

- (184) a. *uom-o ran-a* ‘frogman’  
b. *tren-o merc-i* ‘train, goods = freight train’  
c. *regist-i attor-i* ‘directors, actors = actor directors’ (Basciano et al. 2011: 13)

Another prominent feature with respect to the structural properties of compounds in Germanic languages is recursion<sup>101</sup>, that is, where one (or both) of the elements in the compound is itself a compound (cf. Roeper 2007; Bauer 2009). Indeed, recursion has been acknowledged in the literature as one property of compounds that enhances the productivity of compounds (Gaeta and Schlücker 2012). This observation works significantly in N-N compounds. This explains why in 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” (cf. Booij 1992: 1). Below, we provide examples of recursive N-N compounds in some Indo-European languages.

### Dutch

- (185) a. recursive left side  
[[*boek*]<sub>N</sub>[*handel*]<sub>N</sub>]<sub>N</sub> ‘book shop’  
[[[*boek*]<sub>N</sub>[*handel*]<sub>N</sub>]<sub>N</sub>[*korting*]<sub>N</sub>]<sub>N</sub> ‘book shop discount’  
b. recursive right side  
[[*auto*]<sub>N</sub>[*handelaar*]<sub>N</sub>]<sub>N</sub> ‘car dealer’  
[[[*beroep*]<sub>N</sub>[[*auto*]<sub>N</sub>[*handelaar*]<sub>N</sub>]<sub>N</sub>]<sub>N</sub> ‘professional car dealer’ (Booij 1992: 2)

---

<sup>101</sup> A linguistic entity is recursive when it has a complex structure that can be decomposed into two or more entities of the same type (Radford et al. 1999: 295)



### German

- (186) a. *Donau - dampf-schiff-fahrt -s- gesell -schaft -s- capitän -s- mütze*  
Danube steam ship journey LE journeyman SUFFIX LE captain LE cap  
'Cap of the captain of the Danube steam ship company'

(Neef 2009: 386)

- b. *Lebens-mittel-farb-stoff-zulassungs-verordnung*  
life-means-color-stuff-approval-regulation  
'food coloring approval regulation'

- c. *Straßen-ausbau-beitrags-gesetz*  
street-improvement (building-up)-contribution-law  
'Law that requires a financial contribution for the street in which one lives'

(Gaeta and Schlücker 2012: 12)

### Italian<sup>102</sup>

- (187) a. *responsabile - reparto giocattoli* 'toy section - manager'  
b. *arredamento - stanze server* 'server room - furniture'  
c. *rimessa - vagoni letto* 'sleeping car – depot'

(Bisetto 2010: 30)

- (188) a. *Il comune ha introdotto un programma riciclo materiali molto innovativo*  
'the municipality has introduced a very innovative stuff recycling programme'  
b. *L'ufficio oggetti smarriti è stato trasferito al secondo piano*  
'the lost property office has been moved to the second floor'

(Bisetto 2010: 28)

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<sup>102</sup> Unlike Esahie, Italian and Bantu N-N compounds are left-headed, proving the empirical inapplicability of the RHR (see Basciano et al. 2011 for a comparative approach).

**English**

- (189) a. [[university [teaching award]] committee] member (Plag 2003:133)  
 b. [[[student [film society]] committee] scandal] inquiry (Spencer 1991:48)

Like the various Indo-European languages discussed above, right-headed N-N compounds in Esahie may be recursive. Let us consider the following examples.

- (190) a. [[*musue-dwire*] [*ke~kã-ne-fɔ*]] ‘blasphemer’  
 curse-matter RED~say-NMLZ<sub>E/R</sub>-NMLZ<sub>P/P</sub>  
 blasphemy ‘one who speaks’
- b. [[*nzemba-hã-ne*] *adwuma*] evangelism ministry’  
 PL-good.news-say-NMLZ<sub>E/R</sub> work  
 evangelism
- c. [[*kɔngoen-sukuu*] [*nikyee-sua-ne*]] ‘Adult Education’  
 night-school thing-learn-NMLZ<sub>E/R</sub>  
 ‘learning’
- d. [[*afupɔngɔ-nwiaa*] *ataade*] ‘donkey-hair dress’  
 donkey-hair dress
- (191) a. [[*a-nan-groma*] *talie*] ‘knee-cap’  
 SG-leg-joint cap  
 ‘leg joint’
- b. [[*a-bɔde*]-*nu*] [*nyanza-penal*]] ‘science’  
 SG-creation-inside wisdom-see-NMLZ<sub>E/R</sub>

- |    |                            |   |
|----|----------------------------|---|
|    | ·creation-related’         | ‘wisdom-seeking’                                  |
| c. | [[ <i>a-man-yɔ</i> ]       | <i>nzem</i> ] ‘politics (lit. governance matter)’ |
|    | PL-nation-building         | matter  |
|    | ‘nation-building’          |   |
| d. | [[ <i>nwãtĩ-hɔ-le</i> ]]   | <i>nekaa</i> ] ‘refuge (lit. hiding place)’       |
|    | run-go-NMLZ <sub>E/R</sub> | place   |
|    | ‘(act of) running’         |   |

The examples in (190) and (191) show an interesting dichotomy of N-N compounds in Esahie. We notice that there is both right and left recursion, involving both root and synthetic compounding. In (190c), for instance, both elements of the compound are themselves compounds. Whereas the head, *nikyeesuanε* ‘education’, is a synthetic compound, the complement (modifier), *kongoen-sukuu* ‘night-school’, is a root compound. Furthermore, the modifiers *musue-dwire* ‘curse word’ and *afupɔngɔ-nwīaa* ‘donkey hair’, of the compounds in 190 (a & d), respectively, are themselves root compounds. In a similar fashion, the modifier *nzamba-hanε* ‘evangelism’ in (191b), is a synthetic compound. Similarly, the modifier *anangroma* ‘leg-joint’ in (191a) is complex, while in (191b), the head (*nyanza-penalε* ‘wisdom-seeking’) and modifier (i.e. *abɔdeenu* ‘creation-related’) are both recursive. The modifiers *amanyɔ* ‘governance’ and *nwãtĩ-hɔ-le* ‘(act of) running’ in (191c) and (191d), respectively, are also recursive.

The recursivity property of the N-N compounds under discussion puts Esahie in sharp contrast with languages such as Slovak (Štekauer and Valera 2007) in which recursion is completely banned, as well some African languages such as Fongbe (Lefebvre & Brousseau 2002: 227) and Ngiti (Lojenga 1994: 162-3), where recursion is extremely restricted.

Overall, the Esahie compounds appear to be typically left-recursive. This observation is fairly consistent with observations about cross-linguistically preferred patterns of recursion in compounds (cf. Dressler 2006; Krott et al. 2004). Krott et al. (2004: 89), for instance, in their study of German and Dutch, observed that left-branching compounds outnumber their right-branching counterparts. This implies that for both in German and Dutch, left branching recursion is the unmarked structure for the three-element compounds which they analyzed. This observation is also true for Akan (cf. Appah 2013).

In terms of the semantic properties of the Esahie N-N compounds discussed here, it appears that they are typically compositional, and in a few instances lexicalized. This explains why compounds such as *ngaen-anwa* ‘petrol’, *ewɔfoesua* ‘guest house/hotel’, *afofi-kyěã* ‘holiday’ and *atomvole-braa* ‘bride’ are transparent in meaning, reflecting the meanings of the various constituents. The meaning of the compound *ewɔfoesua* ‘guest house/hotel’, for instance, derives compositionally from the meanings of the relevant concatenated constituents, *ewɔfoe* ‘guest/visitor’ and *sua* ‘house’. To this extent, Esahie N-N compounds differ from Germanic root compounds which tend to have arbitrary readings, since they in principle admit all logically plausible semantic relations between the constituents (including any meaning relation that can be established on the grounds of the context of utterance).

(192) *Fischfrau* ‘fish + woman’ (Heringer 1984)

- a. woman that sells fish
- b. woman that has brought fish
- c. woman standing close to fish
- d. woman eating fish
- e. woman looking like a fish
- f. spouse of a fish

g. woman and fish at the same time (i.e. mermaid)

h. woman as cold as a fish, etc.

(Basciano et al. 2011: 215)

There are, however, few instances where Esahie right-headed N-N compounds may not exhibit full compositional semantics. This means that their meanings are not always transparently related to those of the constituents. Such cases involve forms such as *nyɔfone-nzue* ‘breastmilk’ which to extent has a lexicalized meaning. The direct meaning of the head element *nzue* ‘water’ is not directly reflected in the meaning of the compound *nyɔfone-nzue* ‘breastmilk’. In other words, though the *liquid* property of the head *nzue* ‘water’ is preserved is the meaning of the compound, strictly speaking, *nyɔfone-nzue* ‘breastmilk’ is not a kind of *nzue* ‘water’. The semantic opacity of such compounds is due to the lexicalization phenomena typically occurring within the lexicon.

In terms of semantic opacity, another related sub-class of right-headed compounds are those with one member (usually the head) being what has been termed in the literature as an ‘affixoid’ (cf. Lieber and Štekauer 2009; Booij & Hüning 2014; and Hüning & Booij 2014). Affixoids are words with more abstract meanings (of intensification) when embedded in compounds. In the process of compound formation, such forms acquire specific meanings that are more abstract than the meaning of the corresponding word when used on its own in a sentence (Booij 2018a&b). Characterized by this tendency, their presence in the compound has an effect on compositionality, especially so since in the case of Esahie, such forms are heads. Let us examine the following examples.

	<u>Output</u>		<u>Input</u>
(193) a.	<i>atu-yile</i> ‘gun powder’	<i>atu</i>	<i>eyile</i>
		gun	medicine

b.	<i>sona-bakaa</i> ‘(human) body’	<i>sona</i>	<i>bakaa</i>
		human	tree
c.	<i>anyea-kyiremvua</i> ‘eyeball (lit. eye’s egg)’	<i>anyea</i>	<i>kyiremvua</i>
		eye	egg
d.	<i>agyee-namone</i> <sup>103</sup> ‘gum’	<i>agyee</i>	<i>nain-mone</i>
		tooth	meat-fresh
			‘fresh meat’

The compounds in (193) have meanings that are non-compositional because the most important member of the compound, the head element, is an affixoid. The meaning of the *eyile* ‘medicine’ in (193a) is at a rather abstract level since it is not specific in the meaning of the entire compound *atu-yile* ‘gun powder’. Put differently, the element *eyile* ‘medicine’ of the compound acquires a special meaning, different from the meaning it typically bears in the lexicon of the language. This explains why there is nothing ‘medicinal’ about the meaning of the compound *atu-yile* ‘gun powder’. In (193b) too, the head element *bakaa* ‘tree’ acquires an abstract meaning. So, although the human body to an extent has the shape and form of tree, strictly speaking, the human body is not a type of tree. This implies, therefore, that the compound *sona-bakaa* ‘body’, fails the hyponymy test, although, at an abstract level, there seems to exist a sort of subordination relation between the elements of the compound. The heads of the compounds in (193c) and (193d), *kyiremvua* ‘egg’ and *namone* ‘fresh meat’, respectively, also acquire restricted meanings than what they usually bear.<sup>104</sup> Apart from the shape and color of the egg,

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<sup>103</sup> The compound is right-recursive since the head constituent *namone* ‘fresh meat’ is itself a compound.

<sup>104</sup> Admittedly, we need to adduce more evidence (i.e. many other compound forms with right-hand members that have this ‘metaphorical’ interpretation) in order to make a strong case for an affixoid classification. We also need to establish their productivity in these compound forms, and to establish their status as bound forms that have corresponding free forms in the lexicon. There is therefore a need for more data in order to make a strong case.

all other features of an egg are lost in the meaning of the compound *anyea-kyiremvua* ‘eyeball’. This explains why *anyea-kyiremvua* ‘eyeball’ is not a type of *kyiremvua* ‘egg’. Same can be said for *namone* ‘fresh meat’, the head of the compound in (193d).

We provide other examples of this sub-class of right-headed N-N compounds in (194).

- |          |                               |               |              |
|----------|-------------------------------|---------------|--------------|
| (194) a. | <i>a-saa-m-maa</i>            | <i>sa</i>     | <i>baa</i>   |
|          | PL-hand- PL-child             | hand          | child        |
|          | ‘fingers’                     |               |              |
| b.       | <i>bulale-pɔngɔ</i> ‘bicycle’ | <i>bulale</i> | <i>pɔngɔ</i> |
|          |                               | metal         | horse        |

The right-hand head elements of the compounds in examples (194) may also be classified as affixoids since they acquire specific (restricted or slightly different) meanings that are more abstract than their usual meanings. This is why in (194a), the meaning of the head element *baa* ‘child’ is completely lost (or bleached) in the meaning of the entire compound *asaammaa* ‘fingers’, while in (194b), the head element *pɔngɔ* ‘horse’ acquires an abstract (metaphorical) meaning in the compound *bulale-pɔngɔ* ‘bicycle’.

The foregoing suggests that the N-N compounding in Esahie is productive, apparently due to its recursivity property. N-N compounds are typically right-headed in conformity with the cross-linguistically preferred head position. The relation that holds between the members of the compound is usually one of subordination. However, as we shall see (in [section 4.4.1.2](#)), N-N compounds in Esahie may sometimes deviate from this preferred right-headed pattern. They can be left-headed, in which case they are not very productive, and there is usually an attribution-apposition (ATAP) relation between the constituent members.

#### 4.4.1.2 Left-headed N-N ATAP Compounds

This category of Esahie compounds are irregular and typically lexicalized. As such, they are not like the right-headed N-N compounds discussed in section [4.4.1.1](#). They constitute a small subtype of N-N compounds. There are two sub-groups of members of this class, those made up of two nouns (N-N) and those made up of a noun and a numeral (N-Num); in both cases, however, there appears to be an apposition-attribution relation between their constituents. They include forms such as those in (195).

- (195) a.     *ngaen-komea*  
          machine-magician  
          ‘computer (lit. magic machine)’
- b.     *maen-daen*  
          nation-parent  
          ‘region (of a country)’
- c.     *atemuafoe-paen*  
          judge-leader  
          ‘Chief Justice’

In terms of structural properties, as (195) shows, this subset of compounds is formed via the concatenation of nominal stems, and the resultant forms are nominal compounds, so that they have an  $[N+N]_N$  morphological structure. Again, since the constituent elements of the compounds in (195) show no inflectional marking, it is difficult to determine formal headedness since both elements are nouns. In other words, formally, no morpho-syntactic feature is marked on either of compound members in (195). Semantic headedness, therefore, remains the only potentially reliable option. The  $[N-N]$  compounds forms in (195) are



semantically headed. The compound in (195a) is semantically headed by *ngaen* ‘machine’, while that of (195b) is headed by *maen* ‘country’.

In contrast with the universally preferred head position in compounds (cf. Williams 1981; Dressler 2006), the Esahie compounds in (195), like most Bemba and Italian N-N compounds (cf. Scalise 1994; Scalise & Fábregas 2010; Basciano et al. 2011), are left-headed. In (195a), for instance, the relation between *ngaen* ‘machine’ and *kɔmea* ‘magician’ is one of apposition, since the right-hand member (the modifier), *kɔmea* ‘magician’ (attributively) modifies the right-hand member, *ngaen* ‘machine’ (the head). The whole compound *ngaen-kɔmea* ‘computer’ is a hyponym of the semantic head *ngaen* ‘machine’. This means that the compound *ngaen-kɔmea* ‘computer’ is semantically endocentric. In (195b), also, the relation between *maen* ‘nation’ and *taen* ‘parent’ is one of apposition, since the right-hand member (i.e. the modifier), *taen* ‘parent’, (attributively) modifies the right-hand member, *maen* ‘machine’ (i.e. the head). The whole compound *maen-daen* ‘region (of a country)’ is a hyponym of the semantic head *maen* ‘nation’.

The degree of compositionality exhibited by these compounds is not as strong as the right-headed ones in section [4.4.1.1](#), since their meanings are to some extent lexicalized, an interpretational feature which they share with Bemba (Bantu) compounds. This puts them in sharp contrast with Italian compounds such as *casa-famiglia* ‘care home’, *ufficio viaggi* ‘travel agency’, and *studente lavoratore* ‘student worker’ (Delfitto and Melloni 2009; Basciano et al. 2011; Radimský 2013), which, though left-headed, have interpretations that are constrained along compositional lines.

In Scalise and Bisetto (2009)’s classification, they are appositive (ATAP) compounds given that the modifiers in these compounds are typically interpreted metaphorically. This explains the fact that the meaning that modifier *kɔmea* ‘magician’ in (195a) adds to the meaning of the compound is a metaphorical rather than a literal one. A similar argument could be made

for the modifier *taen* ‘parent’ in (195b), which also encodes a metaphorical function in the interpretation of the compounds.

Other examples of this (N-N) subtype of compounds are provided in [Table 35](#) of the [appendix](#). As explained earlier, the second sub-group of left-headed N-N compounds have numeral right-hand constituents. Accordingly, they may be characterized as Noun-Numeral (N-Num) compounds. It is instructive to note that the categorial labelling of numerals remains a highly debated issue (cf. Corbett 1978; Hurford 1987; Corver & Zwarts 2006; von Mengden 2010; Verhoeven & Huyssteen 2013). While some posit that numerals are adjectives, others opine that numerals are nouns. Other scholars have opted for a combined view (of the earlier stated ones) such that what they consider ‘lower numerals’ are adjectives, while ‘higher numerals’ are nouns. Others also hold the view that numerals constitute a separate syntactic category on their own. With a loose conceptualization of noun-hood (cf. Brainerd 1966; Brandt Corstius 1968; Appah 2013), where nouns are generally understood as names of things, places, persons, etc., I treat numerals as a class of nouns that name NUMBERS, following Appah (2013).

As noted earlier, these compound forms are lexicalized and as a result are not fully compositional. Let us examine the forms in (196), which constitute a special class since they are clearly exocentric. The compound form in (196a) is of the Bahuvrihi type (possessive compounds; see Andreou and Ralli 2015; Ralli and Andreou 2012; and Bauer 2010, Appah 2017a for more) with the meaning ‘one who has 6 fingers’. Similarly, the referent of the compound form in (196b) *ahen-gan* ‘first born after the crowning of a King’ is not necessarily a King.

	<u>Output</u>		<u>Input</u>
(196) a.	<i>nza-nzia</i> ‘a (deformed) baby with six fingers’	<i>nza</i>	<i>nzia</i>
		hands	six
b.	<i>ahen-gan</i> ‘first born after the crowning of a King’	<i>ahen</i>	<i>kan</i>
		king	first

Like their left-headed Italian (cf. Basciano et al. 2011) and Akan (cf. Appah 2013) equivalents, they are hardly recursive. The structural property of lacking recursivity coupled with the non-compositionality feature ultimately affects the productivity of this subtype of left-headed N-N compounds. Indeed, it accounts for their unproductive and restricted characterization. This characterization appears to also account for the fact that their Akan equivalents in (197) and (198) constitute only a minute fraction of the data.

(197) *Left-headed N-N Forms*

- a. *asɛn-trenee*  
saying-righteousness

‘(a) just saying’

- b. *mfonyin n-tsin~tsimi-i*

picture NMLZ-RED~print-NMLZ

‘drawing’

(cf. Appah 2013: 233-234)

(198) *Left-headed N-Num Forms*

- a. *owu-pre-nu*

death-time-two

‘double death’

- b. *n-dɔn-nan*

PL-watch-four

Our discussion shows that ATAP NN compounds in Esahie are left headed. Unlike the SUB NN compounds, they are hardly recursive, slightly opaque, and relatively unproductive.

#### 4.4.1.3 Exocentric (ATAP) N-N Compounds

As earlier explained, exocentric compounds are those in which the compound as a whole is not a hyponym of its head. For example, the compounds *ɲgondĩ nzaa* ‘one who incites people to fight’ and *akondaa-dadeε* ‘monetary token given to prospective in-laws’ in (199) a-b are semantically exocentric. The relation that exists between the N-N elements that make up these compounds appears to be one of apposition, where the left-hand member describes a property of the right-hand member via apposition.

	<u>Input</u>		<u>Output</u>
(199) a	<i>ɲgondĩ</i> fight	<i>nzaa</i> alcohol	<i>ɲgondĩ nzaa</i> ‘one who incite people to fight’
b.	<i>akonda</i> in-law	<i>dadeε</i> cutlass	<i>akondaa-dadeε</i> ‘monetary token given to prospective in-laws’
b.	<i>angole</i> play	<i>wura</i> owner	<i>angole-wura</i> ‘praying mantis’
c.	<i>abilie</i> dance	<i>wura</i> owner	<i>abilie-wura</i> ‘a type of wasp (lit. King of dancing)’

The N-N compounds in (199) violate the *IS A* condition (Allen 1978). For instance, the constituents of *ɲgondĩ nzaa* in (199a) are *ɲgondĩ* ‘fight’ and *nzaa* ‘alcohol’ but the idiomatic meaning of the compound is ‘one who incite people to fight’ which is neither a type *fight* nor a type of *alcohol*. Similarly, the literal meaning of the constituents *akondaa* and *dadee* respectively are ‘in-law’ and ‘cutlass’, but the compound, as a whole, refers to the monetary token given to the brothers of the bride rather than the cutlass given to prospective in-laws<sup>105</sup> of the groom. Thus, the compounds are semantically exocentric.

The compounds in (199) c&d share a common right-hand member, *wura*, which literally means ‘owner/lord’. However, having the characterization of an affixoid, *wura* no longer bears its literal meaning, since its use in the compound restricts its original meaning. Consequently, the affixoid status of the right-hand constituent affects the compositionality of the compounds and contributes to their exocentricity. This accounts for the idiomatic meanings of the compounds *angole-wura* ‘praying mantis’ and *abilie-wura* ‘a type of wasp’ (lit. King of dancing), so that the referents of the compound *angole-wura* ‘praying mantis’ is not necessarily an ‘owner/king of play’, neither is the referent of *abilie-wura* an ‘owner/king of dance’ in 199(c & d), respectively. An important mechanism that underpins the interpretation of such compounds is metonymy, where like their Akan counterparts (cf. Appah 2017a), something is referred to by a word which describes a quality or feature of that thing. The compound *angole-wura* ‘praying mantis’, for example, has to be interpreted metonymically since a characteristic property of the insect *praying mantis*, the referent, is used to represent the whole entity.

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<sup>105</sup> The opacity in the meaning of the compound is probably a diachronic semantic bleaching or extension that has occurred in the lexicon.

(200)	a.	<i>kwasea-adanvo</i> ‘tsetse fly (lit. the fool’s friend)’	<i>kwasea</i>	<i>adanvo</i>
			fool	friend
	b.	<i>εseen-poẽ</i> ‘funeral organizers’	<i>εseen</i>	<i>poẽ</i>
			funeral	mat

The forms in (200) always follow the same exocentricity pattern. This explains why in 200(a), none of the meanings of the individual constituents *kwasea* ‘fool’ and *adanvo* ‘friend’ are preserved or reflected in the meaning of the compound *kwasea-adanvo* ‘tsetse fly’. Similarly, the meaning of the right-hand member *poẽ* ‘mat’ is completely lost in the meaning of the compound *εseen-poẽ* ‘funeral organizers’ in (200b).

#### 4.4.2 Left-headed N-A (ATAP) Compounds

Like Appah (2016) found about Akan N-A compounds, in this class of N-A compounds either constituent is recursive. Though the noun may be an inflected complex form, it is never a compound. The adjectives, however, are all simplex forms, possibly because Esahie has no means of forming derived or compound adjectives. Compounds in this class are all left-headed and constitute counter examples of both the IS A Condition (Allen 1978) and the RHR (Williams’ 1981a), and pattern after NPs because in Esahie, NPs are head-initial, so that attributive adjectives which modify head nouns adjoin to the right of the noun.

An implication of this striking formal similarity to NPs is that although the formations discussed in this section have been called compounds, they may as well be treated as lexicalized phrases.<sup>106</sup> A consequence of this parallelism is that they are not as productive as the [N-N] compounds discussed in section [4.4.1.1](#). They include the formations below.

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<sup>106</sup> As noted in the literature (Booij 2002a, 2009a, Appah 2013; 2016), their left-headedness of such constitutes no real exception to the RHR if they are treated as lexicalized phrases.

	<u>Output</u>	<u>Input</u>	
(201) a.	<i>akoatia</i> ‘dwarf’	<i>ako</i>	<i>tia</i>
		person	short
b.	<i>hohommɔne</i> ‘demon’	<i>hohom</i>	<i>bɔne</i>
		spirit	bad
c.	<i>ewoobile</i> ‘black cobra’	<i>ewoo</i>	<i>bile</i>
		snake	black
d.	<i>nzɛndenden</i> ‘talkative person’	<i>asɛm</i>	<i>tenden</i>
		matter	long

The relation that holds between the constituents of these compounds is one of attribution, since it is characterized by a relation where the modifier (i.e. the right-hand member) describes a property or quality of the head (i.e. the left-hand member/the noun). Being semantically endocentric (since they are headed by the noun), the whole compound is a hyponym of the noun head. The compound *akoatia* ‘dwarf’ in (201a) could be said to be hyponym of its head *ako* ‘person’, while the compound *hohommɔne* ‘demon’ in (201b) could be said to be a hyponym of its head *hohom* ‘spirit’. In the same way, the compound *ewoobile* ‘black cobra’ is a type of *ewoo* ‘snake’. The compound *nzɛndenden* ‘talkative’, however, is exocentric, since it is not a type of its head *asɛm* ‘matter’, but rather refers to a person who is talkative in nature. Following Appah (2017a/b)’s typology of exocentric compounds in Akan, this compound may be classified as a possessive bahuvrihi compound, since the referent of the compound is characterized by the property expressed in the compound *nzɛndenden* ‘talkative’.

	<b><u>Output</u></b>		<b><u>Input</u></b>	
(202) a.	<i>man-zini</i> ‘district’		<i>maen</i>	<i>sini</i>
			country	short/incomplete
b.	<i>krataabue</i> ‘page’		<i>krataa</i>	<i>bue</i>
			paper	half
c.	<i>baabunu</i> ‘virgin’		<i>ɔbaa</i>	<i>bunu</i>
			woman	unripen

To the extent that these compounds bear meanings that are not always entirely transparent, their meanings could be argued to be (a bit) lexicalized. This explains why *man-zini* ‘district’ in (202a) is not a short nor incomplete country but, rather, a district of a country. It also accounts for slightly opaque meanings of the compounds *krataabue* ‘page’ and *baabunu* ‘virgin’ in (202c) and (202d), respectively. This is why *krataabue* ‘page’ does not refer to half of a paper nor a half-sized paper, but to a page. The compound *baabunu* ‘virgin’ is interesting because if its meaning were to be solely and transparently based on its head *ɔbaa* ‘woman’, the meaning of *baabunu* ‘virgin’ should not include male (virgins), however, it does in the Esahie ancestral lexicon. The compound *baabunu* ‘virgin’ therefore refers to both male and female virgins. Overall, Esahie N-A compounds are typically endocentric, left-headed, and hardly recursive.

#### **4.4.3 N-V Subordinate compounds**

Although we mentioned earlier that we would not discuss synthetic compounds in this chapter because they have already been treated in [Chapter 3](#), the compound forms we discuss in this section are exemplars of synthetic compounds.



We discuss them here because being [N-V]<sub>N</sub> formations, they are structurally different from the prototypical [[N + V]+SUFF]<sub>N</sub><sub>N</sub> synthetic compounds in Esahie as discussed in [Chapter 3](#). The fact that these forms are empirically attested contrary to expectation can be explained by two reasons. First, most of them appear to have been borrowed from Akan.<sup>107</sup> Plausibly, this accounts for the blocking of the licensing of the nominalizing suffix [-lɛ], considering that the deverbalization of the right-hand member which licenses the attachment of the nominalizing suffix in Esahie is redundant in Akan since the same can be signaled tonally in Akan (cf. Christaller, 1875; Dolphyne, 1988; Anyidoho, 1990; Marfo, 2004; Anderson, 2013; Appah, 2013, 2015).<sup>108</sup> Second, they lack the regular nominalizing suffix [-lɛ] which usually attaches to the deverbal head noun.

Given this unique structure, we argue, following Dolphyne (1988) and Appah et al. (2017), that unlike the [[N + V]+SUFF]<sub>N</sub><sub>N</sub> cases earlier discussed in [Chapter 3](#), the right-hand element in these [N-V]<sub>N</sub> complexes maintains its verbal status, since the crucial distinctive feature of this class of Esahie synthetic compounds is not the presence of the deverbal affix, but the argument-taking property of the governing element (the verb). This implies that they are formally exocentric. Thirdly, they are not as productive and regular as the [[N + V]+SUFF]<sub>N</sub><sub>N</sub> synthetic discussed in [Chapter 3](#).

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<sup>107</sup> Following Bauer (2008, 2010) typology, Appah et al. (2017: 2) argue for such compounds to be considered as *exocentric synthetic compounds*, which, unlike endocentric synthetic compounds, have no morpheme like English *-er* which corresponds to the external argument of the verb. In this alternative view, the verb and its internal argument together form a noun that denotes the entity that performs the role of the external argument. This is very much like the French *gratte-ciel* 'skyscraper' [lit. scratch-sky], in which only the verb and its internal argument are present but the compound as a whole refers to the external argument – that which scratches the sky. Thus, synthetic compounds need not be endocentric nor have a deverbal head, they argue.

<sup>108</sup> Some Akanists such as Dolphyne (1988) and Appah et al. (2017: 2) reject the view that the right-element is deverbal, which in essence, implies that they also reject the nominal status of the right-hand element. This is in contrast with the position taken by other scholars (especially those working on Germanic languages such as English) including Roeper and Siegel (1978), Selkirk (1982), Lieber (1983) and Grimshaw (1990).

As is characteristic of verbal-nexus SUB compounds, the relation between the modifier (i.e. the left-hand member) and formal head (i.e. the right-hand member) is one of a complementation. The left-hand element (the noun) is complement of the right-hand element (i.e. the (de-)verbal head). The predicate-argument relation that exists between the constituents of the compounds in (203) and (204) also implies that it is the verb that selects the noun, because it controls the government relation in the underlying VP. These N-V types of compounds are the result of the reversal of the linear order of constituents in a VP where the verb precedes the noun (i.e. the internal argument) since Esahie is strictly SVO. In these compounds, reversal of the order of elements results in linearization where the internal argument of the verb rather precedes the verb.

	<u>Output</u>		<u>Input</u>	
(203) a.	<i>ngoasom</i> ‘slavery’		<i>ngo</i>	<i>som</i>
			slaves	serve/worship
b.	<i>mogyafra</i> ‘incest’		<i>mogya</i>	<i>fra</i>
			blood	mix

The verb *som* ‘to serve’ in (203a) selects the internal argument *ngo* ‘slaves’, while the verb *fra* ‘to mix’ in (203b) selects the noun *mogya* ‘blood’, its internal argument. Similarly, the verb *gyina* ‘stand’ in (204a) selects the noun *eyia* ‘sun’, its internal argument, while in (204b), the verb *si* ‘block’ selects its internal argument *anyee* ‘eye’.

	<u>Output</u>		<u>Input</u>	
(204) a.	<i>eyiagyina</i> ‘sunshine’ (time)		<i>eyia</i>	<i>gyina</i>
			sun	stand
b.	<i>anyeesi</i> ‘blindness’		<i>anyee</i>	<i>si</i>
			eye	block

c.	<i>nzɛm-bisa</i> ‘question’	<i>nzɛm</i>	<i>bisa</i>
		matter	ask

Although these forms are formally exocentric, they are to some extent semantically transparent. Their semantic heads share their lexical conceptual properties with the compound, so that, the compound constitute hyponyms of their respective semantic head. This explains why *ngoasom* ‘slavery’ is a type of *som* ‘worship/serve(ing)’ just like other types of *som* such as *nyame-som*<sup>109</sup> ‘the worship of God [the supreme being]’ or *abosom-som*<sup>110</sup> ‘idolatry’. It also accounts for the fact that *mogyafra* ‘incest’ is (in a way) a type of *fra* ‘mixing’, which, though not necessarily directly involving mixing of blood, involves an illicit affair between persons with close family affinities.

Like their [[N + V]+SUFF]<sub>N</sub> counterparts discussed in [Chapter 3](#), these compounds are action nominals hence they typically express events (dynamic processes) or states, keeping open the possibility of extending their core eventive meanings to additionally denote the end-product or the results of the event designated by the base verb. This explains why the compounds *eyiagyina* ‘sunshine’ (time), *anyeesi* ‘blindness’ and *nzɛm-bisa* ‘question’ in (204a), (204b), and (204c), respectively, express non-eventive meanings, like a time period, a resultative state or a propositional content, respectively.

#### 4.4.4 V-N SUB compounds

This class of compound constructions are cross-linguistically attested (cf. Akan: Appah 2013; 2015; 2016; Dangme: Lawer 2017; Zulu: Pala et al. 2010; German: Gast 2008/2009; French: Beard 1995/1996; Italian: von Heusinger & Schwarze 2013; Progovac 2015; Štichauer 2015) and have been argued to share comparable structural properties (cf. Basciano et al. 2011).

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<sup>109</sup> *Nyame* ‘God’

<sup>110</sup> *Abosom* ‘lesser gods’

For several reasons, VN compounds have been noted to pose an arduous challenge to contemporary grammatical theory (cf. Padrosa-Trias 2010; Basciano et al. 2011). First, since they are essentially formally and semantically exocentric (i.e. lacking both a structural and semantic head), they defy the endocentricity principle that underpins cardinal syntactic operations such as Merge as envisaged in the Minimalist Program (see Chomsky 1995; 2000; 2001; Pesetsky & Torrego 2006). Second, notwithstanding the fact that in most cases the V element selects its direct object (i.e. the N), assigning to it a Theme/Patient role, there are also other instances where the N is not a direct object but an adjunct/complement expressing various relations with V (especially, locative/temporal relations). Furthermore, the exact shape and form of the verb has also received inconsistent treatments such that while it has sometimes been analyzed as a stem or theme (a root taking a thematic vowel in some Romance languages), elsewhere, it has been analyzed as an inflected form and sometimes as a bare root, etc. A corollary of this state of definitional and analytical indeterminacy culminates in a difficulty in finding a uniform morphotactic analysis of the constituent morphemes of VN complexes.

In the Esahie VN formations, the N is almost always the direct argument (or complement) of the V and bears a Theme/Patient role. The N may also be a (simple) event nominal such as *ayie* ‘funeral’ in (207b). Another significant cross-linguistic property (cf. Progovac 2006; and Basciano et al. 2011) of the N attested in the Esahie VN complexes is that it refers to body parts and other ‘basic/core’ concepts such as the *nyɔfone* ‘breast’ and *hue* ‘chest’ in (207d) and (209c), respectively. The N can be a plural or mass noun or a singular form.

Like Chinese (Basciano et al. 2011), Akan (Appah 2013), and Dangme (Lawer 2017), the V-element in the compound surfaces as a (mono-morphemic) root in Esahie, in contrast with Bantu and Romance, where it terminates in a vowel which may not be directly associated with any transparent derivational process (Basciano et al. 2011: 205). In Esahie, the V form usually bears a low tone that appears to signal second person imperative mood, as suggested in

Basciano et al. (2011) for VN compounds across Romance and Bantu. The grammatical role of the low tone in Esahie is equivalent to that of the high-tone borne by the final vowel [-á-] in Bemba, a Bantu language, which also signals second person imperative (Nurse 2008; Basciano et al. 2011). The grammatical role of tone in both Esahie and Bemba, therefore, puts them at par with the final vowel attached to the verbal root in VN complexes within I.E. languages which have also received an imperative analysis (cf. Tollemache 1945; Varela 1990; Progovac 2006). Let us examine the V-elements in following VN formations in (205).

	<u>Output</u>		<u>Input</u>
(205) a.	<i>tò-nzue</i> ‘well water’		<i>tò</i> <i>nzue</i>
		fetch (from a well)	water
b.	<i>dikɔm</i> ‘(opportunistic) glutton’	<i>di</i>	<i>kɔm</i>
		eat	hunger
c.	<i>twèrènzem</i> ‘scriptures/bible’	<i>twèrè</i>	<i>nzem</i>
		write	matters

Although there are a few instances where there may be overt number and attested nominalizing prefixes on the V, these cases are too few to warrant a synthetic compound classification for this class. Given this characterization, the Esahie VN formations behave like Bemba compounds which also sometimes bear overt prefixes such as *ka-* and *mu-* that invariably serve a nominalization purpose. Let us examine the examples in (206) which bear the singular prefix [*a-* (as in 206a, b, &c)] or a plural prefix [*n-* (as in 206d)].

- (206) a.     *akàtànòanu*  
              *a-kata-anoanu*  
              SG-shut-door  
              ‘(door) curtain’

- b. *asùàdee*  
 a-sua-adee  
 SG-learn-thing  
 ‘lesson/moral (learnt after an experience)’
- c. *amènàdee*  
 a-mena-adee  
 SG-send-thing  
 ‘parcel’
- d. *ngàtàbo*  
 n-kata-bo  
 PL-cover-chest  
 ‘shield’

In terms of argumenthood, since the relation between V and N is one of a predicate-argument relation, we could argue that there is a sort of lexical selection which is controlled by the V. However, notwithstanding the fact that the V selects the N as its internal argument, indicative of an asymmetric relation, the argument cannot be advanced beyond lexical selection to claim that V is the formal head of the complex, since it fails to share its lexical category with the compound. The V is simply the governing element, but it does not head the compound. Therefore, since neither the V nor N heads the construction, these V-N compounds are formally exocentric.

Another crucial structural feature of these VN formations is their lack of recursion. As such, they fit perfectly into the cross-linguistic picture, given that their equivalents in Sino-Tibetan, Bantu, Romance and Germanic languages are generally hardly recursive (cf. Basciano et al. 2011).

As far as interpretation is concerned, VN compounds in Esahie typically convey personal/participant (i.e. agentive nominalization) meanings as in *dikɔm* ‘an (opportunistic) glutton’ and *kɔ̌ayie* ‘one born during a funeral’, as well as instrumental meanings as in *ngàtàbo* ‘shield’ and *asònyɔfone* ‘brassiere’. They may constitute objective nominalizations as in *twèrènzem* ‘scriptures/Bible’, *akàtànòanu* ‘(door) curtain’ and *amènàdee* ‘parcel’, or abstract nominalizations as in *asùàdee* ‘lesson/moral’. Being semantically exocentric constructions, their meanings are either highly lexicalized or idiomatized. This explains why the forms in (206) such as *akàtànòanu* ‘(door) curtain’, *asùàdee* ‘lesson’, *amènàdee* ‘parcel’ and *ngàtàbo* ‘shield’ convey (partially) lexicalized meanings. Given that they lack semantic heads, it is not surprising that the compound *ngàtàbo* ‘shield’ is not a type of either of the constituents (i.e. *kata* ‘close’; *bo* ‘chest’) that form it, neither is the compound *akàtànòanu* ‘(door) curtain’ a type of *kata* ‘shut’ nor a type of *anoanu* ‘door’. They fail the hyponymy test. Let us consider the following examples.

	<u>Output</u>		<u>Input</u>
(207) a.	<i>sòngyìturoo</i> ‘colander’	<i>songyi</i>	<i>turoo</i>
		sieve	soup
b.	<i>kɔ̌ayie</i> ‘one born during a funeral’	<i>kɔ̌</i>	<i>ayie</i>
		go	funeral
c.	<i>frènwosea</i> ‘sugarcane ( <i>lit.</i> call houseflies)’	<i>frɛ</i>	<i>nwosea</i>
		call	houseflies
d.	<i>asònyɔfone</i> ‘brassiere’	<i>sɔ̌</i>	<i>nyɔfone</i>
		hold	breast

Although the constructs in (207) are predominantly agentive and instrumental nominalizations, their meanings are lexicalized and lack semantic transparency. This accounts for the fact that none of the compounds is a hyponym of either of the elements from which they are formed.

The instrumental nominal compound *sòngyìturoo* ‘colander’, for instance, is neither a type of *songyi* ‘sieve’ nor a type of *turoo* ‘soup’. In the same way, the compound *frènwosea* ‘sugarcane’ expresses a quality of its actual head (denotation), which is not compositionally represented in the compound.

The next class of compounds we examine are interesting and constitute a unique subclass of VN compounds because they are limited in number, completely fossilized, and their meanings are very opaque. They include the forms in (208) and (209).

(208)	a.	<i>frèfrè-hyele</i> ‘(month) February’	<i>frè-frè</i>	<i>hyele</i>
			call-RED	heat
	b.	<i>tùà-huholo</i> ‘(month of) April’	<i>tua</i>	<i>huholo</i>
			stop	heat
	c.	<i>dè-nzue</i> ‘(month of) May’	<i>de</i>	<i>nzue</i>
			receive	water
(209)	a.	<i>kyìnyemene</i> ‘(month of) July’	<i>kyi</i>	<i>nyemene</i>
			hate	beauty
	b.	<i>bḁ-mbḁsea</i> ‘(month of) September’ <sup>111</sup>	<i>bḁ</i>	<i>me</i> <i>bḁsea</i>
			take	1SG loan
	c.	<i>sì-wc-hue</i> ‘(month of) October’	<i>si</i>	<i>wc</i> <i>hue</i>
			beat	your chest
	d.	<i>yìà-hemaa</i> ‘(month of) November	<i>yia</i>	<i>hemaa</i>
			meet	queen

Their unique characterization as espoused above, stems from the fact that they are names of the various months (seasons) in the Esahie (climatic/traditional) calendar. Their meanings are

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<sup>111</sup> The occurrence of pronominal elements in the forms in examples *b* and *c* makes them different from the others. These forms look like lexicalized phrases.



descriptions of the climatic and/or economic condition associated with the designated periods in the mind of the speakers of the language, who are predominantly farmers.

The compound *frèfrè-hyele* ‘(month) February’, for instance, captures the climatic condition associated with a period of time which is characterized by extreme heat. So the compound names the time period characterized by extreme heat. Possibly, this is where the nominal status of the compound emanates from, so that we have something close to a sort of nominalized VP. The compound, therefore, literally means ‘call/invite heat’.

The compound *dè-nzue* ‘(month of) May’, for example, is named so because it is conceptualized as a precursor season to the months of June and July, which in Ghana are generally rainy seasons.<sup>112</sup> So the meaning associated with this month-name in the traditional lexicon is the period where one prepares to receive heavy downpours, hence the name *dè-nzue* which literally means ‘receive-water’.

The period that is equivalent to September in the Roman calendar is named *bɔ̃-m-bɔ̃sea* literally meaning ‘lend me a loan’, because this period marks the middle of the farming season, when the monetary/crop proceeds from the previous farming season would have been fully exhausted. Farmers who are profligate are likely to go around seeking financial assistance during this time, hence the name *bɔ̃-m-bɔ̃sea* ‘lend me a loan’.

The compound *kyinyemene* ‘(month of) July’ is so named because during this time of the year, the ground (or soil) is usually muddied and dirty to walk on. By the time one walks through it to/from work (i.e. farm), getting one’s feet, clothes or whole body dirtied would be inevitable. This explains why the period is named *kyinyemene* which literally means ‘hate beauty’, to wit ‘the period of time which hates to see you looking good’.

The month of November is named *yìàhemaa* which literally translates ‘meet the Queen’, because it precedes the queen (i.e. the month of December). The month of *yìàhemaa*

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<sup>112</sup> The severest floods are recorded during these periods.

‘November’ is the month where one prepares to welcome the Queen, the period of abundance and merrymaking. *Hemaa* ‘(month of) December’ is a good time because it is characterized by festivities, moments of family reunion, when there is so much to eat and drink, because the crops planted would be ready for harvest. The N element in this compound, *Hemaa*, could be analyzed as an affixoid, since it has a peculiar meaning in the compound.

Like the other VN complexes earlier discussed, these formations are also semantically exocentric. This is why they all fail the hyponymy test, so that in terms of the semantics of the output, they are not a type of either of their constituent elements.

Compared to their  $[[N+V]-SUFF]_N$  synthetic compound counterparts, these forms are less productive, and reasonably so because they are highly lexicalized, idiomatized and hardly recursive. Their (un)productivity constitutes a parallelism with VN compounds in Akan (Appah 2016/2017), Chinese and Bemba (Basciano et al. 2011), where such formations are generally restricted to a limited set of fossilized constructions, and a point of departure from Gĩkũyũ and Italian (and most Romance languages), where such formations are extensively attested and fully productive (cf. Mugane 1997; Bresnan and Mugane 2006; Basciano et al. 2011).

#### **4.5 Compounding as a nominalization strategy in Esahie**

As earlier noted, in accounting for the structural properties of morphological constructions, one may resort to the properties of the input elements as well those of the output elements, or even both. As our analyses of the Esahie data has shown, there are numerous instances of compounds which are formally exocentric. One would wonder how the syntactic category of such complexes are computed then. For now, we leave this puzzle open until [Chapter 5](#), where we attempt to offer a theoretically motivated explanation.

Interestingly, however, even for formally exocentric compounds, the syntactic category of the complex is never a puzzle. This is because, compounding in Esahie is invariably a nominalization operation. In other words, the output of the compounding operation in Esahie is always nominal in form-class irrespective of the syntactic category of the input elements. Therefore, following Appah (2015), we may argue that the compounding operation is blind to the syntactic category of the input elements because the nominal status of the output appears to be predetermined.

In [Table 25](#) below, I provide a sample of the various types of compounds earlier discussed, as well as new types of compounds which have not been hitherto discussed due to space constraints. The purpose of the table is to show that even for compounds without any nominal element and those that are formally exocentric, the eventual output is a nominal.

Table 25: **Compounds are nominals**

Compound Type		Example	Output Structure /Category
<b>1. Exocentric formations</b>	<b>V-V</b>	1. <i>su-de</i> cry-take 'a baby that usually resorts to throwing tantrums in order to get something from its parents' 2. <i>da-bie</i> sleep-urinate 'a bed-wetter'	<b>[V-V]<sub>N</sub></b>
<b>2. Exocentric formations</b>	<b>V-A</b>	<i>brɛ-hunu</i> suffer-vain 'a person who is failure or loser'	<b>[V-A]<sub>N</sub></b>
<b>3. Exocentric formations</b>	<b>V-N</b>	1. <i>tò-nzue</i> fetch-water	<b>[V-N]<sub>N</sub></b>

		<p>‘well water’</p> <p>2. <i>kyì-nyemene</i> hate-beauty ‘(month of) July’</p> <p>3. <i>yìà-hemaa</i> meet-queen ‘(month of) Novemeber’</p>	
<b>4. Exocentric formations</b>	<b>N-V</b>	<p>1. <i>ngoa-som</i> slaves-serve ‘slavery’</p> <p>2. <i>mogya-fra</i> blood-mix ‘incest’</p>	<b>[N-V]<sub>N</sub></b>
<b>5. Endocentric formations</b>	<b>N-A</b>	<p>1. <i>akoa-tia</i> person-short ‘dwarf’</p> <p>2. <i>nzen-denden</i> matter-long ‘talkative person’</p>	<b>[N-A]<sub>N</sub></b>
<b>6. Endocentric N-N Synthetic Compounds</b>		<p>1. <i>dumaa-sekyé-le</i> name-destroy-NMLZ<sub>E/R</sub> ‘(act of) defamation’</p> <p>2. <i>nzaa-nú-ne</i> alcohol-drink-NMLZ<sub>E/R</sub> ‘alcoholism’</p>	<b>[[N+V]-SUFF]<sub>N</sub></b>
<b>7. Exocentric N-N</b>		<p>1. <i>ngondĩ~nzaa</i> fight-alcohol ‘a person who incites people to fight’</p> <p>2. <i>angole-wura</i> game-owner ‘praying mantis’</p>	<b>[N-N]<sub>N</sub></b>

<b>8. Left-headed N-N</b>	1. <i>ngaen-kɔmea</i> machine-magician ‘computer (lit. magic machine)’ 2. <i>atemuafoe-paen</i> judge-elder ‘Chief Justice’	[N-N] <sub>N</sub>
<b>9. Right-headed N-N</b>	1. <i>ngaen-anwa</i> machine-oil ‘petrol’ 2. <i>afofi-kyẽã</i> celebration-day ‘holiday’	[N-N] <sub>N</sub>
<b>10. Endo Coordinate N-N</b>	1. <i>emumu-asotiriwaanɛ</i> dumb-ear-block-NMLZ <sub>P/P</sub> ‘deaf and dumb person’ 2. <i>kɔmɛɛ-dunzenɛ</i> fetish.priest-herbalist ‘herbalist-fetish priest’	[N-N] <sub>N</sub>

The data in the table points to the fact that, irrespective of the form-class of the input elements, the compounding operation in Esahie is a nominalization process. The most striking of the Esahie compound types in this regard are the V-V and V-A formations. Without involving any nominal element(s) at the input level, the computation of their outputs surprisingly yields a nominal. This default nominal status of Esahie compounds is an important structural property.

Within the Kwa family, however, this interesting feature is not unique to Esahie. Compounds in other Kwa languages share this structural peculiarity. As we shall see, compound forms in Akan, Dangme, and Lete are all nominals, such that the behavior of Esahie constitutes no deviation from the typological (Kwa) pattern. Indeed, the fact that the output

category of compounding is mostly nominal is a cross-linguistically attested fact (see Guevara and Scalise 2009). This explains why in Italian too, VV, VN, V+P compounds etc. are all nominal (Basciano et al. 2011; Arcodia 2011a-b; Delfitto and Melloni 2009; Bisetto and Scalise 2005). Akan compounds too, for instance, have been argued to be invariably nominal (cf. Christaller, 1875; Dolphyne, 1988; Anyidoho, 1990; Marfo, 2004; Anderson, 2013; Appah, 2013, 2015).

From a constructionist perspective, Appah (2015; 2016; 2017) has argued that this should be interpreted to mean that the nominal syntactic category of Akan compounds is a holistic property that is inherited from a constructional meta-schema for compounding in Akan which is pre-specified to bear a nominal syntactic category. In [Table 26](#) below, we provide an array of Kwa compounds, with particular emphasis on Akan, Dangme, and Lete, in order to highlight their default nominal status.

Table (26): **Nominal Status of Kwa Compounds**

<b>Compound type/structure</b>	<b>Akan</b> (Appah 2016)	<b>Dangme</b> (Lawer 2017)	<b>Lete</b> (Akrofi Ansah 2012)
1. a. [N-V] <sub>N</sub> b. [N+V]+SUFF] <sub>N</sub>	<i>òsé!-bó</i> outcry-make 'jubilation'	<i>yo-ngòm</i> woman-receive 'marriage'	<i>ń-dám`fũ-búé</i> PL-friend-take 'friendship'
2. [N-A] <sub>N</sub>	<i>àfòwà-sín</i> sword-half 'penknife'	<i>to-ku</i> sheep-male 'ram'	<i>òbì-nyíné</i> child-male 'son'
3. [V-N] <sub>N</sub>	<i>dí-bèá</i> (to)assume-place 'rank'	<i>tša-he</i> heal-place 'infirmary'	
4. [V-V] <sub>N</sub>	<i>gyé-dí</i> take-eat 'faith/belief'		
5. [N-N] <sub>N</sub>	<i>àsòmdwòèé-kúó</i>	<i>blèfo-ta</i>	<i>àsó!rí-tsà</i>

	peace-group 'the un peace council'	foreign(er)-palm.tree 'pineapple'	church-building 'chapel'
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As the morphological structure column of the table clearly spells out, all the compound forms in [Table 26](#) are nominals. This formal characterization of compounds suggests that compounding in Kwa is typically a nominalization strategy.

## 4.6 Conclusion

The discussion offered in this chapter points to the fact that, the form and function of compounding in the grammar of Esahie enriches our general understanding of word-formation at large. Overall, there appears to be a coherent picture of Esahie compounding, since SUB compounds are consistently right-headed, while ATAP compounds are consistently left-headed.

Our analysis of compounding in Esahie has revealed interesting parallelisms and peculiarities with other languages in terms of structural and semantic properties. A striking structural property of Esahie (and other Kwa) compounds is that, notwithstanding the form-class of the input elements, the output is always a nominal. This characterization points to a fascinating (mutual) interplay between the word-formation phenomena of compounding and nominalization, since the former feeds the latter operation. Again, this shows that nominalization is a prominent word-formation operation in Kwa grammar.

In the tables below, we highlight some of the other crucial formal and semantic properties of Esahie compounds discussed in this chapter. For purposes of uniformity, however, we treat all compounds that do not involve any verbal constituent in [Table 27](#), and treat compounds with verbal elements in [Table 28](#). The table captures properties such as headedness, recursion, argumenthood, interpretation, and productivity.



Table 27: Properties of non verb-involving Compounds

		SUB N-N	ATAP N-N 1	ATAP N-N 2	COORD N-N	N-A
		Examples				
		<i>a-saa-m-maa</i> PL-hand- PL-child 'fingers'	<i>ngaen-kōmea</i> machine-magician 'computer'	<i>kwasea-adanvo</i> fool-friend 'tsetse fly'	<i>emumu-aso-tiriwaa-niē</i> dumb-ear-block-NMLZ <sub>E/R</sub> 'dumb and deaf person'	<i>a-koa-tia</i> SG-person-short 'dwarf'
HEADEDNESS	Formal	Endocentric	Endocentric	Exocentric	Endocentric (right-headed)	Endocentric
	Semantic	Endocentric	Endocentric (but with an exocentric subgroup as in <i>nza-nzia</i> 'baby with six fingers')	Exocentric	Endocentric	Endocentric
	Position	Right	Left	-	Dual	Left
INTERNAL INFLECTION		Yes	No affixes	Yes	No affixes	Yes
RECURSION		Yes	No	No	No	No
PRODUCTIVITY		Yes	No	No	No	No
INTREPRETATION		Unconstrained	Lexicalized	Lexicalized	Unconstrained	Lexicalized

We notice from [Table 27](#) that compounds with internally inflected elements tend to be formally endocentric. However, the paucity of inflection in Esahie, as an isolating language, leaves some of the compounds coming out as formally exocentric, especially in the case of N-N compounds where both elements are already nominals. In such cases, it is difficult to figure out the particular element from which the nominal property percolates. Apart from ATAP N-N 2 compounds, all other compounds pass the hyponymy test since they are semantically endocentric. In those cases where we can clearly establish a semantic head, we can argue further that the semantic head is also the formal head since typologically, it is very rare that the two do not coincide. Moreover, since the canonical head position in Esahie is the right, the formal head is the rightmost in these cases. In general, however, semantic headedness provides the most applicable and reliable criterion for determining headedness in Esahie. [Table 27](#) also points out a strong correlation between recursion and productivity. This confirms Booij's (1992) observation that recursion enhances productivity in N-N compounds. In this sub-group (of non verb-involved formations), right-headed SUB N-N compounds are the most productive.

Let us now turn to verb-involved compounds, summarized in [Table 28](#).

Table 28: Properties of Verb-involving Compounds

		<b>N-V</b>	<b>[N+V]+SUFF]</b>	<b>V-N</b>	<b>V-V</b>	<b>V-A</b>
		<i>n-goa-som</i> PL-slave-serve 'slavery'	<i>sóná-hú-nε</i> person-kill-NMLZ <sub>E/R</sub> 'act (of)murdering'	<i>twèrè-n-zem</i> write-PL-matter 'scriptures/bible'	<i>da-gye</i> sleep-defecate 'a baby that defecates while sleeping'	<i>brε-hunu</i> suffer-vain 'a person who is failure or loser'
<b>ARGUMENTHOOD</b>		N is the direct object of V (but can also be a locative).	N is the direct object of V (but can also be a locative).	N is the direct argument of V.	Not argumental	Not argumental
<b>N CONSTITUENT</b>		Plural or mass noun / stem.	Plural or mass noun / stem.	Could be singular, plural or mass.	-	-
<b>V CONSTITUENT</b>		Verb root	V is a deverbal base with a nominalizing affix.	V is a stem, with a low tone that signals modality.	Verbal roots	Verb root
<b>HEADEDNESS</b>	<b>Formal</b>	Endocentric	Endocentric	Exocentric	Exocentric	Exocentric
	<b>Semantic</b>	Endocentric	Endocentric	Exocentric	Exocentric	Exocentric
	<b>Position</b>	Right	Right	-	-	-
<b>RECURSION</b>		Yes	No	No	No	No
<b>PRODUCTIVITY</b>		Yes	Yes	Unproductive, although they may derive Agentive, Instrumental, Objective, as well as Abstract nominalizations.	No	No

In [Table 28](#), we observe that in terms of argumenthood, where applicable, the N constituent is usually the direct object of the V, but can also be a locative. The N constituent could be a singular, plural or mass form. The V constituent is typically a root, with a high tone and nominalizing affix in [[N+V]-SUFF]<sub>N</sub> compounds, and a low tone in V-N compounds. The default nominal status of Esahie compounds accounts for the fact most verb-involving compounds are formally and semantically exocentric. Apart from N-V complexes, none of the verb-involving formations are recursive. Overall, the N-N root and [[N+V]-SUFF] synthetic compounds are the most productive types in Esahie. This property is consistent with English and isolating languages in general where synthetic compounding is a productive word-formation process.

## CHAPTER FIVE

### THEORETICAL IMPLICATIONS

#### 5.1 Introduction

This chapter attempts to offer theoretical insights into the analyses of the Esahie data as discussed in [chapters 2, 3, and 4](#). It provides an overview of the current theories of morphology and shows why a particular theoretical view of inflection and word-formation ought to be favored over other(s) on the basis of the Esahie data.

The chapter begins with a description of the goal and nature of morphological theory (section [5.2](#)), outlining two general perspectives of morphology based on what is considered as the minimal unit of grammatical analysis: *morpheme-based* approaches (section [5.2.1](#)) vs. *word-based* approaches (section [5.2.2](#)). Following Blevins (2006), we show that the existing theories of morphology can be reanalyzed into CONSTRUCTIVE and ABSTRACTIVE models, depending on the view they hold on the computation of word structure, that is, whether word structure is computed top-down or bottom-up (section [5.2.3](#)). In section ([5.2.4](#)) we lay out the foundational tenets of Construction Morphology, as an ABSTRACTIVE model, and argue this this model is able to handle all the morphological phenomena in Esahie discussed in the preceding chapters. We provide constructionist account of the Esahie declension classes and syncretism in section ([5.3.1](#)) and deal with nominalization in ([5.3.2](#)). In section ([5.4](#)), we examine various kinds of Esahie compounds using the machinery of Construction Morphology. A summary and conclusion of the chapter is provided in section ([5.5](#)).

## 5.2 Morphological Theory

The goal of morphology is to account for the internal structure of complex words. A theory of morphology usually seeks to spell out the specific constituents that are acceptable in complex words, the order in which the constituents are linearized, what constitutes a well-formed complex word as well as to indicate what sorts of new words a speaker could form. As Aronoff (1976: 17-18) contends, “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.”

Generally, there are two fundamental approaches to the analysis of complex words, namely, *morpheme-based* versus *word-based* approaches. The distinction between these broad approaches is pivoted on what their respective proponents consider to be the minimal unit of grammatical analysis. In other words, morphological models are usually classified in terms of the units that they treat as grammatically ‘meaningful’ and the properties that they associate with these units (Blevins 2006).

### 5.2.1 Morpheme-based/Root-based Approaches

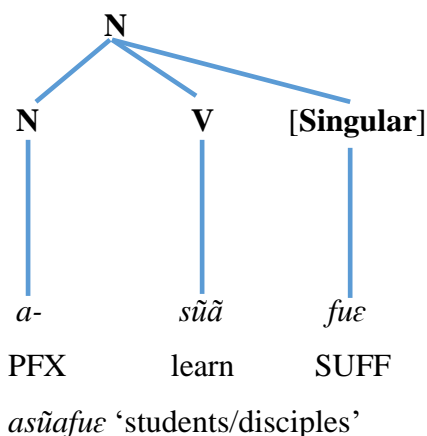
In morpheme-based theories, it is generally assumed that word formation rules operate over morphemes (cf. Halle 1973; Siegel 1974; Lieber 1980; Selkirk 1982; Kiparsky 1982). Such theories reduce language to simplex signs, each of which is an arbitrary union of sound and meaning', i.e. the 'morpheme'. Morpheme-based models assume that languages contain only one type of meaningful unit, the morpheme, which includes stems and affixes, both of which are signs.

In morpheme-based approaches, regular bases and their exponents within a morphological system are identified and isolated, so that they may be captured in rules or entries that represent their grammatical properties. Complex word forms are assumed to be

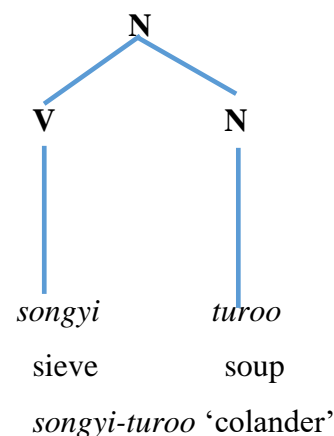
derived from these extracted elements. Alternatively conceptualized as the syntax of morphemes, the roots of morpheme-based models can be traced back to (American) Structuralism of the (post-)Bloomfieldian period, as espoused in the works of Bloomfield (1933), Harris (1942; 1951) and particularly Hockett (1947; 1954; 1958). Hockett (1954), for instance, distinguishes between *Item and Process* (IP) and *Item and Arrangement* (IA), as two models that represent the thinking about morphology at the time. Advocates of morpheme-based morphology include Lieber (1980/1992), Bresnan (1982), Di Sciullo and Williams (1987), Selkirk (1982), and Scalise (1984).

An IP model takes a base and applies a process (i.e. a derivational rule) to it so as to yield a complex word (cf. Aronoff 1976; Anderson 1992). Here, complex words are conceptualized as the result of the application of a morphologically operation called PROCESS. An IA model assumes that complex words consist wholly of a certain number of minimum grammatically relevant elements called *morphemes* which are in a certain *arrangement* relative to each other. In IA, the structure of complex words is specified by stating the morphemes and the order in which they are added, i.e. their arrangement (cf. Lieber 1980, 1983; Selkirk 1982; Williams 1981a). An implication of this additive conceptualization of morphology is that in IA, there is no distinction between derivation and compounding, since they are both additive operations.

(209) a. **Derivation**



b. **Compounding**



Both operations in (209) involve the concatenation of morphemes, with each morpheme having its own lexical entry. Another interesting point is that affixes are also treated as lexical items just like free morphemes.

In the (post-)Bloomfieldian period in general, morphology was thought to have the sole objective of accounting for the relationship between words and their constituents. As Blevins (2006) observes, this implied that, essentially, morphological analysis involved *morphotactics* (a process of segmentation and classification) and *allomorphy* (responsible for the shape of the morphemes in the complex words).

A cardinal assumption in morpheme-based theories is that the morpheme is the smallest unit of form and meaning, and that the meanings of complex units are computed bottom-up, such that the meaning of a complex is a (compositional) function of the meanings of their individual building-blocks. An underlying prediction is that in an “ideal” morphological system, each morpheme contributes/bears one and only one meaning, and each meaning is associated with one and only one morpheme. The IA-type of morphology is ideal for agglutinative languages such as Swahili, Japanese, and Turkish, where morphemes are clearly segmentable.

However, there are numerous challenges posed by morphological systems that deviate from the agglutinative ideal which underlies morpheme-based models, including *form-meaning* deviation issues such as synonymy (many forms – one meaning), homonymy (one form – many meanings), multiple/extended exponence (one meaning – two redundant forms), cumulative exponence (one form – two meanings as obtains in cases of syncretism), as well as instances of zero-morphs (meanings without forms) and empty morphs (forms without meanings). Morpheme-based models are also challenged by purely *form-related* issues such as reduplication (cf. Lieber 2010; Aronoff and Fudemann 2010; Appah 2013; Broohm & Rabanus 2018). Given the shortcomings enumerated above, other scholars reject the morpheme-based



approach, and instead, propose a word-based approach to the analysis of complex words (see Blevins 2006; Matthews 1972).

### **5.2.2 Word-based/Realization-based Approaches**

A cardinal assumption in word-based models is that morphemes need not necessarily be conceptualized as the smallest units of meaning. In word-based theories, it is generally assumed that new words are formed by applying a word formation rule to an already existing word, since the input for morphological processes such as compounding, conversion, and derivation is typically a word and not just a morpheme. Both new and existing words are members of major lexical categories. Two prominent word-based models include Word-and-Paradigm Morphology (henceforth WP) and Lexeme-Morpheme Based Morphology (henceforth LMBM).

WP is in sharp contrast with IA and IP since it regards word forms as the basic unit of a morphological system and classifies recurrent parts (i.e. roots, stems and their exponents) as abstractions over full forms (cf. Blevins 2006: 532-533). The conceptualization of the morpheme as the minimum unit of meaning is completely discarded, and instead, emphasis is placed on full words and the (paradigmatic) relationship that exists between them. This implies that the computation of the meaning of complex words does not necessarily involve the segmentation and decomposition of the meanings of the various subparts of the word. The part-whole relation that is expressed between a word and the morphemes that make them up as enshrined in morpheme-based models is acknowledged to exist between words as well as the paradigms within which such words can be contrasted. In contemporary WP models (Anderson 1992; Aronoff 1994; Stump 2001; 2016), word formation is represented as realizational (spell-out) rules, or instructions for associating bundles of morphosyntactic properties (paradigm cells) with forms, where the morpho-syntactic properties are associated with a morphological

rule that combines a stem and an affix. These rules have the capacity to accommodate one-to-one mappings of morpho-syntactic properties onto units of form, as well as possible mappings of any number of semantic and morpho-syntactic properties onto any number of form exponents, in a many-to-one or one-to-many mapping. This extra capacity counts as an advantage over morpheme-based models. It is now instructive to introduce the notion of ‘morphomic properties’ (earlier mentioned in [Chapter 2](#)). Morphomic properties are non-natural classes of morpho-syntactic properties which are not readily expressible by rules of referral (cf. Aronoff 1994).<sup>113</sup> In other words, they are non-canonical systems of inflection in which the grammatical distinctions relevant for a lexeme’s syntax are neither identical nor isomorphic to those relevant for its inflectional realization (see Stump 2016 for more on *morphomic properties* in Akan). The realization spell-out rules adopted in contemporary WP models also have the capacity to accommodate morphomic forms which are employed for the formation of complex words but make no semantic contribution to the complex (cf. Anderson 1992; Aronoff 1994).

The issue of form-meaning deviations as earlier discussed is what led to the formulation of the ‘Separationist Hypothesis’ (cf. Bazell 1949; 1952) that assumes that the derivation of meaning and the realization of phonological marking are distinct processes in word-formation. This hypothesis is what underpins Beard’s (1988, 1990, 1995; 2005) work on LMBM, as well as Aronoff’s (1994) work on lexeme-based morphology. Beard (1988; 1990), for instance, argues that since the correspondence between form and meaning is scarcely one-to-one, the semantics of word formation should be strictly separated from the formal aspects of word formation. This explains why in LMBM, there is no direct connection between the architecture that deals with the form of the word and the architecture that deals with the syntax and

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<sup>113</sup> The morphomic level is therefore a bridge between the mismatches of morpho-syntactic features and morpho-phonological realization, which effects the mapping. The morphomic level plays a significant role in the inferential-realization theory of inflection.

semantics. Word formation in this model is seen as a morphosyntactic or semantic process which is strictly separated from the concatenation of formal morpho-phonological operators (such as *-ize*, or *-er*). Dressler & Ladányi (2000), therefore, characterize segregation as a splitting of morphological meaning (i.e. morpho-semantics) from morphological form (i.e. morphotactics). Accordingly, there is no expectation that the correspondence between form and meaning will be one-to-one in LMBM. Leading advocates of lexeme-based morphology include Aronoff (1976; 1994), Anderson (1992), Beard (1966-1995), Halle and Marantz (1993), Zwicky (1985) and Stump (1991).

The forgoing points out that the existing models of morphology (IA, IP, WP, LMBM, and Lexical Morphology) discussed above fall into two broad categories – the morpheme-based approaches where surface forms are assumed to be built or derived from inventories of morphotactically minimal forms, and word/lexeme-based approaches where surface word forms are conceptualized as the basic elements of a grammatical system.

### **5.2.3 Constructive vs. Abstractive Models: A Re-Analysis**

Having examined the two morphotactic models (i.e. morpheme-based vs. word-based morphology) as discussed in sections [5.2.1](#) & [5.2.2](#), Blevins (2006) observes that both approaches may intersect each other in employing either a top-down or a bottom-up approach to the computation of word structure. Premised on this, Blevins (2006) re-categorizes the existing approaches to the analysis of word structure into two classes, CONSTRUCTIVE vs. ABSTRACTIVE models.

As Blevins (2006) explains, the CONSTRUCTIVE models, are morpheme-based in terms of morphotactics, because they involve the building of complex words from sub-word units. Blevins notes that notwithstanding the crucial differences in the derivation of surface forms in the three models identified in Hockett (1954), namely IA, IP and WP, each of them at

some point takes some minimal forms for the derivation of larger units. This implies that each of them can be analyzed constructively. In the IA model, for instance, a constructive computation is clearly implied in the idea that morphological analysis “isolates minimum meaningful elements” and describes “the arrangements in which the minimum meaningful elements occur” (Hockett 1947: 321). Likewise, to the extent that it considers derived forms as consisting of “one or more underlying FORMS to which a PROCESS has been applied” (Hockett 1954: 227-228), an IP model is constructive. In the same way, realization-based models such as WP are constructive in orientation, since most contemporary offshoots are alternatively described as stem and paradigm models (Blevins 2006: 534).

Blevins (2006) labels the second model, which is predominantly word/lexeme-based, the ABSTRACTIVE model, because the derivation of new words in this model involves extracting patterns from the internal structure of existing words and forming new words based on the patterns extracted. The assumption is that the speaker of a language having seen enough words of the same form identifies a pattern in the structure of those words, and this pattern then becomes a template for forming new words. Booij (2010a), for instance, observes that the English speakers having observed the paradigmatic relation between sets of words like the verbs (left column) and the nouns (right column) in (210), captures the difference in terms of word-internal morphological structure like (211) a&b.

	<u>Input</u>	<u>Output</u>
(210) a.	drive	driver
b.	speak	speaker
c.	preach	preacher
d.	piano	pianist
e.	organ	organist

- (211) a. [[drive]<sub>V</sub> -er]<sub>N</sub>  
 b. [[piano]<sub>N</sub> -ist]<sub>N</sub>

The pattern in (211) could be seen as a template, like (212), 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* and *-ist*. Thus, a new noun is formed by simply replacing the variable X in the schema with a verb in (212a) or a noun in (212b), respectively, an operation referred to as *unification* (see Booij 2010a-c). Unification is an operation that ensures the creation of well-formed linguistic expressions, at both the word and phrase levels.

- (212) a. [[X]<sub>V</sub> er]<sub>N</sub> ‘one who Vs’  
 b. [[X]<sub>N</sub> er]<sub>N</sub> ‘one who does something connected to N’

Thus, in the abstractive models, analysis of morphological structure is not simply a matter of breaking up complex forms into their respective building-blocks. Rather, it has to do with the question of whether a given (complex) form shares (phonological and/or semantic) properties with other forms in the language. This explains why the abstractive model overlaps with Bybee’s (1985; 1995) *network model*, where words are conceptualized as being listed in the lexicon, with no distinct rule component applying to the various (sub-)parts. Therefore, in abstractive models, the derivation of complex forms is more about creating forms in accordance with existing constructional schemas (cf. Taylor 2002: 282), rather than just a question of assembling component parts.

An essential assumption of such models is that they are opposed to a rule-based view of morphological processes. In other words, they do not posit the existence of rules which are responsible for building words from an input base to an output complex word. As Bybee (2010:

74) notes, unlike rules, schemas “have no existence independent of the lexical units from which they emerge”. While rules are usually considered as part of a separate module, schemas are generated (i.e. extracted) from sets of lexical units, to which they remain linked.

The conceptualization that schemas are extracted from sets of related words by speakers and deployed in the coinage of new words can be traced back over a century to Paul (1880 [3rd edition 1898]), cited in (Booij 2010a: 544) who argues 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, contemporary psycholinguistic studies on language acquisition tend to corroborate (and be grounded on) Paul’s observation that new words are formed following abstract schemas in the mind of speakers of a language. Focusing on processing of morphologically complex words in both L1 and L2 Italian speakers, Piccinin (2018), for instance, argues that L2 speakers might have reduced development of schemas as compared to L1 speakers, given that they tend to have reduced lexical knowledge. For Tomasello (2000), language acquisition begins with storing mental representations of concrete language use. In other words, language learners acquire the abstract systems underlying linguistic constructs through their observation of the nature of constructs which are characterized by similar properties. Therefore, the works of Piccinin (2018) and Tomasello (2000) both acknowledge the role of abstract schemas in the acquisition and processing of language.

In general, paradigmatic approaches which adopt a schema-based perspective rather than strictly rule-based view have been shown to come with numerous advantages including the possibility for schemas to co-exist with full listing of words in the lexicon (Bybee 1995; 2001; Booij 2010b).

One such schema-based model which has recently gained currency in the literature is Construction Morphology. In what follows, I outline the cardinal tenets of Construction Morphology as an ABSTRACTIVE model, and proceed to show that the abstractive view of word formation and word structure provides an efficient way of accounting for the various phenomena in the Esahie morphological system discussed earlier in [chapters 2-4](#).

It is important to clarify that this theoretical stance is by no means a claim for the superiority of Construction Morphology as a theory, neither is it to suggest that there aren't other theoretical ways of formalizing the various inflectional and word formation phenomenon earlier discussed. Indeed, formalisms such as those proposed in Ackema and Neeleman's (2004) morphosyntactic competition model<sup>114</sup> or Lieber's (2004) lexical semantic model<sup>115</sup> also work properly for the Esahie data.

#### **5.2.4 Construction Morphology**

Construction Morphology is a theory of morphology that developed out of Construction Grammar. In constructionist approaches to word formation, the notion of rule, which operates on bases to form complex words is dispensed with. Instead, the focus is placed on the output of word formation processes. Given its unique formalism, the theory has the capacity to account for the formation, (internal) structure, semantic relations of constituents, as well as the meaning of complex words.

An advantage in opting for a constructionist approach is that it allows us to deal with the non-compositional aspects of meaning in word formation, such as exocentric compounding.

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<sup>114</sup> Ackema and Neeleman (2004) endorse a view according to which syntax and morphology are two competitive generative systems, since they argue that in principle two lexical items can be combined in either component. Whether there is a syntactic or morphological preference to combine lexical items depends on the language in question.

<sup>115</sup> Lieber's model of lexical semantics adopts a decompositional formalism where lexical units are decomposed into morpho-semantic atoms. This allows for a cross-categorical lexical semantic description of lexical items.

As earlier pointed out, constructionist theories in general are hallmarked by the assumption that meaning is a holistic property of the construction and needs not necessarily be a compositional function of the meanings of individual sub-parts of the construction, and that the basic unit of grammatical description and analysis in natural language is the *construction*.

Although many versions of the constructionist framework exist today (cf. Gurevich 2006; Orgun 1996; Riehemann 1998, 2001; Sag; Wasow & Bender 2003), in recent times, Booij's (2010a-d; 2012; 2015; 2016) formalism stands out as one of the most appealing and trending approaches to doing morphological analysis.<sup>116</sup> According to Booij (2010a), Construction Morphology is aimed at building a formalism that enriches our understanding of the relation between syntax, morphology, and the lexicon, as well as the semantic properties of complex words. Given this theoretical capacity, the formalism offered in Construction Morphology (henceforth CxM) is able to account for the shared and unshared properties of both word-level and phrase-level constructs (Booij 2010a).

In the constructionist mode of morphological analysis, it is shown that the formal difference between the words in (213a) and those in (213b) also correlates systematically with a meaning difference: the words in (213b) have an additional sequence *-ness* compared to those in (213a) and denote the property or state expressed by the adjectives (213a).

(213) a.	fat	b.	fatness
	neat		neatness
	fit		fitness

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<sup>116</sup> Contrary to Riehemann's (1998, 2001) and Gurevich's (2006) versions of Construction Morphology which are based on the tenets of HPSG and WP respectively, Booij's account makes direct reference to the theory of Construction Grammar.



This paradigmatic relationship between these sets of words can be projected onto a related word such as *astuteness* in the form of word-internal morphological structure.

(214)  $[[\text{astute}]_A [\text{ness}]_N]$

The sets of words in (214) may give rise to an abstract schema in the mind of the English speaker which takes the form below in (215).

(215)  $[[x]_A [\text{ness}]_N]$

(216)  $[[x]_A [\text{ness}]_N]$  ‘the property/state of A’

The schema in (216) represents a generalization in the form and meaning of existing deadjectival nouns in *-ness* listed in the English lexicon, and also functions as a starting point for the coining of new English nouns in *-ness*. Thus, new deverbal nouns terminating in *-ness* are not necessarily coined on analogy with a specific existing word in *-ness*, but may be formed on the basis of this abstract schema.

Therefore, new words are formed by replacing the variable *x* in the schema with a concrete adjective. For instance, the unification of the adjective  $[\text{serious}]_A$  with schema (216) results in the word construct  $[[\text{serious}]_A \text{ness}]_N$  with the meaning ‘the state of being serious’, so that through unification the variables in the formal structure and the semantic specification of the schema are turned into constants.

The schema in (216) licenses the individual nouns ending in *-ness* in the English lexicon. Once complex words are coined, they are stored in the lexicon, which generalizes over the lexical memories of the individual speakers of that language, if they have idiosyncratic properties

and/or have become conventionalized (cf. Booij 2018b; Appah 2013). An assumption in CxM is that complex words (i.e. the outputs of morphological operations) can be listed in the lexicon. Hence, morphological schemas play dual roles: they express predictable properties of existing complex words and also specify how new ones can be coined (Jackendoff 1975). This conception of the grammar obviates the superfluous assumption in the idea that having rules in the grammar excludes storing their outputs as well, the axiomatic *rule* versus *list* fallacy (cf. Langacker 1987).

Therefore, the relation between the schema in (216) and the individual words that conform to it has been argued to be one of ‘instantiation’: each of the nouns in *-ness* listed in (213) instantiate the schema in (216). Schema (216) provides a direct account of the fact that *-ness* is a bound morpheme that does not occur as a word by itself (cf. Booij 2010a-d).

Constructional idioms are schemas in which ‘one or more positions are lexically fixed’ (Booij 2010b: 3). At the word level, the schema in (216) is a constructional idiom, a word level construction with one fixed position, in this case that of the suffix. At the phrase level, they include constructions such as  $N_i$  *after*  $N_i$  exemplified by *time after time*, *case after case*, etc. with the meaning ‘Ns in succession’. The preposition slot is lexically fixed as *after* whereas the N positions are variables.

There are three main tenets of Booij’s CxM model, and they include a theory of the notion of “construction”, a theory of *word structure*, and a theory of the *lexicon*. I discuss these in turn below.

#### **5.2.4.1 The notions of Construction and Schemas**

The term ‘construction’ as used in CxM refers to a pattern in which particular formal properties correlate with specific semantic properties that is not completely compositional, yet predictable (Booij 2010a: 3). A construction therefore is a systematic pairing of form and meaning at word

level. In the hackneyed exocentric compound in (217), contrary to its literal meaning (i.e. ‘a white-colored elephant’), the compound has a non-compositional meaning. This non-compositionality is possibly due to lexicalization.

(217) white-elephant

‘something that has cost a lot of money but has no useful purpose’

In the constructionist perspective, the non-compositional meaning of the compound is conceptualized and treated as a holistic property of the whole construction. This conceptualization can also accommodate (non-compositional) clause-level constructions.

(218) The Archbishop prayed the problem away.

Like (217), the semantic properties of the construction in (218) cannot be fully accounted for by means of strict compositionality. This is because the ‘*prayed the problem away*’ aspect of the meaning of the entire construction cannot be computed along compositional lines, especially since the verb *pray* is prototypically intransitive. This non-compositionality is not a problem for constructionist models since according to Gurevich (2006: 49), “any set of form-meaning constraints that cannot be derived compositionally from the form-meaning constraints on its constituent elements is considered a construction”. To account for the meanings of such constructions, one may adopt an abstractionist framework such as CxM, where meaning is understood as a holistic property of the construction, which needs not be compositional.

### 5.2.4.2 The theory of Word Structure

Given that CxM is abstractive and word-based in orientation, the theory of word structure in CxM is premised on the assumption that the word is the minimal linguistic sign (i.e. a form-meaning pair). In CxM, there are two dimensions to the structure of the word, namely the phonological form of the word and its morpho-syntactic properties. This means that a word is linked with three types of information – PHON(ological), SYN(tactic) and SEM(antic). The grammar of words must fully capture the systematic relations between these three components (Booij 2007a; 2010c). As Booij (2010d: 5) contends, “any morphological system or the grammar of words must deal with the systematic relation between all three components.” This understanding of word structure therefore calls for a grammar with “tripartite architecture” (cf. Jackendoff 1997; 2002; 2007; 2009; Culicover and Jackendoff 2005, 2006).

In the CxM theory of word structure, a word is portrayed as a complex piece of information that connects a particular sequence of sounds to a particular meaning. This is illustrated below in Figures 8 and 9.

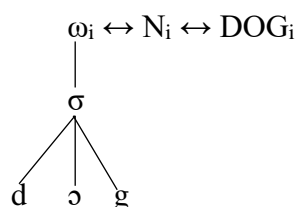


Figure 8: Lexical representation of dog (Booij 2010b: 7)

As Booij explains, each word constitutes a set of interface rules as shown in the representation of *dog* in Figure 8. The PHON component is a phonological word ( $\omega$ ) which consists of one syllable ( $\sigma$ ) made up of a sequence of three sounds; the SYN component expresses/contains lexical category information, i.e. N(oun); the SEM component expresses the (conceptual) information DOG. All three components of the word are co-indexed ( $i$ ) to indicate the correspondence between them.

In figure 9, we are able to show that in a complex word such as *preacher*, each kind of information (PHON, SYN and SEM) affects the other, as shown in the formation of *preacher* from *preach* via the *-er* operator. *Preacher* is a phonological word consisting of two syllables (pri:)<sub>σ</sub> and (tʃə)<sub>σ</sub> and five sound segments (PHON). In terms of SYN, it is a deverbal noun, and in terms of SEM, it is “agent” of the action designated by the base *preach*.

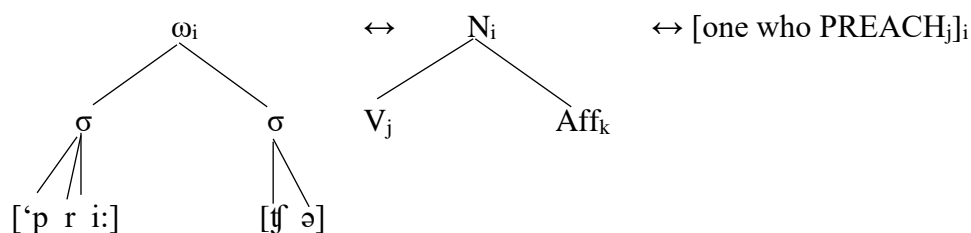


Figure 9: Lexical representation of teacher (Booij 2010b: 7)

As depicted in Figures 8 & 9, in representing the internal structure of both simplex and complex words, the first piece of information is the phonological properties of the words ( $\omega$ ) that consist of the one syllable in Figure 8 and two syllables in Figure 9. The phonological word bears the same syntactic information (N) and is co-indexed with the semantic information. Thus, Booij (2010b: 7) notes, “co-indexation is used to specify the correspondence between the three kinds of information involved in knowing a word and thereby reflecting the tripartite parallel structure.”<sup>117</sup>

Working with the assumption that each lexical item has an index (i.e. a *lexical signature*), say [2], which is attached to all the three pieces of information of the word *preach*, its properties may be indexed as PHON<sub>2</sub>, SYN<sub>2</sub>, and SEM<sub>2</sub>. The representation in Figure 9 can be developed into a generalized template for abstracting over deverbal agentive nouns in *-er*

<sup>117</sup> Jackendoff (2009: 586) argues that each level of representation, PHON, SYN and SEM, has its own primitives and is constructed and governed by independent formation rules (i.e., set of rules and principles) and particular autonomous (i.e., domain-specific) structure and interfaces to other structures. In Jackendoff’s Parallel Architecture, an interface in the model is not a level of structure but a connection between two levels of structure. Hence, 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.

by simply replacing the word-specific information with the more general label, PRED(icate), which refers to the semantics of the base verb, as demonstrated in Figure 10.

$$\begin{array}{l} \varphi_i \leftrightarrow N_i \leftrightarrow [\text{one who PRED}_j]_i \\ | \\ [ ]_j [\text{ər}]_k V_J \text{Aff}_k \end{array}$$

Figure 10: The schema for deverbal *-er* nouns (Booij 2010c: 8)

The PHON level operation involves 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 terminating in *-er* and the syllabification of *teacher* as *tea.cher* is computed by means of a general phonological algorithm for computing prosodic structure (Booij 2010b).

The observed patterns are then 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 express. The PHON is paired with a SEM specification, as in (219), where *x* and *y* stand for arbitrary phonological strings and *i*, *j*, and *k* stand for syntactic categories (N, V, A, etc.). The formalism has all the parts of the tripartite structure represented except that the SYN is realized as categorial labels on the bracket.

$$(219) \quad \langle [[x]_i [y]_j]_k \leftrightarrow [\text{SEM}_j \text{ with relation } \mathbf{R} \text{ to } \text{SEM}_i]_k \rangle \quad (\text{Booij 2010a: 4})$$

The schema in (219) is for a right-headed compound of the type *dancing shoe*. Here X is instantiated as *dancing* and Y as *shoe*. Therefore, the instantiation of the schema is to be interpreted as a *shoe* with some relation to *dancing* and the relation **R** will be spelled out as “(used) for”. Thus, a *dancing shoe* is a shoe used for dancing.

In the examples in (220), the suffix *-less* denotes the property (state) of being without something (Booij 2015).

	<u>Construction</u>	<u>Internal Structure</u>
(220) a.	lifeless	[[life] <sub>N</sub> less] <sub>A</sub>
b.	jobless	[[job] <sub>N</sub> less] <sub>A</sub>
c.	motionless	[[motion] <sub>N</sub> less] <sub>A</sub>

The form–meaning correspondences observable from the complex words in (220) can be represented in the constructional schema in (221).

$$(221) \quad \langle [X]_{Ni} \text{ less} \rangle_{Aj} \leftrightarrow [\text{Property of being without SEM}_i]_j \quad (\text{Booij 2015: 425})$$

The double arrow  $\leftrightarrow$  in schema (221) indicates the correlation between form and meaning of the word. Again, the systematic correlation between form and meaning is specified through co-indexation. The index  $i$  in the schema indicates that the meaning of the base word (SEM) recurs in the meaning of the corresponding complex word, while the index  $j$ , on the other hand, shows that the meaning of the construction as a whole correlates with the form of the complex word as a whole. The angled bracket  $\langle \rangle$  demarcates the boundaries of the construction. The variable  $X$  in the schemas represents the phonological content of the base of the word, and therefore indicates an unoccupied slot which must be filled with a concrete base.

Formal properties of complex words such as headedness and recursivity may also be expressed through the schema. In terms of headedness, right-headed compounds, for instance, may be represented by the abstract schema in (222).

$$(222) \quad \begin{array}{ccc} \langle [[a]_{X_i} [b]_{Y_j} ]_{Y_k} \leftrightarrow [SEM_j \text{ with relation } R \text{ to } SEM_i]_k \rangle \\ | \quad | \\ [\alpha F] \quad [\alpha F] \end{array} \quad (\text{Booij 2010b: 51})$$

The schema in (222) is a generalized one which could be instantiated by various more specific sub-schemas in which the syntactic category of the head constituent is specified. This means that, depending on the value assigned to Y, be it N, V or A, we could in principle have three immediate subschemas. This is exemplified in (223), where the details captured in each schema are (more) specific in terms of the syntactic category of the right-hand constituent, so that the first two compounds, are nouns since the right constituents are nouns. Apart from the syntactic category of the head, a lower subschema or node inherits every property from its dominating schema. The subschema may as well dominate another schema which in turn will be more specific in some other details. Let us consider schema (223).

$$(223) \quad [[a]_{X_i} [b]_{Y_j} ]_{Y_k} \leftrightarrow [SEM_j \text{ with relation } R \text{ to } SEM_i]_k$$

The schema in (224) is abstracted from and can be used in coining right-headed compounds of the type *green-tea*, where X is instantiated as green and Y as tea with the relation **R** spelled out as “is”. Put differently, *green-tea is a type of tea that is green*.

$$(224) \quad \langle [[a]_{X_i} [b]_{Y_j} ]_{N_k} \leftrightarrow [SEM_j \text{ with relation } R \text{ to } SEM_i]_k \rangle$$



### 5.2.4.3 The Lexicon in CxM

The LEXICON has usually been conceptualized as a component of the grammar of a language which minimally contains a specification of the lexical units of that language (Kiparsky 1982; Bloomfield 1933). For Booij (2005: 17), the lexicon is a “repository of all information concerning the established words and other established expressions of a language.” In order to reinforce the fact that the lexicon ought to be seen as a cognitive concept, it has alternatively been called as “mental lexicon”. This is why Booij (2005: 17), for instance, contends that “the lexicon is an abstract linguistic entity, to be distinguished from the notion dictionary, which refers to practical sources of lexical information for the language user in some material (paper or electronic) form.”

All language speakers have a fair idea of what qualifies as a (potential) word in their respective languages. With this intuition, speakers can 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 (Spencer 1991). The English speaker, for example is aware that, (i) *toy* is a (potential) English word but *ɲkwan* is not, (ii) certain words have an internal structure (e.g. *dis-enchant-ment*), and (iii) word-internal structure must occur in a certain order of arrangement of the constituents, so that the arrangement of the constituents in *dis-enchant-ment* is acceptable but, *\*dis-ment-enchant* and *\*enchant-dis-ment* are not (cf. Appah 2013).

The lexicon contains both words and complex structures with meanings that need to be memorized. As a result, each lexicalized or conventionalized structure needs to be stored in the lexicon together with its meaning. The lexicon is therefore conceptualized to contain constructions (i.e. form-meaning correspondences). The idiosyncratic relation between the form and meaning of *black sheep* ‘a person who has done something bad which brings embarrassment or shame to their family’ and *kick the bucket* ‘to die’, means that these constructions have to be stored in the lexicon independent of their constituents. As Di Sciullo

and Williams (1987: 3) point out, “[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”. They term these memorized elements as *listemes* and their property of being storable as *listedness*.

Nonetheless, the lexicon does not only contain irregularities and idiosyncrasies. From the lexicalist viewpoint, the lexicon is the module of grammar that houses both the vocabulary and word formation rules of a language. This view implies an active lexicon.

The simplex and complex items stored in the lexicon are collectively referred to as lexemes. As long as these are attested and conventionalized units, they are listed in the lexicon. The lexicon spells out the properties of each word: (its) phonological form, morphological and syntactic properties, and its meaning. In the representation in (225), we spell out the basic structure of lexical entries for the lexemes TEACH and TEACHER.

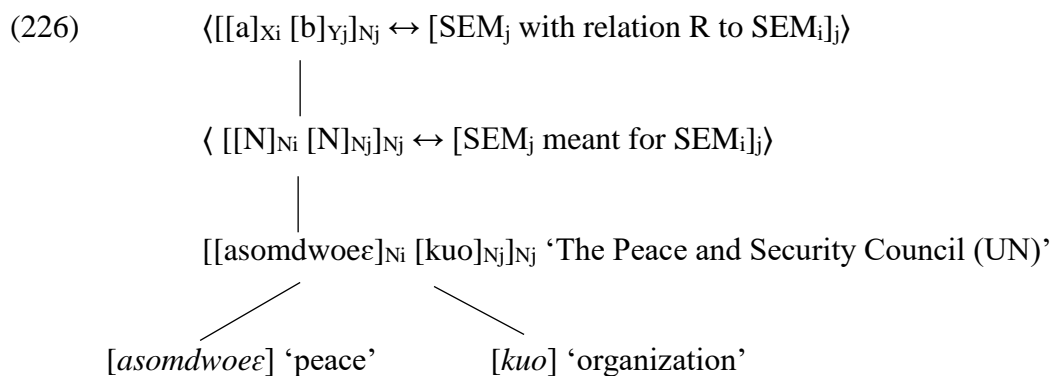
(225) /teach/	/teach er/
[X] <sub>v</sub>	[[X] <sub>v</sub> er] <sub>N</sub>
TEACH <sub>ACTIVITY</sub>	PERSON PERFORMING TEACH <sub>ACTIVITY</sub>

The first row in the representation specifies the phonological form of the lexemes. In the second row, the categorial information and internal morphological structure are specified. In the third row, the meaning of the lexeme is specified. Hence, any entry in the lexicon “expresses a correspondence between phonological, syntactic, and semantic pieces of information, just like morphological rules or templates, which do the same at a more abstract level, in a generalized fashion, with variables taking the place of the individual properties of lexemes” (Booij 2005:17).

As Booij (2005: 18) explains, “the lexicon as the set of established lexical units of a language may have a blocking effect on the creation of new words.” This effect accounts for the fact that, although the form *\*stealer* does not breach well-formedness and morphotactic principles of English, it does not exist in the English lexicon, because the (already existing) word *thief* blocks its coinage (cf. Aronoff 1976; Katamba & Stonham 2006; Kiparsky 1982).

### 5.2.4.3.1 The hierarchical lexicon

In CxM, the understanding is that morphological constructions exist in the lexicon together with the schemas that they instantiate. This yields two main types of relations, namely ‘part of’ relations and ‘instantiation’ relations. The relation between a complex word and any of its components is a “part of” relation (Booij 2010b), while the relation between an abstract schema and the complex word that is formed by the schema is called *instantiation*. An instantiation relation simply means that a compound is formed by its (immediately) dominating schema. The *part of* relation is exemplified in (226) because both *asomdwoeε* ‘peace’ and *kuo* ‘organization’ are constituents of the Akan compound *asomdwoeε-kuo* ‘The Peace and Security Council (UN)’, and therefore constitute ‘part of’ the complex construction (compound).



(Appah 2013: 231)

The nature of relation between morphological schemas in the lexicon is a function of the relationship between words. As noted above, this conceptualization of the organization and structure of the morphological schemas in the lexicon in CxM overlaps with Bybee’s (1995) Network model, to the extent that morphological schemas depend on relationships between words, and that the set of words are connected in the form of a network in the lexicon.

Contrary to Bybee’s (1995) Network model, however, CxM proposes a hierarchical lexicon, i.e., a stratified repository, containing both words and the schemas that generalize the properties of the words. In other words, the lexicon consists of a network of constructions on different hierarchical levels of abstraction, ranging from very abstract schemas to individual (concrete) words. Put differently, constructional schemas form part of a hierarchical lexicon, with different layers of abstraction, and with individual complex words at the lowest level of abstraction. This conception of morphology allows us to make generalizations about subclasses of complex words, and to specify holistic properties of morphological constructions.

Apart from word formation, inflectional phenomena also provide strong arguments for adopting a constructional approach. As earlier explained, form-meaning deviations are typically problematic especially in terms of inflectional morphology. Unless one posits the existence of homonymous inflectional affixes, where the actual value of an inflectional affix is determined by the kind of stem it attaches to, as well as the properties that the stem bears, it is usually difficult to assign a specific meaning to that inflectional affix. Let us consider the paradigm of masculine, neuter and feminine nouns (distributed over four declensional classes) in Russian.

**Table 29: 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'		'bone'	

Gurevich (2006: 51)

Gurevich (2006) points out that, when used in isolation from the declensional class to which they pertain, declensional markers which bear semantic features such as case and gender cannot have individual meanings, unless one assumes the existence of many homophonous affixes. As the paradigms show, the same ending, for instance *-i*, may have different interpretations depending on the declension class of the noun. Furthermore, the actual value expressed by the affix *-i* is a combination of properties, such as [GEN.SG] or [NOM.PL]. In essence, there is no one-to-one correspondence between form and morpho-syntactic properties. As shown in the compounding examples in [Chapter 4](#), one may also find inflectional forms such as the thematic vowels of noun/verbal conjugation in Romance languages that do not necessarily contribute by themselves to the meaning of the inflected forms. The morpho-syntactic properties of each word form in the paradigm could therefore be considered as constructional properties (i.e. properties of the word form as a whole). As Booij (2010a) proposes, such non-compositional properties may be stated as morphological schemas which abstract over words belonging to the same declension class such as the Russian ACC/GEN.SG word forms *stola* and *bljud-a* as in (227).

(227) a.  $\langle (x-a)_{\omega i} \leftrightarrow [N]_i, \text{ masc.sg acc/gen} \leftrightarrow \text{SEM}_i \rangle$  (Booij 2010a: 11)

where  $x$  is a phonological variable for nominal stems, and  $\omega$  is a phonological word. The meaning  $\text{SEM}_i$  mentioned is that of the lexeme. The semantic interpretation of the morpho-syntactic features is not specified here, because this interpretation depends on the syntactic contexts in which a word occurs.

Sometimes, the interpretation of complex words depends on a paradigmatic relationship with complex words of the same degree of complexity. Let us examine the relation between the English nouns in *-ist* and in *-ism* such as:

- (228) b. racist racism  
 c. autist autism

The meaning of the nouns in *-ist* can be described as a compositional function of the meaning of the corresponding noun in *-ism*, even though the noun in *-ism* is not completely present as a sub-constituent of the noun in *-ist*. For instance, a racist is someone with tendencies of racism, and an autist is someone who suffers from autism. The paradigmatic relationships between words belonging to an inflectional or derivational paradigm can be accounted for in CxM by means of a ‘second order’ schema, that is, a schema of schemas (Booij & Masini 2015).

- (229) a.  $\langle [x \text{ -ism}]_{N_i} \leftrightarrow SEM_i \rangle \approx$   
 b.  $\langle [x \text{ -ist}]_{N_j} \leftrightarrow [Person \text{ related to } SEM_i]_{SEM_j} \rangle$  (Booij & Masini 2015: 4)

The notation  $\approx$  symbolizes the paradigmatic relationship between the two schemas that are formally expressed by means of co-indexation of a semantic variable  $SEM_j$  in the two constructional schemas.

Having laid out the foundation for the theoretical orientation adopted in this thesis, we proceed to explain how CxM can be applied to account for the various morphological phenomena in Esahie as discussed in the preceding chapters.

Since most of the inflectional and word formation phenomena earlier discussed have several instantiations and subtypes, we select the most morphologically interesting instantiations

where many subtypes of a phenomenon exist. We begin with declension classes/syncretism in Esahie (section 5.3.1), and proceed to provide a constructional account of nominalization (section 5.3.2) and compounding in Esahie (section 5.4).

### 5.3.1 A constructional account of declension classes and syncretism in Esahie

In this section, we provide a constructional analysis of the *number-based* declension classes and syncretism in Esahie earlier discussed in section 2.4 of Chapter 2. For ease of reference, an abridged version of the (nominal) declension classes table is repeated here as Table 30.

Table 30: Esahie declension classes

	Stem	Singular Form	Plural Form	Productivity
<b>Class 1</b>		(V-)	N-	<b>Very High</b>
a. A-/N-	<i>bɔŋgye</i> <i>kɔ</i>	<i>a-bɔŋgye</i> ‘goat’ <i>a-kɔ</i> ‘fowl’	<i>m-mɔŋgye</i> ‘goats’ <i>ŋ-gokɔ</i> ‘fowls’	
b. E-/N-	<i>Kra</i> <i>woo</i>	<i>ε-kra</i> ‘cat’ <i>e-woo</i> ‘snake’	<i>ŋ-gra</i> ‘cats’ <i>n-woo</i> ‘snakes’	
c. Ø/N-	<i>pure</i> <i>kendɛm</i>	<i>pure</i> ‘squirrel’ <i>kendɛm</i> ‘basket’	<i>mbure</i> ‘squirrels’ <i>ŋgendɛm</i> ‘baskets’	
<b>Class 2</b>		(V-) A-		
a. V-/A-	<i>Len</i> <i>mama</i>	<i>ε-len</i> ‘canoe’ <i>ɔ-mama</i> ‘prominent person’	<i>a-len</i> ‘canoes’ <i>a-mama</i> ‘prominent person’	<b>Low</b>
b. Ø-/A-	<i>koε</i> <i>sɔfo</i>	<i>koε</i> ‘war’ <i>sɔfo</i> ‘pastor’	<i>a-hoε</i> ‘wars’ <i>a-sɔfo</i> ‘pastors’	
		(V)- <i>niε</i>	A- <i>fɔε</i>	
c. A-/A	<i>wie</i> <i>ware</i>	<i>a-wie-niε</i> ‘thief’ <i>a-ware-niε</i> ‘married person’	<i>a-wie-fɔε</i> ‘thieves’ <i>a-ware-fɔε</i> ‘married people’	
d. Ø-/A-	<i>kua</i> <i>nɛɛsɪ</i>	<i>kua-niε</i> ‘farmer’ <i>nɛɛsɪ-niε</i> ‘nurse’	<i>a-kua-fɔε</i> ‘farmers’ <i>a-nɛɛsɪ-fɔε</i> ‘nurses’	
<b>Class 3</b>				
<b>+kinship</b>		V-/Ø-	(Ø-) <i>-mɔ</i>	<b>Low</b>
a. V-/A-mɔ	<i>liemaa</i>	<i>a-liemaa</i> ‘sibling’	<i>a-liemaa-mɔ</i> ‘siblings’	

b. $\emptyset$ -/ $\emptyset$ - <i>mɔ</i>	<i>sewaa</i> <i>wɔfa</i>	<i>sewaa</i> ‘aunty’ <i>wɔfa</i> ‘uncle’	<i>sewaa-mɔ</i> ‘aunties’ <i>wɔfa-mɔ</i> ‘uncles’	
<b>Class 4</b>		(V)- <i>-niɛ</i> / $\emptyset$	<i>N-foɛ</i>	<b>Low</b>
a. <i>-niɛ</i> / <i>N-</i>	<i>Kremo</i>	<i>kremo-niɛ</i> ‘muslim’	<i>η-gramo-foɛ</i> ‘muslims’	
b. $\emptyset$ / <i>N-</i>	<i>Saman</i>	<i>saman</i> ‘ancestor’	<i>n-zaman-vɔɛ</i> ‘ancestors’	
<b>Class 5</b>				<b>Low</b>
<b>Singularia Tantum</b>		<i>ɛ-_-lɛ</i>		
a. <i>ɛ-/-</i> No plural	<i>Sen</i> <i>hɔm</i>	<i>ɛ-sen</i> ‘funeral’ <i>ɛ-hɔm</i> ‘famine’		
b. <i>ɛ-_-rɛ/-</i> ( <b>dever bal</b> ) No plural	<i>wɔnzɛ</i> <i>kuro</i>	<i>ɛ-wɔnzɛ-rɛ</i> ‘pregnancy’ <i>ɛ-huro-lɛ</i> ‘love’		
c. $\emptyset$ - <i>nɛ/-</i> (derive d Compo unds)	<i>nzaa,</i> ‘alcohol’ <i>nɔ̃</i> ‘to drink’ <i>sona</i> ‘person’, - <i>hũ</i> ‘kill’	<i>nzaa-nɔ̃-nɛ</i> ‘alcoholism’  <i>sona-hũ-nɛ</i> ‘the act of murdering’		
<b>Class 6: Mass</b>				<b>Low</b>
			<b>Pluralia Tantum</b>	
d. <i>/N-</i>	<i>-frama</i> <i>-furo</i>		<i>η-vrama</i> ‘air’ <i>η-vuro</i> ‘dust’	
		<b>Singularia tantum</b>		
b. <i>/V-</i>	<i>Yia</i> <i>Tɛ̃ɛn</i>	<i>e-yia</i> ‘sun’ <i>esraen</i> ‘moon’		
c. <i>/∅-</i>	<i>suŋ</i> <i>troo</i>	<i>suŋ</i> ‘fire’ <i>troo</i> ‘soup’		

For each declension class, we provide a constructional schema that abstracts over the forms belonging to it, one for singular nouns and another for plural nouns. Since some classes contain different subclasses, we select the most productive subclass where many subclasses exist.



We begin with [class 1](#), which contains three subclasses. On the basis of productivity, we select subclass [1c](#), where singular forms are zero-marked and plural forms bear the prefix [n-]. They include forms such as those in (230).

	<u>Singular</u>	<u>Plural</u>
(230) a.	<i>pure</i>	<i>m-bure</i>
	squirrel	PL-squirrel
		‘squirrels’
b.	<i>wanzane</i>	<i>n-wanzane</i>
	deer	PL-deer
		‘deer’

Following Booij (2015), the internal structure of such forms can be captured in the second-order inflectional schema in (231).

(231) a.	SINGULAR: $\langle [(x_i)_{\omega-j} \leftrightarrow [N_i, +sg]_j \leftrightarrow [SING [SEM_i]]_j] \rangle \approx$	Productive
b.	PLURAL: $\langle [(n-x_i)_{\omega-j} \leftrightarrow [N_i, +pl]_j \leftrightarrow [PLU [SEM_i]]_j] \rangle$	Productive

The schema in (231a) indicates that singular noun forms in subclass 1c are phonological forms (represented by  $\omega$ ), which have no overt morphological realization (i.e., they are zero-marked) for number. This schema expresses the fact that the stem form of such nouns ( $x_i$ ) also functions as the sg (= singular) form. The SING property indicates that the form is to be interpreted to bear a singular meaning. The schema in (231b), on the other hand, specifies the phonological form, the morpho-syntactic form (i.e. the word class and the morpho-syntactic feature value for number [+pl(ural)], and the meaning of plural nouns). Recall that we need at least two formal levels of representation, the phonological level and the morpho-syntactic level (as in Jackendoff’s tripartite parallel architecture). At the phonological level, we find a prosodic word

$\omega$  that consists of the string  $x$  of the stem preceded by  $[n-]$ . The semantic correlate of the feature  $[+pl]$  is represented here as the semantic operator PLU, which might be interpreted as ‘more than one’. There is a second order relation between the schemas, where the mode of expressing singular nouns determines how plural nouns are formed. They are also specified as productive.

We now proceed to consider [class 2](#), where there are four subclasses. We opt for subclass [2d](#) where nouns select the suffix  $[-ni\epsilon]$ <sup>118</sup> in the singular, and parasynthetically select the prefix  $[a-]$  and the suffix  $[-f\upsilon\epsilon]$  in the plural. Our choice of subclass [2d](#) finds justification in the fact that, in the plural, it has a relatively interesting internal structure due to its parasynthetic composition, and also because it is relatively productive, though the macro-class to which it pertains is generally unproductive. This subclass includes forms such as those in (232).

	<u>Singular</u>	<u>Plural</u>
(232) a.	<i>kua-niε</i>	<i>a-kua-fϕε</i>
	farming-SG	PL-farming-PL
	‘farmer’	‘farmers’
b.	<i>kuna-niε</i>	<i>a-kuna-fϕε</i>
	widowhood-SG	PL-widowhood-PL
	‘widow’	‘widows’

The internal structure and the relationship between such forms is captured in the second-order inflectional schema in (232).

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<sup>118</sup> As we shall see later when we discuss nominalization,  $[-ni\epsilon]$  is an (agentive/human) nominalizing suffix inherently marked as singular. In this view, Esahie nouns in this class do not have a dedicated morpheme for number in the singular.

- (233) a. SINGULAR:  $\langle [(x_i-ni\varepsilon)_{\omega-j} \leftrightarrow [N_i, +sg]_j \leftrightarrow [SING [SEM_i]]_j] \rangle \approx$  Productive  
 b. PLURAL:  $\langle [(a-x_i-f\upsilon\varepsilon)_{\omega-j} \leftrightarrow [N_i, +pl]_j \leftrightarrow [PLU [SEM_i]]_j] \rangle$  Productive

In [class 3](#) there are two subclasses. Of the two subclasses, [3b](#) has a higher membership. This informs our choice of subclass [3b](#), where nouns are zero-marked in the singular, and suffixed with [-*mɔ*] in the plural. The class includes forms as those in (234).

- (234) a. *baba* *baba-mɔ*  
 father father-PL  
‘fathers’  
 b. *ye* *ye-mɔ*  
 wife wife-PL  
‘wives’

The internal structure and the relationship between such forms is captured in the second-order inflectional schema in (235).

- (235) a. SINGULAR:  $\langle [(x_i)_{\omega-j} \leftrightarrow [N_i, +sg]_j \leftrightarrow [SING [SEM_i]]_j] \rangle \approx$  Unproductive  
 b. PLURAL:  $\langle [(x_i-mɔ)_{\omega-j} \leftrightarrow [N_i, +pl]_j \leftrightarrow [PLU [SEM_i]]_j] \rangle$  Unproductive

In [class 4](#) there are two subclasses and both classes have the same number of members. Our choice of subclass [4a](#) is premised on the fact it has a parasynthetic structure. It includes the nominal forms in (236).

- | <u>Singular</u>        | <u>Plural</u>     |
|------------------------|-------------------|
| (236) <i>kremo-niε</i> | <i>ŋ-gramo-fœ</i> |
| Islam-SG               | PL-Islam-PL       |
| ‘Muslim’               | ‘Muslims’         |

The internal structure and the relationship between such forms is captured in the second-order inflectional schema in (237).

- (237) a. SINGULAR:  $\langle [(x_i-ni\varepsilon)_{\omega-j} \leftrightarrow [N_i, +sg]_j \leftrightarrow [SING [SEM_i]]_j] \approx$  Unproductive  
 b. PLURAL:  $\langle [(n-x_i-f\cup\varepsilon)_{\omega-j} \leftrightarrow [N_i, +pl]_j \leftrightarrow [PLU [SEM_i]]_j] \approx$  Unproductive

[Class 5](#) constitutes a *singularia tantum* and, therefore, has no plural. There are three subgroup in this class. We consider subclass [5b](#), where the noun selects the inflectional prefix [ε-] and the derivational suffix [-lε], due to its parasynthetic nature. The class includes forms such as those in (238), whose internal structure is spelt out in the schema in (239).

- (238) a.  $\varepsilon$ -wunzε-lε  
 SG-impregnate-NMLZ  
 ‘pregnancy’

- (239) SINGULARIA TANTUM:  $\langle [(\varepsilon-x_i-l\varepsilon)_{\omega-j} \leftrightarrow [N_i, +sg]_j \leftrightarrow [SING [SEM_i]]_j] \approx$

[Class 6](#) is a mixed class with subclasses of *singularia* and *pluralia tantum*. We do not discuss them because they have a structure similar to those in [class 5](#), which we have already discussed in detail. However, we provide the schemas for the three subclasses below in (300).

- (300) a. SINGULARIA TANTUM (1):  $\langle [(e-x_i-)_{\omega-j} \leftrightarrow [N_i, +sg]_j \leftrightarrow [SING [SEM_i]]_j] \approx$   
 b. SINGULARIA TANTUM (2):  $\langle [(x_i)_{\omega-j} \leftrightarrow [N_i, +sg]_j \leftrightarrow [SING [SEM_i]]_j] \approx$   
 c. PLURALIA TANTUM:  $\langle [(n-x_i)_{\omega-j} \leftrightarrow [N_i, +pl]_j \leftrightarrow [PLU [SEM_i]]_j] \approx$

We now turn to syncretism in the nominal domain of Esahie and show how it can be dealt with in the framework of CxM. As explained earlier in section (5.2.1), syncretism as a type of form-meaning deviation is difficult to handle when one assumes a morpheme-based system of word-structure computation. Our discussion in [Chapter 2](#) revealed three types of nominal syncretism in Esahie: (a) case syncretism in the pronominal system, (b) number syncretism in reflexive pronouns, and (c) number syncretism in nominal forms. Given their characteristic mismatch, we argue that the morpho-syntactic properties of the syncretic pronominal forms in the paradigm could better analyzed if they considered as constructional properties, that is, as properties of the pronoun as a whole. In what follows, we present a constructional analysis of these various forms of syncretism. We begin with (a) case syncretism in the pronominal system as summarized in [Table 31](#).

Table 31: Case syncretism in Esahie

Content Paradigm	Paradigm Linkage	Form Paradigm
<ME, {1SG, NOM}>	→	<me, {1SG, NOM}> <sup>119</sup>
<ME, {1SG, ACC}>		
<YE, {1PL, NOM}>	→	<yε, {1PL, NOM}>
<YE, {1PL, ACC}>		
<EMO, {2PL, NOM}>	→	<εmɔ, {2PL, NOM}>
<EMO, {2PL, ACC}>		
<BE, {3PL, NOM}>	→	<bε, {3PL, NOM}>
<BE, {3PL, ACC}>		

<sup>119</sup> As explained in [Chapter 2](#), the syncretic forms here are assumed to be nominative since typologically, the unmarked case in case-marking African languages is the nominative case. This is a case of directional syncretism where there is a sort of parasitic relation.

As shown in the table, the pronouns *me* ‘I/me’, *ye* ‘we/us’, *emɔ* ‘you (sg)/you (pl)’, and *bɛ* ‘they/them’ are syncretic with respect to case. The form-meaning mismatches in these pronouns are dealt with in their respective schemas in (301).

- (301) a.  $\langle (me)_{\omega i} \leftrightarrow [N]_i, 1SG' \text{ nom/acc} \leftrightarrow SEM_i \rangle$   
 b.  $\langle (ye)_{\omega i} \leftrightarrow [N]_i, 1PL' \text{ nom/acc} \leftrightarrow SEM_i \rangle$   
 c.  $\langle (em\text{ɔ})_{\omega i} \leftrightarrow [N]_i, 2PL' \text{ nom/acc} \leftrightarrow SEM_i \rangle$   
 d.  $\langle (b\epsilon)_{\omega i} \leftrightarrow [N]_i, 3SG' \text{ nom} + \text{anim/-anim} \leftrightarrow SEM_i \rangle$

As shown in the schema in (301a), the pronoun *me*, for example, is a phonological word. The meaning  $SEM_i$  mentioned here is that of the lexeme  $N_i$ . The semantic interpretation of the morpho-syntactic features  $[1SG' \text{ nom/acc}]$  is not specified here, because this interpretation depends on the syntactic contexts in which it is used. In the spirit of CxM, the non-concatenative properties of syncretic pronominal forms could also be considered as constructional properties (see Booij 2015; 2018c; Booij and Masini 2015; Masini & Iacobini 2018; Davis & Tsujimura 2018; Good 2018; and Caballero & Inkelas 2018; for more on the treatment of non-concatenative features in CxM).

We now examine the morphomic relation between the reflexive pronominal forms in [Table 32](#) below.

Table (32): Number syncretism in Reflexive Pronouns

Person	Singular	Plural
1	<i>me-nwõ</i> ‘myself’	<i>ye-nwõ</i> ‘ourselves’
2	<i>wɔ-nwõ</i> ‘yourself’	<i>bɛ-nwõ</i> ‘yourselves’
3	<i>ye-nwõ</i> ‘him/her/itself’	<i>bɛ-nwõ</i> ‘themselves’

The cumulative exponence expressed in the pronoun *bε-nwō* ‘yourselves/themselves’ is represented in schema (302). Because its interpretation is a function of the syntactic contexts in which the pronoun occurs, the semantic interpretation of the relevant morpho-syntactic features [PLUR [Person [SEM<sub>i</sub>]]] of the pronoun is not specified.

$$(302) \langle (b\varepsilon\text{-}nw\tilde{o})_{\omega i} \leftrightarrow [N]_{i, \text{acc.pl, 2/3}} \leftrightarrow [\text{PLUR} [\text{Person} [\text{SEM}_i]]] \rangle$$

The last case of syncretism we deal with involves frozen nominal forms that are syncretic with respect to the morpho-syntactic feature of number. Let us refresh our memory with the [Table 33](#) below.

Table (33): Frozen Nominal Forms

Gloss	Singular	Plural
‘building’	<i>sua</i>	<i>sua</i>
‘stone’	<i>nyɔboε</i>	<i>nyɔboε</i>
‘rope’	<i>yamaa</i>	<i>yamaa</i>
‘food’	<i>alie</i>	<i>alie</i>
‘day’	<i>kyia</i>	<i>kyia</i>
‘farm’	<i>boo</i>	<i>boo</i>
‘land’	<i>aseε</i>	<i>aseε</i>
‘leaf’	<i>nyaa</i>	<i>nyaa</i>

The cumulative exponence exhibited in the nominal forms in [Table 33](#) can be captured in schema (303).

$$(303) \langle (x)_{\omega i} \leftrightarrow [N]_{i [\alpha \text{ NUM}]} \leftrightarrow [\text{SEM}_i [\alpha \text{ NUM}]] \rangle$$

We now proceed to show how word formation in Esahie can be accounted for from a constructionist perspective. We begin with the phenomenon of nominalization (section [5.3.2](#)), and end with compounding (section [5.4](#)).

### 5.3.2 A constructional account of nominalization in Esahie

As pointed out in [chapters 3](#) and [4](#), nominalization constitutes an important word formation phenomenon in Esahie grammar. Various sorts of nominalizations can be derived via several operators. In what follows, we examine some of the nominalization patterns discussed earlier in [Chapter 3](#), including P/P (i.e. personal/participant), instrumental, locative, and action nominalizations. Let us begin with the P/P nominalizations in (304) and (305).

#### 5.3.2.1 P/P nominalizations

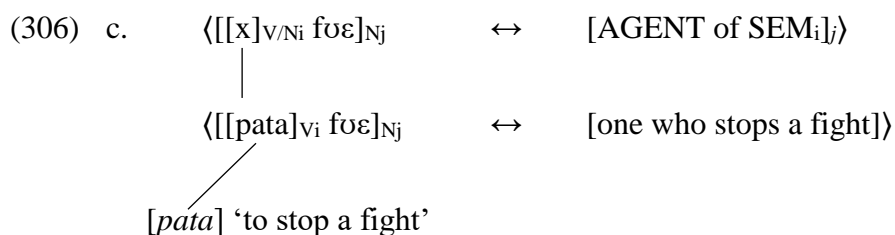
- (304) a. *a-ware-niε*  
 SG-marry-NMLZ<sub>P/P</sub>  
 ‘one who is married/married person’
- b. *pata-fʊε*  
 stop.a.fight-NMLZ<sub>P/P</sub>  
 ‘persons who intervene to stop a fight’
- (305) a. *awie-fʊε*  
 theft-NMLZ<sub>P/P</sub>  
 ‘thieves’
- b. *nwore-fʊε*  
 wisdom-NMLZ<sub>P/P</sub>  
 ‘wise persons’

The form-meaning correlations that we observe in the P/P nominalizations in (304) and (305) can be represented as constructional schemas, schematic representations of morphological constructions, as in (306):

- (306) a.  $\langle [[X]_{Vi} niε]_{Nj} \leftrightarrow [AGENT \text{ of } SEM_i]_j \rangle$
- b.  $\langle [[X]_{V/Ni} fʊε]_{Nj} \leftrightarrow [AGENT \text{ of } SEM_i]_j \rangle$



The variable  $x$  in these schemas stand for the phonological content of the base word. Once we fill this variable position with a concrete word, we get a complex word, for instance *patafʊɛ* based on the verb *pata* ‘to stop a fight’, or *nworefʊɛ* based on the noun *nwore* ‘wisdom’. These words are hence instantiations of these schemas. We may refer to these fully concrete instantiations of constructional schemas as (morphological) constructs. The extraction of a construct such as *patafʊɛ* ‘one who stops a fight’, from an abstract schema, may be represented through inheritance relations as in (306)c, where the syntactic category of the construct is already specified in the dominating schema.



The schema in example (306c) is ‘constructional idiom’ since the slot of the affix in the construction is fixed, while the other slot is variable (see Jackendoff 2002). It is important to stress the fact that meaning is a “holistic property” of the construction, rather than that of the suffix [-fʊɛ]. Furthermore, the template for the -fʊɛ derivatives tells us that affixes are not items of the lexicon; “they only exist as parts of complex words, and as parts of abstract schemas for these complex words” (Booij 2007: 34). In this perspective, headedness is not necessarily linked to feature inheritance but, rather, with generalizations on the morphology of Esahie, such as the fact that complex nominals are usually right-headed, as shown in [Chapters 3](#) and [4](#). As far as derivation is concerned, semantic and formal features belong to the construction, rather than to the affix. The Esahie class-changing suffixes -niɛ and -fʊɛ could be said to mean

‘Agent of X’ (as in *awarenie* ‘married person’ or *awiefɔɛ* ‘thieves’) or ‘person with the attribute of X’ (as in *gyimifɔɛ* ‘fool’), hence, in CxM terms, the semantic contribution of *-fɔɛ* is construction-specific, and will be ‘spelled out’ as the SEM component, since, in principle, holistic properties of constructions do not derive from their constituents in CxM.

### 5.3.2.2 Instrumental nominalizations

We now turn to the derivation of instrumental nominalizations.

- (307) *za*                      *n-za-lee*  
           *hang*                    PL-*hang*-NMLZ<sub>INST</sub>  
                                       ‘sticks used to stake yam plant [so that it climbs around]’

The form-meaning correlations of the instrumental nominalization in (307) can be represented as a constructional schema in (308):

- (308) a.      $\langle [n-[x]_{vi} -lee]_{Nj} \leftrightarrow [instrument\ for\ SEM_i]_j \rangle$   
                   |  
                    $\langle [n-[za]_{vi} -lee]_{Nj} \leftrightarrow [stake\ used\ for\ hanging] \rangle$   
                   /   
                   [*za*] ‘to hang’

Rather than of the form  $[-lee]$ , meaning is a property of the construction. As a matter of fact, the suffix *-lee*, as we shall see, is also an exponent in other schemas (e.g. in locative nominalizations as in *asielee* ‘cemetery’ and abstract nominalizations as in *lalee* ‘dream’), so that the instrumental meaning is only found in the combination described in the schema above,

where *-lee* combines with the specified class of words. Later in section 5.4, we will show that other prototypical cases of instrumental nominalizations take the form of compounding.

### 5.3.2.3 Locative nominalizations

In this section, we provide a constructionist account of the locative nominalizations in Esahie.

- (309) a.     *bia*             *a-bia-lee*  
               ‘to bath’       SG-bath-NMLZ<sub>Loc</sub>  
                                   ‘bathroom’
- b.     *sie*             *a-sie-lee*  
               ‘to bury’       SG-bury-NMLZ<sub>Loc</sub>  
                                   ‘cemetery’

The form-meaning correlations expressed in the locative nominalizations in (309) can be represented as a constructional schema in (310). Hence, the locative nominalizations *abialeε* ‘washroom’ and *asieleε* ‘cemetery’ are instantiations of the schema in (310).

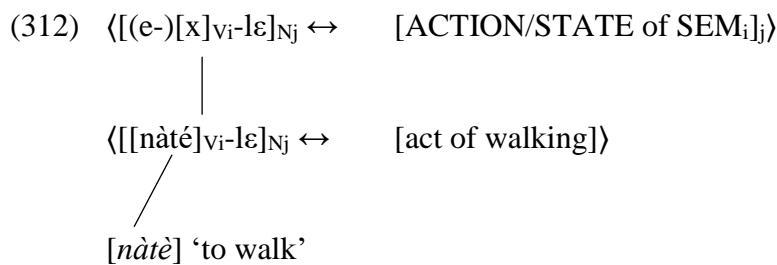
- (310) a.     ⟨[[x]<sub>vi</sub> lee]<sub>Nj</sub>           ↔     [LOCATION for SEM<sub>i</sub>]<sub>j</sub>
- b.     ⟨[a-[x]<sub>vi</sub>-lee]<sub>Nj</sub>       ↔     [LOCATION for SEM<sub>i</sub>]<sub>j</sub>
- |
- ⟨[a-[sie]<sub>vi</sub>-lee]<sub>Nj</sub>     ↔     [cemetery]
- /
- [sie] ‘to bury’

### 5.3.2.4 Action Nominalization

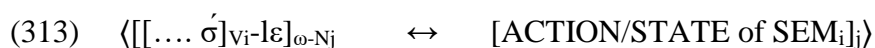
The last class of nominalizations that we discuss in this section is the action nominalization class. They include forms as those in (311).

- (311)
- a. *e-sũ-nɛ*  
SG-cry-NMLZ<sub>E/R</sub>  
'(act of) crying'
  - b. *e-gó-lɛ*  
SG-dance-NMLZ<sub>E/R</sub>  
'(act of) dancing'
  - c. *nwãtĩ-nɛ*  
run-NMLZ<sub>E/R</sub>  
'(the act of) running'
  - c. *nàtɛ-lɛ*  
walk-NMLZ<sub>E/R</sub>  
'(act of) walking'

The ANs in (311) can be represented as a constructional schema in (312):



The high tone (´), noted in [chapter 4](#) as a nominalizing toneme in Kwa may also be conceptualized a holistic property that characterizes ANs. In CxM terms, it could be labelled as a 'CONSTRUCTIONAL TONE' (see Appah 2013; Harry and Hyman 2014). This phonological property can be spelled out in the following constructional (sub)schema.



The subschema in (313) indicates that the final syllable of form that occupies its variable slot bears a high tone. Since the high tone always docks on the final syllable of the

verb, the position of the high tone could be said to be pre-specified in the schema, as a constructional property of ANs. The Esahie nouns in *-le* discussed above may be noted to stand in a systematic paradigmatic relationship to the corresponding base verbs, as shown in (314):

	<u>Output</u>	<u>Input</u>
(314) a.	<i>bia-le</i>	<i>bia</i>
	bath-NMLZ <sub>E/R</sub>	‘to bath’
	‘(act of) bathing’	
b.	<i>sie-le</i>	<i>sie</i>
	bury-NMLZ <sub>E/R</sub>	‘to bury’
	‘burial’	

Formally, the constructions in (314) differ in their degree of morphological complexity, since the input words have one morphological constituent less than the corresponding derived words. However, the constructions to left (i.e. *biale* ‘act of of bathing’ and *siele* ‘burial’) are paradigmatically related since they have the same degree of complexity. In the same way, *biale* ‘(act of) bathing’ could also be said to be paradigmatically related to *abialeε* ‘bathroom’: they belong to the same word class and share the root/stem *bia* ‘bath’. They have the same degree of morphological complexity: [stem + suffix].

Such paradigmatic relationships are the source of paradigmatic word formation, in which a word is formed by replacing one of its constituents. Therefore, just as English has the word family *impress*, *impression*, *impressive*, where the derived noun and adjective share the verbal base *impress*, Esahie also has the word family *bia* ‘to bath’, *biale* ‘(act of) bathing’ and *abialeε* ‘bathroom’, where the derived nominalizations share a common verbal base, *bia* ‘bath’. As shown below in (315), words in *-le* denote actions or resultative states while those in *-lee* denote the corresponding location of the action.

	<u><b>ACTION</b></u>	<u><b>LOCATION of ACTION</b></u>
(315) a.	<i>bia-le</i>	<i>a-bia-lee</i>
	bath-NMLZ <sub>E/R</sub>	SG-bath-NMLZ <sub>LOC</sub>
	‘(act of) bathing’	‘bathroom’
b.	<i>sie-le</i>	<i>a-sie-lee</i>
	bury-NMLZ <sub>E/R</sub>	SG-bury-NMLZ <sub>LOC</sub>
	‘burial’	‘cemetery’

Given this word family, an Esahie speaker might assume that the *-lee* locative nominalizations in (315b) have been created by replacing the suffix *-le* with *-lee*, as a morphological shortcut in establishing morphological relations between these words. The relationship also holds in the inverse direction: *abiale* ‘bathroom’ is also the place where the action of *biale* ‘bathing’ occurs. Hence, there is a systematic correspondence between the schema for words in *-le* and those in *-lee*. This apparent paradigmatic relation is captured in the schema is a second order schema in (316).

$$(316) \langle [[x]_{Vi} l\epsilon]_{Nj} \leftrightarrow [\text{ACT of SEM}_i]_j \rangle \approx \langle [[x]_{Vi} le\epsilon]_{Nj} \leftrightarrow [\text{LOCATION for SEM}_i]_j \rangle$$

It is important to point out, however, that this schema should not be taken to imply that each word in *-le* would have a corresponding word in *-lee*. For instance, there is no word such as *\*dwudwolee* based on *dwudwole* ‘(act of) talking/language’.

Thus, we see that the lexicon is a complex web of relations between words and morphological schemas: words are instantiations of schemas and may contain other words as building blocks, they are paradigmatically related in word families, and belong to morphological classes (like deverbals in *-le*), schemas can be instantiated by subschemas, and there are second order schemas as well. This makes the lexicon a well-structured whole of words and classes of words.

We now proceed to provide a constructional account of compounding in Esahie.

#### **5.4 A constructional account of compounding in Esahie**

In recent years, the word formation of compounding has been argued to be better analyzed when one assumes a constructionist view of word formation (cf. Booij 2010a-d; 2013; 2015; 2018c; Booij and Masini 2015; Hüning & Booij 2014; Arcodia 2011; Arcodia & Basciano 2018; Appah 2013; 2015; 2016; 2017b; Lawer 2017; Giraud & Dal Maso 2018). In what follows, we provide a CxM account of Esahie compounding as discussed in [Chapter 4](#), against the backdrop that compounds (and complex words in general) may contain holistic properties and may not always be compositional.

Appah (2013; 2015; 2017b) posited a meta-schema for Akan which is pre-specified to bear a syntactic category N. This was a way of capturing the fact that all Akan compounds are nouns. We have established in [Chapter 4](#) that this true for Esahie, too. Therefore, we follow Appah (2013; 2015; 2017b) in positing a meta-schema for Esahie which specified to bear a syntactic category N. This is the first schema in (317). We begin with endocentric compounds (section [5.4.1](#)) and proceed to examine exocentric compounds (section [5.4.2](#)).

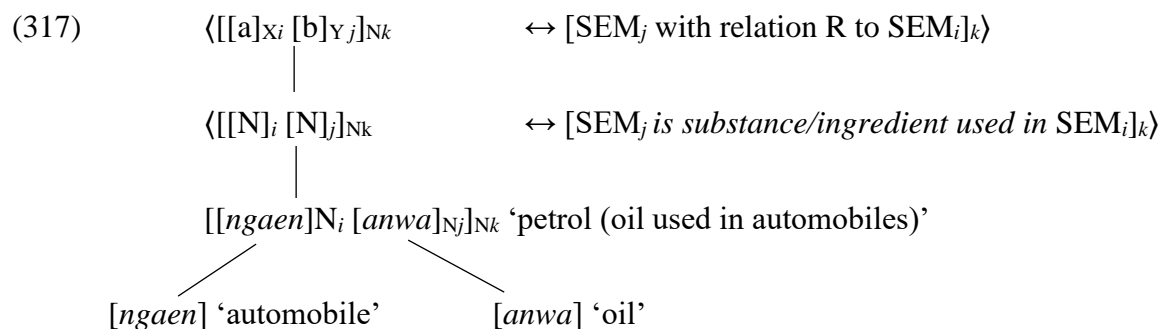
##### **5.4.1 Endocentric compounds in Esahie**

For the endocentric category, we examine compound types including right-headed SUB N-N compounds (section [5.4.1.1](#)), left-headed ATAP N-N compounds (section [5.4.1.2](#)), left headed N-A (ATAP) compounds (section [5.4.1.3](#)), as well as dual-headed COORD N-N compounds (section [4.1.4](#)).

### 5.4.1.1 Right headed N-N Subordinate Compounds

We begin with right-headed subordinate compounds. Right-headed compounds in general can be captured by the schema in (317), where the compound is shown to be a subtype of the right-hand constituent with some relation R to the left-hand constituent.

#### Schema for right headed N-N Subordinate Compounds



At the first level we have a meta-schema which abstracts over all right-headed compounds, hence, it dominates all relevant lower subschemas. The lower subschemas are instantiations of the meta-schema, and are therefore in an ‘instantiation’ relation with the meta-schema. The terminal level schema where the constituents of the compound are glossed is where the ‘part of’ relation is seen. The ‘part of’ relation shows that the properties of the individual constituents become part of the complex construction unless a constructional property overrides it. The ordering of schemas reflects a hierarchy: “properties of higher nodes are percolated to lower nodes, unless the lower node bears a contradictory specification for the relevant property” (Booij 2009: 206). This has been termed “default inheritance”, and it allows us to account for subregularities within a morphological system (cf. Appah 2013).

Given the fact that all Esahie compounds are nominal in syntactic category, we have to assume that the right-hand constituents are nouns. Nonetheless, this assumption is redundant, given the fundamental assumption in CxM that the nominal status of the compound is inherited from the dominating-schema. Furthermore, it is interesting to point out that the possibility of



attributing the syntactic category to either the right-hand constituent or the constructional schema in this case is even moot, since the features concerned do not conflict (i.e. both constituents are nominal anyway).

In the interpretation of the compound *ngaen-anwa* ‘petrol’, the meaning of the right-hand constituent *anwa* ‘oil’ is linked to meaning of the left-hand member *ngaen* ‘machine (automobile)’ because oil is a substance used in automobiles. In keeping with the understanding that the actual interpretation of each compound depends on the meaning of the constituents and the encyclopedic knowledge one applies to the interpretation process, the relation **R** has to be spelled out separately for each instantiating compound. For each of the SUB N-N compounds below, the semantic relation between the constituents has to be specified to suit the relevant nuances of the compound. Therefore, although the meta-schema can abstract over all the compounds in (318), their actual realization is spelled out in each case.

- (318) a. *εwɔfœ-sua*                    ⟨[[N]<sub>i</sub> [N]<sub>j</sub>]<sub>Nk</sub> ↔ [SEM<sub>j</sub> is used by SEM<sub>i</sub>]<sub>k</sub>⟩  
           guest house  
           ‘guest house/hotel’
- b. *nyɔfone-nzue*                ⟨[[N]<sub>i</sub> [N]<sub>j</sub>]<sub>Nk</sub> ↔ [SEM<sub>j</sub> is produced in SEM<sub>i</sub>]<sub>k</sub>⟩  
           breast milk  
           ‘breastmilk’
- c. *bakaa-baa*                    ⟨[[N]<sub>i</sub> [N]<sub>j</sub>]<sub>Nk</sub> ↔ [SEM<sub>j</sub> is produced by SEM<sub>i</sub>]<sub>k</sub>⟩  
           tree child  
           ‘seed’
- d. *amanyɔ fekue*                ⟨[[N]<sub>i</sub> [N]<sub>j</sub>]<sub>Nk</sub> ↔ [SEM<sub>j</sub> is formed for SEM<sub>i</sub>]<sub>k</sub>⟩  
           politics group  
           ‘political party’

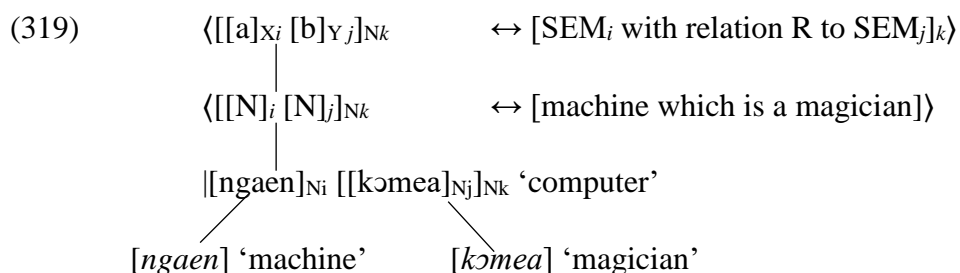
Our discussion has shown that right-headed NN compounds in Esahie come in various forms, and that in order to accurately capture the meaning of a compound, the semantic relation that holds between the constituents ought to be spelled out in finer details.

We now proceed to analyze ATAP compounds in Esahie. As Bisetto & Scalise’s (2009) classification points out, ATAP compounds are of two types: N + N (as in the English *keyword* or the Esahie *nyɔboetaen* ‘rock’) and A+N or N+A (as in the English *blackboard* or the Esahie *akoatia* ‘dwarf’). Based on the underlying lexical category distinction, we treat NN compounds in section (5.4.1.2) and NA compounds in (5.4.1.3).

#### 5.4.1.2 Left headed N-N ATAP Compounds

We now consider left-headed ATAP N-N compounds. Left-headed compounds in general can be captured by the meta-schema below, where the compound is a subtype of the left-hand constituent with some relation R to the right-hand constituent.

##### Schema for left headed N-N ATAP Compounds



The hierarchical ordering of schemas indicates the possibility of default inheritance which allows us to account for sub-regularities within the morphological system (cf. Appah 2015). Here, we assume that the syntactic category of the compound is from the head.

In the interpretation of the compound *ngaen-kɔmea* ‘computer’ the meaning of the left-hand constituent *ngaen* ‘machine’ is linked to meaning of the right-hand member *kɔmea* ‘magician’ because a chief-justice is a leader (of the set of judges). Here, unlike the SUB N-N

compounds previously discussed, the interpretation of each compound needs not be specified because since all the compounds in (320), for instance, involve a 'classic' appositional relation.

- (320) *nyɔboε-taen*            ⟨[[N]<sub>i</sub> [N]<sub>j</sub>]<sub>N<sub>k</sub></sub> ↔ [stone which is a parent]⟩  
 stone-parent  
 'rock'

#### 5.4.1.3 Left-headed N-A (ATAP) Compounds

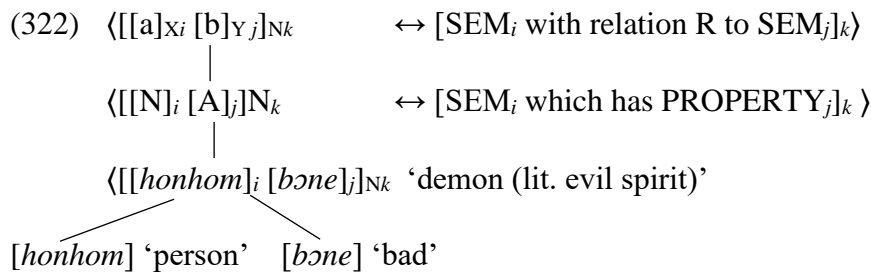
We now examine left-headed N-A (ATAP) compounds. The schema applied here is the general one for left-headed endocentric compounds. At the intermediate level, the schema for (left-headed) N-A compounds follows, and its instantiation is provided at that lowest level.

##### **Schema for left headed N-A ATAP Compounds**

- (321)            ⟨[[a]<sub>X<sub>i</sub></sub> [b]<sub>Y<sub>j</sub></sub>]<sub>N<sub>k</sub></sub>            ↔ [SEM<sub>i</sub> with relation R to SEM<sub>j</sub>]<sub>k</sub>⟩  
                   |  
                   ⟨[[N]<sub>i</sub> [A]<sub>j</sub>]<sub>N<sub>k</sub></sub>            ↔ [SEM<sub>i</sub> which exhibits PROPERTY<sub>j</sub>]<sub>k</sub>⟩  
                   |  
                   ⟨[[*akoa*]<sub>i</sub> [*tia*]<sub>j</sub>]<sub>N<sub>k</sub></sub> 'dwarf'  
 /  \  
 [akoa] 'person'                      [tia] 'short'

The lower level subschemas instantiate their respective dominating schemas. They are in an 'instantiation' relation with the respective dominating schemas. The constituents, *akoa* 'person' and *tia* 'short', are in a 'part of' relation since the form part of the compound. This indicates that the properties of the individual constituents are part of the complex construction. Therefore, since the N-A compound is a nominal, it is possible to attribute the syntactic category of the compound to the left-hand constituent (i.e. the noun), this notwithstanding, our understanding, following Appah (2015), is that, the syntactic category of the compound is a holistic property of the construction which is already specified in the constructional schema. In

the interpretation of the compound *akoatia* ‘dwarf’, the meaning of the left-hand constituent *akoa* ‘person’ is linked to meaning of the right-hand member *tia* ‘short’. As demonstrated in (322), the relation R has to be spelled out separately for each instantiating compound, as has been done for *honhommɔne* ‘demon’ below.



#### 5.4.1.4 Coordinate N-N compounds

The last category of endocentric compounds we deal with in this section is the coordinate [N-N]<sub>N</sub> compound class. These compounds are dual-headed both semantically and formally. Semantically, the compound is a hyponym of the both constituents. Formally, both constituents are nouns so it difficult to attribute the syntactic category of the compound to a particular constituent. As Appah (2013) notes, sometimes, whether an N-N compound is analyzed as coordinate or otherwise is a matter of construal and perspectivization, depending on whether the relation between the constituents is seen to be symmetrical or asymmetrical. However, in a recent work, Arcodia (2018) proposes that, depending on the language, the criterion of *reversal of constituent order* may be applied as a test for coordinating status. According to Arcodia (2018), unless lexicalized, prototypical endocentric coordinating compounds tend to tolerate inversion of the constituents. This criterion proves useful in ascertaining the coordinate status of the N-N compounds in (323), since the order of constituents in these compounds is open to manipulation. Another useful parameter that could applied here in determining the headedness, however, is the *locus inflectionis* parameter (i.e. locus of inflection or what controls inflection).

Cross-linguistically, the head (rather than the modifier) tends to be the *locus inflectionis*. If this is parameter is applied to the Esahie, then the right-hand element in these compounds can be shown to be the (formal) head. They include forms in (323):

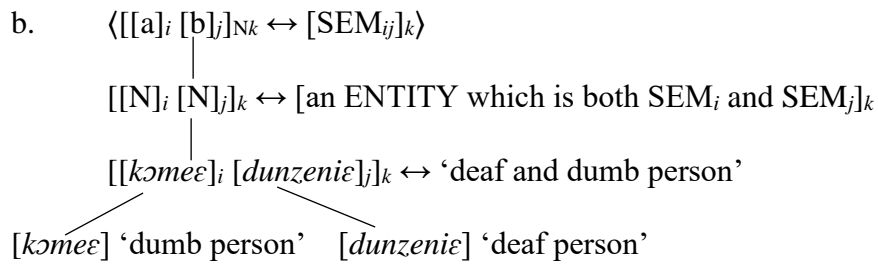
- (323) a. *emumu-asotiriwaaniε*  
 dumb-ear-block-NMLZ<sub>E/R</sub>  
 ‘deaf and dumb person’
- b. *kɔmεε-dunzeniε*  
 fetish.priest-herb-NMLZ<sub>E/R</sub>  
 ‘herbalist-fetish priest’

The internal structure, the semantic relation between the constituents, and the syntactic category of such compounds can be captured by the schema below in (324), where the meaning of the whole compound captures the individual meanings of both constituents, hence the semantic component contains the indexes of both constituents.

$$(324) \langle [[a]_i [b]_j]_{Nk} \leftrightarrow [SEM_{ij}]_k \rangle \quad \text{Appah (2013: 302)}$$

Having been formed, this schema becomes the template for forming other coordinate N-N compounds as those in (325) (see Arcodia 2011; 2018; Appah 2015 for more on the CxM treatment of coordinate compounds).

$$(325) \text{ a. } \begin{array}{l} \langle [[a]_i [b]_j]_{Nk} \leftrightarrow [SEM_{ij}]_k \rangle \\ | \\ [[N]_i [N]_j]_{Nk} \leftrightarrow [\text{an ENTITY which is both SEM}_i \text{ and SEM}_j]_k \\ | \\ [[emumu]_{Ni} [asotiriwaaniε]_{Nj}]_{Nk} \leftrightarrow \text{‘deaf and dumb person’} \\ | \quad \diagdown \\ [emumu] \text{ ‘dumb person’} \quad [asotiriwaaniε] \text{ ‘deaf person’} \end{array}$$



### 5.4.2 Exocentric compounds in Esahie

In this section, we deal with various forms of exocentric compounds. These compounds are exocentric either at a formal level, at a semantic level, or at both levels. They include  $[VV]_N$  compounds (section 5.4.2.1),  $[VN]_N$  SUB compounds (section 5.4.2.2),  $[[N-V]-SUFF]_N$  compounds (section 5.4.2.3), as well as (ATAP)  $[N-N]_N$  compounds (section 5.4.2.4).

Regarding the treatment of exocentric compounds in CxM, Appah (2013: 237) posits that, if the meaning of an 'exocentric compound is in a way relatable 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 (i.e. the unindexed **SEM**) over the meaning of the compound, or the meaning of the relevant constituent'. This is captured by the disjunction (|) in the meta-schema (326).

$$(326) \quad \langle [[a]_{Xi} [b]_{Yj}]_{Nk} \leftrightarrow [SEM ([SEM_i | SEM_j])]_k \rangle \quad \text{Appah (2017: 154)}$$

We proceed to discuss the various classes of exocentric compound instantiating the meta-schema above.

### 5.4.2.1 V-V Compounds

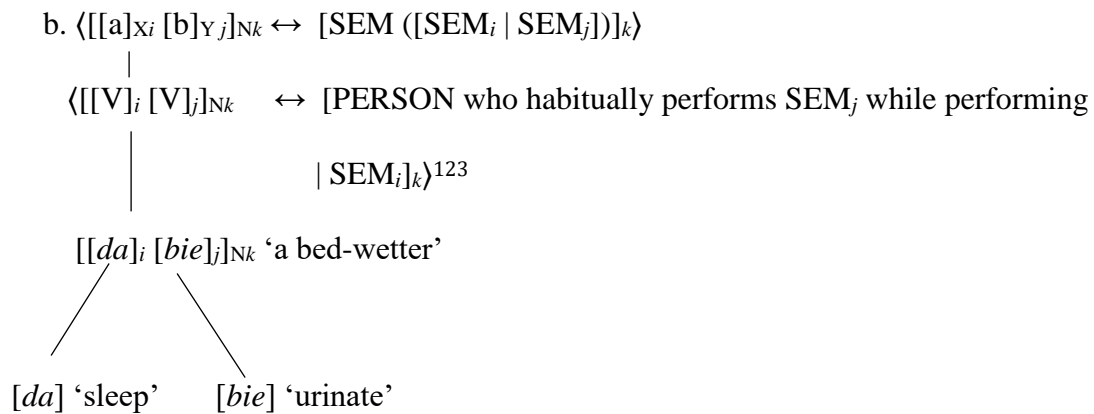
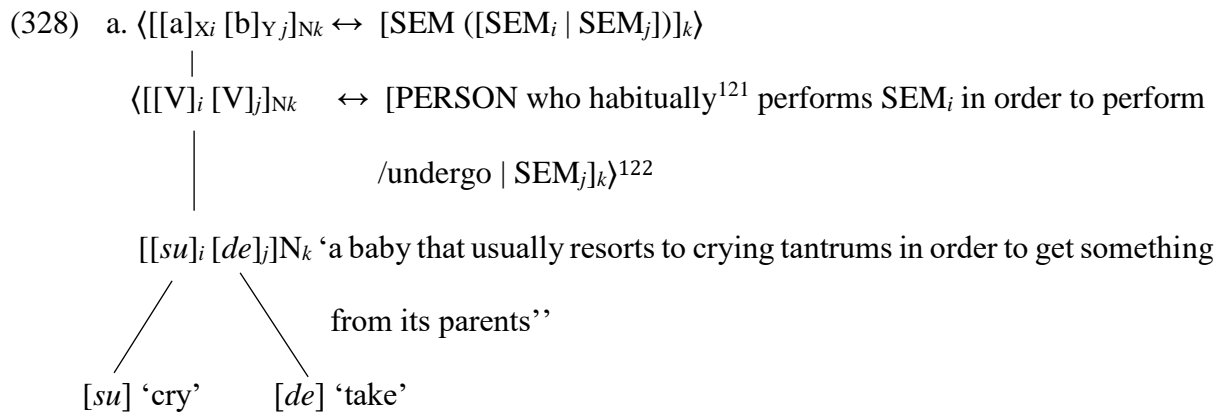
We begin with [V-V]<sub>N</sub> compounds, where two verbs are put together to form a noun, making them formally exocentric. They carry an agentive meaning which is not expressed in their internal structure, hence, they are also somewhat semantically exocentric. As such, this class of compounds presents the greatest challenge to source-oriented account of compounds, and also provides a good empirical support for the product-oriented (constructionist) approach adopted for the analysis of Esahie compounds.<sup>120</sup> They include compounds such as those in (327).

- (327) a.     *su-de*  
          cry-take  
          ‘a baby that usually resorts to crying tantrums in order to get something from its parents’
- b.     *da-bie*  
          sleep-urinate  
          ‘a bed-wetter’

We represent the internal structure and properties of this compound type and how they inherit the nominal syntactic category in the schema below.

---

<sup>120</sup> Though exocentricity is a challenging phenomenon, it is not impossible to account for. Indeed, exocentricity has been reanalyzed as actual endocentricity, and several phenomena point to the presence of a head in so-called exocentric constructions (cf. Štekauer 1998; Benczes 2015).



The fact that these V-V compounds are nominal in syntactic category although they are formed from two verbs is not a challenge at all for CxM, where formal properties which cannot be seen to emanate from the constituents are interpreted as properties of the construction. This particular formal property (i.e. the nominal status) of the compounds is captured in the schema via the index  $N_k$ , so that the nominal status of the  $[V-V]_N$  compounds, say *dabie* ‘bed-wetter’,

<sup>121</sup> The feature of *habituality* is a general property of compound forms lacking tense or aspect operators. This also explains the genericity of Words vs. Phrases (see Di Sciullo and Williams 1987). This habituality/genericity applies to these Esahie compounds.

<sup>122</sup> A simplified and finer version of semantic component of this compound would be:  
 [SEM<sub>i</sub> CAUSE SEM<sub>j</sub>]  
 temporal precedence and causal relation

<sup>123</sup> A simplified and finer version of semantic component of this compound would be:  
 [SEM<sub>i</sub> AND SEM<sub>j</sub>]  
 temporal overlap and coordination relation



is accounted for by the mechanism of default inheritance. In other words, the nominal category of *dabie* ‘bed-wetter’ is inherited from its dominating schema, and not from either of its V constituents. In a similar fashion, the agentive meaning of the compound is also captured in the semantic component of the schema as [*PERSON who habitually ...*], so that the encoding of this extra-compositional meaning is not necessarily surprising or difficult to account for, since it is already captured in the schema. The agentive meaning ‘PERSON who...’ which is not part of the constituents of the compound is what makes the compound semantically exocentric.

#### 5.4.2.2 V-N SUB compounds

There are several kinds of V-N compounds, but they are all both formally and semantically exocentric. Notwithstanding the fact that the V is the governing element, it does not head the compound, hence, such compounds are formally exocentric. As explained in [Chapter 4](#), these compounds can be categorized into various semantic classes including instrumental, agentive, and objective nominalizations, but could also be used as names of the calendar months. Since neither of the constituents of the compounds, say for instrumental nominalizations, are themselves instruments, these compounds are semantically exocentric. We shall examine some of these instrumental compounds.

- (329) a. *songyi turoo*  
 sieve soup  
 ‘colander (that which is used to sieve soup)’
- b. *sesa wura*  
 pick rubbish  
 ‘dustpan (a flat container with a handle into which you brush dust and dirt)’
- (330) a. *asò-nyɔfone*  
 hold-breast  
 ‘brassiere (that which is used to harness breast)’

- b.     *n-gàtà-bo*  
           PL-cover-chest  
           ‘shield’

The internal structure, semantic relations (of the constituents), and the meaning of these instrumental compounds may be captured in the simplified schema below.

(331)  $\langle [[V_k] [N_i]]_{N_j} \leftrightarrow [\text{INSTRUMENT}_j \text{ OF ACTION}_k \text{ on OBJECT/ENTITY}_i]_j \rangle$

Since this overarching schema spells out the internal structure, the semantic relations of constituents, the meaning, and the syntactic category of the compound, it deals with the problems associated with the formal and semantic exocentricity of such compounds. Compounds such as those in (332) can be formed based on the schema in (331). The abstraction of instrumental compounds such as *songyi-turoo* ‘colander’ and *asɔ̀-nyɔfone* ‘brassiere’ follow the representation captured in their schemas in (332a) and (332b) below, respectively.

(332) a.      $\langle [[V_k] [N_i]]_{N_j} \leftrightarrow [\text{INSTRUMENT}_j \text{ for performing ACTION}_k \text{ on ENTITY}_i]_j \rangle$

|  
 $[[\textit{songyi}]_k [\textit{turoo}]_i]_{N_j} \leftrightarrow \text{‘colander’}$   
 |                                    |  
 $[\textit{songyi}] \text{ ‘sieve’ } [\textit{turoo}] \text{ ‘soup’}$

b.  $\langle [[V_k] [N_i]]_{N_j} \leftrightarrow [\text{INSTRUMENT}_j \text{ for performing ACTION}_k \text{ on BODY PART}_i]_j \rangle$

|  
 $[[\textit{sɔ̀}]_k [\textit{nyɔfone}]_i]_{N_j} \leftrightarrow \text{‘brassiere’}$   
 |                                    |  
 $[\textit{sɔ̀}] \text{ ‘hold’ } [\textit{nyɔfone}] \text{ ‘breast’}$

### 5.4.2.3 *[[N-V]-AFF] synthetic compounds*

We now examine the [[N-V]-SUFF] synthetic compounds discussed in [Chapter 4](#). Given their structure, these compounds are formally exocentric. Going by this exocentricity analysis, we have to assume that the [[N-V]-SUFF] compounds are categorially/formally exocentric because their nominal properties cannot be said to emanate from their nominal constituents, especially since in CxM, affixes (such as *-lɛ*) are not seen as bearing categorial labels (Booij 2010a-d).

From a constructionist perspective, we could interpret the foregoing to imply that the exocentric [[N-V]-SUFF] 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 (i.e. a high tone), to be discussed below. To the extent that some property of the whole cannot be said to emanate from the constituents, a construction may be posited. An abstract schema generalizing over the shared properties of the exocentric [[N-V]-AFF] compounds together with a general meaning, rendered as “[Event [V]<sub>j</sub> involving/affecting [N]<sub>i</sub>]<sub>k</sub>”, is represented in (333).

(333)  $\langle [[N]_i [V]_j N_k \leftrightarrow [\text{Event } [V]_j \text{ involving/affecting } [N]_i]_k \rangle$  (Appah 2017a: 12)

All exocentric [[N-V]-AFF] compounds instantiate the schema which in turn instantiates this general schema. The toneme that characterizes this class of synthetic compounds may be represented in (334b) following Appah (2017a: 13), where the high tone is explicitly shown to dock on the final syllable of the verbal right-hand element.

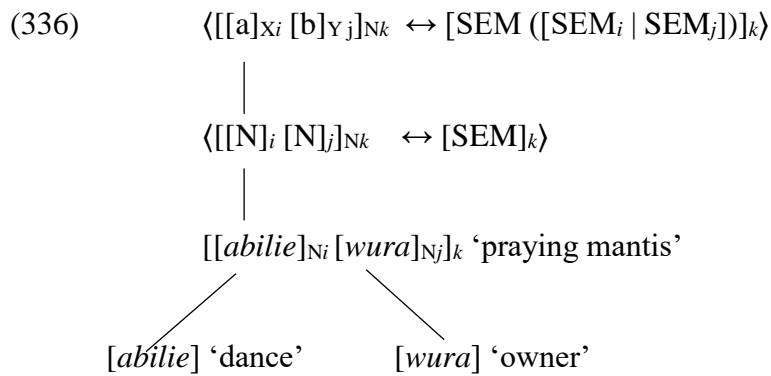
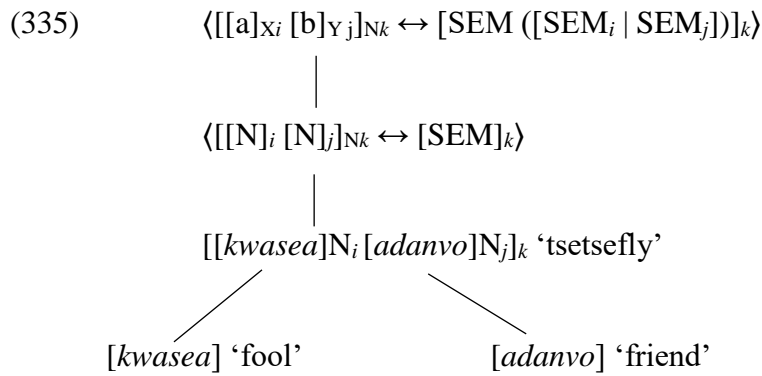
*Schema for [[N-V]-AFF] exocentric compounds*

- (334) a.  $\langle [[N]_i [V]_j l\epsilon]_{Nk} \leftrightarrow [\text{Event } [V]_j \text{ involving/affecting } [N]_i]_k \rangle$   
        |  
         $\langle [ale\epsilon]_i [li]_j l\epsilon \rangle_{Nk} \leftrightarrow \text{'act of eating'}^{124}$   
        /              \  
         $[ale\epsilon]$  'food'  $[di]$  'to eat'
- b.  $\langle [\sigma^* \dots]_{Ni} [ \dots \acute{\sigma} ]_{Vj} \rangle_{Nk}$

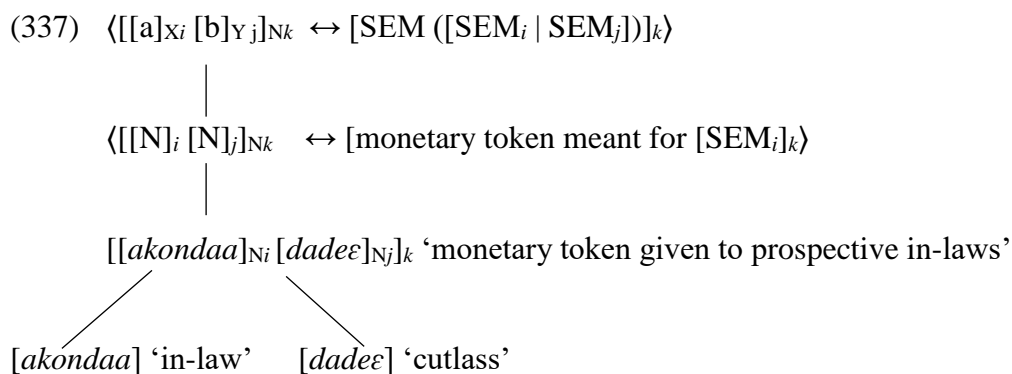
#### 5.4.2.4 ATAP [N-N]<sub>N</sub>

ATAP [N-N]<sub>N</sub> compounds are semantically exocentric. In this class, we find cases where the compound has a meaning that is completely unrelated to the meanings of the constituents. An example of this is *kwasea-adanvo* 'tsetsefly' (*kwasea* 'fool', *adanvo* 'friend') for which there is no conceivable link between the idiomatic meaning of the compound and the meanings of the individual constituents, so that, there is no way to tell that the two constituents combined will/can refer to a particular insect. As such, its meaning has to be learned and stored in the lexicon of the Esahie speaker. Another example of this is *abilie-wura* 'praying mantis' (*abilie* 'dance', *wura* 'owner') for which there is also no compositional connection between the idiomatic meaning of the compound and the meanings of the individual constituents, and there is no way to tell that the two constituents combined will/can refer to a particular insect. Here, a typical property, of dancing, is extended metonymically to refer to the entity that has the habit of dancing. This class of compounds may be represented in (335) and (336), where the parenthesized part of the semantic pole is not part of the meaning of the compound because the meaning of the compound is not related to the meanings of the constituents at all (cf. Appah 2017a).

<sup>124</sup> The consonant sound /d/ in the verb *di* 'eat' becomes /l/ through a kind of dissimilation process.



There are also some exocentric N-N compounds for which one may be able to link the meaning of the whole to the meaning of one or both of the constituents, but the compound still violates the hyponymy test. For example, the constituents of *akondaa-dadee* (lit. the in-law's cutlass) are *akondaa* 'in-law' and *dadee* 'cutlass', but the idiomatic meaning of the compound which is 'monetary token given to prospective in-laws', is neither a type of in-law nor a type of cutlass. Nevertheless, the meaning of the left-hand constituent *akondaa* 'in-law' is still somewhat preserved in the idiomatic meaning of the compound, so that the metaphoric meaning of the compound *akondaa-dadee* 'monetary token given to prospective in-laws' still has something to do with 'in-laws'. Since the 'monetary token' meaning component is not directly encoded in either constituent of the compound *akondaa-dadee*, it has to be treated as a constructional property, and this meaning will be represented as an operator over the meaning of the constituent *akondaa* which is somewhat preserved in the meaning of the compound, as exemplified in (337).



## 5.5 Conclusion

This chapter set out to provide an overview of the extant models of morphology. From the perspective of what is considered to be the minimal unit of morphological analysis, two approaches of analysis exist, morpheme-based vs. word-based approaches. Following Blevins (2006), we have shown that these theories may be re-analyzed either CONSTRUCTIVE or ABSTRACTIVE models.

CxM, as an abstractive model, is adopted for the analysis of the various inflectional and word formation phenomena in the morphological system of Esahie as discussed in preceding Chapters. Our discussion of the Esahie data in this chapter has shown that adopting a constructionist approach to morphology comes with numerous advantages. First, the computational engine employed in CxM is able to account for both inflectional and word formation phenomena. Second, it is able to account for both compositional and idiosyncratic properties of form-meaning pairs (i.e. constructions). Thirdly, it provides valuable insights into the organization of the lexicon and how processing occurs in language acquisition.

In the domain of inflection, the CxM model adopted in this thesis is able to adequately handle both declension classes and syncretism. Since syncretism, as a type of non-canonical

inflection, poses a daunting challenge for morpheme-based theories, the modelling offered in CxM is apt.

In the domain of nominalization, the CxM model helps to account for all the semantic and formal properties of Esahie nominalizations. The meaning contribution and inheritance of (certain) features in these nominalizations are best seen as a property of the nominalization process, rather than of the suffix [-lɛ], or of the base, for that matter. This assumption can also account for the high tone of eventive deverbal nouns.

In terms of compounding, CxM has proven particularly useful in dealing with exocentric compounds in Esahie, where extra-compositional formal and semantic properties are seen as properties of the construction.

## CHAPTER SIX

### SUMMARY AND CONCLUSION

#### 6.1 Introduction

The principal motivation for the present study was to examine some pertinent inflectional and word formation issues in the nominal domain of Esahie. In a language documentation-oriented spirit, the present study sought to investigate and provide a comprehensive account of the attested types, structure, formation, and the lexical semantics of nouns and nominalizations in Esahie.

Another goal was to understand what the facts about the structure and formation of nouns and nominalizations in Esahie reveal about the nature of the interface between morphology, syntax and semantics, and about the general architecture of the grammar. In this chapter, we summarize the main points of the various chapters, present what we have achieved and make recommendations for future work.

#### 6.2 Summary of Chapters

In [Chapter 1](#) we presented a general background to the present study, introducing some of the crucial aspects of Esahie linguistics and the sociolinguistics of the Esahie speaking communities. We also defined the problem (research gap) that motivated this study and spelled out other stage-setting elements including the aims of the study, the research questions, as well as data and methodological issues.

[Chapter 2](#) was dedicated to the exploration of the inflectional system of the nominal domain of Esahie. The first part of the chapter dealt with the *noun class system* (NCS) of Esahie, where we argued that, though the NCS of Esahie *per se* is morpho-syntactically



vestigial, hence differing from other African languages (e.g. most Bantoid languages where noun classes can be likened to *gender*), number, as a syntactic feature, is active and triggers agreement. This makes the class system in Esahie a *number-based* one. On morpho-syntactic grounds, six distinctive noun classes were established for Esahie. We also introduced the notion of *agreement*, spelled out what constitutes canonical agreement (following Corbett 2006), and proceeded to compare and contrast *DP-internal* agreement with *anaphora* agreement. We showed that *DP-internal* agreement is more canonical. Finally, we discussed the phenomenon of syncretism. We examined various instances of syncretism in Esahie and attempted to provide an analysis of these instances following Stump's (2016) typology. We showed that, relatively speaking, the inflectional system of the Esahie nominal domain could be described as fairly robust.

[Chapter 3](#) dealt with the word formation phenomenon of nominalization. We discussed two types of nominalizations in Esahie: *lexical* vs. *clausal* nominalizations. The characterization of Esahie nominalization was shown to be predominantly a case of lexical nominalization, because, it is typically not a case of the so-called clausal nominalizations, where you have a VP or TP translated into a DP-structure nominal construction via the addition of an article. Rather, what we typically have is something close to what we have in English, in terms of nominalizations which are fully fledged nouns, having lost a lot or all of their verbal properties (such as verbal inflection). Action nominalization, as a classic case of lexical nominalization, was been argued to be a productive (derivational) process in Esahie. We also highlighted the fact that action nominalization in Esahie primarily involves a composite strategy: a morpho-syntactic operation, invariably involving (both) affixation and a resultant a change in tonal melody, which may or may not be coupled with synthetic compounding (when the verb in question is argument-requiring). We showed that nominalizing affixation must be overt, so that unlike Gã, Akan, and Lete, action nominals in Esahie cannot be derived through

a zero operator. On the role of prosodic morphology in AN-derivation, we observed that in Kwa and in (tonal) African languages on a whole, it appears that tone raising is a nominalizing marker (toneme) or cue that may be used independently or in addition to affixation to signal nominalization. The typology of AN-derivation (cf. Koptjevskaja-Tamm 1993) as discussed in this work puts Esahie within the POSSESSIVE-INCORPORATING subtype of the INCORPORATING languages. Finally, the chapter also showed that Grimshaw's (1990) diagnostics for distinguishing eventive nouns (CENs) from result nouns (RNs), though useful, do not always hold when tested against the Esahie data, as well as English and other languages (as previously discussed by other scholars).

[Chapter 4](#) dealt with the word formation phenomenon of compounding. Our discussion of Esahie compounding sought to answer questions such as: what types of compounds are attested in Esahie, what their structural properties (headedness issues, internal inflection, recursion, input and output constraints, etc.) and semantic properties (compositionality, lexicalization and idiomaticity issues, etc.) are, and, to what extent these phenomena are productive in the morphological system of Esahie. The discussion offered in this chapter pointed to the fact that the form and function of compounding in the grammar of Esahie enriches our general understanding of word-formation at large. Overall, there appeared to be a coherent picture of Esahie compounding, since subordinate compounds are consistently right-headed, while attributive-appositive compounds are consistently left-headed. Our analysis of compounding in Esahie revealed interesting parallelisms and peculiarities with other languages in terms of structural and semantic properties. A striking structural property of Esahie (and other Kwa) compounds was that, notwithstanding the word class of the input elements, the output is always a nominal. This characterization signifies a fascinating (mutual) interplay between the word-formation phenomena of compounding and nominalization, since the former feeds the latter operation.

In [Chapter 5](#), we proffered theoretical insights into the analyses of the inflection and word formation Esahie data as discussed in [chapters 2](#), [3](#), and [4](#). The chapter provided an overview of the current theories of morphology, and showed based on the Esahie data that the ABRTRACTIONIST view of morphology is to be favored over the CONSTRUCTIVIST view. The chapter began with a description of the goal and nature of morphological theory, outlining two general perspectives of morphology based on what is considered as the minimal unit of grammatical analysis: *morpheme-based* approaches vs. *word-based* approaches. Following Blevins (2006), we showed that the existing theories of morphology could be re-analyzed into CONSTRUCTIVE and ABSTRACTIVE models, depending on the view they hold on the computation of word structure, that is, whether word structure is computed top-down or bottom-up. We laid out the foundational tenets of Construction Morphology, as an ABSTRACTIVE model of morphology, and argued that this model is able to handle all the morphological phenomena in Esahie discussed in the preceding chapters. Our discussion of the Esahie data in this chapter pointed out that adopting a constructionist stance on morphology comes with numerous advantages. First, the computational engine employed in CxM is able to account for both inflectional and word formation phenomena. Second, it is able to account for both compositional and idiosyncratic properties of form-meaning pairs (i.e. constructions). Thirdly, it provides valuable insights into the organization of the lexicon and how processing occurs in language acquisition. In compounding, for instance, CxM proves particularly useful in dealing with exocentric compounds in Esahie, where extra-compositional formal and semantic properties are seen as pertaining to the construction.

### **6.3 Main Contribution**

As far as the nominal morphology of Esahie is concerned, this thesis is both ground-breaking and seminal. The overall impact of the thesis can be grouped in terms of its general contribution

to linguistics and its contribution to Esahie linguistics in particular, which are the two main research goals. I will begin with the latter.

In terms of contribution to the study of Esahie linguistics, the present study is the pioneering work on nouns and nominalizations in Esahie. It addresses pertinent questions about inflection and word formation in the nominal domain of Esahie, regarding the nature and structure of nouns and nominalizations. Following from this approach, the study has presented and analyzed structures that had not received any (systematic) account thus far. The study, therefore, has shown that: (a) Esahie nouns and nominalizations can and do have (morphomic) properties that do not emanate from those of their constituents, and (b) Esahie nouns and nominalizations tend to be transparent; however, they sometimes exhibit extra-compositional tendencies. The constructional approach adopted in this thesis, therefore, helps to give a complete account of the range of nouns and nominalizations that are attested in Esahie.

The present study contributes to on-going debates in contemporary linguistics, especially those constructional approaches to the study of language and morphology. For CxM in particular, this thesis has extended its empirical scope, showing that its tenets can be applied to other languages apart from the Indo-European languages, which are still the focus of most work carried out within this framework. The CxM account adopted here is ground-breaking in that, to the best of my knowledge, the present thesis is one of the few morphological studies on African languages that adopt this framework.

To morphology generally, the present thesis contributes to the under-researched issue of exocentricity (Bauer 2010b; Scalise & Guevara 2006; Appah 2013; 2015; 2016), especially in the chapter on compounding where I show that because Esahie compounding is ultimately a nominalization strategy, any compound which does not contain a nominal constituent is *prima facie* formally exocentric. Finally, the present study contributes to the study of inflection and word formation in general, in Kwa, and Esahie in particular.

## 6.4 Limitations of the study

The first and biggest limitation of this study is that, in some instances, data provided is not sufficient as one would have expected. This is largely due to the scarcity of literature and materials on Esahie linguistics. Due to the rather small size of the dataset based on which the present study was conducted, not all the properties of the attested nouns and nominalizations could be discussed in detail. This, sometimes, made it difficult to make strong generalizations and conclusions. For instance, although the right-hand member, *hema* ‘queen’, of the compound *yia-hema* ‘(the month of) December’, is analyzed as a suffixoid (see section [4.4.4](#)), admittedly, two instances are not enough to make a case for an affixoid.

The second is time constraints. This study was conducted within a limited time frame, hence, some data patterns are not discussed at all or not discussed in detail because no sufficient data were gathered to allow for a deep analysis of some of the encountered patterns. For example, the [V-V]<sub>N</sub>, [V-A]<sub>N</sub>, and endocentric coordinate compounds are not discussed in detail. Another class of complex nominals, namely *personal attributive nominal constructional* (PANCs) such as *asosere* ‘stubbornness’, *anyesere* ‘haughtiness’ and *anwonyemene* ‘beauty’, are not discussed at all in the thesis since we could not gather sufficient data on them (despite the fact that they are attested in synchronic Esahie).

## 6.5 Recommendations for future research

What the present thesis has shown is that Esahie morphology still requires a lot of research attention. A number of issues still remain outstanding.

In terms of nominalization, an outstanding issue has to do with the nominalization of ditransitive verbs. In this regard, it would be interesting to know the properties of such nominalizations, especially in terms of the realization of argument structure.

Regarding compounding, as enumerated above, I did not analyze the following compounding types: V-V, V-A, coordinate compounds, and PANCs. We need to find out the extent to which these compounds are attested in Esahie and other related languages.

In the area of inflection marking, the verbal morphology of Esahie has not been studied as yet. This area promises to be interesting since it appears to widely involve many instances of prosodic morphology.

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COMPOUNDS

Table (34): Right headed [N-N] Compounds

Structure	Product	Head		Relation
		Formal	Semantic	
<i>NN compounds</i>				
<i>kaa</i> ‘car’ + <i>atēē</i> ‘road’	<i>kaatēē</i> ‘car street’	R	R	Subordination
<i>anyuro</i> ‘up’ (heaven) + <i>nzue</i> ‘water’	<i>anyuronzue</i> ‘rain water’	R	R	Subordination
<i>bangye</i> ‘cassava’ + <i>mɔɔre</i> ‘dough’	<i>bangyemɔɔre</i> ‘cassava dough’	R	R	Subordination
<i>nzue</i> ‘water’ + <i>ahɔ̃in</i> ‘hunger’	<i>nzuhwen</i> ‘thirst’	R	R	Subordination
<i>kro</i> ‘town’ + <i>menia</i> ‘people’	<i>kro-menia</i> ‘citizen’	R	R	Subordination
<i>kɔmɛ</i> ‘neck’ + <i>nikye</i> ‘thing’	<i>kɔmɛ-nikye</i> ‘necklace’	R	R	Subordination
<i>asoɛ</i> ‘ear’ + <i>nikye</i> ‘thing’	<i>asoɛ-nikye</i> ‘earring’	R	R	Subordination
<i>sĩ</i> ‘back’ + <i>bowue</i> ‘bone’	<i>sĩ-bowue</i> ‘spine’	R	R	Subordination
<i>anwo</i> ‘self’ + <i>naen</i> ‘meat’	<i>anwonaen</i> ‘body’	R	R	Subordination
<i>abɔngye</i> ‘goat’ + <i>nan</i> ‘meat’	<i>abɔngyenain</i> ‘mutton’	R	R	Subordination
<i>ayee</i> ‘palm nut’ + <i>dwomaa</i> ‘pestle’	<i>ayeedwomaa</i> ‘palm-nut pestle’	X	R	Subordination
<i>ayee</i> ‘palm nut’ + <i>duwaa</i> ‘mortar’	<i>ayeeduwaa</i> ‘palm-nut mortar’	X	R	Subordination
<i>banju</i> ‘local meal’ + <i>ta</i> ‘spatula’	<i>banjuta</i> ‘the spatula used for preparing <i>banju</i> ’	X	R	Subordination
<i>ɲgua</i> ‘life’ + <i>nzue</i> ‘water’	<i>ɲguanuzue</i> ‘water of life’	R	R	Subordination
<i>nyame</i> ‘God’ + <i>som</i> ‘worship’	<i>nyamesom</i> ‘religion’	R	R	Subordination
<i>akɔ</i> ‘fowl’ + <i>tui</i> ‘coop’	<i>akɔtui</i> ‘hen coop’	R	R	Subordination
<i>baana</i> ‘plantain’ + <i>boe</i> ‘peel’	<i>baanaboe</i> ‘plantain peel’	R	R	Subordination
<i>ahen</i> ‘kings’ + <i>fie</i> ‘house’	<i>ahenfie</i> ‘palace’	R	R	Subordination

<i>sukuu</i> ‘school’ + <i>sua</i> ‘building’	<i>sukuusua</i> ‘school building’	R	R	Subordination
<i>noa</i> ‘mouth’ + <i>dwile</i> ‘matter’	<i>noadwile</i> ‘contents of an agreement/declaration’	R	R	Subordination

Table (35): Left headed [N-N] Compounds

Structure	Product/Comment	Head		Relation
		Formal	Semantic	
<i>NN</i> compounds				
<i>nyɔboε</i> ‘stone’ + <i>taen</i> ‘parent’	<i>nyɔboetaen</i> ‘rock’	L	L	Attribution
<i>aten</i> ‘judgement’ + <i>denenee</i> ‘righteousness’	<i>atendenenee</i> ‘fair justice’	L	L	Attribution
<i>nzue</i> ‘water’ + <i>fiε</i> ‘dirt’	<i>nzufiε</i> ‘dirty water’	L	L	Attribution

# **SIL COMPARATIVE AFRICAN WORDLIST**

**(SILCAWL)**

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1.	MAN'S PHYSICAL BEING	L'ÊTRE PHYSIQUE DE L'HOMME
1.1	BODY PARTS	PARTIES DU CORPS
0001	Body	Sona-bakaa = body+tree
0002	skin (of man)	Anwo-nae = self-meat
<b>1.1.1</b>	<b>Head</b>	<b>Tête</b>
0003	Head	tire
0004	Forehead	womaa
0005	Face	anyunu
0006	Eye	anyee
0007	eyebrow	Ndow-nwiaa = brow-hair
0008	eyelid	
0009	eyelash	
0010	pupil (of eye)	nyee-dote = eye-dot
0011	nose	boin
0012	bridge (of nose)	Ndo-afia = brow-middle
0013	ear	asoε
0014	cheek	nvokaa
0015	mouth	noa
0016	lip	Noa-kaa = mouth-ring
0017	tongue	temverεma
0018	tooth	agyee
0019	molar tooth	naalε
0020	palate	
0021	jaw	awεgyee
0022	chin	kanza
0023	neck	kεmεε
0024	nape of neck	kεmεε kaa = neck-ring
0025	throat	Konvi
0026	voice box, larynx, Adam's apple	
0027	hair (of head)	Ti-nwiaa =head-hair
0028	beard	Kanza-nwiaa = chin-hair
0029	hair (of body)	Anwo-nwiaa = body-hair
0030	tuft, lock (of hair)	mbεεmbεε

**1.1.2 Trunk**

0031	shoulder	abati
0032	shoulder blade	Abati-bowie
0033	chest	hue
0034	breast	nyɔfonɛ
0035	side (of body)	ngyeinu
0036	waist	sisia
0037	navel	kotoa
0038	umbilical cord	Kotoa-nyamaa = navel-rope
0039	abdomen (external)	yaase
0040	stomach (internal)	koɛ
0041	womb	awodeɛ
0042	back	Sĩ
0043	small of back	Sisia-sĩ = waist-back
0044	buttock	boɛ
0045	anus	bunu
0046	penis	toa
0047	testicle	ndomaa
0048	vagina	kɔɛn
0049	clitoris	kɔmboi

**1.1.3 Limbs**

0050	arm	Basa
0051	armpit	nvuromanu
0052	upper arm	Sa-nsuen = hand-??
0053	elbow	batwɛ
0054	forearm	
0055	wrist	Sa-kaa = hand-ring/ sa-kɔm = hand-neck
0056	hand	asaa
0057	fist	
0058	palm (of hand)	Sa-kunu =hand-stomach
0059	finger	Sa-baa = hand-child
0060	thumb	Koko-tire = fowl-head

0061	knuckle	
0062	fingernail	Sa-boin = hand-hole
0063	leg	Agyire/gya
0064	hip	Taku
0065	thigh	sɔ
0066	knee	Nan-goroma = leg-???
0067	shin	Gya-boo-nyunu =leg-under-face
0068	calf of leg	
0069	ankle	Gya-porɛ = leg-joint
0070	foot	Gya-tasaa = leg-???
0071	heel	Gya-sĩ = leg-back
0072	sole	Gya-kunu = leg-stomach
0073	toe	Gya-mmaa = leg-children

#### 1.1.4 Internal parts and products

0074	bone	bowie
0075	bone marrow	Fofáa
0076	skeleton	Sona-bowie = body-bone
0077	skull	Kongroma/ ti kuangua = head-container
0078	breastbone	
0079	spine, backbone	Sĩ-kumaa = back-???
0080	rib	Nve-paleε = side-bone
0081	brain	ameε
0082	heart	ahone
0083	liver	boε
0084	kidney	saa
0085	lung	hrawaa
0086	intestines	Kunu-nyamaa = stomach-rope
0087	bladder	meendoa
0088	gall bladder	
0089	muscle	wileε
0090	tendon	
0091	vein	ndi
0092	breath	wimeε
0093	saliva	nwoserε
0094	phlegm	ahoróló
0095	nasal mucus, snot	Bóín-nvroló =nose-mucus
0096	earwax	Soanu-fiε = ear-dirt
0097	tears (n)	Nnye-moin = eye-???
0098	blood	mogya
0099	bile, gall	abówee
0100	semen	anwoó-nzue =body-water
0101	urine	mmien
0102	excrement, faeces	sebeε

#### 1.2 BODY PROCESSES, FUNCTIONS

0103	blink	Nnye-pore = eye-joint
0104	wink (eye)	bə ɔ-nye 'blink your eye'
0105	blow nose	Ye o-boinu 'clear your nostrils'
0106	breathe	homee
0107	yawn	yáɔ
0108	snore	pɛ ngorɔn = ICV-snore (N)
0109	pant	Teeso
0110	blow (with mouth)	hú
0111	spit	To nwoseɛ = ICV-saliva
0112	cough (v)	bə tangɔ = ICV-cough (N)
0113	belch	hyiko
0114	hiccough (n)	tikɔtikɔ
0115	sneeze (v)	pɛ nyaen = ICV –sneeze (N)
0116	groan (with pain)	Pene
0117	grunt (from effort)	konveɛ-penene = throat-clearing
0118	palpitate (of heart)	bə palipali = ICV-idephone

0119	urinate	bie
0120	break wind, fart	tã
0121	defecate	gyé
0122	shiver, tremble	Anwo-wosó-ɩɛ = body-shake-NMLZ
0123	perspire, sweat	Te mvifire = ICV sweat
0124	bleed	Tu mogya = ICV blood
0125	coagulate, clot	Mogya na aɸɛ ‘the blood has stopped’
0126	(be) dizzy	
0127	faint	pɛ-fi = collapse-fall
0128	sleep (v)	Da
0129	dream (n)	laleɛ
0130	wake up (intr)	ghyɔso
<b>1.2.1 Senses</b>		
0131	see	nwú
0132	notice (v)	hyɛ-nzore = ICV-identity
0133	look at, watch	nea
0134	hear	te
0135	listen	Tie
0136	smell (v)	Fofa/hũã
0137	feel (passive)	Te nga
0138	touch, feel (active)	Fa ɔsa ka
0139	taste	Kania
<b>1.2.2 Ingestion</b>		
0140	eat	dí
0141	bite (v)	Ká
0142	crunch	bobɔnu
0143	chew	pisa
0144	gnaw	ɛtwe
0145	swallow	mĩ
0146	choke	hia
0147	lick	tafe
0148	suck	nɔ
0149	drink	nɔ

1.3 BODY MOVEMENT

0150	sit	Tena ase
0151	rise up (intr)	gyoso
0152	lie down	Da bre
0153	turn round (intr)	Kakyi onwo
0154	walk	nate
0155	step (v)	tia
0156	stumble	poli
0157	limp	to guaso
0158	crawl	kongo
0159	run	Tu mmirika
0160	swim	Bia nzue
0161	jump (v)	Huri

0162	kick	bɔ
0163	stamp (with foot)	tiaso
0164	trample	Tiatiaso
0165	wave (hand as a greeting) (v)	Him ɔsa
0166	indicate, point (as with the finger)	kyireso
0167	clap (hands)	bɔ nzannu
0168	slap (v)	bɔ soanu
1.4	BODY STATES AND CONDITIONS	
<b>1.4.1</b>	<b>Body positions</b>	<b>Attitudes</b>
0169	stand	gyina
0170	straddle	
0171	lean against (intr)	kisa
0172	bend down, stoop	kundu
0173	bow (as in greeting)	bɔ onu ase
0174	(be) seated	Te brɛ
0175	squat	Koto
0176	kneel	Bu ntwerɛ
0177	(be) lying down	Da brɛ
<b>1.4.2</b>	<b>Body conditions</b>	
0178	(be) hot (of person)	hyerɛ
0179	(be) hungry, hunger (v)	Mma ɛhoin hu wɔ
0180	(be) sated	Mma ɔkoyi
0181	(be) thirsty, thirst (v)	nzuhoi
0182	(be) drunk	Bo nzaa
0183	(be) tired	fɛ
0184	(be) sleepy	Mma onye hu
0185	rest	De w-ahome
0186	(be) awake, alert	tingye
1.5	IRREGULAR CONDITIONS	
0187	wrinkle (on skin)	mengye



0188	pimple	nsaa
0189	hump (of hunchback)	
<b>1.5.1</b>	<b>Abnormal qualities (adjectival)</b>	<b>Qualités anormales (adjectivaux)</b>
0190	(be) bald	kwabokwabo
0191	(be) blind	anyesinuwaa
0192	(be) myopic, (be) shortsighted	ɔnwodede
0193	(be) thin	teamaa
0194	(be) impotent	alabirigyo
<b>1.5.2</b>	<b>HANDICAPPED PEOPLE</b>	
0195	barren woman	Mmotaen
0196	blind person	anyesiniwaanɛ
0197	deaf (mute) person	asotiriwaanɛ

0198	hunchback	
0199	cripple (n)	bubuanie
0200	dwarf	Mmotia/akoatia
0201	giant	Branoa
0202	stupid person	Sona gyimiles
0203	senile person	
0204	mad person	bɔlanie
1.6	HEALTH AND DISEASE	SANTÉ ET MALADIES
0205	(be) healthy, (be) well	Nya anwosere
0206	(be) sick, (be) ill	fokye
0207	hurt oneself	Pira onwo
0208	heal (tr), cure (v)	anwoyerɛsale
0209	medicine	Eyile
0210	get well, recover	onwo bayeo
0211	revive	Kenyae
<b>1.6.1</b>	<b>Abnormalities</b>	
0212	abscess	
0213	swelling	
0214	tumour	
0215	bruise (n)	
0216	burn (n)	Mbubunya
0217	goiter	kombɔ
0218	hernia (umbilical)	Ngorootoo
0219	ulcer (leg)	Kunukena
0220	wound, sore	Kena
0221	pus	
0222	scar	Kenanvoye
0223	intestinal worm	Esuroin
<b>1.6.2</b>	<b>Diseases, malaise</b>	
0224	illness, disease	anwoyerɛ
0225	elephantiasis	Nambim
0226	ringworm	

0227	leprosy	Kwata
0228	malaria (fever)	Atiridii
0229	fever (not malaria)	Ebunu
0230	pain (n)	yale
0231	give pain, hurt	Peraye
0232	throb (with pain)	Sorain mbeteka
0233	vomit (v)	Fe
0234	stomachache, upset stomach	koeyale
0235	headache	Te-pakye-le
0236	diarrhea	kunutule
0237	scabies (the itch)	

**1.6.3 Life and death**

0238 life  
0239 (be) alive  
0240 menstrual period  
0241 (be) pregnant  
0242 miscarriage  
0243 labour (n), birth pains  
0244 bear (child), give birth  
0245 (be) born  
0246 (be) young  
0247 grow up  
0248 (be) old (not young)  
0249 die  
0250 death  
0251 (be) dead

**2 MAN'S NONPHYSICAL BEING**

**2.1 KNOW, BELIEVE, TEACH**

0252 think  
0253 believe  
0254 hope (v)  
0255 know (something or someone)  
0256 knowledge  
0257 wisdom  
0258 (be) wise  
0259 (be) intelligent  
0260 (be) stupid  
0261 (be) confused  
0262 learn  
0263 teach  
0264 show

0265 remember

0266 Forget

**2.2 EMOTIONS**

0267 (be) happy, (be) joyful

0268 rejoice

0269 Laugh

0270 Smile

0271 (be) sad

0272 cry, weep

0273 sorrow (n)

0274 shame (n)

0275 pity (n)

0276 fear (n)

0277 frighten

0278 startle, surprise

	sũ̀
	kyire
	kyire
	kae
ngoã	awerefire
tease	
asaabule-kyia	de onye
wonze	de onye
wonzẽle bõ wasekye	sire
awore nu yale	nwenwe
wo	di aworebõle
wo	su
	aworebõle
nyĩ	aniwuo
paenyele	
wu	suroin
ewue	hunsahuna
wu	
dwene	
dedi	
anidasoe	
sè	
nimdee	
nwore	
sè nwore	
sè nwore	
gyimi	
adwene atoto	

0279	(be) angry	feyaa
0280	calm (oneself)	Dwodwo ahone
0281	(be) proud	bɔ dwɛɛ
0282	respect (v)	Bu nikye
0283	honour (v)	Di ni
0284	love (v)	kuro
0285	hate (v)	po
0286	despise, disdain	Bu animtia
2.3	HUMAN WILL	
0287	want, desire (v)	kuro
0288	decide	bɔ adweneporɛ
0289	choose (tr), pick (tr)	ye
0290	hesitate	Twe ogya bo
0291	abstain	Twe onwo fi
0292	allow, permit	Ma atɛɛ
0293	forbid	bra
0294	prevent	Si atɛɛ
0295	plan (n)	bɔ adweneporɛ
0296	try	sonea
0297	succeed	diyie
0298	fail	Dinkyɔ
0299	pretend	Hyeda
2.4	HUMAN CHARACTER	
0300	(be) kind	kunutepa
0301	(be) generous	Bukye osanu
0302	(be) selfish	yɛ angodi
0303	(be) honest	Ka nahorɛ
0304	(be) corrupt	Ma oti yɛ se
0305	(be) wicked	bɔ aborɛ
0306	(be) fierce	yɛ patapaa
0307	(be) jealous	yɛ ahoɔyaa

0308	(be) shy	fere
0309	(be) courageous, (be) brave	
0310	coward	sepe
0311	(be) curious	ye tirentiren
0312	(be) eager, (be) zealous	Nya nsiye
0313	(be) lazy	akwadworo
0314	(be) patient	Nya abotre
0315	(be) impatient	Olé abotre
0316	(be) restless, (be) unsettled	
0317	(be) stubborn	
0318	reputation	Nzaberanoa

2.5	DIFFICULTY	
0319	hardship, distress	anwokyere
0320	(be) difficult	se
0321	suffer	Nwu amanee
0322	obstruct	Si atēē
0323	stumbling block, obstruction	siakwan
0324	danger	
0325	problem, trouble	ɔhaw/amanee-nwune
3.	PERSONS	
0326	human being, person	sona
0327	self	anwoe
0328	man (male)	brensua
0329	woman	brasua
0330	white man	bronie
3.1	STAGES OF LIFE	
0331	fetus	abodoma
0332	baby	adoma
0333	twin	ndaa
0334	child	akɔdaa/akɔlaa/akɔraa
0335	boy	brensua
0336	girl	brasua
0337	adult	paen
0338	young man	abrandee
0339	virgin	ababunu
0340	old person	Aworowaa (female)/ akokoraa (male)
3.2	BLOOD RELATIONS	
0341	relative (by blood)	abusuanie
0342	ancestor	nanamo
0343	grandparent	nana
0344	father	baba
0345	mother	Maame/nie



0346	brother (elder/younger)	Aliemaa brensua
0347	sister (elder/younger)	Aliemaa brasua
0348	father's brother (uncle)	baba
0349	mother's brother (uncle)	wɔfa
0350	mother's sister (aunt)	sewaa
0351	father's sister (aunt)	sewaa
0352	cousin	aliemaa
0353	firstborn	Baa-paen/bamue-baaa
0354	descendant	bosonie
0355	son	Baa brensua
0356	daughter	Baa brasua
0357	grandchild	anomaa

		0386	enemy
		0387	traitor
		0388	thief
0358	nephew	0389	guide (n)
0359	name	0390	messenger
0360	namesake	0391	crowd
3.3	MARRIAGE RELATIONS	0392	chief, headman
0361	in-law, relative by marriage	0393	elder
0362	husband	0394	master
0363	wife	0395	slave
0364	fellow-wife, co-wife		
0365	father-in-law		
0366	mother-in-law		
0367	brother-in-law		
0368	sister-in-law		
0369	son-in-law		
0370	daughter-in-law		
0371	widow		
0372	widower		
0373	orphan		
0374	fiancé (betrothed boyfriend)		
0375	fiancée (betrothed girlfriend)		
0376	bastard, illegitimate child		
3.4	RELATIONS, EXTENDED AND SOCIAL		
0377	tribe, ethnic group		
0378	clan		
0379	family		
0380	friend		
0381	neighbour		
0382	acquaintance		
0383	host		
0384	guest, visitor		
0385	stranger (unknown person)		

	Abusua kure
awosiaa	ndoon
dumaa	abusua
	damfo/liengo
	aliɛmaa
	maniniɛ
sia	ɛwɔfoɛ
hũɛ	ɛwɔfoɛ
yɛɛ	pɔfoɛ
kora	
sia-brensua	awieniɛ
sia-brasua	
akonda	somafoɛ
akumaa	ɛlɔɛn (dɔm/menia)
sia brensua	ɔhene
sia brasua	paen
kunaniɛ	mene
kunaniɛ brensua	akoaa
awisia	
somaa	
somaa	
olé baba	

## 3.5 PROFESSIONS

0396	farmer	kuanie
0397	fisherman	nzue nu nae yefoe
0398	hunter	bəfoe
0399	blacksmith	ɔbo nnadee
0400	potter	ɔnwo ngukue
0401	weaver	owufoe
0402	butcher (n)	nangwasenie
0403	trader	dwadinie
0404	(domestic) servant	afranee
0405	beggar	sresrefoe
0406	soldier	sraanie
0407	prostitute	gyandranie
0408	midwife	Ode awore
0409	medicine man, traditional healer	dunzinie
0410	fetish priest	komee
0411	sorcerer (male)	Bayi bonzam
0412	witch (female)	bayifoe
0413	fortune-teller, diviner	

## 4. PERSONAL INTERACTION

## 4.1 ASSOCIATION OF PERSONS

0414	meet, encounter	yia
0415	accompany	Soma
0416	(be) together	bonu
0417	assemble, meet together	Boa noa
0418	invite	To sa fre
0419	(be) alone	angome
0420	abandon	po
0421	flee, run away from	nwatĩ
0422	drive away	foa

0423	avoid	Si atēē
0424	(be) same	tefe
0425	(be) different	
0426	resemble	soma
0427	imitate	suasua
0428	admire	
0429	benefit, suit	fata
4.2	SPEECH, LANGUAGE	PAROLE, LANGAGE
0430	language	edwudwole
0431	word	dwere
0432	meaning (n)	ngyerεasee
0433	say	kā
0434	voice	edwudwole
0435	speak, talk	Dwudwo

0436	whisper (v)	
0437	shout (v), cry out	teanu
0438	chat (v)	Di ngømmō
0439	mumble	Besebese ɔnoa
0440	stutter	
0441	(be) eloquent	Ye noa ate
0442	(be) silent	Dinn-yɛ-lɛ
<b>4.2.1 Greeting</b>		
0443	greet (v.)	Kyia
0444	call (someone)	frɛ
0445	say goodbye, take leave of	
<b>4.2.2 Information and questions</b>		
0446	announce	bɔ ngæɛ
0447	announcement	ngæbɔ
0448	news	dwirɛ
0449	explain	Kyirenu
0450	advise	Tu fo
0451	gossip (v)	yɛ teta teta
0452	lie (n) (falsehood)	anoanu
0453	ask, request	bisa
0454	plead, implore	kyerɛ-palɛ
0455	request (n)	abisaadeɛ
0456	answer, reply (v)	bua
0457	thank	Da ase
<b>4.2.3 Promise</b>		
0458	promise (n)	anohoba
0459	oath	ndaen
0460	swear	Kã ndaen
<b>4.2.4 Strife and praise</b>		
0461	insult (v)	pɛ nzoa
0462	insult (n)	Nzoa
0463	slander (v)	dumaasekyele

0464	threaten	bɔ ndrɛnɛɛ
0465	argue	Su aporowaa
0466	argument	Aporowaa-sule
0467	grumble, complain	nwiinwii
0468	contradict	
0469	accuse	bɔ kwaadu
0470	deny	pɔ
0471	admit (to a wrong)	De tonu
0472	agree	De tonu
0473	agreement	apam
0474	persuade	
0475	praise (n)	ngamfo
0476	bless, praise (someone)	Esaleɛ
0477	congratulate	bɔ abaso

0478	boast, brag	0502	lead, guide (v)
<b>4.2.5</b>	<b>Discourse genres</b>	0503	follow
0479	tell, recount (story)	0504	obey
0480	story (tale)	4.6	CONFLICT AND RESOLUTION
0481	proverb	0505	please, satisfy
0482	speech, discourse	0506	annoy, disturb
0483	account (report) (n)	0507	deceive
4.3	INTERPERSONAL CONTACT	0508	quarrel
0484	embrace, hug (v)	0509	fight
0485	caress (v)	0510	stab
0486	kiss (v)	0511	kill, murder
	copulate, have sexual	0512	take revenge
0487	intercourse		
0488	nurse, suckle (baby) (tr)		
0489	tickle (v)		
0490	spank (child)		
0491	whip (n)		
4.4	HELP AND CARE		
0492	help		
0493	protect, defend		
0494	look after		
0495	bring up (a child)		
4.5	DOMINION AND CONTROL		
0496	rule over, dominate		
	order (someone to do		
0497	something)		
0498	command (n)		
0499	duty, obligation		
	send (someone to do		
0500	something)		
0501	serve		



hye yye

Hohoa onwo

nhye

asedee

ka

soma

so

hoaa

di mmua

anyandera

di nsee

edwudwole

ye asoe

ngondaa

sre/ pa kyere

to ye nu/ ye atuu

gyegye

nnakanaka

fe ye noa

ko

naa

ko

woye dadee

nekine

ku

tuayeso

pe ebonwo

egwale

boka

bo awaen

nia so

tete

	resolve, settle	<b>5.2.1 Clothing</b>
0513	(dispute)	0536 article of clothing, clothes
0514	intercede, mediate	0537 wear clothes
0515	compromise	0538 dress (v)
0516	appease, pacify	0539 undress
4.7	CRIME AND JUSTICE	0540 (be) naked
0517	steal	0541 hat
0518	rape	0542 shirt
0519	judge (v)	0543 trousers
0520	law	0544 loincloth
0521	(be) fair, just	0545 robe (man's gown)
0522	(be) guilty	0546 cloth worn by a woman
0523	(be) innocent	0547 baby sling
0524	punish	0548 shoe, sandal
0525	penalty, punishment	
5.	HUMAN CIVILISATION	
5.1	SETTLEMENT	
0526	dwell, inhabit	
0527	inhabitant, resident	
0528	bush dweller	
0529	move away, migrate	
0530	country, ethnic area	
0531	frontier (of ethnic area)	
0532	town, city	
0533	village	
0534	camp, encampment	
0535	market (n)	
5.2	CLOTHING AND ADORNMENT OF BODY	

siesie  
dima  
pata

kuro  
akuraa  
sesẽ  
dwaa

wia  
to monaa  
bua ndeen  
mmraa  
ye pɛ  
di fɔ  
ennifo  
twe aso  
asotwe

Tena/ndena  
Wura ataadeɛ  
Wura ataadeɛ  
Yeye onwo  
mbaen  
kyere  
ataadeɛ  
tena

tena  
kuromanie  
eburoniɛ/nnamuɛnunie  
tukotena  
maen

maboa

### 5.2.2 Adornment and accessories

0549	bead	tōmaa
0550	string, thread (beads) (v)	tōmaa nyamaa
0551	bracelet	afre
0552	necklace	komadee
0553	ankle ring, bangle	afre
0554	ring (finger)	kaa
0555	earring	asomadee
0556	pierce (ears)	Bonu tokuru
0557	labret, lip plug, lip disk	
0558	plait, braid (hair)	bō oti nwiaa
0559	(facial) incision(s), tattoo(s)	
0560	cane, walking stick	pōmaa

### 5.2.3 Care for body

### Soins du corps

0561	bathe, wash oneself	bià
0562	apply (ointment), besmear	popa
0563	wipe off (excreta)	kyikyì
0564	cut (hair)	tete
0565	shave (v)	póa
0566	razor	
0567	comb (n)	Sekaa
0568	tooth stick, toothbrush	

## 5.3 FOOD AND DRINK

### 5.3.1 Food

0569	food	alee
0570	meat	naen
0571	fat	eloi
0572	oil	anwa
0573	soup, broth	troo
0574	pap, mushy food	afufu
0575	bread	panoo

0576	crust (n)	panoosĩ
0577	flour	esam
0578	salt	ngyẽẽ
0579	breakfast	ngyermɔ alee
0580	evening meal	nnɔsoa alee
0581	feast	Epoen-tole
0582	leftovers	alee ngaa
0583	spoil (food) (intr)	
0584	mould (n)	
<b>5.3.2 Drink</b>		
0585	milk (n)	nyɔfone-nzue
0586	curdled milk	
0587	alcohol (general)	Nza (nzaden)
0588	beer (traditional)	

0589	mead, honey beer	
0590	palm wine	Nza-fufuo

#### 5.4 FOOD PREPARATION

##### 5.4.1 Kitchen preparation

0591	prepare (food to cook)	tõ
0592	cut (tr)	pε
0593	cut open (fruit)	
0594	slice	pepε
0595	peel (v)	Yeyenwo
0596	mix (v)	frafra
0597	stir	kanu
0598	strain (food) (v)	
0599	pound	si
0600	grind	ti
0601	knead	fete
0602	pluck (feathers)	tutu

##### 5.4.2 Cooking

0603	cook (v)	tõ
0604	roast	toto
0605	fry	kye
0606	bake (in ashes)	tõ
0607	(be) smoked	tõtõ
0608	boil (water), bubble up	tõ
0609	ferment (alcohol) (v)	

#### 5.5 DOMESTIC UTENSILS AND CONTAINMENT

##### 5.5.1 Kitchen utensils

0610	cooking pot (earthenware)	dansen
0611	metal pot	dansen
0612	pot (for water)	bua
0613	ladle	ngwanda
0614	cooking stone	

0615	grinding stone	nyɔboɛ
0616	upper grinding stone	nyɔkoa
0617	lower grinding stone	nyɔboɛ
0618	pestle, pounding stick	dwomaa
0619	mortar, pounding pot	duwaa
<b>5.5.2 Eating utensils</b>		
0620	plate	kyɛnsĩ
0621	bowl	talie
0622	cup	kwangua
0623	spoon (traditional)	ateɛ

### 5.5.3 Containers and containment

0624	bag	0656	tie (knot)
0625	box	0657	untie
0626	basket	0658	tighten (tr)
0627	bucket, pail	0659	(be) tight
0628	calabash	0660	loosen
0629	bottle	0661	(be) loose, slack
0630	stopper, plug		
0631	handle		
0632	pour		
0633	spill (liquid) (tr)		
0634	take out (from container)		
0635	fill		
0636	(be) full		
0637	(be) empty		
0638	(be) open		
0639	open (tr)		
0640	close, shut (tr)		
0641	stop up		
0642	cover (v)		
0643	uncover		
0644	store (up)		
0645	bundle (n)		
0646	heap (n)		
0647	heap up		
0648	wrap up		
0649	unwrap		
0650	pack (v)		
0651	strap (n)		
0652	string (n)		
0653	rope		
0654	knot		
0655	fasten, bind (load)		



kotoku	kataso
	bukye so
alaka	sie
kɛndɛɛn	kyekye bonu
bokiti	doboa
toa	tas
	pɛso
tiran	buabua
hwie	
hwie gua	nyamaa
ye fite	nyamaa
	pɔrɛ
ma oyi	mianu/bɔ
wayi	kyekye
hwee nenu	sankye
bukye	mianu
bukye so	
tonu	ɡɔnu/hɔdwɔn
tua	sankye nu

## 5.6 HABITATION

### 5.6.1 Parts of a house

0662	compound, house	Fi-twa-hyia
0663	hut	sesɛ
0664	wall	
0665	door, doorway cover	anoa
0666	doorway	anoa
0667	window	Mboma

0668	roof	Sua nkatasoe
0669	beam, rafter	
0670	floor	aseenwõ
0671	room	suanu
0672	bedroom	pien
0673	kitchen	gyaade
0674	entrance hut	
0675	courtyard	
0676	fence (n)	
0677	fence in (v)	
0678	granary	
0679	well (n)	
0680	bathing place	abialee
0681	latrine, toilet	eyaen
0682	garbage dump	boolaso
0683	garden	Bondua sī boo
0684	shelter (n)	
<b>5.6.2 Construction</b>		
0685	build	si
0686	mark out, peg out (ground)	hye nzore
0687	mud block	
0688	thatch (n)	
0689	plaster (n)	
0690	lime, whitewash	
0691	paint (n)	
0692	ladder	atwolee
<b>5.6.3 Furniture</b>		
0693	chair	bíà
0694	stool	namadwa
0695	wickerwork	
0696	bed	bëen/mba
0697	mat	bëe
0698	lamp, torch	kanea
0699	fan (n)	bɔ-mvrama

0700	bell	adɔma
0701	ring (bell) (v)	Woso adɔma

#### 5.7 PROFESSIONS AND WORK

0702	act, do	yɛ
0703	work (n)	Adwuma-yɛɛ
0704	mend, repair	siesie

##### **5.7.1 Smithing**

0705	forge (n)
0706	hammer
0707	anvil
0708	bellows

**5.7.2 Pottery**

0709	lump (clay, mud)	tore
0710	mould (pottery)	nyonu
0711	potter's kiln	

**5.7.3 Wood work**

0712	wood	taboa
0713	cut down (tree)	pɛto
0714	log	eyéin
0715	hollow out (log)	
0716	axe	akumaa
0717	chop into pieces	Bubu nu mmaamaaa
0718	saw (n)	sralaa
0719	saw (wood) (v)	
0720	plank (n)	ndaboa
0721	knot (in wood)	
0722	splinter, sliver (n)	
0723	chisel (n)	
0724	nail (n)	Nadoaa

**5.7.4 Tailoring and weaving**

0725	sew	pa
0726	needle	panee
0727	thread (n)	nyamaa
0728	hem (n)	
0729	pocket	bɔto
0730	(be) torn	watete
0731	weave	nyono
0732	cloth	tena

**5.7.5 Domestic work****Travaux domestiques**

0733	rag	nangure
0734	broom	saën
0735	sweep	pra
0736	polish	pepa
0737	wash (clothes, utensils)	pu
0738	draw water	Twe nzue

0739	fetch (firewood)	Bubu mmakaa
0740	dig	tu
0741	rubbish	nwuraa

## 5.8 AGRICULTURE

### 5.8.1 Cultivation

0742	cultivate, farm (v)	So (boo)
0743	field	fieso
0744	boundary (of field)	hyeeso
0745	fertile soil	asee belee
0746	(be) barren (of land)	asee nyii

0747	clear (land for planting)	siesie
0748	sow, plant	dua
0749	transplant	tudua
0750	weed (v)	bɔ ndire
0751	hoe (v)	Fa kona tutu
0752	hoe (n)	Kona
0753	big hoe	Kona pri
0754	sickle	
0755	machete, cutlass	Kotokro, ngrande
<b>5.8.2</b>	<b>Harvest</b>	<b>Moisson</b>
0756	harvest season	εpeε mmere
0757	harvest (maize) (v)	pε (aburo)
0758	harvest, dig up (yams)	Tu (boluo)
0759	pick, pluck (fruit)	Sesa/t (aduaba)
0760	harvest, collect (honey from hive)	Nye (woε)
0761	threshing-floor	aseenwō
0762	thresh, beat (grain)	Bro (aburo)
0763	winnow (n)	Huhuamoa
0764	winnow, throw in air (grain) (v)	huhu
0765	shell (groundnuts) (v)	bɔ (ngateε)
0766	husk (corn) (v)	Wongye (aburo)
<b>5.8.3</b>	<b>Animal husbandry</b>	
0767	domesticate, tame	nyεne
0768	herd (cattle, sheep) (n)	kure
0769	herd, tend (cattle, sheep) (v)	Nia, kā (nnandwie, mmoaen)
0770	cattle pen	Nnandwie tui
0771	tether (sheep, goats) (v)	Menda (mmoaen, nnandwie)
0772	feed (animals)	Ma ngaka aleε
0773	milk (cows, goats) (v)	Twe nyɔfone nzue
0774	castrate	sa
5.9	HUNTING AND FISHING	
<b>5.9.1</b>	<b>Hunting</b>	
0775	hunt (v)	Ku ye

0776	stalk (v)	To kye ye
0777	chase (v)	fõã
0778	track (animal) (n)	tete
0779	footprint (human)	anamøn
0780	bow (hunting)	ahayodeε-tui/ agyaa
0781	arrow	Afena tui/ agyaen bakaa /pea
0782	poison (on arrow)	εboro
0783	head of arrow	Afena ti
0784	quiver (n)	Agyaen kotoku/afena kotoku
0785	lance (spear) (n)	Agyaen/afena/apea
0786	knife	dadeeba
0787	throwing stick (n), throwing knife	dadeeba

0788	club, cudgel	bokorma
0789	hunting net	ahayɔ-asau
0790	birdlime (adhesive to catch birds)	
0791	trap (n)	ngaen
0792	set (trap)	Soa (ngaen)
0793	trap (animal) (v)	Kye (kaka)
0794	evade	nwatĩ
0795	escape	nwatĩ
0796	wound (animal)	Pura (kaka)
0797	slaughter, kill (animal for butchering) kũ	
0798	skin (animal) (v)	Pure nwomaa
<b>5.9.2</b>	<b>Fishing</b>	<b>Pêche</b>
0799	fish (v)	Pena nzue nu naen
0800	fish dam	Tiré nzue
0801	fish trap	Tiré ngaen
0802	fishing net	Egyein-yele asau
0803	fishing line	Egyein-yele nyamaa
0804	fishhook	koaa
0805	bait	ngamdangoraa

## 5.10 POSSESSIONS AND COMMERCE

		0816 (be) poor
<b>5.10.1</b>	<b>Possessions</b>	<b>5.10.2 Money exchange, finances</b>
0806	have, possess	0817 money
0807	need (v)	0818 cowrie shell
0808	get, obtain	barter, exchange (of
0809	give	0819 goods)
0810	return (tr), give back	0820 buy
0811	belongings	0821 sell
0812	owner	0822 (be) scarce
0813	rich man	0823 (be) expensive
0814	poor man	0824 (be) inexpensive
0815	(be) rich	0825 price



0826 haggle, negotiate a price  
0827 payment  
0828 pay (for goods, services,  
etc.)

Nya, le

hĩã

nya

ma

ahõdee

(o)wura

sikanie

ehianie

(nya) sikaa

(di) hia

sikaa

serewaa

nzesa dwaa

tó

tone

ye na

ye nyõboe ye se

ye nyõboe nye se

nyõboe

di ye noa

akatuua

tua (kerε)

0829	gift	akyɛdɛɛ
0830	hire (v)	bɔ paa
0831	beg (for money)	sɾɛsɾɛ (sikaa)
0832	borrow	fɛm (sikaa)
0833	lend	Fa fɛm
0834	debt	kɛrɛ
0835	offer (v)	fama
0836	accept, receive	dɛ
0837	refuse	pɔ
0838	tax (n)	ɛtoɔ
0839	tribute	aboadɛɛ
0840	inheritance	agyapadɛɛ/awugyadɛɛ
0841	inherit	Di bia, fa agyapadɛɛ
5.11	TRAVEL AND TRANSPORTATION	
0842	journey, trip (n)	akwanduo
0843	travel, go on a trip (v)	Tu atɛɛ
0844	traveler	akwanduniɛ
0845	wander	Kyini/ bɔ mbrakaa
0846	(be) lost	Mini
0847	path, road	atɛɛ
0848	fork (in path)	ngwandaa
0849	crossroads, intersection	mgwandannaen
0850	cross (river)	pɛ (asue)
0851	canoe	ɛlɛn
0852	paddle (n)	Tabɔnga
0853	paddle (v)	Kā ɛlɛn
0854	bale out (canoe, boat)	fɛ nzue
0855	capsize	butu
0856	bring	Fa bra
0857	take (away), carry away	fakɔ
0858	send (something to someone)	soma
0859	carry (in arms)	tira

0860	carry (child) on back	dodo
0861	carry on head	soa
0862	headpad	kəhyire
0863	load, burden (n)	nningyein
0864	load (v)	hyehye nningyein
0865	unload	Ye nningyein
5.12	WAR	
0866	war	kõε
0867	peace	asomdwoε
0868	army	asrafoε
0869	spy (n)	tetεfoε
0870	spy (v), spy on	tetε
0871	sword	ngrandε

0872	gun	tuii
0873	shield (n)	akokyem
0874	conquer, defeat	Di ngonim
0875	(be) defeated	Di nguguo
0876	prisoner, captive	kukununiε, deduanie
0877	plunder (a town)	sεkye (kuro)

### 5.13 ARTS AND LEISURE

#### 5.13.1 Music and dance

0878	music	edwein
0879	song	edwein
0880	sing	To dwein
0881	hum (v)	pene
0882	whistle (v)	bɔ nvrema
0883	dance (n)	abilie
0884	dance (v)	gó

#### 5.13.2 Musical instruments

#### Instruments de musique

0885	big(gest) drum	kyeneε piri
0886	small(est) drum	kyeneε ba
0887	talking drum	Anyandera kyeneε
0888	hour glass drum	
0889	flute	Nvrema awεen
0890	harp	sangoo
0891	balafon	
0892	horn (musical instrument)	awεen
0893	shell (musical instrument)	
0894	rattle (musical instrument)	
0895	play instrument	
0896	blow (horn)	Hu awεen

#### 5.13.3 Arts

0897	draw (picture)	drɔmo
0898	decorate	siesie

0899	carve	sé
<b>5.13.4 Leisure</b>		
0900	play (child) (intr)	yekyerε
0901	game	angolε
0902	tobacco pipe	Taa kuruwaa
0903	pipe-stem	Kuruwaa bakaa
0904	tobacco	taa

5.14 RELIGION AND THE

0905	awe, reverence (for God)	nidie
<b>5.14.1 Supernatural beings</b>		
0906	God (supreme being)	Nyameε
0907	god (lesser), fetish (spirit)	bosoe
0908	demon, evil spirit	sunzummmone
0909	ghost (visible apparition)	εnwomee
0910	soul, spirit (of living person)	εkra, sunzum
0911	spirit (of dead person) (invisible)	sunzum
<b>5.14.2 Religion and witchcraft</b>		
0912	pray	bɔ mbaεε
0913	blessing	esaleε
0914	divine, prophesy (v)	hyε ngɔm
0915	prophecy (n)	ngɔmhyε
0916	vision (supernatural)	nnyekyire
0917	omen	Kyeabie nzunzwansoe
0918	witchcraft	bayie
0919	bewitch, cast spell	yε ayire / kyekye
0920	curse (v)	Dome/ di amoen
0921	curse (n)	Nnome, amoen, amowaa
0922	poison (n)	εborɔ
0923	poison (a person) (v)	Maye adubone
0924	amulet, charm, fetish	bodua
0925	protect by charm	Be ye nwo/ bɔ yenwo awaen
0926	mask (n)	ngatanim
0927	(be) taboo	akyiwadeε
0928	exorcise	Tu sunzummmone
0929	sacrifice	apayε/ afɔleε
0930	pour libation	Gua nzaa
0931	dwelling place of the dead (spiritual)	asieleε/nzamanbonu

5.15 CEREMONIES

0932	tradition, custom	amamere/amanee
0933	feast (n)	epoentole/poen
0934	naming ceremony (baby)	dumaatole amamere

0935	circumcision (male)	Bienzua pele
0936	excision (female)	
0937	initiation (male)	
0938	initiation (female)	manzaahyele

**5.15.1 Marriage**

0939	marry	Gya biãã/ gya braa
0940	marriage (state of wedlock)	agyaa
0941	(be) engaged, (be) betrothed	baye yenwo nningyein/ b'abo ye asiwa

0942 brideprice (for bride's family)  
0943 wedding (ceremony)  
0944 bride  
0945 groom  
0946 polygamy  
0947 adultery  
0948 divorce (v)

**5.15.2 Funeral**

0949 funeral (at occasion of death)  
0950 mourning  
0951 wail, ululate (at funeral) (v)  
0952 condole, comfort (v)  
0953 corpse  
0954 bury  
0955 grave  
0956 cemetery

6. Animals

0957 animal

6.1 DOMESTIC ANIMALS

**6.1.1 Bovines**

0958 ox (general term), bovine  
0959 bull  
0960 cow (female)  
0961 heifer  
0962 steer  
0963 calf

0964 herd (of cattle)

**6.1.2 Ovines and caprines**

0965 goat  
0966 he-goat, billy goat  
0967 she-goat, nanny goat  
0968 kid  
0969 sheep  
0970 ram  
0971 ewe  
0972 lamb  
0973 flock (of sheep, goats)

**6.1.3 Poultry**

0974 chicken  
0975 rooster (cock)  
0976 hen  
0977 chick



Ti nzaa/ atɔmvole sika

atɔmvole

atɔmvole braa

atɔmvole biãã

agyaadodoɔ/ dodoɔ agyaa

agyaasɛkyeɛ

yira (agyaa)

ɛsɛɛn

abubuo/esũe

bɔ awuye

kyekye wora

efui

sie

asieleɛ kumaa

asieleɛ

kàkà

nandwie ba

nandwie nyii bɔ basa ye

nandwie ba

kure

abirekyie

abirekyie nyii

abirekyie beleɛ

abirekyie ba

boaen

boanen nyii

boaen beleɛ

boaen ba

abirekyie / boaen kure

ako

ako nyii

ako beleɛ

ako ba

nnadwie

nandwie nyii

nandwie beleɛ

0978	turkey	kokroloko
0979	guinea fowl	akɔmfem
0980	duck	dabodabo
<b>6.1.4 Beasts of burden</b>		
0981	camel	afupɔngɔ
0982	horse	pɔngɔ
0983	stallion	pɔngɔ nyii
0984	mare (female horse)	pɔngɔ belee
0985	colt	pɔngɔ ba
0986	donkey	afunum
<b>6.1.5 Other</b>		
0987	pig	prako
0988	boar (male pig)	Prako nyii
0989	sow (female pig)	Prako belee
0990	piglet	Prako ba
0991	dog	kyia
0992	pup	Kyia ba
0993	cat	ɛkra
0994	kitten	ɛkra ba
<b>6.2 MAMMALS</b>		
0995	elephant	ɛsɔ̃e
0996	hippopotamus	ɛtangwa
0997	buffalo	toeen
0998	rhinoceros	
0999	giraffe	
1000	warthog	Eburo prako
1001	monkey	adoee
1002	baboon	
1003	hyena	
1004	jackal	
1005	antelope	ketɛbɔɔ
1006	zebra	
1007	anteater, aardvark, antbear	

1008	pangolin, scaly anteater	
<b>6.2.1</b>	<b>Rodents</b>	<b>Rongeurs</b>
1009	mouse	amrokua
1010	rat	ebote
1011	cane rat, cutting grass, grass cutter	akrandee
1012	palm rat	
1013	shrew	
1014	mole	
1015	mongoose	
1016	hare	adango
1017	squirrel	epuro
1018	porcupine	kotoko

1019	bat	apaen
1020	fruit bat	
<b>6.2.2 Cats</b>		
1021	wild cat	Eburo kraa
1022	civet cat	
1023	genet	
1024	leopard	abrebee
1025	lion	gyata
<b>6.2.3 Mammal parts</b>		
1026	hide (of animal)	Nwomaa/womaa
1027	fur	nwiaa
1028	horn	mmeen
1029	hump (of cow)	akyakya
1030	udder	nyɔfone
1031	tail	dua
1032	hoof	maboa
1033	mane	sie nwiaa
1034	elephant's trunk	esɔe tulue
1035	elephant's tusk	esɔe gye
1036	den, lair, hole	bɔen
<b>6.2.4 Mammal actions</b>		
1037	bark (as dog) (v)	po
1038	bare, show (teeth)	Nwee (ogye)
1039	growl	Poro konvi
1040	ruminant, chew cud	Pu wesa
<b>6.3 BIRDS</b>		
1041	bird	anomaa
1042	crow	adene
1043	dove	abubure
1044	weaver-bird	
1045	parrot	akoo
1046	partridge	

1047	cattle egret	
1048	heron	
1049	kingfisher	
1050	hornbill	
1051	pelican	
1052	stork (marabou)	
1053	ostrich	
1054	owl	patue
1055	eagle	koleε
1056	hawk	akonoma
1057	vulture	pete

### 6.3.1 Bird parts and things

1058	feather	takraa
1059	wing	ndaa
1060	beak, bill	noa
1061	crest (of bird)	
1062	comb (of rooster)	fæen
1063	crop (of bird)	Konviabo fæen
1064	gizzard	sraboa
1065	claw	Gya boe
1066	egg	kyiremvue
1067	eggshell	Kyiremvue boen
1068	yolk (of egg)	Kyiremvue kunu
1069	nest	Bue/saen
1070	flock (of birds)	Anomaa kure

### 6.3.2 Bird actions

1071	fly (v)	tu
1072	dive	Yakyinu faa
1073	soar	Tu kə anwuro
1074	land (v), alight	Dwu ase
1075	perch	gyina
1076	flap the wings	bə ndanu
1077	cackle (as of chicken)	su
1078	crow (as a rooster) (v)	bə
1079	peck (tr)	
1080	lay (eggs)	to (kyiremvue)
1081	incubate, set (on eggs)	kə abu
1082	hatch	bobə

### 6.4 FISH

1083	fish	egyein
1084	catfish	
1085	mudfish (lives in the mud during dry season)	

1086 eel

**6.4.1 Fish parts**

1087 fish bone Egein bowie

1088 fish-scale Egein boen

1089 gill

1090 fin

**6.4.2 Shellfish and mollusks**

1091 crab kanga

1092 shrimp

1093 clam

1094 snail ebuhye

6.5 REPTILES

1095	snake	ewoo
1096	spitting cobra	ɛbɔnaa
1097	puff adder	
1098	python	ɛnyee
1099	green mamba	ɛkyerebene
1100	lizard	epo
1101	agama lizard (red-headed)	
1102	chameleon	
1103	gecko	lalee
1104	monitor lizard	
1105	crocodile	ɛlɛngyɛɛn
1106	frog	ɛprohyɛɛn
1107	toad	ɛprohyɛɛn
1108	tortoise (land)	akyekyere
1109	turtle (water)	akyekyere

**6.5.1 Reptile parts**

1110	fang (of snake)	Ewoo gye
1111	venom (of snake)	Ewoo ɛborɔ
1112	shell (of turtle)	Akyekyere sɪ

**6.5.2 Reptile actions**

1113	slither (snake)	
1114	bite (snake)	ka
1115	crawl (lizard)	kongo
1116	hiss	

6.6 INSECTS

1117	insect	
1118	flea	
1119	louse	egyire
1120	bedbug	nzongonzuo
1121	maggot (in rotten meat)	



1122	cockroach	tefre
1123	ant	ngyegyira
1124	army ant, soldier ant	kasre
1125	flying ant	
1126	termite	
1127	spider	ananze
1128	tarantula	kyemvoe
1129	scorpion	nyanyagyelee
1130	dung beetle	
1131	jigger	
1132	grasshopper	abebe
1133	cricket	
1134	locust	
1135	praying mantis	Abilie wura
1136	leech	

1137	caterpillar	
1138	centipede	kabe
1139	millipede	kòkròbòtè
1140	earthworm	esuroin
<b>6.6.1 Flying insects</b>		
1141	fly (n)	nwòsea
1142	mosquito	ndondom
1143	bee	abore
1144	mud wasp	
1145	dragonfly	
1146	butterfly	akyeen
1147	moth	akyeen
<b>6.6.2 Insect things</b>		
1148	antenna	
1149	sting (v)	ka
1150	stinger	
1151	spider's web	ndendaen
1152	cocoon	
1153	termite hill	
1154	beehive	
1155	beeswax, bee-bread	
1156	honey	wòe
1157	swarm (n)	abore pee/ kure
<b>7. PLANTS</b>		
<b>7.1 TYPES OF PLANTS</b>		
<b>7.1.1 Trees</b>		
1158	tree	bakaa
1159	ebony tree	Bakaa bire
1160	mahogany tree	
1161	teak tree	
1162	baobab tree	

1163	silk-cotton tree, kapok tree	
1164	shea-butter tree, shea-nut tree	Nguto bakaaa
1165	fig tree	Bobé bakaa
1166	thorn-tree	Bowue bakaa
1167	tamarind tree	
1168	oil palm	Aye bakaa
1169	coconut palm	Kube bakaa
1170	raffia palm	
1171	date palm	
1172	bush	ndire
<b>7.1.2</b>	<b>Grasses</b>	
1173	grass	esere
1174	bamboo	mбанbure

1175	reed	Relemmire/ngyenngyema
1176	weeds	ndire
7.2	PLANT PARTS	
1177	leaf	nyaa
1178	branch (of tree)	mmaen
1179	trunk (of tree)	Bakaa afiã
1180	bark (of tree)	Bakaa sî
1181	sap	
1182	stump	dosî
1183	root	ndii
1184	bulb, tuber	
1185	stem, stalk (of maize, millet, etc.)	
1186	silk, hair (of maize)	
1187	blade (of grass)	
1188	flower	nyereen/flawese
1189	bud	
1190	shoot (new plant)	
1191	vine	bobe
1192	tendril	
1193	thorn	mmowue
1194	palm branch, frond	εbere
1195	midrib of palm-frond	ndondoin
1196	palm needle	
7.3	PLANT PRODUCTS	
<b>7.3.1</b>	<b>Plant product parts</b>	
1197	juice	Aduaba nzue
1198	stone, pit	
1199	regime (of bananas)	
1200	corn cob	Aburo bakaa
1201	kernel (of corn, maize)	aburo
1202	seed	aba
1203	skin (of fruit)	Aduaba boen

1204	shell (of groundnut)	ngateε boen
1205	corn husk (n)	Aburo boen
1206	chaff	ndεtε
<b>7.3.2</b>	<b>Fruits</b>	
1207	fruit	aduba
1208	banana	kwadu
1209	plantain	baana
1210	lemon	domui
1211	orange	akengaa
1212	grapefruit	Bobe/ bobe aduaba
1213	pawpaw, papaya	brɔfre

1214	pineapple	abrɔbe
1215	guava	
1216	avocado	pɛɛ
1217	fig	bobe
1218	date	
<b>7.3.3</b>	<b>Vegetables</b>	
1219	tomato	ndos
1220	onion	gyeene
1221	garlic	
1222	pepper (green)	Mako bunu
1223	red pepper, hot pepper	mako
1224	okra	ngunuma
1225	egg-plant	nyaadoa
1226	mushroom	ndire
<b>7.3.4</b>	<b>Tubers</b>	
1227	cassava, manioc	bangye
1228	cocoyam, taro	mangani
1229	yam	boluo
1230	sweet potato	asaandoo
1231	potato	asaandoo
<b>7.3.5</b>	<b>Cereals</b>	
1232	maize, corn	aburo
1233	millet (rainy season)	
1234	sorghum (dry season)	
1235	guinea corn	
1236	rice	ɛmo
<b>7.3.6</b>	<b>Other plant products</b>	<b>Autres produits de plante</b>
1237	groundnut, peanut	ngateɛ
1238	sesame seed	
1239	cola nut	ɛwɔsɛ
1240	palm nut	ayee
1241	sugar cane	ahenamaa
1242	coffee	

1243 rubber

1244 cotton

7.4 PLANT PROCESSES

1245 grow (of plants) dua

1246 sprout (v) fefe

1247 (be) ripe boro

1248 ripen, become ripe boro

1249 (be) unripe bunu

1250 (be) rotten W'aporo

1251 (be) shrivelled, (be) wrinkled  
(fruit) W'atwindwam

1252 wither (plant) Wu/ w'awu

1253 blight (n)

8. ENVIRONMENT

8.1 NATURE

**8.1.1 Areas, region**

**ewiase**

1254	world	ewiase
1255	place	Nekaa/nkaa
1256	desert	ɛhwaɛ/eburo
1257	grassland	ɛsɛɛ
1258	forest	ɛhwaɛ/eburo
1259	open place, clearing	peteenu
1260	bush country, rural area	akuraa

**8.1.2 Physical features**

1261	ground, land	aseɛ
1262	mountain	bokaa
1263	summit, highest point	Bokaa so
1264	cliff	Bokaa poreso
1265	valley	kukoka
1266	ditch	Konga/bonga
1267	pit	kumaa
1268	hole	bɔɛn
1269	crevice	tokuro
1270	cave	nyɔbɔɛ sua

**8.1.3 Natural things (minerals, etc.)**

1271	rock (large)	nyɔbɔɛ taen
1272	stone (small)	ngakua
1273	gravel	
1274	sand	anweaa
1275	dust	nvutere
1276	dirt, soil	nɛtere
1277	clay	nɛtere kɔkɔɛ
1278	mud	asaa
1279	iron	bulalɛ
1280	gold	Esikaa kɔkɔɛ



1281	silver	ɛdwetɛ
1282	copper	kɔɔberɛ
1283	rust (n)	nnaakye
<b>8.1.4</b>	<b>Water related</b>	
1284	water	nzue
1285	ocean, sea	ɛpo
1286	lake	asue
1287	pool	ɛkwaa
1288	waterhole	
1289	marsh	
1290	spring	Asue ti
1291	waterfall	
1292	brook, stream	Asuten ba

1293	river	asutene
1294	current (river, stream)	
1295	riverbed (dry)	
1296	river bank	asuenoa
1297	ford (n)	
1298	bridge	
1299	island	supo
1300	beach	mboanoa
1301	wave	asorokye
1302	bubble	Pu nzue / ponda
1303	foam	ahure
1304	slime (organic)	
<b>8.1.5 Fire related</b>		
1305	fire	sĩĩ
1306	flame	Sĩĩ bō ogye
1307	spark	
1308	smoke	nwosina
1309	fireplace	Sĩĩnwo
1310	firewood	eyein
1311	charcoal	ebunaen
1312	ashes	znzoen
<b>8.1.6 Sky</b>		
1313	sky	ewienu
1314	air (breathed)	mrana
1315	cloud	munugum
1316	rainbow	nyangondon
1317	sun	eyia
1318	moon	εsraen
1319	full moon	
1320	new moon	
1321	eclipse (moon)	
1322	star	nzramaa
1323	Pleiades	

1324 Big Dipper, Plough, Great  
Bear

1325 Orion

1326 shooting star, meteor

**8.1.7 Other**

1327 noise, sound (n) dédé

1328 rustle (leaves) (v) hu

1329 squeak (wheel) (v)

**8.2 WEATHER**

1330 wind (n) Mvrama

1331 harmattan prakasua

1332 storm Mvrama piri

1333 thunder agradaa

1334	lightning	ayerem
1335	rain	Esue/ nyangomzue
1336	drizzle	Nzue pete
1337	hail	
1338	dew	ebosuo
1339	flood (n)	nzueyiri
1340	dry up, evaporate	wewe
1341	drought, famine	εpe/ εhoen
<b>8.2.1 Seasons</b>		
1342	season	mmre
1343	rainy season	nzuto mmre
1344	dry season	εpe mmre
1345	hot weather	ahuhuro
1346	cold weather	ayire
<b>8.2.2 Ambient conditions</b>		
1347	light	εhaen
1348	sunshine	Eyia kanea
1349	moonlight	εsraen mmre
1350	shadow	mwawoa
1351	darkness	Awosĩ
<b>8.3 TIME</b>		
1352	time	εmmre/berε
1353	now	kesaalae
1354	before	kora
1355	after	anzaana
1356	early	nde
1357	late	Ka nzie
1358	once	komape
1359	again	bieku
1360	sometimes	otelehoaa
1361	often	mben pēē/otaa
1362	usually	taa

1363	always	Daa/ daabiala
1364	never	lé
1365	spend time, pass time	pε/di mmere
1366	wait	wonde

### 8.3.1 Time periods

1367	day	kyĩã
1368	month	εsraen/bosome
1369	year	afoε
1370	today	enne
1371	yesterday	anoma
1372	day before yesterday	anoma sĩ
1373	tomorrow	ehema
1374	day after tomorrow	ehema sĩ
1375	olden times	Tete mmrere

### 8.3.2 Times of the day

1376	dawn (before sunrise)	Alabahene
1377	sunrise	eyiafitele
1378	morning	ngyeremɔ
1379	noon	eyiagyia
1380	afternoon	eyia
1381	sunset	eyiatɔɛ
1382	dusk, twilight (after sunset)	nɔsoa
1383	daytime	Eyia
1384	night	kɔngoen

### 8.4 SPACE AND OBJECTS

1385	thing	Nikye/nkye
1386	piece	
1387	top	anwuro
1388	bottom	aseɛ
1389	front (of something)	anyunu
1390	back (of something)	s̄ɛ
1391	side (of something)	ngyenu
1392	middle	afĩã
1393	edge (n)	ahameɛ, noa
1394	point (n)	
1395	bump (n), protuberance	
1396	spot (n)	

### 9. EVENTS AND ACTIONS

#### 9.1 MOVEMENT

(MOSTLY INTRANSITIVE)

1397	move (intr)	Kekã, tu
1398	movement	
1399	come	bra
1400	go	kɔ
1401	approach (v)	pingye
1402	arrive	dwu

1403	remain, stay	kabrɛ, tena
1404	leave (place)	fɪ
1405	return, go back	Sã kɔ
1406	go round, detour	kɔ yenwõ
1407	enter, go in	Wura nu
1408	come (or go) out, exit (v)	fite
1409	ascend, go up	fo
1410	descend, go down	dwu
1411	fall (intr)	tɔ (ase)
1412	swing (v), go back and forth	To alongo
1413	slide	
1414	roll	munumunu
1415	spread (disease, fire)	To pete

1416	burst	pakye
1417	disappear	mini
1418	speed (n)	mmirika
1419	(be) fast	nnyera
1420	(be) slow	nyaa
1421	hasten, hurry	Ka wɔ nwɔ̃

9.2 ACTIONS, EVENTS  
AFFECTING MATTER

**9.2.1 General**

1422	take	fa
1423	snatch, seize	foti
1424	catch (object in air)	kye
1425	pick up	Fa/ maso
1426	hold	Tira/sonu
1427	raise, lift	Masa/pagya
1428	lower (tr)	Ka ye ase
1429	drop (tr)	Yakyi nu
1430	throw	to
1431	shoot (v)	bɔ/to
1432	knock down, knock over (an object)	Ka to so
1433	turn over (tr)	kakyi
1434	pull	twē
1435	drag	Twē ye ase
1436	push	pĩã
1437	steer (v)	kã
1438	overtake, pass (tr)	Sã yenwɔ̃
1439	surround	pɛ yenwɔ̃ yia
1440	twist	kyinu
1441	fold (v)	bobɔ.buka
1442	coil (rope) (v)	bobɔ
1443	hang up	sinzɛ
1444	spread out (maize) (tr)	trɛnu



1445	stretch	baebaenu
<b>9.2.2</b>	<b>Percussion</b>	
1446	hit, strike	bɔ
1447	beat	bo
1448	bump (v), knock against	
1449	rub	Twip/popa
1450	scrape (v)	po
1451	scratch (v)	twitwi
1452	pierce	bɔ nu tokuro
1453	tear (tr)	te
1454	strip off (bark)	wɔngye
1455	shake (tr)	woso
1456	squeeze	moa
1457	crush (tr)	dwidwa

### 9.2.3 Creation and destruction

1458	create, make	bɔ, yɔ
1459	alter, change (tr)	sesã
1460	break (tr)	Bu, dwa
1461	destroy, spoil	sɛkye
1462	(be) ruined, (be) spoiled	sɛkye, bɔ asesa

### 9.2.4 Association of things

1463	join, put together	Fa bonu, ka bonu
1464	accumulate	bungam
1465	gather	Boa ye noa
1466	divide, separate (tr)	kyekye nu
1467	scatter (tr)	To pete
1468	throw away, get rid of	gyito

### 9.2.5 Placement

1469	put, place, set	fato
1470	leave (something somewhere)	Gya to brɛ
1471	keep, save	sie
1472	hide (tr)	fĩã
1473	lose (tr)	hwere
1474	look for	pena
1475	find	bɔ

### 9.2.6 Action of wind

1476	blow (of wind) (v)	bɔ
1477	blow down	bɔ to ase
1478	blow away (intr)	bɔ kɔ/ bɔ gyito/ bɔto
1479	fan (v)	Fita, bonu

### 9.2.7 Action with liquids

1480	flow	tengyɛ
1481	drip	
1482	leak (v)	nyu
1483	sprinkle	pete
1484	smear (tr)	

1485	dip	
1486	soak	doa
1487	wring out	Twe nu/ kyĩ nu
1488	dry out (clothes)	worɛ
1489	float	ɔturu ye nye/ turu so
1490	sink (v)	mono
1491	drown (intr)	Ye bo
<b>9.2.8 Action of light</b>		
1492	shine	Ta/ hyerɛn
1493	fade	nua
1494	(be) bright	ɔhyerɛn
1495	(be) dim	dumu

**9.2.9 Action of heat, fire**

1496	light (fire) (v)	sɔ
1497	quench, extinguish	nua
1498	burn (intr), blaze	yera
1499	melt (intr)	huro
1500	singe	

**9.3 ASPECT**

1501	begin	hyɛ yebo
1502	beginning	ahyɛaseɛ
1503	continue, resume	toaso
1504	end (n)	ayieleɛ
1505	cease, stop	Yakyi, pɛso
1506	finish, complete (v)	yie

**10. QUALITY****10.1 DIMENSION, SHAPE**

1507	(be) big	piri
1508	enlarge	Baye nu/ bukye nu
1509	(be) small	kaamba
1510	diminish	Te o
1511	(be) high	kɔ anwuro
1512	(be) low	kɔ ase
1513	(be) long	tenden
1514	lengthen	yɛ tenden
1515	(be) short	Sĩĩ/ kãã
1516	shorten	Buso/ pɛso
1517	(be) fat, (be) thick	piri
1518	(be) thin	Teamaa
1519	(be) wide	terɛ
1520	widen	terɛ nu
1521	(be) narrow	teaa
1522	(be) deep	Enu kɔ/ kuroun
1523	deepen	yɛ ye kuroun
1524	(be) shallow	Enu ngɔ

1525	(be) flat	
1526	flatten	
1527	(be) hollow	tokuro
1528	swell (intr)	
1529	(be) round	kurukuru
1530	(be) straight	tene
1531	straighten	tene
1532	(be) crooked	wahyeehyea
1533	bend, crook, curve (n)	Kōa, kyea
1534	(be) heavy	(oyε) nō
1535	weight	nonoε
1536	(be) light (not heavy)	Nyera

10.2	FEEL	1566	(be) sour
1537	(be) sharp	1567	(be) bitter
1538	sharpen (knife)	1568	odour, smell (n)
1539	sharpen, bring to point (arrow)	1569	stink, smell (bad)
1540	(be) blunt, dull	10.5	ABILITY
1541	(be) rough	1570	(be) able (to)
1542	(be) smooth	1571	(be) strong (physically)
1543	make smooth	1572	strength
1544	(be) hard	1573	(be) weak
1545	harden	1574	(be) great, (be) powerful
1546	(be) soft	1575	splendour, glory
1547	soften		
1548	(be) dry		
1549	(be) wet		
1550	(be) slippery		
1551	(be) sticky		
1552	(be) hot (objects)		
1553	(be) cold (objects)		
10.3	COLOUR		
1554	colour		
1555	(be) white		
1556	(be) black		
1557	(be) red		
1558	(be) blue		
1559	(be) green		
1560	(be) brown		
1561	(be) yellow		
1562	(be) dark (colour)		
1563	(be) light (colour)		
10.4	TASTE AND SMELL		
1564	taste (n)		
1565	(be) sweet		

(oye) na

Si (dadee)

Ye noa awu

sesakaa

menaõõ

ye ye menaõõ

(oye) se

ye se

ma oye se

oye mmere

w'awo

w'aloa

oye ndono

otè maaen

oye hye

oye fróló

fēē

fē

bisĩĩ

wēē

mvãã

õbõ

(okõ) hora

(yenwõ) ye se

anwõsere

(ye) mmere

(ole/nya) tumi

animonyam

fufue

bire

kòkore

tuum

10.6	VALUE	
1576	(be) good	paa
1577	(be) bad	(ɔtè) paa/ ɔte tɛɛ
1578	right, (be) correct	Tene/ pɛ
1579	truth	nahore
1580	(be) perfect	(yɛ) pɛ
1581	(be) wrong	tĩ
1582	(be) beautiful	nyemene
1583	(be) ugly	tɛɛ
1584	(be) clean	Yenwõ te
1585	(be) dirty	(ɔte) fiɛ
1586	(be) important	Ye now hia
1587	(be) amusing, funny	ɔyɛ siri
10.7	MATURITY	
1588	(be) new	fofore/ monɛen
1589	(be) old (not new)	daa
11.	QUANTITY	
11.1	CARDINAL NUMBERS	
1590	one (1)	kõ
1591	two (2)	nyɔ
1592	three (3)	nzã
1593	four (4)	nna
1594	five (5)	nnu
1595	six (6)	nzia
1596	seven (7)	nzoo
1597	eight (8)	mmɔtwe
1598	nine (9)	ngona
1599	ten (10)	buru
1600	eleven (11)	Buru ne kõ
1601	twelve (12)	Buru ne nyɔ
1602	thirteen (13)	Bure ne nza
1603	fourteen (14)	Buru ne nna
1604	fifteen (15)	Buru ne nnu



1605	sixteen (16)	Buru ne nzia
1606	seventeen (17)	Buru ne nzoo
1607	eighteen (18)	Buru ne mmõtwe
1608	nineteen (19)	Buru ne ngona
1609	twenty (20)	aburannyo
1610	twenty-one (21)	aburannyo ne kō
1611	twenty-two (22)	aburannyo ne nyo
1612	thirty (30)	aburasa
1613	forty (40)	aburanna
1614	fifty (50)	aburannu
1615	sixty (60)	aburunzia
1616	seventy (70)	aburanzoo

1617	eighty (80)	aburaɔtwe
1618	ninety (90)	aburahona
1619	hundred (100)	ɛyaa
1620	two hundred (200)	ɛyaa nyo
1621	five hundred (500)	ɛyaa nnu
1622	thousand (1000)	Apee kō
11.2 ORDINAL NUMBERS		
1623	(be) first	(di) mua
1624	(be) second	tɔso nyo
1625	(be) third	tɔso nza
1626	(be) last	pɛyebo
11.3 ORDER		
1627	add	kabonu
1628	subtract, take away	tefinu
1629	increase (intr)	tonu
1630	decrease (intr)	teso
1631	count (v)	kā
1632	arrange	Hyebye
1633	(be) equal	(ye) pɛ
11.4 RELATIVE QUANTITY		
1634	(be) abundant	waboso
1635	enough	pěě
1636	lack (v)	
1637	(be) used up	
11.5 QUANTIFIERS AND NEGATION		
1638	all	Yemu, nkoraatĩ
1639	many	pěě
1640	few	kāā
1641	half	bue
1642	whole	mumuya
1643	everybody	ebiala
1644	everything	nkyebiala

1645	everywhere	Nekaabiala
1646	nobody	Etè ebiala
1647	nothing	(oté) hwee

12. GRAMMATICAL ITEMS

12.1 PRONOUNS

1648	I	me
1649	you (masc., sing.)	wɔ
1650	he (human)	ɔ-

1651	we (incl.)	yε
1652	you (pl.)	εmɔ
1653	they (human)	bε
12.2	RELATIONALS	
1654	here	εwa
1655	there	εdɔ
1656	far	dede
1657	near	opingye
1658	north	Soro/atifi
1659	south	ngwaen
1660	east	afitelee
1661	west	atɔlee
1662	up	anwuro
1663	down	aseenwõ
1664	forward (direction)	kɔ anyunu
1665	backward (direction)	kɔ nzie
1666	right (direction)	Fa maaso
1667	left (direction)	Fa bæenso
1668	over, above	So anwuro
1669	under, below	yebo
1670	in front of, before	nyunu
1671	behind	sĩε
1672	beside	ahameε/ngyenu
1673	inside	(ku)nu
1674	outside	Ye nwo
1675	between	B'afĩã
1676	towards	
1677	away from	
1678	with	ne
12.3	DEMONSTRATIVES, ARTICLES	DÉMONSTRATIFS
1679	this (man)	hé
1680	that (man)	hèné
1681	some (men)	ebie

1682	other (men)	ebiemo
12.4	QUESTION WORDS	INTERROGATIFS
1683	who?	Nwa?
1684	what?	nikye?
1685	which (one)?	beni?
1686	where?	nusua?
1687	when?	Kyĩa beni/ mmere beni?
1688	why?	nzuyo?
1689	how?	kyesεet?
1690	how many?	nyεε?

12.5 CONJUNCTIONS

ADVERBIALS, ETC.

1691	and	ne
1692	if	sɛ
1693	because	fikyɛ
1694	perhaps	ebiaa
1695	really, truly	nahore
1696	well (adv)	paa
1697	poorly	ɔnzɔ anyɛɛ
1698	only	Angome/ngom
1699	yes	yoo
1700	no	daabi

**TABLE 36: LANGUAGE CONSULTANTS**

	NAME	GENDER	RESIDENCE	PROFESSION
<b>YOUNG ADULTS (15-35)</b>				
1.	Rexford Mensah	M	Wiawso	Teacher
2.	George Attah Boateng	M	Bodi/Norway	Student
3.	Evan Chebuiere	M	Ahokwaah	Teacher
4.	Obed Ayisi	M	Wiawso	Mining Engineer
5.	Sylvia Esi Andam	F	Asawinso	Student
6.	Grace Comfort Arthur	F	Subriso	Nurse
7.	TP	M	Juabeso	Radio presenter
8.	Salomey Nkuah	F	Anyinabrim	Anaesthetist
9.	Sanford Mensah	M	Bodi	Student
10.	Kwabena Danso	M	Asafo	Court Clerk
11.	Abena Attaa	F	Juabeso	Esahie News reader (Golden Pod Radio – Juabeso)
12.	Aseda Jonas	M	Akurafu	Teacher
13.	Elizabeth Nkuah	F	Anyinabrim	Fire Officer
14.	Vera	F	Penakro	Student
15.	Ishamael Acquah	M	Nsawora	Student
<b>MID ADULTS (36-50)</b>				
16.	Ama Teye	F	Ewiase	Radio consultant (Uniiq FM)
17.	John Ackah (Sir Kwame)	M	Wiawso	Farmer

18.	Mr. Donkoh	M	Ahokwaah	Teacher
19.	Mr. Evans Adu Gyamfi	M	Wiawso	Theologian/IT specialist
20.	Rev. Fr. Frank Amoah	M	Anhwiam	Priest/Teacher (SEWASS)
21.	Aunty Dorcas	F	Anhwiam	Trader
22.	Elder Sakyi	M	Camp	Tailor
23.	Madam Jane	F	Punikro	Teacher (SEWASS)
24.	Nana Nkuah	M	Kangyeabo	Chief
25.	Nana Nyame Paul	M	Wiawso	Radio presenter (Liberty FM)
<b>ADULTS (51-75)</b>				
26.	Assembly man	M	Armahkrom	Host, <i>Esahie Semba</i> (Uniiq FM)
27.	Original cassette	M	Bosomoiso	Radio consultant ( <i>Esahie Semba</i> , Uniiq FM)
28.	Dr. Ashie	M	Ewiase	Radio consultant ( <i>Esahie Semba</i> , Uniiq FM)
29.	Elder Adasa Nkrumah	M	Dwenase	Preacher
30.	Nana Owusu Ansah	M	Anhwiam	Chief
31.	Elder Owuo Boateng	M	Wiawso	Veteran
32.	Elder Ababio	M	Wiawso	Educationist
33.	Mrs. Tano	F	Kessekro	Farmer
34.	Ngya Kwaw	M	Fawokabra	Host, <i>Esahiemman</i> (Host, Liberty FM- Wiawso)
35.	Elder John Nkuah	M	Mafia	Farmer/Adult Education Coordinator
36.	Pastor Hayford	M	Camp	Palmwine tapper
37.	Yaa Larbi	F	Camp	Farmer
38.	Pastor G.K. Kobiri (late)	M	Wiawso	Teacher/Pastor