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Noun-Noun compounds in Dangme

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This paper examines the class of Dangme compound words that consist of two nouns within the framework of Construction Morphology. The paper indicates that the constituents of Dangme noun-noun compounds are either simplex or complex, with the latter being compounds or affix-derived complex nominals. The study shows that the constituents of N-N compounds in Dangme may not share the same semantic characteristics; yet a covert relation such as "part of", "ingredient of", "causer of" and "location of" holds between them, and this unexpressed relation constitutes pragmatic information that affects the interpretation of the compounds. It is shown that some nouns may lose part of their core semantic properties when they occur as constituents of compounds, resulting in the non-compositionality of the compounds in which they occur. This is the case especially with exocentric N-N compounds in the language which would have be interpreted metonymically or metaphorically because their meanings are constructional properties rather than the compositional function of the meanings of their constituents.

Keywords*: Dangme, compounding, endocentric, exocentric, Construction Morphology*

1. Introduction

Compounds are characterised as words that are formed from other already existing words. They may be classified in various ways, using criteria like the presence and position of a head constituent, the semantic properties of the output and the syntactic category of the constituents and/or of the output (Scalise & Bisetto 2009a, 2009b; Scalise & Vogel 2010; Bisetto & Scalise 2005; Dressler 2006; Appah 2013a; Appah et al. 2017; Bauer 1998; Lieber 2009). Basing the classification on the syntactic category of the constituents yields compounds that combine various word classes, including noun-noun, noun-verb, verb-noun, adjective-noun, and noun-adjective. Each such compound type comes with varying properties that may be the subject of interesting linguistic analysis.

Although compounding is acknowledged as a prominent word formation process in Dangme, a Kwa language spoken in Ghana, compounds in the language have been largely under-researched. Therefore, the purpose of this paper is to make a little contribution through the study of the nature of Dangme noun-noun compounds like those in Table 1.

Table 1: N-N compounds in Dangme

Base 1	**Gloss 1**	**Base 2**	**Gloss 2**	**Compound**	**Translation**
gɔ̀	pawpaw	*tsō*	tree	*gɔ̀ tsō*	pawpaw tree
tsopà	medicine	*tsɛ*	owner	*tsopàtsɛ*	herbalist
sɔ̀lēm	prayer	*tsũ*	building	*sɔ̀lem tsũ*	church building
wɔ́	deity	*yò*	woman	*wɔ̀ yò*	priestess
mɑ̀̃	town	*tsɛ̄*	father	*mɑ̀̃tsɛ̄*	king
té	stone	*sà*	mat	*té sà*	boulder

We discuss the structure and semantic properties of the compounds, paying particular attention to the relations existing between the constituents of the compound and whether or not the meaning of the compound as whole is a compositional function of the constituents. We observe that, in terms of structure, Dangme noun-noun compounds are binary-branching, mostly right-headed constructs, and their constituents can themselves be complex, either compounds or derived words. Also, the semantic relations between the constituents vary, although there are some recurrent patterns, including compounds in which the referent of one constituent is *part, ingredient, cause, location,* etc. of the referent of the other constituent. It is observed that there are some compounds whose meanings cannot be deduced from the literal meanings of the compound constituents. Such exocentric compounds have to be interpreted by means of some figure of speech such as metaphor and metonymy.

In the rest of the paper, we present a brief characterization of compounds in section 2, a sketch of the Dangme language in section 3 and a brief introduction to the framework of Construction Morphology (Booij 2010b), in section 4. We then discuss the data on Dangme noun-noun compounds in section 5, employing ideas and formalism from Construction Morphology. We conclude the paper in section 6.

2. Characterizing compounds

As noted above, compounds are said to be formed by combining already existing forms. Although this characterization sounds simple, linguists differ on what they see as the nature of compound constituents (cf. Bauer 2005, 2006; Lieber & Štekauer 2009; Scalise & Vogel 2010; Appah 2013b; Montermini 2010; Omachonu & Onogu 2012; Ralli 2013). This is because constituents of compounds seem to vary within and across languages, as seen in the varied terms used to describe compound constituents, including *roots* (Harley 2009), *stems* (Lieber 2004; Plag 2003; Ralli 2009), *bases* (Katamba & Stonham 2006; Appah 2013b), *words* (Spencer 1991; Fabb 1998) and *lexemes* (Bauer 2003; Haspelmath & Sims 2010). This lack of agreement on the nature of compound members seems to result from the varied nature of compound constituents across languages. As Scalise and Vogel (2010) observe, the items referred to as stems, roots and words are different elements in different languages. They note, for instance, that stems in Greek are bound forms while in English, they are free forms. Additionally, words in some languages (e.g., Mandarin Chinese) tend to be monomorphemic whereas in a language like Swahili, they usually consist of several morphemes.

These issues have prompted the suggestion that compound constituents and the compounding process should be defined on language-specific bases, taking into account the morphology of the language (cf. Aikhenvald 2007). However, as noted by Appah (2013b: 152), this suggestion will "result in *ad hoc-ness* and would not advance the cause of developing a general theory of language". Guevara and Scalise (2009) attempt to deal with the issues in extant definitions of compounding by approaching it in categorial terms: $[X\ r\ Y]_Z$, where X, Y and Z are lexical categories and 'r' represents an unexpressed grammatical relation between X and Y. This definition assumes that a compound has a lexical category Z which may be different from its constituent X or Y, or both (cf. Scalise & Vogel 2010).

Another well debated aspect of the study of compounding is how to account for the semantics of especially noun-noun compounds. Two main views have been canvassed, which Spencer (2011) characterizes as *Lees' solution* and *Downing's solution*, after Lees (1960) and Downing (1977). Lees' solution assumes that there is a small(-ish) set of general semantic

relations in noun-noun compounds. The assumed finite set of semantic properties includes general categories like *appearance* (catfish), *event participant – agent* (flower seller), *purpose* (writing desk), *location* (garden chair), and *patient* (swan song). In this approach, the meaning of a compound is constructed by enumerating the set of semantic properties of the head and corresponding appropriate properties in the non-head based on which a paraphrase is constructed which defines the compound. Thus, in this approach, *tree house* is a possible compound because a house has to have a location, which is named by the first constituent, etc. (cf. Spencer 2011: 490).

The controlling assumption in Downing's solution is that the relation between the constituents of compounds is specified pragmatically and hence could be any relation at all. Proponents believe that there is some arbitrary relation $\mathfrak{R}$ or 'R' which is pragmatically and contextually determined (Allen 1978). This relation may very well be semantically definable (e.g. 'N2 is located at N1). However, it does not necessarily need to involve any semantic predicate that is associated with any lexeme in the compound. It is assumed that on a given occasion of use, a hearer is expected to construct some plausible (though not necessarily unique) relation between a modifier and a head. Given this understanding, a compound like *bike girl* can denote a girl with some relation to the notion 'bike' (e.g. she has just left hers in the driveway, she rides to school on a bike, she mends bikes for a hobby/living, etc.). Similarly, *pea princess* can have many different interpretations which will be limited only by the speaker's/hearer's imagination. Also, in an imaginary society where roads are owned by individual and can be bought and sold freely, so that people can specialize in selling streets, a compound like *street seller* could refer to one who sells streets (Spencer 2011; Appah 2015).

Downing's solution approach to the semantics of compound is what underpins the categorial definition of compounds proposed by Guevara and Scalise (2009). This is also our view of the semantic of semantics of noun-noun compounds, and deal with it in section 5.

A relatively less controversial issue in the study of compounding is how to classify compounds, although varied approaches are adopted, depending on what is of interest. One approach uses the grammatical relation between the constituents, yielding three types of compounds – appositive, attributive and coordinate. Another approach, use the presence and/or position of a head constituent which determines the properties of the compound, including its syntactic category, so that if the head is a noun, the compound will be a noun, if it is a verb, the compound will be a verb, etc., and the head can occur on the left or right, giving left-headed and right-headed compounds. Headedness also leads to a distinction between endocentric (internally headed) and exocentric (externally headed) compounds. A third approach uses the syntactic category of the constituents, yield many combinations of word classes, including noun-noun, noun-verb, verb-noun and verb-verb.

In this paper, we are interested in noun-noun compounds, the most common type of compound in languages that employ compounding as a word formation process. They have been the subject of major studies in many languages (cf. Downing 1977; Clark et al. 1985; Bauer 1998, 2001, 2008, 2009, 2017; Giegerich 2004; Gagné 2002; Gagné & Spalding 2006, 2010; Guevara et al. 2009; Guevara & Pirrelli 2011; Libben et al. 2003). For example, Scalise and Vogel (2010: 10) observe that traditional work on compounds focused primarily on two structures – noun-noun compounds, also called root compounds, and the so-called synthetic (or verbal nexus) compounds, in which one of the constituents is a derived noun with verbal or adjectival base. Thus, even synthetic compounds are noun-noun compounds. Indeed, the literature shows that, although other compound types may not exist in a particular language, it is difficult to find a language that has compounding but lacks the class of noun-noun

compounds. We will mention research from a few African languages to illustrate this, given that the pervasiveness of noun-noun compounds in the familiar (European) languages is well documented (cf. Downing 1977; Bauer 1998, 2009, 2017; Scalise 1992; Ralli 2009, 2013).

Akrofi-Ansah (2012) identifies noun-noun, noun-verb and noun-adjective compounds in the Ghanaian language Lɛtɛ, with noun-noun being the commonest type. She observes that verb-noun and adjective-noun compounds in Lɛtɛ are mostly borrowed from Akan and are not productive in the language. Compound types identified in Akan are noun-noun, noun-adjective, verb-noun, noun-verb and verb-verb (Dolphyne 1988; Anyidoho 1990; Anderson 2013; Appah 2013a, 2013b). Some authors add Adjective-nouns compounds to Akan compounds. However, Appah (2013a) argues that Adjective-noun compounds do not exist in Akan because the supposed adjectives in such combinations are nominalized prior to the compounding process, making the resultant compound, noun-noun constructions. In C'lela, spoken in Nigeria, three types of compounds are identified, based on the syntactic categories of the constituents: noun-noun, noun-adjective and verb-noun, with noun-noun compounds being the commonest and most productive (Aliero 2013). In Igala, noun-noun, noun-verb, noun-adjective, verb-verb and verb-nouns compounds have been identified (cf. Omachonu & Abraham 2012).

Aside from occasional mentioning of compounding as a word formation process in the language, there are only two studies dedicated to compounding in Dangme. The first is Lawer (2017), which forms the basis of the present study. It discusses Dangme compounds in all its dimensions, positing many types of compounds in the language, including noun-noun compounds. The rest are noun-postposition, noun-verb, noun-adjective and verb-noun compounds. The other study is Caesar (2018), which also deals with many issues in the study of compounding and shows how they manifest in Dangme. She defines compounding as "a word formation process which involves the combination of at least two potential free forms belonging to open word classes" (Caesar 2018: 52), and posits various types of Dangme compounds, including noun-noun, noun-adjective, verb-noun, noun-postposition and what she calls clausal compounds reduced to personal and town names. This is where the paper begins to show weaknesses in analysis. For example, in the discussion, various affixes are separated from the closest bases and it is unclear whether they are meant to be affixes of the closest constituents or they belong to the whole compound, needless to say that whatever choice the author makes will have implication for the analysis.[1]

[1] Again, she posits a class referred to as "clauses as compounds". See the example below.

Clause Phonetic					**Form**
Á	plέ	nὲ	á	hyὲ.	[áplɛ́nájὲ]
3PL	VP	CONJ	3PL.OBJ	VP	(a place name in Ada)
They turn and they look					
'They should turn and look.'					(Caesar 2018: 68)

The Author writes: "there are certain nouns whose meanings enable us to relate them to an underlying structure of a main clause. These nouns refer to humans, locations and events. These compounds are formed as a result of experiences or events that one might have gone through in life. This process may be described as agglutination. These are special simple and compound sentences, and I cannot at the moment provide a systematic analysis since all have subjects, verbs, objects, conjunctions, negation, adjectives, postpositions, etc. The merging of words of this kind to form a compound is that the compound may denote a place or a personal name."

The problem, in our view, is that the author fails to distinguish between compounding and lexicalization or univerbation. Thus, the criterions for compoundhood is rather loose, allowing for even pronominals and conjunctions to be accepted as compound members, although the author claims that the constituents of compounds

The present study aims to present a detailed study of Dangme noun-noun compounds with the view to unravelling their general and unique properties, showing to what extent they conform to identified crosslinguistic formal and semantic properties of compounds in general and noun-noun compounds in particular. We identify endocentric and exocentric types. We show that Dangme noun-noun compounds are mostly right-headed endocentric constructs in which the left-hand modifiers bear varying relations to the head and evokes various context-specific interpretations of the head. Another aim of this study is to show how the properties of noun-noun compounds may be accounted for in Construction Morphology.

3. Dangme language

Dangme is a Kwa language of the Niger-Congo phylum, spoken by about 1.4 million people in Ghana (Dakubu 1987). The language is taught in some basic schools in three out of the sixteen political regions in Ghana: Greater Accra Region, which is estimated to have the highest number of speakers, is followed by Eastern Region and Volta Region (Akortia 2014: 2). The dialects are Ada, Krobo, Ningo, Gbugbla, Sɛ and Osudoku (Dakubu 1988). It has been observed (e.g., Ameka & Dakubu 2008) that there are some small communities, east of the Volta that trace their origin to Dangmeland, though most of the people of these communities have shifted to Ewe as the language of their daily life. According to Caesar (2012: 19) there are also some speakers of Dangme in Nyetoe and Gatsi in Togo.

Dangme is the majority language in communities where it is taught as a subject in schools. The language is also studied at the tertiary level in the Department of Ga-Dangme at the University of Education, Winneba. The language also features on radio and television programmes and is one of the nine government sponsored languages in the country. The language shares borders with other Kwa languages, including Akan, Ga, Ewe and Hill Guan (Ɔkere and Lɛtɛ). Figure 1 represents the family tree of Dangme.

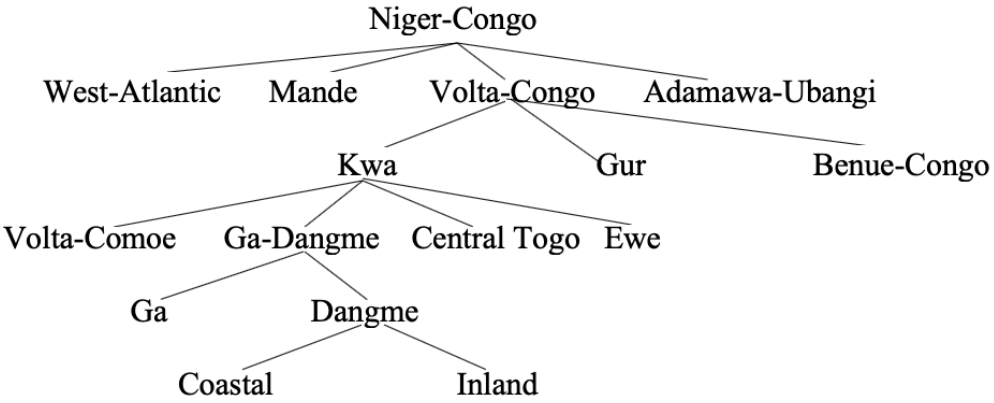


Figure 1: Family tree of Dangme (Dakubu 1987; Lawer 2017)

Regarding the linguistics, there are twelve vowel phonemes in the language, seven oral / i, e, ɛ, a, u, o, ɔ / and five nasal / ã, ɛ̃, ĩ, ũ, ɔ̃ / vowels (Caesar 2012: 18). The vowels can be

"are potential free forms belonging to open word classes" (Caesar 2018: 52). Finally, it is unclear whether the basis for inclusion of some constructions as compounds is formal or semantic.

lengthened, with length indicated in the orthography by doubling the vowels, as in /ii, ee, ɛɛ, aa, uu, oo, ɔɔ/. Vowel Length in the language is phonemic, as we see in the minimal pair *tǔ̀* 'jumped' and *tǔ̀ǔ̀* 'very dark' (Lawer 2017). Dangme has an inventory of twenty-two consonants, all of which are capable of occupying the onset position in syllables (Dakubu 1987: 13).

Dangme is a CV syllable structure language with occasional syllabic consonants, usually the bilabial nasal /m/ that occurs at word final positions, as in *lám̀* 'act of singing' and *fiém̀* 'act of playing' (cf. Dakubu 1987; Lawer 2017).

Mid [¯], low [`] and high [´] are the three contrastive level tones in Dangme (Caesar 2012; Dakubu 1987; Owulah 2014), and tone has both grammatical and lexical functions in the language (Lawer 2017; Caesar 2012).

In terms of syntax, Dangme is an SVO language with a verbal system in which every verb phrase contains one main verb. The verb in a clause bears verbal features of aspect, polarity and mood (Caesar 2012). Dangme, according to Caesar (2012: 20), does not have tense. It has also been argued that Dangme has no prepositions but rather relational noun particles which occur after the head noun (cf. Adi 1997). These relational nouns include *se* 'back', *no* 'top', *mi* 'inside', and *he* 'around'. Lawer (2017) agrees with Adi (1997) regarding the claim that these words are nouns and they combine with other nouns, especially concrete ones to form nominal compounds.

4. Construction morphology

Construction morphology (CxM) is a theory of linguistic morphology that builds on insights from Construction Grammar (CxG). It is an approach to the grammar of words which seeks to properly account for the properties of complex words, in relation to "syntax, morphology, and the lexicon, and […] the semantic properties of complex words" (Booij 2010a: 543).

The main tenets of CxM are a theory of word structure, a theory of the notion of 'construction' and a theory of the lexicon. The basic unit of analysis is the constructions, which pairs a particular form and a particular meaning, and may not be completely compositional, but has to be predictable (Booij 2016). Constructions are formed by constructional schema which abstracts over the properties of existing form-meaning complexes and serves as a pattern for forming similar constructions. Thus, in CxM each word is a linguistic sign, a construction. Thus, compounding patterns may be represented as constructional schemas like (1), which is for right-headed endocentric compounds.

(1) $< [[a]_{Xi}\ [b]_{Yj}]_{Nk} \leftrightarrow [SEM_j \text{ with relation } \Re \text{ to } SEM_i]_k >$ (Appah 2013b: 70)

In this schema, the double arrow symbolizes the relationship between the form and the meaning. Upper-case variables, *X* and *Y*, stand for the major lexical categories (nouns, verb, etc.). The variables *a* and *b* stand for arbitrary sound sequences. The variables *i, j,* and *k* are lexical indexes on the phonological, syntactic, and semantic properties of the words (Appah 2013b: 70).

Morphological constructions exist in the mental lexicon of speakers together with schemas that they instantiate. Two kinds of relations hold in the lexicon: "instantiation" which exists between a schema and the word formed by the schema and "part of", which exists between complex forms and their constituents (Appah 2015; Booij 2010a). For instance, in (2)

we see that the Akan right-headed N-N compound *àsɔ́rédáń* 'chapel' instantiates an abstract schema from which it inherits some of its features. It also inherits features from the constituents, *àsɔ́ré* 'church' and *dáń* 'building' with which it shares a *part of* relation.

(2) $< [[N]_i\ [N]_j]_{Nk} \leftrightarrow [SEM_j \text{ used for } SEM_i]_k >$

$[\grave{a}s\acute{ɔ}r\acute{e}]_{Ni}\ [d\acute{a}\acute{n}]_{Nj}]_{Nk} \leftrightarrow [d\acute{a}\grave{n}_j \text{ used for } \grave{a}s\acute{ɔ}r\acute{e}_i]_k >$

church building "chapel" (Appah 2015: 363)

It is understood that constructions which share features or common constituents are also connected in the lexicon. For example, *àsɔ́rédáń* is linked with other schemas that contain either *àsɔ́ré* such as *àsɔ́ré twèné '*church drum' and *àsɔ́ré káá '*church vehicle*'*, or the constituent *dáń* such as *sùkúú dáń* 'school building' and *dɔ̀tè dáń '*mud building' (cf. Appah 2015). The multiple relations which constructional schemas share "creates the network of related words" that models the lexical knowledge of the speakers of the language (Appah 2015: 364).

5. Dangme noun-noun compound formation

Dangme noun-noun (hereafter, N-N) compounds are formed by combining two nouns of varied formal and semantic characterization into a new lexeme, and the process is very productive, consistent with crosslinguistic patterns of productivity in N-N compounding, which is attributable to the flexibility of the head-modifier relationship between the constituents (Bauer 1998; Fabb 1998; Dressler 2006; Lieber 2009; Scalise & Vogel 2010; Guevara & Pirrelli 2011; Akrofi-Ansah 2012; Omachonu & Abraham 2012; Aliero 2013; Appah 2013b). As observed in the literature (Downing 1977; Gagné 2002; Gagné & Spalding 2010; Spencer 2011; Appah 2013b), in such compounds, the non-head constituents are assigned various interpretations, which evokes new context-specific meanings for the head constituent. This enhances the productivity of N-N compounds and strengthens the general usefulness of compounding as a pattern of word-formation. In this section we discuss Dangme N-N compounds based on the data in Table 2. We discuss their structure and interpretation, paying attention to the relation between the constituents.

5.1 *The structure of Dangme N-N compounds*

In terms of structure, we observe that Dangme N-N compounds appear in two main orthographic forms. In the first, the compound members are written together, as in *mɑ̀̃tsɛ̄*'king' [lit. town owner], *blɔ̄nyà* 'roadside' and *yòtsɛ̄* 'husband'. In the second pattern, which has the majority of Dangme N-N compounds, the compounds members are separated, as shown in Table 2. They include *nɪ̃̀né nguɛ́* 'finger', *mɑ̀̃tsɛ̄ dɑ̀̃* 'royal wine', *sìklì dɑ̀̃* 'soft drink', *lā tsō* 'firewood', *wɔ́ tsũ* 'shrine' and *té sà* 'boulder'. A third orthographic pattern in Dangme compounds has hyphenated members (Caesar 2018). However, this orthographical pattern appears not to be used in the formation of N-N compounds. this type of compounds are usually names of people made up of "a noun and an adjective or a noun and a numeral", according to Caesar (2018: 55). For instance, the compound *tètè-tsū* '*tɛ̄tɛ̄*who is fair in complexion**'** consists

of the noun *tètɛ̀* ‘a second male born’ and *tsū* ‘red’. Again, the name *Nà* ‘a fourth male born’ and *wàyó* ‘small/little/younger’ are combined to form *Nà-waỹó* which means ‘*Nà* who is younger or smaller in size’. In the form *tètɛ̀-ényɔ̄* ‘second *tètɛ̀*’, we see the name *tètɛ̀* ‘a second male born’ combine with the numeral *ényɔ̄* ‘two’ (Caesar 2018; Lawer 2017). Conventionally, all of them are written with the constituents hyphenated. The orthographical form of Dangme compounds, as consisting of solid/closed, spaced and hyphenated is consistent with what has been found in Akan (Dolphyne 1988; Appah 2013b), Lɛtɛ (Akrofi-Ansah 2012), Ga (Appah 2019) and English (Fabb 1998; Bauer 1998). However, there is no specific rules on these writing conventions crosslinguistically, as some hyphenated and combined words may sometimes be written as separate words in the same language and by the same author (Fabb 1998).

Table 2: N-N compounds in Dangme

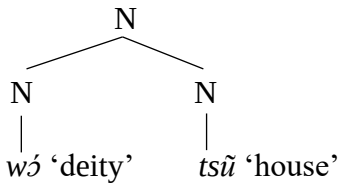
Base 1	**Gloss 1**	**Base 2**	**Gloss 2**	**Compound**	**Translation**
àgbèlì	cassava	*bà*	leaf	*àgbèlì bà*	cassava leaf
àkáté	groundnut	*hwónyũ*	soup	*àkáté hwónyũ*	groundnut soup
Akoto[2]	A name	*hɛ̃gmɛ̃*	eye	*akoto hɛ̃gmɛ̃*	Jagger bush
bí	child	*nyɛ̀*	mother	*bí nyɛ̀*	lactating mother
blɛ̀fó	maize	*gbà*	barn	*blɛ̀fó gbà*	maize barn
da˜	wine	*búé*	pot	*da˜búé*	‘drunkard’
gɔ̀	pawpaw	*tsō*	tree	*gɔ̀ tsō*	pawpaw tree
lā	fire	*zũ*	soil	*la zũ*	sandy soil
lā	fire	*té*	stone	*lā té*	‘earthen stove’
lā	fire	*tsō*	wood	*lā tsō*	firewood
lā té	fire stone	*kùé*	hut	*lā té kùé*	kitchen
mɛ̀	town	*tsɛ̄*	father	*mɛ̀tsɛ̄*	king
mɛ̀tsɛ̄	king	*dɛ̀*	wine	*mɛ̀tsɛ˜dɛ̀*	wine for kings
mì	belly	*tɔ̄*	bottle	*mì tɔ*	Pot belly
mɛ̃́nyɛ̃́	speech	*yē-lɔ̄*	eat-AGENT	*mɛ̃̀nyɛ̃̀ yēlɔ̄*	judge
nɛ̃̀né	hand	*nguɛ́*	finger	*nɛ̃̀né nguɛ́*	finger
pà	river	*tsō*	tree	*pà tsō*	bridge
pàm	river	*lò*	fish	*pàm lò*	fish
sà	matress	*tsō*	tree	*sà tsō*	bed
sɛ́klì	sugar	*dɛ̀*	drink	*sìklì dɛ̀*	soft drink
sɔ̀lēm	prayer	*tsũ*	building	*sɔ̀lem tsũ*	church building
tsō	tree	*pókú*	root	*tsō pókú*	tree root
tsopà	medicine	*tsɛ*	owner	*tsopàtsɛ*	herbalist
té	stone	*sà*	mat	*té sà*	boulder
twi	heart	*tsɛ*	owner	*twí tsɛ̄*	quick tempered person
wē	house	*sè*	back	*wē sè*	menstruation
wē	house	*tsɛ̄*	father	*wētsɛ̄*	landlord
wɔ́	idoleity	*yò*	woman	*wɔ̀ yò*	priestess
wɔ́	ideityol	*tsũ*	house	*wɔ́ tsũ*	shrine
yī	head	*nyɛ̀*	mouth	*yī nyɛ̀*	forehead

[2] Akoto is a name of a person

yo	woman	*tsɛ*	owner	*yotsɛ*	husband

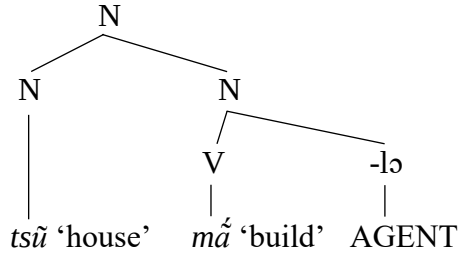
The constituents of Dangme N-N compounds may be simplex or complex. Compounds like *àgbèlì tsō* 'cassava stick' and *wɔ́ tsũ* 'shrine' [*lit*. deity house] have simplex constituents, because none of their constituents is a compound or a derived complex word. See the structure in (3).

(3)



The compounds with complex bases are those whose constituents are either themselves compounds or derived words formed through suffixation. The first group of N-N compounds with complex bases have at least one of their constituents derived through suffixation. In the compound *tsu mɑ̀̃-lɔ* 'mason' [lit. house + build-AGT], for instance, we identify the agentive suffix on the right-hand verbal base. See the internal structure in (4).

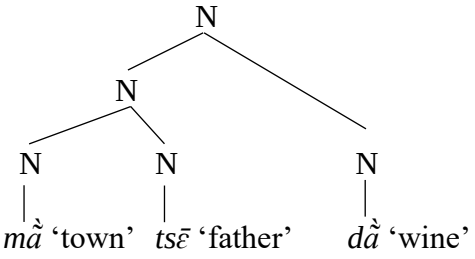
(4)



This is the so-called synthetic or verbal nexus compound. Thus, the structural analysis presented here is just one of two options that have been proposed in the literature for such compounds (Selkirk 1982; Lieber 1983; Botha 1980; Botha 1984; Appah, et al. 2017). The alternative analysis has the derivational suffix attaching to a noun-verb compound base, as in [[tsu]$_N$ [*mɑ̀̃*]$_V$]$_N$ - *lɔ*]$_N$. This analysis assumes the existence of a class of N-V compounds which tend not to be productive across languages. For languages like English and Dutch, the class of N-V compounds is almost completely unproductive, making this analysis less favoured. However, the issue of the lack of productivity of N-V compounds is circumvented by what Booij (2010b) calls embedded productivity, by which it is argued that in the context of the suffixation, the embedded, otherwise unproductive, N-V construct becomes productive.

Dangme appears to have limited number of derivational affixes. Therefore, derivation as a word formation process is not very productive in the language. As a result, complex words in the language are usually compounds. Therefore, as the data show, complex constituents of compounds are usually compounds, making the compounds recursive (cf. Plag 2003: 134). Dangme N-N compounds with compound constituents include *mɑ̀̃tsɛ̄ dɑ̀̃* [[[*mà*]$_N$ [*tsɛ̀*]$_N$]$_N$ *dɑ̀̃*]$_N$ 'royal wine [*lit*. king wine]', *lā tɛ́ kùé* [[[*la*]$_N$ [*tɛ́*]$_N$]$_N$ *kúé*]$_N$ 'kitchen', and *sɔ̀lem tsũ* [[sɔ̀lɛ̀m̀]$_N$ + [tsũ̀m̀]$_N$ + [sɛ̃̀]$_N$]$_N$ 'chapel seat/pew'. It appears, based on the present data, that the complex bases are left-hand constituents. This means that the compounds are left-recursive, as shown in (5).

(5)



The bilabial nasals that terminates some of the nouns represent two distinct morphological units that cliticize on words. One unit is the nominaliser *mi*, which occurs on deverbal nouns (e.g., *sɔ̀lè=m̀* ‘prayer’, *ye=m* ‘eating’ and *gbà=m* ‘prophecy’). So, the full forms of the words are *sɔ̀le m̀i, yēmi* and *gbà mi.* The other *mi* occurs as a bilabial nasal clitic on nouns, encoding the meaning ‘inside’, so *pàm* ‘river inside’ and *tsũm* ‘room’ in the compounds *pàm lo* ‘fish’ and *tsũm sɛ̃* ‘room chair’ are realised in full as *pá mì lo and tsũ mì sɛ̃.* Thus, the compounds have nominal compounds as left-hand constituents.

Note that *mi* has been classified as a postposition, a view which Lawer (2017) has argued against, maintaining that *mi* is a locative noun.

5.2 *Semantic relations between the constituents of N-N compounds*

The constituents of N-N compounds tend to be from different grammatical and semantic classes, and there is usually a relation between them which forms the basis for their interpretation (cf. Scalise & Vogel 2010; Downing 1977; Gagné & Spalding 2006, 2010; Gagné 2002; Guevara & Pirrelli 2011; Guevara, et al. 2009). However, sometimes, a full interpretation of N-N compounds requires an appeal to pragmatics, in addition to identifying the morphosyntactic structure in which they occur and the semantic information that is available in the constituents (Bauer 1979). As Bauer and Tarasova (2013: 3) observe, “the morphosyntactic structure provides minimal semantic information (compatible with all compounds); most information on interpretation comes from the context of use.” This makes it possible for two or more compounds with a common constituent at the same slot in the compounds to have different interpretations. Thus, the kind of relations that the variable constituents share with the common constituent differ in various compounds. For example, in English, while *pill* in *sleeping pill* causes/induces sleep, the *pill* in *sea-sickness pill* rather prevents seasickness. Hence, the relation between *pill* and the other constituents in each compound is different (cf. Bauer & Tarasova 2013). Within the context of Guevara & Scalise’s (2009: 108) categorial characterization of compounds [X ℜ Y]$_Z$, the interpretation of N-N compounds will require that the nature of ℜ to be ascertained. Since ℜ is not explicit, the missing semantic information is reconstructed in context in order to adequately interpret the N-N compound (Bauer & Tarasova 2013).

The nouns that form constituents of N-N Dangme compounds vary quite a bit in their semantics. They may be concrete (e.g., *wē* ‘house’, *sà* ‘matress’, *tsō* ‘stick’), abstract (e.g., *sɔ̀lèm̀* ‘prayer’, *mű́nyű́* ‘speech’), animate (e.g., *yēlɔ̄* ‘glutton’, *tsɛ̄* ‘father’, *yò* ‘woman’, etc), inanimate (e.g., *dà̀* ‘wine’, *wē* ‘house’, *kùé* ‘hut’), mass (e.g., *sìklì* ‘sugar’, *dà̃* ‘wine’, *zũ* ‘soil’), count (e.g., *yò* ‘woman’, *mà̀* ‘town’, *tsō* ‘tree’), kinship (e.g., *tsɛ̄* ‘father’, *bí* ‘child’, *nyɛ̀* ‘mother’) etc., and the compounds that they form may be endocentric or exocentric, the former being the majority. The endocentric compounds are generally right-headed constructions. The Few exocentric compounds in our dataset are in Table 3. All the rest in Table 2 are endocentric.

Table 3: Exocentric N-N compounds

Base 1	**gloss**	**Base 2**	**Gloss**	**Compound**	**meaning**
mì	belly	*tɔ̄*	bottle	*mì tɔ*	pot belly
twi	heart	*tsɛ*	owner	*twí tsɛ̄*	quick tempered person
wē	house	*sè*	behind	*wē sè*	'menstruation'
da᷌	wine	*búé*	pot	*da᷌búé*	'drunkard'
Akoto[3]	A name	*hɛ̃gmɛ᷌*	eye	*akoto hɛ̃gmɛ᷌*	Jagger bush

As expected of N-N compounds, there is flexibility in the semantic relations between the constituents of Dangme N-N compounds. This sometimes requires contextual information to interpret, as noted above. However, with some encyclopaedic knowledge, the nature of the relation between heads and their modifying constituents, especially in endocentric N-N compounds, is usually decipherable, as they tend to emanate in part from the lexico-grammatical properties of the constituent nouns. We find certain recurrent relations between the constituents of Dangme N-N compounds in our dataset, as shown by the collection of relations in Table 4.

Table 4: Relations between constituents of Dangme N-N compounds

Base	**Relation**	**Base**	**Example**	**Translation**
N1	INGREDIENT OF	N2	*àkáté hwónyũ*	groundnut soup
N1	LOCATION OF	N2	*tsũm sɛ̃*	room chair
N2	PART OF	N1	*blɔ nyà̰*	roadside
N1	CAUSE	N2	*la zṹ,*	ash
N2	MAKE	N1	*jé bɔ̀lɔ*	creator of the universe
N2	USE	N1	*pà tso*	bridge
N2	PROPERTY	N1	*zíá zũ*	sandy soil
N2	POSSESSION/OWNERSHIP	N1	*wē tsɛ*	landlord
N1	LIKE	N2	*mì tɔ*	pot belly

Considering the fact that the compounds are endocentric and right-headed, we may position a general constructional schema capturing the common properties of the compounds. This abstract schema is presented in (6), and it indicates that there is a nominal compound (N_k) which is a type of the right-hand constituent (N_j) and it shares a certain unspecified relation $\Re$ with the left-hand constituent (N_i).

(6) $< [[a]_{Ni}\ [b]_{Nj}]_{Nk} \leftrightarrow [SEM_j \text{ with relation is } \Re \text{ to } SEM_i]_k >$

This schema abstracts over all the compounds, but it allows for the specification of the relation $\Re$ in instantiating schemas. It also allows for overrides by default inheritance, so that unique properties of individual compounds may override properties inherited from higher level schemas. This is shown in (7), where the relation $\Re$ is spelt out as "ingredient of".

(7) $< [[a]_{Ni}\ [b]_{Nj}]_{Nk} \leftrightarrow [SEM_j \text{ with relation is } \Re \text{ to } SEM_i]_k >$

$< [[a]_{Ni}\ [b]_{Nj}]_{Nk} \leftrightarrow [SEM_i \text{ is } \textit{ingredient of } SEM_j]_k >$

[3] Akoto is a name of a person

These inheritance and overrides continue to lower level schemas where the properties of individual compounds are specified and actual phonological strings substitute for the variables, $[a]_{Ni}$ and $[b]_{Nj}$. For instance, as shown in Table 2, the relation *ingredient of* is exemplified by the compound *àkáté hwónyũ* 'groundnut soup', in which the first constituent *àkáté* 'groundnut' is the *ingredient of* the second constituent *hwónyũ* 'soup'. The same relation exists between *síklì* 'sugar' and *dã̀* 'wine' in *síklì dã̀* 'soft drink' [lit. sugar wine], where *síklì* is the ingredient for making *dã̀*, as well as *wíé hwónyũ* 'palm nut soup' and *bà tsipã̀* 'herbal medicine' [lit. herb medicine]. The properties of compounds with this relation may be schematized as shown in (8).

(8) $< [[a]_{Ni}\ [b]_{Nj}]_{Nk} \leftrightarrow [SEM_i$ is *ingredient of* $SEM_j]_k >$

$[[$*àkáté*$]_{Ni}\ [$*húeónyũ*$]_{Nj}]_{Nk}$ [àkáté$_i$ is *ingredient of* húényũ$_j]_k$

àkáté 'groundnut' *hùónyũ* 'soup' 'groundnut soup'

As we noted above, sometimes the relation between the constituents is variable. For example, the left-hand constituent of the compound *síklì dã* is not just an ingredient of the referent of the right-hand constituent, but *síklì* 'sugar' may also be construed as a "property of" the right-hand constituent, ascribed to it by the non-head constituent. Similarly, in the compound *zíà-zũ* 'sandy soil', *zũ* 'soil' is understood to have a property, *zíà* 'sand'. However, unlike *àkáté* 'groundnut' in *àkáté hùónyũ* 'groundnut soup', *zũ* 'soil' is not made from *zíà* 'sand' and therefore cannot be construed as ingredient of *zũ* 'soil'. The *property of* relations may be schematized as (9).[4]

(9) $< [[a]_{Ni}\ [b]_{Nj}]_{Nk} \leftrightarrow [SEM_i$ is a *property of* $SEM_j]_k >$

$[[$*síklì*$]_{Ni}\ [$*dã*$]_{Nj}]_{Nk} \leftrightarrow [$*síklì* is *a property* of *dã*$]_k$

síklì 'sugar' *dã* 'wine' 'sugary drink'

We observed that *síklì dã* 'soft drink', *síklì* 'sugar' designates both an ingredient and a property of the product because the referent of the compound is made of or contains sugar. The same can be said about the compound *ngò nyũ* 'saltwater'. However, there are traditional drinks that are not made from *sugar* in the sense that no *sugar* is added, but they are regarded as *síklì dã* because of their taste; they have the property of *síklì* 'sugar'. Thus, the *property of* relation may further be specified as "tastes like" for the compounds *síklì dã* and *ngò nyũ*. This is captured in the schema in (10).

(10) $< [[a]_{Ni}\ [b]_{Nj}]_{Nk} \leftrightarrow [SEM_j$ which tastes like $SEM_i]_k >$

$[[$*ngò*$]_{Ni}\ [$*nyũ*$]_{Nj}]_{Nk}$ 'salt water'

Property of relation, as seen in (10), may be contrasted with the relation existing between the constituents of the compound *lā zũ* 'ash' [lit. fire soil] in which the left-hand

[4] In subsequent schematic representations, we simplify the representational machinery, doing away with some higher-level schemas, and the specification of the *part-of* relation between the compound and its constituents.

constituent *lā* 'fire' does not ascribe a property to *zũ* 'soil' but rather is understood as the causer of *zũ* 'soil'. The 'causer' relation is illustrated in schema (11) with the compound *lā zũ* 'ash'.

(11) $< [[a]_{Ni}\ [b]_{Nj}]_{Nk} \leftrightarrow [SEM_i \text{ is causer of } SEM_j]_k >$

$< [[la]_{Ni}\ [z\tilde{u}]_{Nj}]_{Nk} \leftrightarrow [z\tilde{u}_j \text{ caused by } l\grave{a}_i]_k >$ 'ash'

The constituents of some Dangme N-N compounds share a *part-whole* relation, where the relation ℜ is realised as 'part of'. This is seen in the compound *blɔ̄ nyã* 'roadside' [lit. road mouth] whose constituents are *blɔ̄* 'road/path' and *nyɛ̀̃* 'mouth'. In compounds that exhibit this kind of relation, usually the right-hand constituent names a part of the referent of the left-hand constituents (the whole). The same relationship exists between *àgbèli* 'cassava' and *tsɔ̄* 'tree' in the compound *àgbèlì tsɔ̄* 'cassava stick'. The noun *àgbèlì* is used for both the tuber 'cassava' and the plant. Hence, *àgbèlì* 'cassava' in this compound refers to the whole plant of which *tsɔ̄* is a part. Other compounds that show this kind of relation include *nàné ngúɛ́* 'toe' [lit. leg finger], where *ngúɛ́* is part of *nàné*. Note that, in Dangme, *ngúɛ́* is used for both finger and toe. However, when it is used in isolation without a modifier like *nàné* 'leg' or *nìné* 'hand', the meaning 'finger' is implied. The *part of* relation is captured in (12), exemplified by the compound *àgbèli tsɔ̄*.

(12) $< [[a]_{Ni}\ [b]_{Nj}]_{Nk} \leftrightarrow [SEM_j \text{ is } \textit{part of } SEM_i]_k >$

$[[\grave{a}gb\grave{e}l\grave{i}]_{Ni}\ [ts\bar{o}]_{Nj}]_{Nk}$ 'cassava stick'

Location of is another relation that occurs between the constituents of N-N compounds. Here, the referent of one of the constituents names the location of the referent of the other. For instance, the referents of the left-hand constituents of the compounds *tsɥ̀ mì sɛ́* 'room chair' and *pà mì lò* 'fish' name the location of the right-hand constituents, *sɛ́* 'chair' and *lò* 'fish' respectively. That is, *sɛ́* 'chair' is located in *tsɥ̀ mì* 'inside room', whiles *lò*[5] 'fish' is also located in *pà mì* 'inside river'. The *location of* relation is shown in (13) with the compound *pà mì lɔ̄* 'fish'.

(13) $< [[a]_{Ni}\ [b]_{Nj}]_{Nk} \leftrightarrow [SEM_j \text{ located in } SEM_i]]k >$

$[p\grave{a}m\grave{i}]_{Ni}\ [l\grave{o}]_{Nj}]_{Nk}$ 'fish'

A relation, *used for*, holds between constituents of N-N compounds in which one constituent names the entity that is used to carry out some activity in relation to the other constituent. For instance, in the compound *pà tsɔ̄* 'wooden bridge for crossing a stream/river' [lit. river tree], *tsɔ̄* 'tree' is used for crossing *pà* 'river'. There may be trees at the bank of the river, but these are not called *pà tsɔ̄* because they are not used for crossing the river. So *pà tsɔ̄* refers to a specific kind of *tsɔ̄*. A similar relation can be observed between the constituents of the compound *gbà hɛ̄ tsɔ̄* 'ladder', where *tsɔ̄* 'tree' is understood as an instrument used for climbing *gbà hɛ̄* 'hut side'. The 'used for' relation indicates that one of the constituents of the

[5] Dangme does not have separate lexemes for fish and meat. They are both called *lò*. To distinguish them, *pà mì* 'inside river' or *de* 'game' or the name of the animal whose meat is implied is mentioned to qualify *lò*.

compound, mostly the right-hand constituent functions as an instrument. In the compound *blɛ̀fó gbà* 'maize barn', the right-hand member of the compound, *gbà* 'barn' is *used for* storing *blɛ̀fó* 'maize', the left-hand member of the compound. The 'used for' or instrument relation is captured in (14).

(14) $< [[a]_{Ni}\ [b]_{Nj}]_{Nk} \leftrightarrow [SEM_j$ used for crossing $SEM_i]_k >$

$[[p\grave{a}]_{Ni}\ [ts\bar{o}]_{Nj}]_{Nk}$ 'wooden bridge'

pà 'river' *tsō* 'tree'

Another relation that is seen among constituents of Dangme N-N compounds is *possessor/owner of*, where the referent of one of the constituents is understood to possess/own the referent of the other constituent. In the compound *wē tsɛ* 'landlord' for instance, the right-hand constituent, *tsɛ̄* 'owner' owns the left-hand constituent, *wē* 'house'. Other N-N compounds exhibiting this kind of relation are *ngmɔ tsɛ̄* 'farm owner' and *yo tsɛ̄* 'groom' [lit. woman owner]. The possessor relation also holds in the compound *sìká-tsɛ* 'rich man' [lit. money owner]. However, for the referent of this compound, one must be seen or assumed to possess a significant amount of money to merit the term. Thus, *sìká-tsɛ* is used to refer to very rich persons. The possessor relation in the compound *wē tsɛ* 'landlord' is shown in (15).

(15) $< [[N]_i\ [N]_j]_{Nk} \leftrightarrow [SEM_j$ *possesses/owns* $SEM_i]_k >$

$[[w\bar{e}]_{Ni}\ [ts\varepsilon]_{Nj}]_{Nk}$ 'landlord'

In the compounds *wɔ́yò* 'priestess' [lit. deity woman] and *wɔ́tsɛ̄* 'priest' [lit. deity owner/father], one assumes that the right-hand constituent is the *possessor of* the left-hand constituents, which is the primary meaning. That is, in *wɔ́yò* 'priestess', and *wɔ́ tsɛ* 'priest', *yò* 'woman' and *tsɛ* 'owner' are construed to possessing *wɔ́* 'deity'. However, the possessed entity in *wɔ́ yò* and *wɔ́ tsɛ,* may be viewed from the other direction, so that it is possible to argue that *wɔ́* 'deity' rather possesses *yò* 'woman' and *tsɛ* 'owner, father'. This is because *wɔ́*, as a deity, chooses whoever it wants as its agent or worshipper. Thus, the relation is subject to construal and perspectivization (Verhagen 2007). Possession relation holding between constituents of the compound *wɔ́ yò* is illustrated in (16)

(16) $< [[a]_{Ni}\ [b]_{Nj}]_{Nk} \leftrightarrow [SEM_j$ possesses/possessed by $SEM_i]]k >$

$[w\acute{ɔ}]_{Ni}\ [y\grave{o}]_{Nj}]_{Nk}$ 'priestess'

5.3 *Interpreting Dangme N-N compounds: The X-centricity dimension*

As the foregoing discussion has shown, the interpretation of N-N compounds depends primarily on two factors: the relation holding between the constituents and the accessibility of the meanings of the compound constituents. The interpretation becomes relatively easy when the semantic properties of the constituents are preserved in the compound and the relation holding between the compound members is also available to the speaker/listener. However, the availability of the core semantic properties of the constituents is not enough to accurately

interpret the compound because it is clear from the literature that the interpretation of compounds requires both linguistic knowledge and extra-linguistic or pragmatic information (Downing 1977; Bauer 1979; Spencer 2011). Thus, with some encyclopaedic knowledge and access to the meanings of the constituents and the compositional meaning of the resultant compound, in accordance with the compositionality principle (Fodor & Lepore 2002; Dever 2006), most N-N compound may be fully interpreted, taking a Downing's solution approach to accounting for the semantics of the compounds.

For example, to interpret *lā zũ* 'ash' [lit. fire soil], the core semantic properties of the constituents are considered together with the semantic relation holding between the constituents, which could be any of the following: *zũ* 'soil' has the property of *lā* 'fire', *zũ* is located at *lā* , *lā* makes/causes *zũ*, or *lā is* the ingredient of *zū*. This could be complicated further by the fact that the relation between the constituents could be viewed from different directions, as noted above in relation to *wɔ́yò* 'priestess', and *wɔ́ tsɛ* 'priest', so that the same compound *lā zũ* could be construed as *lā* has the property of *zũ*, lā is located at *zũ*, *zũ* causes *lā*, *zū* is the ingredient of *lā*, etc. Clearly, some of the relations sound outlandish, while others are plausible. However, we assume that because the relation between N-N compounds is conventionalised, not all possible relations may be deemed acceptable to speakers of the language. This prevents what has been described by Bauer (2006) as superficial ambiguity, where a wrongful relation between the constituents of the compound impedes communication. For instance, for the compound *lā zũ*, it appears that only the relation *lā* causes *zũ* is acceptable. Other N-N compounds which may be interpreted relatively easily like *lā zũ* 'ash', because they are each a type of the right-hand constituent, include those in (17), where *nɛ̀né nguɛ́* [lit. hand fingers] 'fingers' is a type of *nguɛ́* [fingers], *lā tsō* 'firewood' is a type of *tsō* 'wood', *wɔ́ tsũ* 'shrine' is a type of *tsũ* 'house' and *pà mì lò* 'fish' is a type of *lò*.

(17)	*wɔ́ yò*	'priestess'	*sɔ̀lēm tsũ*	'chapel'
	wē tsɛ	'house owner'	*nɛ̀̃né nguɛ́*	'fingers'
	wɔ́ tsũ	'shrine'	*pà mì lò*	'fish'
	lā tsō	firewood'		

The approach described above works for most N-N compounds because the meanings of the constituents are accessible from the compounds, even if in context some meanings narrow or broaden due to semantic drift (Ajiboye 2014; Bauer 2006; Fabb 1998). Indeed, generally, N-N compounds that have modifier-head structure tend to be hyponyms of their head constituents, meaning the referent of the compound is a type of the right-hand constituent, the semantic head. So, the approach works. However, there are compounds which will be impossible to interpret without resorting to some figure of speech like metaphor or metonymy because their properties are generally not traceable to their constituents. These are the exocentric compounds. They fail the hyponymy test because they are not hyponyms of their head constituents, if any, or some crucial feature needed to interpret them is not present in the compound (Appah 2016, 2017, 2019). Consider the compound *wē sè* 'menstruation' [lit. house back]. In interpreting this compound, the relation 'part of' is perceived between the constituents (*sè* 'back' is understood as part of *wē* 'house'). Yet, the meaning of *wē sè is not* the back of the house, so that we can argue that the compound satisfies the hyponymy test. Rather, the compound refers to that which is done at the back of the house, the activity. Thus, the compound has to be interpreted metonymically to refer to the activity that is carried out at the

location named by the literal meaning of the compound. The activity being referred to is the washing down or taking a bath which is done at the back of the house where bathhouses are located traditionally.

Again, in the compound *mì tɔ* 'pot belly', neither the right-hand constituent nor the left-hand constituent of the compound can be said to be the semantic head. That is, though, the relation between the compound members is clear, with the left-hand member "being like" the right-hand member, the compound's meaning 'pot belly' is not directly traceable to either constituent. Rather, it refers to one who is identified by the potbelly he possesses. This type of compound, then, is a possessor exocentric compound because it refers to one who possesses a potbelly (Appah 2019).

A pair of exocentric compounds which look like the possessor exocentric compounds just discussed are *híɔ̀ tsɛ̄* 'mad person' [lit. sickness owner] and *twí tsɛ̄* 'quick tempered person' [lit. heart owner], which also have to be interpreted metaphorically. Unlike the possessor type, the referent of these compounds is more like undergoer/experiencer/patients of the compositional meaning of the compounds.

The final type of exocentric compound which we find interesting is *akoto hɛ̃gmɛ̃* 'jagger bush' [lit. akoto's eye]. The referent is not a type of *akoto* nor *hɛ̃gmɛ̃* 'eye'. Rather, it refers to that which '*causes some effect on Akoto's* eye'. This is not coded in either constituent of the compound, and therefore, neither of them is the head of the compound.

6. Conclusion

In this paper, we have discussed N-N compounds in Dangme and presented a CxM representation of their properties. We have shown that the compounds combine two nouns of the same or different semantic and formal classes. Regarding the structure of the compounds, it has been shown that the compounds may have simplex or complex bases which may be derived words or compounds, making the compound recursive, and left-recursive because the complex bases which are compounds occur on the left. We have also shown that the compounds may be exocentric and semantically headless, or they may be endocentric with the heads usually occuring on the right.

The discussion has shown the potentially complicated process of interpreting compounds. Although the constituents of Dangme N-N compounds come from different semantic classes, and the relationship between them varies, there are some recurrent relations, including *part of, ingredient of, causer of, location of,* and *possessor of,* unexpressed pragmatic relations between compound constituents that determine the combination of the constituents and affects the interpretation of the compounds.

We have shown that the meanings of the individual constituents and the relations between them may only be the starting point in the interpretation process. Ultimately, pragmatic factors influence how compounds are interpreted. This is true for even regular endocentric compounds. For the class of exocentric compounds, however, the meanings of the individual constituents and their combined meanings may only be the basis for deciphering the actual meaning of the compound, which will be by means of some figure of speech like metaphor or metonymy because their meanings are constructional properties rather than compositional functions of their constituents.

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Relative Clauses as Grammatical Nominalizations: Evidence from Akan

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The structures that have been referred to as relative clauses in Akan (Niger Congo, Kwa) are re-examined in light of Shibatani (2009, 2019), which shows these structures formally to be nominalizations. It is shown that Akan "relative clauses" are nominalizations in modification use. "Headless relative clauses" are shown to be argument uses of nominalizations. Evidence adduced includes the occurrence of relative structures with determiners, internal syntactic changes such as the inability to take full NPs in relevant argument positions, and external syntactic properties of occurrence as subjects and objects in clauses. Forms traditionally classed as relativizers are shown to be nominalizers or nominalization markers. The polysemous nature of these markers is seen in their occurrence with "headless genitives", which are also shown to be nominalizations. The paper highlights the value of separating form from function in syntactic analyses.

Keywords: *Akan, Kwa, relative clause, nominalization, genitive, modification, referring expression*

1. Introduction

This paper looks at the manifestation of relative constructions in Akan (Niger-Congo, Kwa), and seeks to show that the structures that have hitherto been referred to as relative clauses are nominalizations which function as modifiers. These nominalizations have other functions in the grammar, such as genitivization and complementation, although this paper will be limited to an examination of relativization and genitivization. The observation that relative constructions are in fact nominalizations is important because it highlights the importance of separating form from function when doing linguistic analysis. Data from a few other Kwa languages is examined to show that this phenomenon might not be unique to Akan.

The paper is organised as follows: §2. is a general review of past work on relativization and its relation to nominalization. §2.1 reviews relative constructions in Akan, while §2.2 reviews relative constructions in Kwa generally. §3. to §3.2 explain the theoretical underpinnings of the nominalization approach to relative constructions and genitives. This leads up to a re-examination of data on relative constructions and genitives in some Kwa languages in §4. Having laid the theoretical foundations for the novel analysis, I investigate relative constructions and genitives in Akan in-depth in §5. to §5.2. §6. presents the summary and conclusion.

2. Relativization and nominalization

That relative clauses in some languages are nominalizations is not a recent discovery. Linguists working on language families such as Tibeto-Burman and Austronesian have pointed out the relationship between relativization, nominalization and genitivization and have sought synchronic

as well as diachronic explanations to account for these connections. Delancey (1986: 1) noted that in Lhasa Tibetan and Newari, "... relativization is simply one function of nominalization, i.e. "[that] relative clauses are simply dependent or appositive NPs." In the Newari examples in (1) and (2) below, the morpheme *gu* is a nominalizer.

(1) ji-nɔ khun-a-gu
I-ERG cook-PART-NOM
'what I cooked', 'my cooking' (Delancey 1986: 2)

(2) ji-nɔ khun-a-gu la
I-ERG cook-PART-NOM meat
'the meat which I cooked' (Delancey 1986: 2)

(3) ji-gu la
1-NOM meat
'my meat' (Delancey 1986: 2)

Similarly, for Chantyal (Tibeto-Burman, Bodish), Noonan (1997) finds that there is a nominalizing morpheme, *-wa* which occurs in several structures which all have different functions; verb complementation, purpose constructions and relative constructions being some of them. In (4) we see an argument use of the nominalization marked by *-wa.*

(4) pəri-wa gãra-wa mu
study-NOM be-NOM good+PST
'Studying is good.' (Noonan 1997: 375)

(5) shows a *-wa* nominalization in a purpose construction while (6) shows it in a relative construction.

(5) səŋlal-ma məə tara-wa-ri hya-i
Sanglal-PL honey gather-NOM-LOC go-PERF
'Sanglal and some others went to gather honey.' (Noonan 1997: 376)

(6) gaɣ-ye sya ca-wa mənchi
cow-GEN meat eat-NOM person
'the person who is eating beef' (Noonan 1997: 376)

A more literal translation of (5) would be "Sanglal and some others went honey-gathering", while (6) would be "the beef-eating person". Noonan (1997) concludes that all these manifestations of *-wa* are just different functions being carried out by the same grammatical form i.e. nominalization. Indeed, Delancey (2002: 56) observes that the vast majority of Tibeto-Burman languages use nominalizations for relativization. The genitive function, although still quite common, is not as pervasive. Ouhalla (2004: 297), in an account of relative clauses in Arabic and

Amharic, concludes that they are determiner phrases (DPs); in other words, nominals. Nominalization as a means of relativization is especially well known for the Turkic and Carib families (Givón 2001: 26).

The Uto-Aztecan family is also famed for their use of nominalization structures for relativization.[1] This is seen in Toosarvandani (2011), as well as Thornes (2012) who examines the use of nominalization structures for relative constructions in Northern Pauite, an Uto-Aztecan language. Thornes (2012: 148) observes that in Northern Pauite, nominalizations used as relative clauses may be viewed as morpho-syntactically complex noun phrases. He proposes a historical developmental path in which the precursor of these nominalizations is a paratactic construction, a pathway that has been attested for Hebrew and other languages in Givón (2009). The Hebrew case will be examined in §5.1.

A formal likeness has also been observed between relative constructions and genitives in some languages. Aristar (1991) noticed this similarity in about twenty languages and posited that in at least two of the languages in his survey (Agaw and Iranian), both the genitive and "relative clause" constructions are descended from a common modifier construction type. He therefore proposed a similar developmental path for other languages with identical "relative clause" and genitive morphemes. Providing a detailed evolutionary path for relative constructions and formally similar structures will not be possible for Akan because of the lack of historical data, but it is hoped that comparison with other languages will highlight changes that have been made or are in progress, since different languages undergo change at different rates. Being able to compare nominalization structures and markers in a wide variety of languages will enable the establishment of a common or prevalent path of development in the use of such nominalization markers and will contribute to answering the historical question: "Which forms gave rise to which?".

Many authors who identify the relationship between nominalization and relativization analyse nominalization as simply a strategy for relative clause formation. But this view is problematic because of the incompatibility of the terms used. A nominalization cannot be a clause in the same context, just as a noun in some context cannot at the same time be a verb. For example, a derived noun such as *(a) walk* is not a verb. Shibatani (2009, 2019) is of the view that in these languages, there is no such thing as a relative clause. What have hitherto been described as relative clauses are in fact grammatical nominalizations being used in a modification function. They are neither clauses nor sentences as has been generally defined in the literature. For example, *who I want* in the English sentence *I will marry who I want* is a grammatical nominalization that functions as an argument. This same nominalization may also be used as a modifier to restrict the referent of a noun phrase in a sentence like *The man who I want is already married.* A parallel use in the lexical domain is the use of the noun *wood* as a modifier in *wood stove.* Shibatani's (2009, 2019) conclusions follow an extensive survey of relative constructions in Tibeto-Burman, Austronesian, Germanic, Mayan, Romance and other language families. He convincingly shows the nominalization analysis for relative constructions to be applicable to languages as diverse as German, K'ichee, Japanese, Spanish, Sasak and Tagalog, among others. The arguments for this analysis, as put forth by Shibatani (2009, 2019) will be discussed in more detail in §3. It involves a pivotal change in our understanding of the fundamental linguistic notions of clause, sentence and

[1] I am grateful to an anonymous reviewer for pointing this out to me.

nominalization that is rooted in their function and that eschews morphological considerations. Based on this, I make the claim that Akan relative clauses are also grammatical nominalizations in modification function, that Akan "headless relative clauses" are grammatical nominalizations in argument function, and that the Akan "headless genitive" is a different kind of grammatical nominalization (noun-based) that is being used as an argument.

2.1 *Previous work on relative constructions in Akan*

Most Akan scholars analyse Akan relative constructions as comprising a head NP (noun phrase) followed by a modifying clause which together form one complex NP (Saah 2010, Osam 1997). This complex NP is capable of performing the grammatical functions of subject or object. According to Saah (2010: 93), the beginning of the Akan relative clause is marked by a relative complementizer *áà*, which is obligatory. Osam (1997: 258) terms this marker a relative subordinator and gives its form as *a*, a short vowel. One of the earliest grammars of Akan – Christaller (1881) – also designates the 'relative particle' as a short *a*. So do Fiedler and Schwarz (2005), but with a falling tone *(â),* while Schachter (1973) and Welmers (1946) give its form as a long *áà*. McCracken (2013) attempts to resolve the uncertainty surrounding the length of the vowel. Her phonetic analysis shows that the vowel is indeed long, although she maintains that the tone on the initial mora is mid - *āà*. In this work, I follow Welmers (1946), Saah (2010), McCracken (2013) and others in representing the marker with a long vowel, *áà* with a high-low tone pattern based primarily on auditory perception.

Saah (2010) notes that *áà* follows the head NP and selects a sentence or clause as its complement. He finds that the end of the relative clause is almost always modified by a determiner, which he terms a clause final determiner (CD). See examples (7-9). This determiner may be the definite distal determiner *no*[2] or its proximal counterpart *yi.* Amfo and Fretheim (2005) are of the view that these are not determiners but rather dependent clause markers, as they occur in a host of other dependent constructions. McCracken (2013) observed that the prevalence of the clause final determiner may have been overstated. In a study that made use of naturally occurring data, she reports that only about half of relative clauses in the dataset were modified finally by *no.* The presence or absence of *no,* according to McCracken, was dependent on the animacy and definiteness of the head NP. Occurrence of *no* is dispreferred when the head noun is indefinite or non-human. While this may be interpreted to mean that definite head nouns favour *no,* her data shows that human head nouns do not necessarily favour *no.*

In Akan, resumptive pronouns are used to indicate the relativization site, except where the relativized NP is inanimate (Saah 2010: 98). Inanimate nouns are pronominalized with a null pronoun. Case recoverability is therefore largely achieved by pronoun retention. In (7) and (8), the relativized noun is the subject and its position in the relative construction is marked by the third person subject pronoun ɔ. The subscript in the examples indicate co-referentiality between the head noun and the pronoun in the relative construction.

[2] The definite article/clausal determiner, *no* is homophonous with the third singular animate object pronoun, *no.*

(7) ɔbáá$_i$ áà ɔ$_i$-wáré-e Kofi nó fi Aburi[3]
woman REL 3SG-marry-PST Kofi CD be.from A.
'The woman who married Kofi is from Aburi.' (Saah 2010:92; my subscripts)

(8) ɔbáá$_i$ áà ɔ$_i$-túrú ne bá nó te Takoradi
woman REL 3SG-carry 3SGPOSS child CD live T.
'The woman carrying her baby lives in Takoradi.' (Saah 2010: 98)

Similarly, the object relativized noun in (9) is marked in the relative clause by the third person animate object pronoun *nó*.

(9) ɔbáá$_i$ áà me-nim no$_i$ nó fi Takoradi
woman REL 1SG-know 3SG CD come.from T.
'The woman whom I know comes from Takoradi.' (Saah 2010: 98)

Object pronouns for inanimates, however, are realised as null, as in (10).

(10) Ataadé$_i$ áà Ama páme-e Ø$_i$ nó yɛ
dress REL A. sew-PST 3SG-INANIM CD be fɛ
beautiful
'The dress that Ama sewed is beautiful.' (Saah 2010: 98; my subscripts)

In (11) below, the relativized NP is inanimate but is in subject position. This is marked in the relative construction by the third person inanimate subject pronoun *ɛ-*. The sentence literally translates: 'The dress that it is wearing Ama is beautiful'.

(11) [$_{NP}$Ataadé$_i$ [áà [$_{IP}$ɛ$_i$-hyɛ́ Amma nó]$_{NP}$] yɛ fɛ
Dress REL 3SG-wear A. CD be beautiful
'The dress that Ama is wearing is beautiful.' (Saah 2010: 98; my subcripts)

Saah also describes certain structures which he sees as resembling headless relative clauses. He characterizes these as "relative clauses without overt complementizers" (Saah 2010: 103). Examples are (12) and (13).

(12) **Nea** [ɔ-kɔ nsu] na ɔ-bɔ́ ahiná
Person (that) 3SG-go water FOC 3SG-break.PRES pot
'(The one) who fetches water breaks the pot.' (Saah 2010: 104)

[3] Diacritics: [ˊ]-high tone; [ˋ]-low tone; [ˇ] -rising tone; [ˆ]-falling tone; [!]-tone on following syllable is downstepped.

(13) **Deɛ/nea** [wó-dé má-a mé] nó] sua
Thing:that 2SG-take give.PST 1SG CD be.small
'What you gave me is small.' (Saah 2010: 104)

He postulates that the morphemes *nea* and *deɛ* are portmanteau morphemes composed of an antecedent NP and the relative complementizer, *áà*. So *deɛ*, which is used in the Asante dialect, is a fusion of the morphemes *adeɛ + áà* – 'thing + relative'; *nea,* which is used in the Akuapem[4] dialect, is a fusion of *oni + áà* – 'one/person + relative'. Therefore, sentences such as (12) and (13) are actually relative clauses; they just happen to have their complementizers fused with the head noun as a result of grammaticalization. These complementizers cannot be followed by the relative complementizer, *áà* (14):

(14) ***Deɛ/nea** áà [wó-dé má-a mé] nó] sua
Thing (that) REL 2SG-take give.PST 1SG CD be.small
"What you gave me is small." (Saah 2010: 104)

I will show in this work, that both "relative clauses" with and without "overt complementizers" in Akan are not clauses but nominalizations being utilized for different functions: modification in the case of "relative clauses" with "overt complementizers", and argument function in the case of those without "overt complementizers". The markers that have variously been called relativizers, relative markers and complementizers will be reclassified as markers of nominalization.

2.2 *Previous work on relative constructions in other Kwa languages*

Among the 50 to 60 Kwa languages that exist, very little attention has been paid to the possibility that nominalizations may in fact be used for relativization. In the few studies that have been done on relativization, the relative constructions are generally analysed as clauses. One such study is a short one by Aboh (2010) which looks at these constructions in Kwa languages generally. Aboh (2010: 28) notes that relative constructions in Kwa are mostly restrictive and tend to follow the demonstrative, as the following example from Gungbe shows.

(15) a. Kòfí wɛ̀ yí [àsé yù àwè éhè [ɖě mi xɔ̀]
Kofi FOC take cat black two DEM that[REL] 1PL buy
lɔ́ lɛ́]
DET NUM
'Kofi received these two black cats that we bought.' (Aboh 2010:28)

[4] In current speech, both *deɛ* and *nea* are used in the Asante dialect as well.

However, in some languages such as Yoruba and Gungbe itself (15b), the relative construction can precede the demonstrative.

b.	ásé	yù	ɖě	mí	xɔ̀	éhè	lɔ́	lɛ́
	cat	black	REL	1PL	buy	DEM	DET	NUM

'this black cats [sic] that we bought' (Aboh 2010: 28)

Some Kwa languages also allow relative constructions whose noun heads do not take a determiner. In some languages such bare nouns are indefinite as well as non-specific while in others they are definite. The relative clause is therefore fully responsible for conveying the definiteness and specificity properties of the head noun. The following examples from Yoruba and Gungbe show this.

(16) a. Yoruba

	ère	ti	Kúnlé	ni
	statue	REL	Kunle	own

'the statue that Kunle owns' (Aboh 2010: 28)

b. Gungbe

òxwé	ɖě	Súrù	xɔ̀
house	REL	Suru	buy

'the house that Suru bought' (Aboh 2010: 28)

Another pervasive feature of Kwa relative constructions, according to Aboh (2010: 29), is that they occur between the head noun and a determiner, resulting in sequences which in English will be rendered as for example, *'cat that we bought the'*. Shibatani (2019) notes that this structure also occurs widely in Austronesian languages of Indonesia, e.g. Toba. It has been shown above that this is also the case with Akan, as it is with Gã (Campbell 2017).

Aboh discusses a sub-type of relative constructions he names factive relative clauses that are common in Kwa languages. These resemble relative constructions but have a factive interpretation. Aboh's use of the term 'factive' recalls factive predicates, such as *know* and *understand* whose complements constitute a presupposition of truth e.g. *I know that Jane is unhappy*. In the constructions described here as factive, however, a head noun is modified by a relative construction and this larger NP functions as the subject or object of a verb. Semantically, the subject of the main verb is not the head plus relative clause complex. Instead, the subject is a proposition whose arguments are the head noun and other nouns in the relative construction, and which semantically constitutes a truth presupposition. "Factive", as used here appears to be influenced by the truth presuppositional element inherent in these constructions and perhaps their translation into English with the nominal complement construction – *The fact that…*.

In Gungbe and other Kwa languages (e.g. Fongbe), the factive meaning arises when the head noun in what seems like a relative clause occurs with a determiner. Compare the following examples from Gungbe:

(17) a.

àsé	yù	ɖě	mí	xɔ̀	éhè	lɔ́	lɛ́
cat	black	REL	1PL	buy	DEM	DET	NUM

‘The black cats that we bought.’ (Aboh 2010: 29)

b. àsé yù lɔ́ lɛ́ ɖě mí nyàn vɛ́ ná Kofi
cats black DET NUM that 1PL chase hurt for Kofi
‘The fact that we chased those black cats hurt Kofi.’
*‘The black cats that we chased hurt Kofi.’ (Aboh 2010: 29)

The following Gungbe example shows clearly that the factive clause is different semantically from the relative clause. Aboh explains that if (18) were assigned a relative clause reading the two clauses that make up the sentence will be contradictory i.e. it would mean that the soup that Kofi cooked was good and yet the same soup wasn’t good.

(18) Núsɔ́nú lɔ́ ɖě Kòfí ɖà nyɔ́n àmɔ́n núsɔ́nú lɔ́ kpàkpà
soup DET that Kofi cook good but soup DET itself
má nyɔ́n
NEG good
‘The fact that Kofi cooked this soup was a good thing but the soup (itself) wasn’t good [it didn’t taste nice].’ Collins (1994) in Aboh (2010: 30)

Aboh (2010: 30) suggests that these languages that have factive interpretations of relative clause-like structures “have a kind of event relativization where the event head (or maybe a cognate object denoting event) is being extracted”. Aboh (2005: 283) concludes that factive clauses are truncated relative clauses.

Bámgbósé (1992) takes a different view on the analysis of this structure in Yoruba. He analyzes the relative clause-like structures that occur with a factive meaning as instances of nominalization. For the following examples from Bámgbósé (1992:88), no interlinear gloss was provided. However from the meanings of the sentences and the fact that Yoruba is mostly an SVO language, the following glosses are assumed: *ìlù* ‘drum’, *tí* ‘REL’, *ó* ‘3SG’, and *ńlù* ‘beat.PROG’.

(19) a. ìlù tí ó ńlù
‘the drum that he is beating’ (Bámgbósé 1992:88)

b. ìlù tí ó ńlù
‘the fact that he is beating a drum’ (Bámgbósé 1992:88)

Unlike Gungbe, the relative meaning and the factive meaning are conveyed by the exact same structure. In Yoruba, the element that occurs before the relativizer *tí* may be a nominalized verb rather than a noun, as in (20) below. Verbs are nominalized by partial reduplication of the form *Ci-Verb*. So *wa* ‘come’ becomes *wiwa* ‘coming’ and *na* ‘beat’ becomes *nina* ‘beating’.

(20) wíwá tí ó wá
coming that he come

'the fact that he came' (Bámgbósé 1992: 91)

Bámgbósé's analysis seems to be based on the structural similarity between (20), containing the relativizer *tí,* and (21), which has a different marker and no head nominal but also has a factive meaning.

(21) pé ó wá
that he come
'the fact that he came' (Bámgbósé 1992: 91)

Though Bámgbósé does not mention it, this nominalization is capable of modifying a head, as in the following sentence:

(22) Mo gbo irohin pé ole ní Ade
1SG hear news that thief be Ade
"I heard the news that Ade is a thief."

The above exposition on factive relative clauses in Yoruba has shown that at least one other Kwa researcher has recognised the possibility of a relative construction being a nominalization. Bámgbósé however stops short of claiming that all relative clauses in Yoruba are nominalizations, limiting the analysis to only those with a factive interpretation. This begs explanation, as regardless of their semantic interpretation, all the relative clauses have the same structure.

Of particular importance to the goals of this paper is the observation made by Ajiboye (2005) that there is a similarity between the relative clause and the genitive in Yoruba. Compare (23a) and (23b).

(23) a. ère ti Kúnlé
statue C K.
'statue of Kunle' (Ajiboye 2005: 90).

b. ère tí Kúnlé ni
statue C K. owns
'the statue that Kunle owns' (Ajiboye 2005: 90)

The difference between genitive marker, *ti* (23a) and relative construction marker, *tí* (23b) is that the former has mid tone while the latter has high tone[5]. Ajiboye (2005) argues that *ti* (with mid tone) genitives are reduced relative clauses, while *tí* (with high tone) relatives are full relative clauses. In both the reduced relative clause and full relative clause, *ti* is a complementizer. He further states that in the reduced relative clause (genitive), the complementizer takes a verb phrase

[5] In the tone-marking convention used by Ajiboye (2005), mid tones are left unmarked.

(VP) complement while in the full relative clause it takes an inflectional phrase (IP)[6] complement. Mid tone *ti* occurs in yet another related construction which Ajiboye describes as a 'possessive noun phrase with no possessum'. This is basically a possessive noun phrase (NP) whose possessum is not overtly realised but can be retrieved from discourse context (aka "headless genitive"), as shown below:

(24) a. Mo ri [ti Kúnlé]
1SG see of K.
"I saw Kunle's." (Ajiboye 2005: 107)

b. Mo rí aṣọ ti Òjó ṣùgbọ́n n kò rí *pro*
1SG see cloth of O. but 1SG NEG see
ti Túndé
of T.
'I saw the dress of Ojo but I didn't see Tunde's own.' (Ajiboye 2005: 108)

Ajiboye accounts for these genitives without possessums in the same way as those with possessums, that is, as reduced relative clauses. The difference is that in the former type the possessum is a null pronominal (pro). Therefore, in examples such as (24a) and (24b) above, *ti* is considered a complementizer.

In the next few sections, I lay out the rationale and evidence for a nominalization approach to relative constructions, after which I revisit the Kwa data and make a case for further investigation of the merits of a nominalization analysis.

3. Defining relative constructions

The analyses of the noun-modifying structures shown above as relative clauses by Saah (2010), Aboh (2010), Bámgbósé (1998), Ajiboye (2005) and others is in step with the consensus among most linguists. Andrews (2007: 175) for instance, defines a relative clause as "... a subordinate clause which delimits the reference of an NP by specifying the role of the referent of that NP in the situation described by the RC [relative clause]." Givón (2001: 175) states that relative clauses are "...clause-size modifiers embedded in the noun phrase." The relative clause then, according to Givón (2001: 175-176), is a proposition which codes a state or event and whose function is to act as an anaphoric foregrounding clue for some noun phrase (NP) referent which is accessible to the hearer's episodic memory but which is not currently activated. This is possible because the NP referent in question is involved in or acts as a participant in the event or state coded by the RC, and that event or state is readily accessible and activated in the hearer's episodic memory.

Fox and Thompson (1990), offer a discourse-centred analysis of relative clauses in English. Using conversational data, they discern systematic correspondences between head nouns and

[6] In X-bar theory, an inflectional phrase is basically a sentence, and has as its head an inflectional category such as tense

relativized noun phrases. For example, that non-human subject heads tend to occur with object relativized NPs and that non-human object heads do not choose object relativized NPs. They account for these patterns by appealing to interactional factors relating to information flow such as the information status and grounding status of the referent, in addition to discourse-external factors such as humanness, definiteness and the function of the relative clause. Most relevant to the present paper is their position that some types of relative clauses assert new information (Fox Thompson 1990:306). This is contra Givón (2001) and Shibatani (2009, 2019) who maintain that relative clauses contain presuppositions. It is my position as well that relative constructions do not assert but presuppose. Fox and Thompson (1990) base their claim on the fact that many relative constructions contain main verbs that are semantically general, such as *have* or *have got* and whose object heads are non-human. These heads are then modified by a relative construction that characterises the head. One such example from Fox and Thompson (1990: 305) is *They had one [that was a real cheapo thing]*. Although the information in this relative construction may indeed be new, this does not automatically mean that it is the part of the sentence that carries the assertion. That function still rests with the main verb. Sentences like these have been labelled informative presuppositions (Prince 1978, Abbott 2008). As Abbot (2008: 532) argues, presuppositions do not necessarily equate to old information, just as assertions do not always constitute new information, but rather the coupling of presupposition with old information and assertion with new information can be seen as "at best only generalizations about what is perhaps the most frequent kind of case." Hence, it is possible for a presupposition to contain new information, but it still will not constitute an assertion.

Shibatani (2009) identifies some problems with the traditional definitions and characterisations of relative constructions. The first is the use of the terms "clause" and "sentence" to describe these structures. Shibatani (2009: 195) argues that so-called relative clauses cannot be considered clauses or sentences even if they are finite and contain all the arguments required by the grammar. In Shibatani (2019: 93), these clauses, sentences and nominalizations are defined functionally, in terms of the speech acts that they perform. Clauses predicate i.e. they ascribe a property to some noun phrase referent. Sentences have illocutionary force i.e. they assert, order, warn, promise or express the speaker's ideas, desires etc. Different sentence types have different illocutionary forces. Declarative sentences assert information, interrogative sentences seek information while imperative sentences give commands. So-called relative clauses neither predicate nor assert, but rather denote entities by presupposing a state of affairs characterizing the denoted entities. They are, therefore, nominalizations. In characterising the state of affairs, the properties and actions of the head noun may be anchored temporally and therefore tense markers (and other verbal markers) may be found. When subjected to the classic negation test, "relative clauses" are found to constitute presuppositions. In (25), negating the sentence does not negate the presupposition that John recommended something to me.

(25) I didn't read the book which John recommended. (Shibatani 2009: 195)

Givón (2001:176) also holds that relative constructions contain presuppositions and not assertions. He writes: "the speaker does not assert the proposition in the REL-clause, but rather *presupposes* it to be *known* or *familiar* to the hearer, thus *accessible* in the hearer's episodic memory of the

current text." However, per Shibatani (2009, 2019), denotation, predication and assertion are mutually exclusive functions of the different construction types of nominalizations, clauses and (declarative) sentences respectively. Therefore, the relative construction cannot be a sentence as it does not assert, and it is not a clause as its function is not to ascribe a relational property to an entity. Instead it evokes an entity denotation by presupposing its involvement in some event or presupposing its exhibition of some property. *who I love* in *The man who I love* evokes an entity who is the object of the speaker's affection. This entity evoked by the relative construction serves to restrict further the referent of *the man.*

In addition, Shibatani (2009: 166) maintains that it is not possible to embed a sentence into a smaller constituent such as a noun phrase, and that, in order for this to occur, the sentence must first be nominalized. His position, therefore, is that relative clauses are grammatical nominalizations formed from clauses, and it is this property that allows them to be subordinated or embedded. Grammatical nominalizations are essentially referring expressions, just as lexical nouns also have a referring function. In the next section, I explain further what grammatical nominalizations are and how they relate to "genitives", "headless relatives" and "headless genitives".

3.1 *Types of nominalizations*

Shibatani (2009, 2019) sets out a classification of nominalizations that incorporates grammatical nominalizations. The major types of nominalization are lexical nominalizations and grammatical nominalizations. Lexical nominalizations create nouns while grammatical nominalizations create referring expressions. Nouns denote or refer to specific entities or classes of entities. For example, in English, *boys* denotes the class of young, male humans while *the boy* refers to a specific instantiation of that class. The denotational boundaries of nouns are very narrowly defined. Grammatical nominalizations, on the other hand may denote a very wide range of entities. Although this range is narrowed down by a characterisation in terms of an event, it is much wider than that associated with a noun. For example, while the noun *money* refers to a specific entity, the grammatical nominalization *what I lost*, absent of contextual information, could refer to a host of entities, including *money*. This grammatical nominalization may be used as a modifier ("relative clause") where together with the head noun it serves to narrow down the set of referents of the head noun to one unique instantiation.

Each major type of nominalization may be further divided into two subtypes: argument nominalizations and event nominalizations. A lexical argument nominalization is a noun which refers to an entity and which is derived from another lexical item. Examples are *employer* and *employee*, derived from the verb *employ* or the noun *cook*, derived from the verb *cook*. The morphemes *-er* and *-ee* are nominalizers. A lexical event nominalization is a noun which refers to an event and which is derived from another lexical item e.g. *employment*, also derived from the verb *employ*. The derivation may also be a zero derivation, as in the derivation of *walk (n.) from walk (v.).* It is possible also, for lexical nominalizations to be derived from existing nouns e.g. *parenthood* from *parent*.

A verb-based (V-based) grammatical argument nominalization denotes an entity characterised in terms of its participation in an event e.g. *what Jane ate*. Verb-based grammatical

argument nominalizations often (but not always) contain a gap which corresponds to the grammatical relation of the entity referred to. For example, *what Jane ate Ø* is an object argument nominalization while *what Ø fell on me* is a subject argument nominalization. In some languages, e.g. those of the Austronesian family, there is special morphology on the verb to indicate the grammatical role of the argument nominalized. The referent of a grammatical argument nominalization is always made explicit in the linguistic or extra-linguistic discourse.

There are some grammatical argument nominalizations that are entirely noun-based. These nominalizations are derived from existing nominals, but they differ from lexical nominalizations derived from other nouns (the *parent-parenthood* type) by not having definite, explicit referents. Their referents are dependent on the discourse. It is these kinds of nominalizations that are found in genitive constructions in many languages e.g. the Japanese example below.

(26)	kore=wa	[boku]=no	hon	de,	are=wa	[otoosan]=no	da
	this-TOP	I-NMZ	book	COP	that=TOP	father=NMZ	COP

'This is my book and that is the father's.' (Shibatani 2009: 191)

In this example, the nominalizer, *no,* on *otoosan* 'father' marks it as an argument nominalization denoting an entity associated with the referent of the base nominal, *otoosan* 'father'. This entity can be recovered from the discourse as *hon* 'book'. This is an NP use. In *boku no hon* 'my book', the same nominalizer indicates an entity associated with the first person. This nominalization is used as a modifier to *hon* 'book', where it restricts the denotation of *hon* 'book' to that pertaining to *boku* 'I'. Nominalizations are either used for modification, where they occur with a nominal, or they are used as NPs/arguments. The modification use involves juxtaposition of the nominalization and the noun it modifies. This is what we see in *boku no hon* 'my book'.

These different types of nominalizations may be put to various uses/functions. What many see as relative clauses is simply the modification use of a verb-based argument nominalization. In *The watch that Jill bought is beautiful*, *that Jill bought* is simply an argument nominalization used to modify *the watch*. The function of the argument nominalization is to restrict the referent of *watch* to the one bought by Jill. In a similar vein, what many see as headless relative clauses are simply verb-based argument nominalizations in NP use or argument use, where they have a referring function e.g. *What I bought yesterday* refers to some entity, whose identity is or will be known from the discourse. In this analysis, a distinction is made between nominalizers and nominalization markers. Nominalizers mark derivations of nominals while nominalization markers indicate an NP-use or argument use of a nominalization.

A grammatical event nominalization denotes an event, fact, or proposition which is characterised in terms of the state of affairs pertaining to the event itself. For example, *that John fell asleep* in *I can't believe that John fell asleep* denotes a fact. Grammatical event nominalizations are all verb-based. They may take on an NP use, as in *that he is clever* in *I know that he is clever*. In this case the referring expression is termed an object complement. Although Akan has event nominalizations, they fall outside the purview of this paper. Figure 1 below illustrates the different types of nominalizations per Shibatani (2009, 2019), while Figure 2 shows the uses of grammatical argument nominalizations.

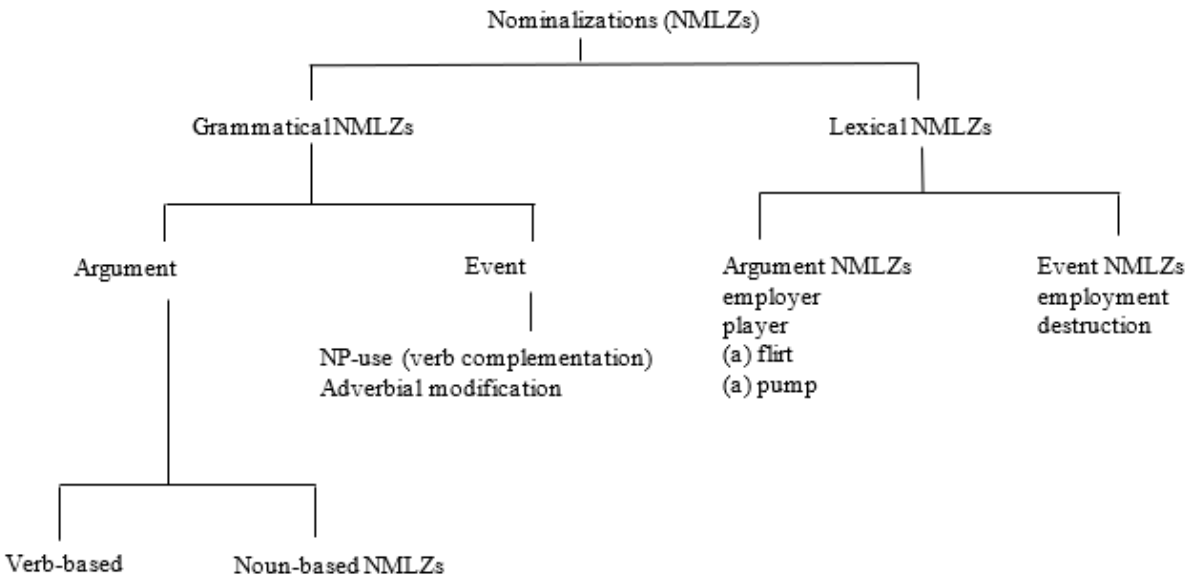

Figure 1: Types of Nominalizations

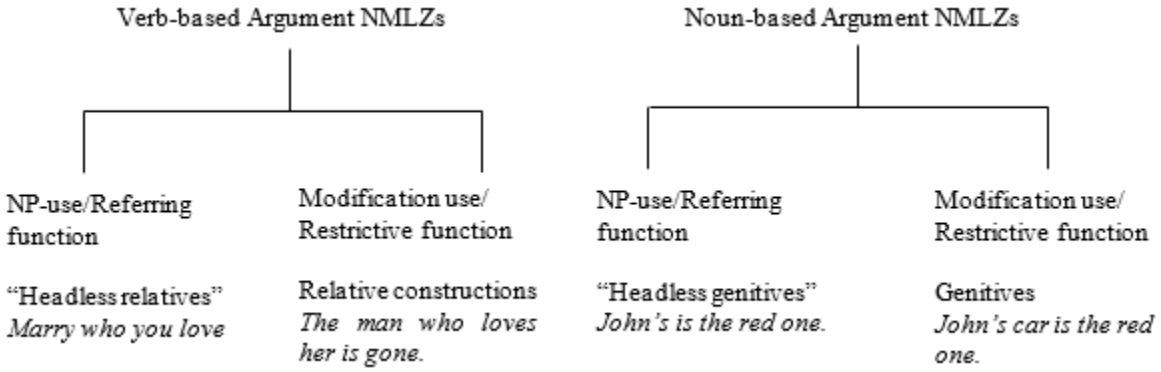

Figure 2: Grammatical Argument Nominalizations and their uses

3.2 *Finiteness and nominalization*

According to Lehmann (1986) and Givón (2001), a clause may be nominalized to various degrees. This depends on how many verb or noun characteristics are displayed and how similar or dissimilar the grammatical nominalization is from an independent clause. In discussing the correlation between finiteness and nominalization, Givón (2001: 27) notes that the most finite constituents are the least nominalized and vice versa. This analysis, however, is not sound. Clauses and nominalizations perform different functions, so it is not the case that as a nominalization exhibits more and more finiteness features, it inches more and more towards clause-hood. One

problem some may have with reclassifying relative clauses as nominalizations is the fact that they contain finite verbs i.e. verbs which take tense, aspect and mood marking. However, as noted by Shibatani (2009: 193), finiteness is not a definitional feature of a sentence or clause. Therefore, there is no definitional correlation between finiteness and sentences and between non-finiteness and nominalizations. Since grammatical nominalizations denote an entity in terms of its involvement in some event, it is natural that the event be grounded temporally with markers of tense (Shibatani & bin Makhashen 2009: 29). This does not necessarily make the structure a clause or sentence. Clausehood is characterised by predication, which also may or may not involve TAM marking (as with verbless clauses). Sentencehood is defined not in terms of structure but in terms of the speech act performed. Grammatical nominalizations merely constitute a presupposition[7] and their function is to denote. A nominalization may contain many formal features of finiteness but its function, by virtue of being a nominalization, is to denote. That is, its internal syntax may resemble that of a clause - with TAM markers and such, but its external syntax will be that of a nominalization; in that it functions as an argument or modifier. Such a nominalization has a referring or denotational function and is not a clause or sentence. The referring and denotational functions preclude predication and assertion.

In Gã, for example, there are lexical nominalizations with full tense, aspect and person markers which nevertheless have a denotational function and therefore, nominal status. Examples are given in (27) and (28). In the b) sentences, these nominalizations are used as arguments and few will analyse them as clauses or sentences despite the verbs or aspectual markers they contain. In addition, some take plural suffixes, e.g. *òjèŋmá!-í* [habanero.pepper-PL] 'habanero peppers'.

(27) a. *òjèŋmɑ̋* 'lavender, perfume' or 'a kind of aromatic, hot pepper; habanero'

ò-jè ŋmɑ̋
2SG-exit sweet.smell
'You smell good.' (Campbell 2017: 520)

b. òjèŋmɑ̋ é-bù
pepper.type PERF-be.plentiful
'There is a glut of *òjèŋmɑ̋* peppers.' (Campbell 2017: 522)

(28) a. *àkɛ̀shɑ́à* 'an abrasive cleaning agent'

à-kɛ̀-shɑ́-à
3.IMPERS-take-scrub-HAB
'They use it for scrubbing.'

b. Má-hé àkɛ̀shɑ́à
1SG.FUT-buy abrasive
'I will buy an abrasive.'

[7] See Givón (2001:176) for a discussion of relative clauses and their relation to presuppositions and assertion.

Conversely, some constructions with nominalizing or gerundive morphology may function as sentences and make assertions, as is shown in the Amharic example below from Evans (2010: 410). The response *hedo* to the interrogative constitutes an assertion and therefore a sentence, but it has a gerundive form (3rd singular masculine gerundive).

(29) käbbädä yät allä
Kebbede where exist.3M.PFV
'[W]here is Kebbede?'

hed-o
'Why, he has already left.'
(Lit. 'His having gone') (Evans 2010: 410)

My position is that category labels should be determined primarily by function, and not by morphological features or internal syntactic properties.

4. Critique of previous works on relative constructions

After laying out the evidence for a nominalization approach to genitives and relative clauses in some languages, we can turn our attention to the data from the Kwa languages examined earlier. In those works, relative constructions are analysed as clauses, and the particle that introduces them is called a relativizer or complementizer. This view is problematic for languages like Yoruba where the complementizer or relativizer *ti* is found in both the "relative clause" (23b) and genitive (24a). In an effort to account for the symmetry in marking in these semantically disparate constructions, Ajiboye (2005) analyzes genitives as instances of reduced relative clauses. I contend that this account deserves further inspection as the suggestion that the genitive is a clause is confounding since it does not predicate. That the relative and genitive constructions are related is apparent, based on synchronic morphological similarities and proven diachronic development in other languages with historical data. But one possibility that needs consideration is that this synchronic relationship could be one of nominalization. The alternative analysis of the Yoruba relative clause may be that *ti* is a nominalization marker which marks a verb-based argument nominalization that is being used as a modifier. In Ajiboye's reduced relative clause with a null possessum, e.g. *ti Túndé* in (24b), repeated here as (30), *tí* could be analysed as a nominalization marker which marks a noun-based (N-based) nominalization in NP use. This nominalization indicates an entity that has crucial relevance to the possessor and whose identity is recoverable from discourse. In this case, the entity is *aṣọ* 'cloth'. In the first genitive in (30), *aṣọ tí Òjó* 'Ojo's dress', the noun-based argument nominalization, *tí Òjó*, is being used to modify *aṣọ 'cloth',* thereby restricting the referent of the denotation of *aṣọ 'cloth'* to that pertaining to Ojo.

(30) Mo rí aṣọ ti Òjó ṣùgbọ́n n kò rí *pro* ti
1SG see cloth of O. but 1SG NEG see of
Túndé
T.
'I saw the dress of Ojo but I didn't see Tunde's own.'

Regarding the Yoruba factive relative construction (31b), it is difficult to see why Bámgbósé analyzes it as a nominalization, yet he maintains that the exact same form in (31a) is a relative clause. The two forms differ semantically but they should receive the same structural analysis. I agree with Bámgbósé that the *tí* constituent in the factive clause is a nominalization but if this is the case then the one in the relative clause is likely also a nominalization.

(31) a. ìlù tí ó ńlù
'the drum that he is beating'

b. ìlù tí ó ńlù
'the fact that he is beating a drum'

Saah's (2010) study on relative clauses in Akan also encounters a problem when he has to analyze structures like those in (12) and (13) as "relative clauses without overt complementizers" due to the occurrence of a marker that by many indications is developed from the relativizer *áà*. These structures, however, do not fit the definitions of relative clauses given by these authors (e.g. lack of a head nominal in Akan), hence the need to posit exceptional features such as covert complementizers and reduction of structures. If the view proposed by Shibatani (2009) that the link between so-called headed relative clauses and headless relatives is that they are all nominalizations, then the data in Akan starts to become clearer and the need to resort to positing covert categories is obviated.

Saah's "relative clauses without complementizers" may instead be analyzed as nominalizations being used in a referential function. The forms *nea* and *deɛ* would therefore be nominalization markers. As nominalizations, they are able to occupy subject and object positions just as lexical nouns would. In (12) and (13) for example, they are subjects. Another reason why the "relative clause without overt complementizer" approach should be abandoned is that, although it is likely the case that the particles *nea* and *deɛ* are fused morphemes made up of *oni* 'one' + *áà* 'REL' and *adeɛ* 'thing'+ *áà* 'REL' respectively, the grammaticalization process has proceeded so far that both *nea* and *deɛ* can now be used for both people and things, or both animates and inanimates. If speakers conceived of *nea* and *deɛ* as lexical items with the component meanings of 'person' and 'thing' respectively, then one would expect *nea* to be used only for animates or humans and *deɛ* only for inanimates or non-humans. This is obviously not the case, as (13) shows. Semantically therefore, it is irrelevant that they arose from the fusion of the two separate elements; synchronically they behave as single morphemes and have lost the semantic constraints that were probably associated with them in the past. In addition, they have also lost a significant amount of

phonetic material as would be expected of grammaticalized forms. In the case of *nea,* four syllables have been reduced to two, while with *deɛ* five syllables have been reduced to two. Indeed, it appears that in the case of *deɛ* the relativizer *áà* is totally lost. Furthermore, their tonal patterns have been completely altered:

[òní] + [áà] → [nìà]
[àdɪ́ɛ́] + [áà] → [dɪ̀ɛ̀]

Therefore, *nea* and *deɛ* are not head nouns; they are grammatical markers.

While Shibatani (2019) shows that the nominalization account for relative clauses and genitives in many languages is supported by morphosyntactic evidence, it remains to be seen whether it is a universal phenomenon, applying to all or most languages. In Campbell (2017), it is shown that Gã, a Kwa language in contact with Akan, also has verb-based grammatical nominalization structures used for modification (relative clauses) and NPs (headless relatives), as well as noun-based grammatical argument nominalizations used as NPs (headless genitives). In what follows, I argue the same position for Akan relative constructions and genitives.

5. Argument nominalizations in Akan

In light of these facts about nominalization and the role they play in what have been described as relative clauses, the Akan data on relative constructions will be reanalyzed. It will be shown that Akan also makes use of grammatical argument nominalizations to modify nouns. Hence there are no relative clauses in Akan, just modification uses of verb-based argument nominalizations. Consider once again Saah's "relative clauses without overt complementizers" or what others would classify as "headless relative clauses". (13) is repeated here for convenience as (32a) and glossed to reflect the nominalization analysis. (32b) and (32c) also show such "headless relatives".

(32) a. [Deɛ/nea wó-dé má-a mé nó] sua
NM 2SG-take give.PST 1SG DEF be.small
'What you gave me is small.' (Saah 2010: 104; my glosses and bracketing)

b. Mè-m̀-pɛ́ [dèɛ̀/nèà wó-ré-yɛ́ nó]
1SG-NEG-like NM 2SG-PROG-do DEF
I don't like what you are doing.

c. [Dèɛ̀/Nèà mè-pɛ́ n'ă!sɛ́m̀ pɑ̃́ɑ̃́] né Kòjó
NM 1SG-like 3SG.matter very.much be Kojo
The one I really like is Kojo.

The position taken in this paper is that *deɛ* and *nea* mark the NP use of argument nominalizations and these argument nominalizations have a referring function. The particles are

not relative pronouns as Saah (2010: 104) states; they are nominalization markers. In many languages, argument nominalizations have a gap in one argument position which corresponds to the grammatical relation of the referent of the argument nominalization. In the Akan argument nominalization, all relevant argument positions must be filled, but the argument that is nominalized cannot occur as a full NP. Instead, it must be pronominalized. If this argument is an inanimate object, the pronoun is realised as zero or null. Many linguists use the terms subject relativization, object relativization etc. to describe relative constructions based on the grammatical relation of the relativized noun. But this gap has nothing to do with relativization per se; it is formed from the argument nominalization process. Therefore, these should be termed object argument nominalizations, subject argument nominalizations etc. The following are some examples showing the different types of argument nominalizations in Akan (with the pronominalized argument in bold).

Subject argument nominalization:

(33)	a.	Mè-ǹ-hù	dèɛ̀/nèà	**ɔ̀**-bɔ́-ɔ̀	màámé		nó
		1SG-NEG-see	NM	**3SG**-hit-PST	woman		DEF
		'I didn't see the one who hit the woman.'					

Object argument nominalization:

	b.	Deɛ/nea	wó-dé	**Ø**	má-a	mé	nó
		NM	2SG-take	**3SG.INAM.OBJ**	give.PST	1SG	DEF
		sua					
		be.small					
		'What you gave me is small.' (Saah 2010: 104; my glosses)					

Indirect argument nominalization:

	c.	Dèɛ̀/Nèà	Kòfí	bísá-à	**nò**	sìká	nó	dè	Kòjó
		NM	Kofi	ask-PST	**him**	money	DEF	be.called	Kojo
		'The one Kofi asked for money is called Kojo.'							

The analysis of these structures as relative clauses is inaccurate for a few other reasons. The so-called clauses or sentences are quite different from independent sentences. Their inability to take full NPs as arguments in all positions is one difference. In (34a) both arguments in the argument nominalization are full NPs, *Kofi* and *màámé nó* 'the woman', making the sentence ungrammatical. However, an independent sentence will be able to occur with two full NPs as (34b) shows.

(34)	a.	*Mè-ǹ-hù	dèɛ̀/nèà	Kofi	bɔ́-ɔ̀	màámé	nó
		1SG-NEG-see	NM	Kofi	hit-PST	woman	DEF

	b.	Kòfí	bɔ̀-ɔ̀	màámé	nó
		Kofi	hit-PST	woman	DEF

'Kofi hit the woman.'

Another crucial feature that distinguishes Akan argument nominalizations from ordinary independent sentences is the tone on the verb. Example (35a), which is the same form as the argument nominalization in (33a), is not grammatical, but (35b) is. The difference is that the tone on the verb *bɔ́* 'hit' in (35a) is high while that in (35b) is low. This difference in the tone pattern of argument nominalizations in Akan was first observed and discussed in detail by Schachter and Fromkin (1968). They also observed parallel tonal changes in focus constructions as well as other subordinate constructions.

(35) a. *ɔ̀-bɔ́-ɔ̀ màámé nó
3SG-hit-PST woman DEF
'S/he hit the woman.'

b. ɔ̀-bɔ̀-ɔ̀ màámé nó
3SG-hit-PST woman DEF
'S/he hit the woman.'

Another sign of the nominalized nature of Saah's "relative clauses without overt complementizers" is that they are usually followed by a determiner e.g. *nó* 'DEF'. The importance of the determiner in argument nominalizations in Akan will be discussed in detail in §5.2. Also, the fact that these argument nominalizations can function in sentences as subject or object means that they exhibit one of the definitional features of nominalizations put forward by Givón (2001: 24). Further arguments against analysing *dèɛ̀* and *nèà* as relative pronouns is laid out in the following section, which looks at noun-based argument nominalizations, or genitives.

5.1 *The Akan genitive and its relationship to argument nominalization*

The morphological shape of the Akan genitive phrase provides some clues as to why the argument nominalizations just described cannot be considered relative clauses. It has been noted that in some languages, the relative construction and the genitive have the same morphological marking. At first glance, this seems not to be the case in Akan. The basic genitive phrase in Akan consists of juxtaposing possessor and possessum[8]. Example:

(36) a. Kòfí tí
Kofi head
'Kofi's head'

b. m'èdúàné
1SG'food
'my food'

[8] The possessed noun may undergo some tonal changes, but a discussion of this is beyond the scope of this paper.

However, so-called 'headless genitives', in which there is no possessed entity, are formed by the particles *dèɛ́* or *dèá*. The first of these particles is almost identical in form to the nominalization marker for NP use of argument nominalizations, with the important difference being that while the particle found in the genitive has low-high tone pattern *(dèɛ́)*, that in the verb-based argument nominalization has low-low tone pattern *(dèɛ̀)*. The following expressions exemplify their use.

(37) a. Kòfí dì-ì n'èdú!áné ɛ̀nà mé ńsó mé-dí-ì
Kofi eat-PST 3SG'POSS.food and 1SG too 1SG-eat-PST
mé-dèɛ́
1SG-NM
'Kofi ate his food and I also ate mine.'

b. Àtààdéɛ́ nó yɛ̀ mé-dèá
dress DEF be 1SG-NM
'The dress is mine.'

The two particles, *dèɛ́* and *dèá*, differ in semantics and syntactic distribution. *Dèɛ́* is contrastive, in that, when it is used, there is a presupposition that there exists another referent in the linguistic or extra-linguistic context who is also a possessor of a member of the set of entities denoted by the possessed noun. This is the case in (37a) where *médèɛ́* 'mine' is contrasted with *Kofi édúàné* 'Kofi's food'. If no such presupposition exists in the discourse, then *dèá* is used instead, as in (37b). Example (37b) is appropriate as an answer to the question of whom a particular dress belongs to, where there is no indication of the existence of another dress belonging to someone else. Examples (38) and (39) are ungrammatical because they each contain the nominalization marker that is incompatible with the discourse semantics of the sentences in which they occur.

(38) *Kòfí dì-ì n'èdú!áné ɛ̀nà mé ńsó mé-dí-ì
Kofi eat-PST 3SG.POSS.food and 1SG too 1SG-eat-PST
mé-dèá
1SG-NM
'Kofi ate his food and I also ate mine.'

(39) *Àtààdéɛ́ nó yɛ̀ mé-dèɛ́
dress DEF be 1SG-NM
'The dress is mine.'

The particle *nèà*, which to some speakers is interchangeable with *dèɛ̀* in argument nominalizations used as NPs, cannot occur in N-based nominalizations:

(40) *Kòfí dì-ì n'èdú!áné ɛ̀nà mé ńsó mé-dí-ì
Kofi eat-PST 3SG'POSS.food and 1SG too 1SG-eat-PST
mé-nèà
1SG-NM
'Kofi ate his food and I also ate mine.'

(41) *Àtàádéɛ́ nó yɛ̀ mé-nèà
dress DEF be 1SG-NM
'The dress is mine.'

The contrastive meaning of *dèɛ́* is seen in another kind of genitive construction specific to the Wassa dialect of Akan. Here, *dèɛ́* co-occurs with the juxtaposed possessor and possessum to indicate that the possessum is being contrasted with another one of the same ilk but with a different possessor. Example (42) illustrates this.

(42) Àkwàsí átá!ádeɛ dèɛ́ nó wɔ̀ héné
Akwasi dress NM DEF be.located QP
'Where is Akwasi's dress?' (Example context: Kofi's dress has been found and speaker is inquiring about Akwasi's)

Dèá appears to be restricted to equational sentences such as (37b) and cannot occur in verb-based argument nominalizations. Example (43) is therefore ungrammatical.

(43) *Mè-ǹ-hù dèá ɔ̀-bɔ́-ɔ̀ màámé nó
1SG-NEG-see NM 3SG-hit-PST woman DEF
'I didn't see the one who hit the woman.'

If we are to follow Saah (2010) in analysing *dèɛ̀* in V-based argument nominalizations in NP-use as relative pronouns composed of *àdéɛ́* 'thing' and the particle *'áà',* will we be able to apply the same analysis to *dèɛ́* in so-called "headless genitives"? If that was possible then the following sentence where a "headless relative clause" contains a "headless genitive" will be very complicated to analyze.

(44) Fà dèɛ̀ ɛ̀-yɛ́ mé-dèɛ́ nó tó ǹkyɛ́ń
take NM 3SG.INAN-be 1SG-NM DEF put side
'Put what is mine aside.'

It would be very difficult indeed to analyze such Akan genitives without possesums as relative clauses of any kind, yet it is formed by a marker that is almost identical to that found in

relative constructions. On the other hand, when both constructions are recognised as argument nominalizations the occurrence of *deɛ*[9] can be accounted for.

These genitive constructions without possessums are noun-based argument nominalizations. *Dèɛ́*, as well as *dèá*, are nominalization markers which indicate that the entire phrase denotes some entity associated with the referent of the base nominal, and whose referent is recoverable from the discourse context. It changes the referent of the base nominal much in the same way as suffixing *-hood* to *parent* results in a new noun, *parenthood*, with a different referent. In the case of the genitive, this association may be one of ownership. In (37a), repeated below as (45) for instance, the entity associated with the referent coded by the first-person pronoun in *médèɛ́* 'mine' can be deduced from the context to be *èdùànέ* 'food'.

(45) Kòfí dì-ì n'èdú!áné èná mé ńsó mé-dí-ì
Kofi eat-PST 3SG.POSS.food and 1SG too 1SG-eat-PST
mé-dèɛ́
1SG-NM
'Kofi ate his food and I also ate mine.'

Further evidence that the nominalization marker, *dèɛ́* is distinct from the lexical item *àdéɛ́* 'thing' is seen in possessive constructions where the possessum is *àdéɛ́* 'thing' (46a). In such constructions there is no contrastive element to the semantics of the possessive NP. So in (46a), there is no assumption that the referent of *m'ădéɛ́* 'my thing' is one among multiple referents of the same type. On the other hand, use of the noun-based nominalization marked by *dèɛ́* carries precisely this contrastive meaning. That is, (46b) implies that there are several other entities belonging to others, but the speaker wants the one associated with his or her own self.

(46) a. Fà m'ădéɛ́ má mè
take 1SG'thing give 1SG
'Give me my thing.'

b. Fà mé-dèɛ́ má mè
take 1SG-NM give 1SG
'Give me mine.'

The structural relationship between what is commonly known as headless genitives and headless relative clauses in Akan is therefore that of nominalization. The genitive is a noun-based argument nominalization while the "headless relative clause" is a verb-based argument nominalization. Both constructions are used as NPs to refer to entities in discourse.

The dearth of historical records on Akan does not allow us to investigate how this symmetry in marking came about. However, we may hypothesize, based on the path of

[9] When *deɛ* appears in this work without any tone marks, it represents the general argument nominalization marker used to mark NP use. Its tone pattern varies depending on whether it marks a N-based argument nominalization *(dèɛ́)* or a V-based argument nominalization *(dèɛ̀)*.

development of nominalization markers in other languages, e.g. the Ryukyuan and other dialects of Japanese, that the noun-based nominalization occurred first (Shibatani p.c). According to Heine and Kuteva (2004: 296) the word for 'thing' is a very common source for the grammaticalization of possessive markers in many languages e.g. Japanese, Thai and Khmer. It may well be then, that Akan speakers employed *àdéɛ́* 'thing' (or whichever form it had at the time) to mark N-based nominalizations in NP use (possessives) and then extended this morpheme to marking V-based nominalizations in NP use as well.

In such languages the argument nominalization bearing the NP-use marker is then extended to modification uses, resulting in "relative clauses", which are nothing more than V-based argument nominalizations in modification use. This modification use of argument nominalization is found in use among a small minority of Akan speakers. Many speakers consider the following sentence in which the argument nominalization marked by *dèɛ̀* is used to modify *pàpá nó* 'the man' ungrammatical, and even those who use it admit that it is non-standard.

(47)	ʔMè-hù-ù	pàpá	nó	dèɛ̀	ɔ̀-bá-à	há	ɛ́nŕ!á	nó
	1SG-see-PST	man	DEF	NM	3SG-come-PST	here	yesterday	DEF
	'I saw the man who came here yesterday.'							

The fact that constructions such as (47) are considered non-standard suggests that the development of the V-based argument nominalization is proceeding in a parallel direction to that of the Japanese and Ryukyuan dialects. The modification use, which is developed last, is just beginning to appear among some Akan speakers, hence its non-standardness. This indicates a syntactic change in progress.

Hendery (2012: 59) remarks humorously that generic nouns such as words for 'thing', that mark headed relativizations just happen to be in the wrong place at the wrong time and get kidnapped into the relative clause. The situation in Akan appears less straightforward than that, since in this case it is likely, as suggested by Saah (2010), that it is not the original lexical item *àdéɛ́* 'thing' that gets 'kidnapped' but an already grammaticalised form made up of a fusion of *àdéɛ́* 'thing' and the original nominalizer *áà*. Indeed, Heine and Kuteva (2007: 230-231) report an identical path of development for "free relative clause" (headless relative clause) formation in Ewe (Niger-Congo, Kwa) where "free relatives" are marked by an article comprising a generic noun meaning 'thing', 'person', 'place' etc. and the relativizer *si*.

The modification use of the *dèɛ̀*-marked argument nominalization probably starts out as a paratactic construction involving the head noun and the argument nominalization. A similar pathway is suggested by Givón (2009: 105-106) for colloquial Hebrew. Givón posits a development from a non-restrictive (parenthetical) relative clause to an embedded relative clause. According to him, the free relative construction marked by the demonstrative in (48b) occurs in a paratactic construction with the standard headed relative construction shown in (48a) to yield the non-restrictive relative construction in (48c).

Standard OBJ REL-clause

(48)	a.	Ha-'ish	she-pagash-ti	'oto	'etmol	
		the-man	REL-met-1s	met	yesterday	

‘The man I met yesterday...’ (Givón 2009: 105)

Standard headless OBJ REL-clause

b. zé she-pagash-ti ‘oto ‘etmol
DEM REL-met-1s met yesterday
‘The one I met yesterday...’ (Givón 2009: 106)

Standard non-restrictive OBJ REL-clause

c. Ha-‘ish zé she-pagash-ti ‘oto ‘etmol
the-man DEM REL-met-1s met yesterday
‘The man, the one I met yesterday...’ (Givón 2009: 106)

Non-standard condensation to restrictive OBJ REL-clause

d. Ha-‘ish zé-she-pagash-ti ‘oto ‘etmol
the-man DEM-REL-met-1s met yesterday
‘The man I met yesterday...’ (Givón 2009: 106)

The difference between (48c) and (48d) is that whereas the former is produced with two intonation contours (with a pause after *ha-‘ish* ‘the man’) the latter comes under a single intonation contour. Givón’s relative clause corresponds to my argument nominalization in modification use. A similar pathway may be occurring in Akan, leading to a construction which, like Hebrew, is considered non-standard. (49a) to (49d) represent how I hypothesize the situation to have developed. (49c), with a pause after ***pàpá nó*** ‘the man’, is an appositive construction in which the argument nominalization is juxtaposed to a head nominal. The argument nominalization is referential. All native speakers agree that this sentence is perfectly grammatical. However, when the head noun and the argument nominalization come under the same intonation contour to yield (49d), many speakers consider it unacceptable; while others have no problem with it but admit it is non-standard. The argument nominalization in (49d) is not referential (but is denotational) and occurs in apposition to the head noun.

(49) a. Pàpá nó à mè-hyíâ nò ɛ́nŕ!á nó
man DEF NMLZ 1SG-meet him yesterday DEF
‘the man I met yesterday...’

b. Dèɛ̀ mè-hyíâ nó ɛ́nŕ!á nó
NM 1SG-meet him yesterday DEF
‘the one I met yesterday...’

c. Pàpá nó, dèɛ̀ mè-hyíâ nó ɛ́nŕ!á nó
man DEF NM 1SG-meet him yesterday DEF
‘the man, the one I met yesterday...’

d. ?Pàpá nó dèɛ̀ mè-hyíâ nó ɛ́nŕ!á nó

man DEF NM 1SG-meet him yesterday DEF
'the man that I met yesterday...'

(49c) and (49d) have the following structure, the difference being that the argument nominalization in (49c) is referential while that in (49d) is not:

[[Papa no]$_{NP}$ [dèɛ̀ mèhyíâ nò ɛ́nɾ́!á nó] $_{NMLZ}$]$_{NP}$

The construction in (49d), where an argument nominalization that has NP use is used to modify a noun, parallels constructions in other languages that have been analyzed as relative clauses. Sentence (2) above from Newari and (50a) and (50b) from Chinese are some examples. In (50a), the bracketed constituent is an argument nominalization in direct object position. In (50b), it is a modifier.

(50) a. nǐ méi yǒu [wǒ xǐhūan] de
you not have I like NMZ
'You don't have what I like.' Shibatani (2009: 189)

b. nǐ méi yǒu wǒ xǐhūan de chènshān
you not have I like NMZ shirt
'You don't have a shirt that I like.' Shibatani (2009: 189)

Based on the crosslinguistic pattern observed by Aristar (1991), where genitive and relative constructions are marked identically, the connection established between possessive *dèɛ́* and "relative clause without complementizer" *dèɛ̀*, is not far-fetched in spite of their differing tones. While it is likely that the historical origin of these particles is exactly as Saah posits, it is untenable to apply such an analysis synchronically to possessive *dèɛ́*. That native speakers are oblivious to the morphological make-up of these particles is evident in the interchangeablility of *dèɛ̀* and *nèà* for all nouns, even though the proposed etymology imposes animacy constraints. Saah's examples appear to suggest that while both *deɛ* and *nèà* may be used for non-humans as in (13), only *nèà* may be used for humans, as in (12). This is not so for many native speakers of Akan, who regularly produce utterances like that in (51) where *dèɛ̀* refers to a human. There are, however, speakers for whom only *nèà* will be acceptable in this sentence.

(51) Mè-bá né nèà/dèɛ̀ ɔ̀-bá-à há nó
1SG-child be NM 3SG-come-PST here DEF
'My child is the one who came here.'

The patterns of acceptability suggest that the grammaticalization process is still on-going. A section of speakers still preserves the human/non-human distinction of the lexical items that gave rise to the particles, while for others this semantic distinction has been lost. Furthermore, these particles can be used even when the noun in question is an intangible entity, neither a person

nor a thing, as in (52) below. Although nominalization markers better reflect the roles of *dèɛ̀* and *nèà* across the various uses, in abandoning the term 'relative pronoun', the animacy requirements that inform the choice between *dèɛ̀* and *nèà* for some speakers is backgrounded. Despite this loss, the novel term brings the added value of making obvious the functional commonalities of the particles across the various structures.

(52) Mè-pɛ̀ nèà/dèɛ̀ w'á-yɛ́ wò tí nó
1SG-like NM 2SG.PERF-do 2SG head DEF
'I like what you've done to your hair.'

In addition, it is possible in Akan to have a head noun which literally means 'thing' or 'person', as in the following two examples, the latter of which is taken from the Asante-Twi Bible:

(53) Àdéɛ́ nó à mè-tɔ̂-ɛ́ nó níé
thing DEF NMZ 1SG-buy-PST DEF here
'Here is the thing that I bought.'

(54) Na onipa bi a ɔ-firi Farisi-foɔ no mu
and person INDEF NMLZ 3SG-come.from Pharisee-AG DEF inside
wɔ hɔ
be.located there
'And there was a person there who was one of the Pharisees.'

In this section, it has been shown that in Akan, the particle *dèɛ́* in the genitive and *dèɛ̀* in the "headless relative" both carry out the same function of marking NP use of nominalizations. The former is used for N-based argument nominalizations while the latter is used for V-based argument nominalizations. There appears to be a change in progress where the V-based argument nominalization is being employed to modify nouns, most likely via a paratactic route as has been reported by Givón (2009) for Hebrew. In the following section, the modification use of argument nominalizations will be examined.

5.2 *Argument nominalizations in modification function (aka headed relative clauses)*

By far the most frequently used and accepted marker of the modification use of V-based argument nominalizations is *áà*.

(55) Mè-hù-ù pàpá nó áà màámé nó bɔ́-ɔ̀ɛ́
1SG-see-PST man DEF NMLZ woman DEF hit-PST
'I saw the man whom the woman hit.'

(56) Mè-hù-ù pàpá bí áà ɔ̀-hyɛ́ !kyɛ́
1SG-see-PST man INDEF NMLZ 3SG-wear hat
'I saw a man who was wearing a hat.'

Just as the argument nominalization marked by *dèɛ̀* usually ends in a determiner, so too that marked by *áà* also ends in a determiner. The final determiner may either be *no*, the distal definite article (distal demonstrative determiner in Amfo's (2007) terms), or *yi*, the proximal definite article (Amfo's proximal demonstrative determiner). So far, we have seen only examples of argument nominalizations bounded finally by the distal determiner, *no*. In (57) we see the use of the proximal demonstrative determiner, *yi*.

(57)	abofrá	yi	áà	Kofi	re-soma	no	yi	ɛ-n-nyɛ́
	child	DEF	NMLZ	K.	PROG-send	3SG	DEF	3SG-NEG-be-good

'This child whom Kofi is sending (on an errand) is not good.' (Saah 2010:96; my glosses)

Amfo (2007: 146) states that *no,* in addition to its function as a definite article, is also used to mark dependent clauses, where it may occur in a relative clause, mark a clause as temporal, or mark a clause as a substitutive construction. Using Gundel et al's (1993) Givenness Hierarchy as a point of departure, the distal demonstrative determiner is said to code a noun phrase as 'uniquely identifiable' or 'familiar' in all its contexts of use. Its use as a spatial deictic indicating distance from the deictic centre depends on context. Its counterpart, *yi*, also carries out the same dependent clause functions but indicates proximity of the NP referent to the deictic centre. So, in (57) above, the use of *yi* indicates that the child is spatially close to the speech participants.

I take the use of a final determiner, be it distal or proximal, to be evidence that the relative clause is not a clause; its function is not to predicate, i.e., to attribute some property to an argument, but rather to evoke a discourse entity which is co-referential with the head nominal by characterising that entity's involvement in an event or activity that is familiar to the listener. Entity denotation is done via nominals or nominalization (here, nominalization), and this nominalization aids in the picking out of some referent from among the set of denotations encoded by the head nominal. This is a modification function, and the determiner after the argument nominalization indicates that the event that aids the addressee to pick out the specific referent has been nominalized.

The pronominal in the argument nominalization is co-referential with the argument that is nominalized. The particle *áà* serves as a cue that what follows is a nominalization. The determiner at the end confirms that what precedes it is a nominal. It is not surprising, therefore, that where the argument nominalization occurs with a determiner, it should be identical to the determiner that modifies the head noun. This is because it is the same referent that is activated in the speaker's mind when both the head noun and the argument nominalization are produced together. The use of a determiner to signal some form of nominalization of a clause has been noted by Andrews (2007: 232). He observes that in Lakhota, the relative clause is marked by a determiner, which is indicative of nominal status.

My view about the final determiner differs from Saah's in another respect. While Saah believes that the determiner modifies the entire noun phrase complex including the head nominal, I believe that its scope is restricted to the argument nominalization only. This is for the simple reason that the head nominal often bears its own determiner. In addition, the argument nominalization marked by *dèɛ̀* also ends in a determiner when it is used as an NP, indicating that

argument nominalizations by themselves are modified by a determiner in Akan. A structural analogy to the head noun and its modifying argument nominalization is the following paratactic construction:

(58) Shwè sàá pàpá nó, kèséé nó
look that man DEF big DEF
'Look at that man, the big one.'

In (58), *kèséé* 'big', which is an adjective (Cf. *pàpá kèséé nó* 'the big man'), takes on a referential function when it occurs with a determiner. The phrase *kèséé nó* 'the big one' is a lexical argument nominalization that is juxtaposed with the sentence and serves to modify the referent of *pàpá nó* 'the man'. In a similar way, the nominalization marked by *áà* is a modification use of a grammatical argument nominalization. The difference is that (58) is an adjective-based lexical argument nominalization while the *áà*-marked nominalization is a verb-based grammatical argument nominalization. Another important difference is the requirement that there be an intonational pause between the noun and the modifier in (58) whereas no such requirement exists for relative constructions. An anonymous reviewer wondered whether it was possible to have a noun with a determiner being restrictively modified by another noun with its own determiner. Such a noun phrase would present a structural parallel to relative constructions at the lexical level. Although this is not possible in Akan, it nevertheless does not indicate that it is not possible at the level of grammatical nominalizations.

Sometimes the argument nominalization marked by *áà* occurs without any sort of determiner, as in (59a). This normally happens when the head noun takes the indefinite, specific determiner *bi*. The bare argument nominalization as it were is not unexpected since in Akan nominals do occur in bare form to indicate indefiniteness and non-specificity. Use of a final determiner when the head noun is modified by *bi* renders the utterance somewhere between unacceptable and marginally acceptable to native speakers, as (59b) illustrates.

(59) a. màámé bí à ɔ̀-tɔ́ŋ̀ àǹkàá bà-à
woman INDEF NMLZ 3SG-sell orange come-PST
há
here
'A certain woman who sells oranges came here.'

b. ʔmàámé bí à ɔ̀-tɔ́ŋ̀ àǹkàá nó/bí
woman INDEF NMLZ 3SG-sell orange DEF/INDEF
bà-à há
come-PST here
'A certain woman who sells oranges came here.'

Another type of relative construction that disallows a final determiner is when there is extraposition, as in the following biblical text in (60a), taken from Saah (2010: 102). In this type the final determiner *cannot* occur with any degree of acceptability (60b).

(60) a. ɔbarímá bí tená-a ase áà ne díń
man INDEF sit-PST under NMLZ 3SG.POSS name
de Nyamékyɛ
be.called N.
'There lived a man whose name was Nyamekye.' (Saah 2010: 102)

b. *ɔbarímá bí tená-a ase áà ne díń
man INDEF sit-PST under NMLZ 3SG.POSS name
de Nyamékyɛ no/bi
be.called N. DEF/INDEF
'There lived a man whose name was Nyamekye.'

It makes sense that when the head nominal is marked by *bi*, there is no determiner after the relative clause. Since the speaker is assuming the head nominal to be unknown to the listener, the modifying information is also not likely to be known by the listener. The use of bare nominals in this context is therefore fitting to mark the indefiniteness and non-specificity of the referent to the addressee.

McCracken's (2013) study of determiner use in relative constructions which was mentioned earlier in §2.1 focused on the definite article *no* and found that it was missing in about half of the relative constructions in her data. The presence or absence of *no* was dependent on the topic-worthiness of the head noun a well as the distance between the clause and the head noun. Relative constructions modifying highly topic-worthy (i.e. human, definite) head nouns tend to occur with *no* while relative constructions that are relatively distant from their head nouns tend not to occur with *no.*

In another kind of relative construction, there is no verb at all in the modifying constituent. Such constructions consist of a noun phrase made up of a possessor, possessum and an adjective or noun which modifies the possessum. The following example from Amfo (2007:145) illustrates this.

(61) a. Àbòfrá yí né àberèwá á nè hó ǹkòǹkònéné yí
child PDD CONJ old.lady REL POSS skin algae PDD
tènà-è
stay-COMPL
'This child stayed with this algae infested old lady.' (Amfo 2007: 145)

Although in (61a) *á* is glossed as REL, implying that what follows it is a relative clause, it is clear that the phrase *nè hó ǹkòǹkònéné* 'her algae-infested skin' is a noun phrase. The noun phrase marked by the nominalizer *á* may be replaced by a grammatical argument nominalization as in (61b).

(61) b. Àbòfrá yí né àberèwá á nè hó yɛ́ ǹkòǹkònéné
child PDD CONJ old.lady NMLZ POSS skin do algae
yí tènà-è
PDD stay-PST
'This child stayed with this algae infested old lady.'

The existence of constructions of the kind found in (61a) reinforces the point that *áà* does not mark clauses.

Note that the V-based argument nominalization marked by *áà* cannot be used as an NP. The following is ungrammatical:

(62) *Mè-dè bɛ́-má [áà mè-pɛ́ n'ă!sɛ́m]
1SG-take FUT-give NMLZ 1SG-like3SG.POSS.matter
'I'll give it to the one I like.'

Lehmann (1986: 672) contrasts prenominal relative constructions with postnominal ones. He observes that prenominal relative clauses tend to be the most strongly nominalized, with features such as genitive-marked subjects, nominalising affixes and constraints on TAM marking. Such relative clauses behave just like attributes would in the language. Examples of languages with prenominal relative clauses are Turkish, Quechua and Dravidian. Givón (2001: 26) refers to such languages as extreme nominalising (embedding) languages and adds accusative marking of the entire clause to the list of features of nominalization. Postnominal relative clauses, on the other hand, tend to be weakly or moderately nominalized, displaying only one of the three features just mentioned or some other external syntactic nominal feature (Lehmann 1986). Internally they may possess all TAM marking abilities but lack an argument, or in the case of Akan lack the ability to take two full NPs. Based on these points of reference, Akan could be classified as a moderately nominalising language.

6. Summary and conclusion

It has been shown that so-called relative clauses in Akan are juxtapositions of a head nominal and a verb-based argument nominalization. Subject relativization is juxtaposition of a head nominal and a subject argument nominalization. Object relativization is juxtaposition of a head nominal and an object argument nominalization etc. These argument nominalizations are marked either by *áà* or *dèɛ̀*. The use of the latter is restricted to a few speakers whose sociolinguistic characteristics are yet to be determined. "Relative clauses without overt complementizers" or "headless relatives", marked by *dèɛ̀*, have also been shown to be verb-based argument nominalizations being used as NPs. A similar marker, *dèɛ́* is employed to mark NP use of noun-based nominalizations, commonly known as "headless genitives".

In this paper I have given an account of relative constructions in Akan based on Shibatani (2009, 2019) that takes into account the function of these constructions, recognises the polysemous

nature of the particles involved and tries to give a unified formal and functional account of the structures and morphemes that exhibit formal similarities. It has been shown that the very term 'relative clause' is anomalous and that these constructions are nominalizations, as evidenced by their modification by a determiner. Another piece of evidence that the structures concerned are nominalizations is their ability to function as subjects and objects in sentences.

Perhaps one reason for the assumption that argument nominalizations such as those in Akan and English are clauses or sentences is the lack of a universally applicable definition of these common grammatical terms. Such a cross-linguistic characterisation has been given by Shibatani (2009, 2019) in terms of the functions of these constituents; the speech acts they perform. Clauses predicate and sentences perform speech acts such as assertion, questioning etc. None of these functions is performed by the grammatical nominalizations in Akan. On the other hand, what these nominalizations do is refer to or denote some entity or event by characterising it in terms of an event or state of affairs related to the entity or event. The presence of tense and aspect markers on the verbs in these nominalizations is not indicative that they are clauses or sentences. Nominalized clauses may bear full TAM marking, that is, they may contain finite verbs, because as Shibatani (2009: 195) notes, formal finiteness features do not necessarily mean that a construction can predicate or assert. Like all categories that are meant to be applied cross-linguistically, a functional definition is more useful than a formal one since form differs from language to language.

Analytically, what this nominalization account of relative clauses and genitives in Akan and other languages such as Ga reveals is that the salience of reference and denotation as a means of facilitating the expression of ideas or propositions in human language is much more important than has been recognised. While others have noticed and proffered explanations for the similarity in morphological marking across these different structures, their analysis has been based primarily on historical morpho-syntactic relationships and development of shared morphemes. While that is certainly significant, the nominalization analysis recognises a functional commonality among these constructions, that is, their use of larger grammatical structures for the functions of reference and modification. An analysis that views these as the differing syntactic structures of relative clauses and genitives misses this association.

The data in other Kwa languages await a more thorough analysis against the backdrop of what is known about nominalizations and their relationship with relativization and genitivization. This could potentially reveal previously overlooked functional relationships between formally similar structures and inform a better synchronic and diachronic view of relative constructions and their development. It was seen earlier in the paper that a final determiner seemed to be the norm in relative constructions in Kwa. And we have seen structures in Yoruba that look and function very much like nominalizations. The exotic-looking factive constructions of Yoruba and Gungbe are possibly event nominalizations, but this requires more investigation. It is hoped that this work has brought to the fore the significance of approaching syntactic analysis with an increased focus on function rather than form, and that it will encourage a re-examination of relative constructions in these and other languages.

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Abbreviations

1	first person	IP	inflectional phrase
2	second person	ITI	itive
3	third person	LOC	locative
AG	agentive	M	masculine
BGL	Bureau of Ghana Languages	NEG	negative
C	complementizer	NM	nominalization marker
CD	clause final determiner	NMLZ/NMZ	nominalizer
COMP	complementizer	NP	noun phrase
COMPL	completive	NUM	number
CP	complementizer phrase	OBJ	object
CTM	contrastive topic marker	PART	partitive
DEF	definite	PDD	proximal demonstrative determiner
DEM	demonstrative	PERF	perfect
DET	determiner	PFV	perfective
FOC	focus	PL	plural
GEN	genitive	POSS	possessive
ERG	ergative	PRES	present
FUT	future	PROG	progressive
HAB	habitual	PST	past
IMPERS	impersonal pronoun	REL	relativizer
INAN	inanimate	S	singular
INANIM	inanimate	SG	singular
INDEF	indefinite		

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A descriptive analysis of vowel harmony in Efutu[1]

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Efutu, also known as Simpa, a less-studied, minority language of Ghana, is found to exhibit vowel harmony. The goal of this paper is to use data from a documentation of Efutu to present a descriptive analysis of vowel harmony as it manifests in the language. ATR and Rounding harmony constitute the two types of vowel harmony found in the language, with ATR harmony being more prevalent. The phenomenon shows up in various domains of the grammar, including verbal affixation, possessive constructions, and locative constructions. In verbal affixation, vowels in verbal prefixes assimilate the ATR and rounding values of the verb stem's vowels. In possessive constructions, vowels in possessive pronouns assimilate the ATR and rounding values of the possessed noun's vowels. In locative constructions, the definite article's vowel assimilates the locative noun's vowels' qualities. Thus, there is a clearly delineated domain of harmony with clear restrictions on both triggers and targets. In Efutu, vowel harmony involves leftward spread in terms of directionality, a case of regressive assimilation.

Keywords: *Simpa, Efutu, Guan, vowel harmony, ATR harmony, rounding harmony, verbal affixation.*

1. Introduction

This paper presents a language documentation-based descriptive analysis of vowel harmony in Efutu (sometimes spelt 'Effutu'), a previously under-described South-Guan language of Ghana. Like many of its Kwa relatives, Efutu exhibits vowel harmony in various aspects of its grammar, including the domains of verbal affixation, possessive constructions, and locative constructions. Two types of vowel harmony, namely, ATR harmony, and rounding harmony, occur in these domains of grammar of the language, though, ATR harmony is found to be more prominent. In terms of directionality, the spread of ATR and rounding features in the relevant domains is leftward, such that the target occurs to the left of the trigger to result in what could be described as regressive assimilation. The following sections expound on the Efutu vowel harmony. The discussion begins with a socio-linguistic background of the language in section 2, followed by a brief characterisation of the phenomenon of vowel harmony from a cross-linguistic perspective in section 3. Section 4 is devoted to the discussion of the Efutu vowel harmony, with sub-sections 4.1 and 4.2 focusing on ATR and rounding harmony, respectively. Section 5 deliberates on the prominence of ATR harmony over rounding harmony in Efutu. Section 6 touches on directionality. Section 7 concludes the discussion.

2. Sociolinguistic background of Efutu

Efutu is considered as one of three dialects of Awutu (Eberhard et al. 2020). The other two dialects are Awutu and Senya. Awutu, along with its dialects, is genetically classified as a South-Guan language belonging to the Kwa branch of the Niger-Congo family of languages (Hall 1983; Eberhard et al. 2020). A partial family tree in Figure 1 illustrates the linguistic

[1] This paper is based on sections from Agyeman 2016, a PhD thesis by the author.

classification of Efutu. It is spoken in Winneba, a coastal town in the central region of Ghana. The exact number of speakers of Efutu is not known, however the total number of speakers for all the three dialects of Awutu is estimated at 129,000 (Eberhard et al. 2020). In Winneba, speakers live mainly in suburbs close to the sea. That is to say, Efutu is spoken mainly in the quarters close to the sea, whereas Fante is the main language spoken in the inland parts (Welmers 1974:11, Agyeman 2016: 31).

Although the language is known to outsiders as Efutu[2], speakers call their language Simpa. Speakers also refer to their township, as well as their clan or tribe, as Simpa. In an interview, speakers explained that the term 'Efutu' is an Akan word with the meaning 'mixed up'. Apparently, outsiders perceive the language as containing vocabulary from different languages, hence the name Efutu (see Agyeman 2016: 25-26). Issues about the language names Simpa and Efutu, as well are other related names, including Ewutu and Awutu are discussed in detail in Agyeman (2016: 25-27). Speakers of Simpa or Efutu are bilingual in the Fante dialect of Akan and speak it as a second language. Fante is also the language used in schools, in addition to English, the official language of Ghana (see Agyeman 2013: 267-270; Ansah G.N. 2014; Ansah & Agyeman 2015). In terms of linguistic typology, significant features of Efutu include tone[3], subject-verb-object word order, verb serialisation, and vowel harmony.

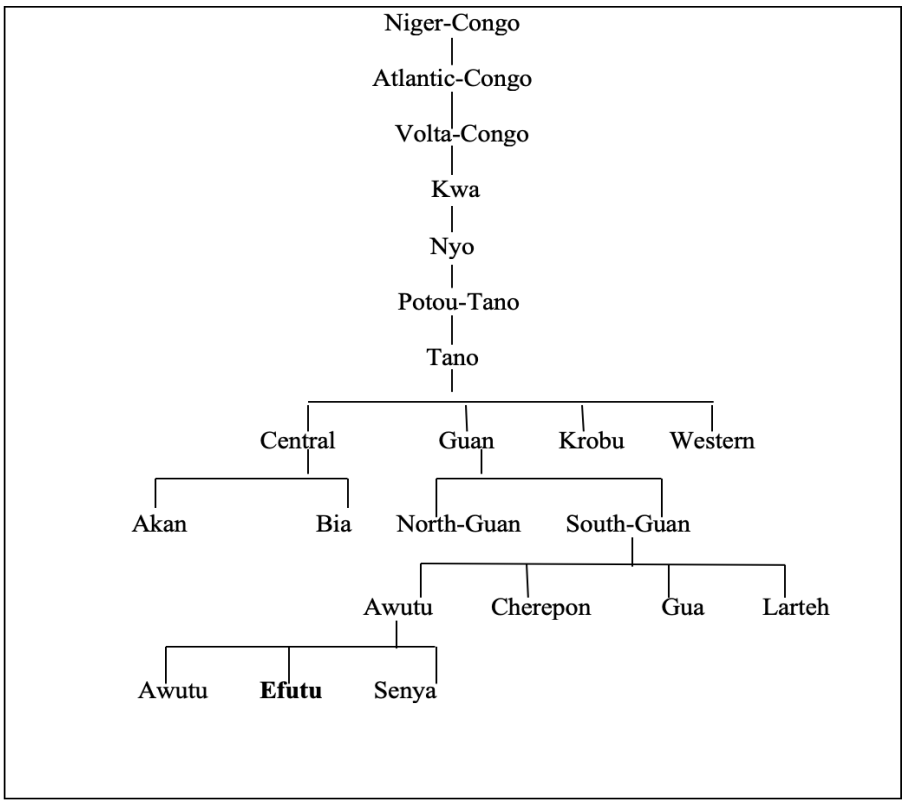

Figure 1: A partial family tree of Efutu

[2] All documents, including published materials, refer to the language as Efutu. For instance, the Ghana government has named the district Effutu Municipal District (Ghana Statistical Service, 2014).

[3] Although Efutu is a tone language, tone is not marked in the data in this paper since it is considered not central to the discussion. Another feature which is not marked in the data is nasality, as it is not central to the discussion.

3. Vowel harmony

Vowel harmony has received extensive discussion in both theoretical and descriptive terms because of its intriguing nature. Cross-linguistic as well as language-specific studies of the phenomenon abound (Aoki 1968; Painter 1971; Hall et at. 1973; Clements 1976, 1985, 1991; Anderson L. 1980; Anderson S. R. 1980; Ringen 1988;Van der Hulst & Van de Weijer 1995; Casali 1995, 2003, 2008, 2012; Obeng 1995, 2000; Anderson, C.G. 1999;Finley 2006, 2008; Archangeli & Pulleyblank 2007; Nevins 2010; Gafos & Dye 2011; Archangeli et al. 2012; Van der Hulst 2012).Vowel harmony may be described as a phonological, assimilation process in which vowel sounds in a given domain share some or all articulatory features (Van der Hulst & Van der Weijer 1995; Rose & Walker 2011; Van der Hulst 2016).The domain of vowel harmony may vary in languages. Harmony may occur within a word or a smaller domain in some languages (Archangeli & Pulleyblank 2007: 363-364;Rose & Walker 2011: 251; Van der Hulst 2016:3),but also may extend to a larger domain such as an entire phrase in other cases (Archangeli & Pulleyblank 2007: 365). In some cases, the assimilating vowels may be separated by consonants (Van der Hulst 2016: 5; Rose & Walker 2011: 251). Cross-linguistically, vowel harmony types identified in languages involve one or more phonetic features, including the feature backness [+/– Back], height [+/– High], rounding [+/– Round] and tongue root [+/– ATR] (Van der Hulst 2016; Rose & Walker 2011; Van der Hulst & Van der Weijer 1995). Vowel harmony is widespread. It is reported in some related Guan languages, including Anum (Painter 1971), Nawuri (Casali 1995), Larteh (Akrofi-Ansah 2009; Ansah M. A. 2014) and Nkami (Akanlig-Pare & Asante 2016). It is also reported in some related Kwa languages like Akan (Dolphyne 1988; Clement 1985), and also Gur languages like Buli (Akanlig-Pare 2002) and Dagbani (Hudu 2010), as well as unrelated languages, such as Turkish (Khalilzadeh 2010), Finnish (Ringen & Heinamaki 1999; Valimaa-Blum 1999), Warlpiri (Harvey & Baker 2005) and Korean (Kim 2000; Finley 2006). The phenomenon is illustrated in (1) with ATR harmony in Nkami.

(1) Nkami

a.	[+ATR]		b.	[–ATR]	
	e-muo	'clay'		*ɛ-bɪ*	'time'
	e-ŋu	'head'		*ɛ-yʊ*	'self'
	e-wei	'house'		*ɛ-danɔ*	'tongue'
	e-fifi	'sweat/ warmth'		*ɛ-mɛrɪ*	'horn/ antenna'

(Akanlig-Pare & Asante 2016: 28)

The Nkami example in (1) involves ATR vowel harmony in nominal affixation. Vowels in nominal prefixes assimilate the ATR properties of vowels in stems. Thus, in each of the examples in (1a), the [+ATR] value of the nominal prefix /e/ is conditioned by the [+ATR] vowels in the respective noun stems, whereas in (1b), the [–ATR] value of the nominal prefix /ɛ/ in each example is conditioned by the[–ATR] vowels in the respective noun stems. In effect, two alternative forms of the same nominal prefix could be realised in Nkami based on ATR harmony in the language.

4. Efutu vowel harmony

This section begins with a brief overview of Efutu vowel inventory. Efutu operates a nine (9) vowel system, as presented in Table1.In term of distribution, each of the vowels may occur word-initially, except the High, Back vowels /u/ and /ʊ/, as illustrated in (2).Thus, in (2), /u/ and /ʊ/ are found to be without examples where they occur word-initially. These nine vowels are all contrastive, nonetheless, they are patterned in a way to achieve harmony in words and some other domains, as discussed in the following sections.

Table 1: Efutu vowel inventory

	Front	Central	Back
High	i, ɪ,		u, ʊ,
Mid	e, ɛ,		o, ɔ,
Low		a	

(2). /i/ *Igo* 'wall'
/ɪ/ *ɪpan* 'nine'
/e/ *editɔ* 'food'
/ɛ/ *ɛda* 'net'
/a/ *atɔ* 'thing'
/u/ -
/ʊ/ -
/o/ *odefe* 'chief/king'
/ɔ/ *ɔsa* 'person'

The Efutu data from the language documentation corpus reveals two types of vowel harmony, namely, ATR harmony and rounding harmony, with ATR harmony being more prevalent, as mentioned earlier. Observed areas of grammar of the language where ATR and rounding harmony occur include the domains of verbal affixation, possessive construction, and locative constructions. A common feature associated with these areas of vowel harmony involves a somewhat morphological and positional restrictions on both targets and triggers. In each case, the target is a grammatical form whereas the trigger is a lexical form. With regards to position, the target occurs to the left of the trigger. These conditions hold for all instances of vowel harmony discussed below, as will be seen in the examples. For the sake of clarity, the two vowel harmony types, viz., ATR and rounding harmony will be discussed separately in the following sub-sections.

4.1 *ATR harmony in Efutu*

ATR harmony in Efutu requires that all vowels in certain domains - precisely, a root or a lexical

item, and its preceding grammatical word or prefix - share the same ATR value, such as [+ATR] or [–ATR]. Based on ATR harmony, vowels in Efutu may be classified into two harmonic sets, as in Table 2.

Table 2: Efutu ATR vowel harmonic sets

Set 1: [+ATR]	Set 2: [-ATR]
i	ɪ
e	ɛ
o	ɔ
u	ʊ
	a

The ATR harmonic sets as depicted in Table 2 suggest that the central vowel /a/is without a [+ATR] equivalent.[4] This gap creates an apparent asymmetry in the vowel system. Nevertheless, such a gap does not disturb the Efutu vowel harmony, as will be shown in the discussion.

In Efutu, it is common for all the vowels in a root or stem word to belong to the same ATR harmonic group. Stem words that conform to ATR harmony include those illustrated with the near-minimal pairs in (3a) for [+ATR] and (3b) for [–ATR].

(3a)	**[+ATR]**		(3b)	**[–ATR]**	
i.	*odu*	'medicine'	i.	*ɔpʊ*	'sea/salt'
ii.	*oɲi*	'man/male'	ii.	*ɔɲɪ*	'red'
iii.	*tɕire*	'call'	iii.	*tɕɪrɛw*	'write'
iv.	*mbiew*	'bone'	iv.	*bɪɛ*	'greet'
v.	*dei*	'sleep'	v.	*ɛbɛɪ*	'herrings'
vi	*yibi*	'tree/wood'	vi	*yɛya*	'arrange'
vii.	*inu*	'fish/meat'	vii.	*anʊ*	'lips'

In spite of the prevalence of ATR harmony in Efutu, not all words in the language conform to the phenomenon. Example of words containing both [+ATR] and [–ATR] vowels are listed in (4), where [–ATR] vowels follow [+ATR] vowels in (i-vi) whereas [+ATR] vowels follow [–ATR] vowels in (vii-x).

(4)

	gotɔ	'room'
ii.	*bisa*	'ask'
iii.	*buyaa*	'needle'

[4] Some related Kwa languages have a similar ATR harmonic inventory (see for instance Akanlig-Pare & Asante 2016 on Nkami). Nevertheless, some other related Kwa language include a [+ATR] counterpart (see for instance Dolphyne 1988 on Akan).

iv. *burufɔ* 'urine'
v. *editɔ/ edutɔ* 'food'
vi. *ebiɛ* 'chair'
vii. *ɔse* 'woman/ female'
viii. *ɔwʊse* 'faeces'
ix. *atobi* 'child'
x. *ɔsʊko* 'someone/ somebody'

In a sense, root words seem not to follow ATR harmony strictly (and also rounding harmony) in Efutu, as shown in (4). Indeed, in a cursory survey of a wordlist of eighty-five (85) root words, seventeen (17) of them were disharmonic in ATR, while sixty-eight (68) of them were ATR harmonic. This seems to suggest that ATR harmonic roots are more prevalent in the language. However, in other areas of grammar, the phenomenon is strictly adhered to. One such area of grammar is the domain of verbal affixation, where vowels in verbal affixes assimilate the ATR value of the verb stem's vowels. Such verbal affixes include pronominal prefixes and aspectual markers. The process of ATR harmony in verbal affixation is illustrated with the first person singular pronominal prefix and two aspectual markers, namely, the habitual marker and the future marker[5], in (5) for [+ATR] and (6) for [-ATR].

(5)
a. *mi-i-di mpuwa*
1SG-HAB-eat bananas
'I eat bananas'
b. *mi-i-bete tɕibi n*
1SG-HAB-take knife DEF
'I take the knife'
c. *mu-u-do yibi n*
1SG-HAB-climb tree DEF
'I climb the tree'
d. *mu-u-tu empi n*
1SG-HAB-throw stone the
'I throw the stone'
e. *m-ee-di mpuwa*
1SG-FUT-eat bananas
'I will eat bananas'
f. *m-ee-bete tɕibi n*
1SG-FUT-take knife DEF
'I will take the knife'
g. *m-ee-do yibi n*
1SG-FUT-climb tree DEF
'I will climb the tree'
h. *m-ee-tu empi n*
1SG-FUT-throw stone the
'I will throw the stone'

[5] For a more detailed discussion of pronominal prefixes, tense, and aspect marking in Efutu, see Agyeman (2016).

In example (5), the [+ATR] forms *mi* in (a-b) and *mu* in (c-d) of the first person singular '1SG' are triggered by the [+ATR] vowels in the verb stems *di* 'eat' (a), *bete* 'take' (b), *do* 'climb' (c) and *tu* 'throw' (d). Likewise, the forms *i* in (a-b) and *u* in (c-d) of the habitual aspect marker 'HAB' are conditioned by the [+ATR] vowels in the respective verb stems. In(5e)-(5h), the [+ATR] form /*ee*/ of the future marker[6] 'FUT' is conditioned by the [+ATR] vowels in the stems *di* 'eat', *bete* 'take, *do* 'climb', and *tu* 'throw'. In (5e)-(5h), the pronominal prefix deletes its vowel segment in order to accommodate the sequence of vowels in the future marker /*ee*/ (for further discussion on vowel deletion, see Agyeman 2016: 88-90, 197-199).It is worth noting that in Efutu, all verbs begin with consonants

On the other hand, in (6), the [–ATR] forms *mɪ* in (a-c) and *mʊ* in (d-e) of the first person singular '1SG' are conditioned by the [–ATR] vowels in the verb stems *bɪɛ* 'greet' in (a), *fɛ* 'sell' in (b), *na* 'walk' in (c), *dɔ* 'like' in (d) and *fʊ* 'wash' in (e), respectively. Also, the forms *ɪ* in (a-c) and *ʊ* in (d-e) of the habitual aspect marker 'HAB', are triggered by the [–ATR] vowels in their respective verb stems. Furthermore, the [-ATR] form /*aa*/ of the future marker 'FUT' in (f-g) is conditioned by the [-ATR] vowels in the stems *fɛ* 'sell' in (f), and *fʊ* 'wash' in (g).

(6)

a. *mɪ-ɪ-bɪɛ w*[7]
1SG-HAB-greet 2SG
'I greet you'

b. *mɪ-ɪ-fɛ mpuwa*
1SG-HAB-sell bananas
'I sell bananas'

c. *mɪ-ɪ-na*
1SG-HAB-walk
'I walk'

d. *mʊ-ʊ-dɔ dwaade*
1SG-HAB-like cassava
'I like cassava'

e. *mʊ-ʊ-fʊ bamba n*
1SG-HAB-wash cloth DEF
'I wash the cloth'

f. *m-aa-fɛ mpuwa*
1SG-FUT-sell bananas
'I will sell bananas'

g. *m-aa-fʊ bamba n*
1SG-FUT-wash cloth DEF
'I will wash the cloth'

The illustrations in (5) and (6) demonstrate that each of the targets, viz., the verbal

[6] In Efutu, the future marker and the progressive marker are similar in form but different in tone (see Agyeman 2016).

[7] At object position, the second singular uses the form *w*; at subject position, it is *o* or *ɔ*; the full form, that is the emphatic form is *ɔwʊ*.

prefixes, occurs with vowels of the same ATR value as found in the, trigger, viz., the verb stem's vowels. Again, it could be seen from the illustrations in (5) and (6) that the central vowel /a/ successfully participates in the vowel harmony. Thus, even though /a/ creates asymmetry in the Efutu vowel system, as pointed out in section 4, it is found to alternate with the [+ATR] vowel /e/ to produce an accurate harmony, as illustrated in (5e)-(5f) and (6f)-(6g). Thus, in the data, in (6f)-(6g), *m-aa-fɛ* '1SG-FUT-sell' and *m-aa-fʊ* '1SG-FUT-wash' occur in the environment of [-ATR] harmony, whereas in (5e)-(5f), *m-ee-di* '1SG-FUT-eat' and *m-ee-tu* '1SG-FUT-throw' occur in the environment of [+ATR] harmony.

Besides the domain of verbal affixation, ATR harmony occurs in possessive constructions in Efutu. In possessive constructions, the vowels in the possessive pronoun - the target - assimilates the ATR value of the possessed noun's vowels. This is illustrated in (7) and (8).

(7)

a.	*mi bi*	'my child'
b.	*mi se*	'my father'
c.	*mu gotɔ*	'my room'
d.	*mu wubi*	'my stomach'
e.	*me editɔ*	'my food'

In (7), the possessive pronoun forms *mi* in (a-b) and *mu* in (c-d) adapt the [+ATR] value of the vowels in the respective possessed nouns in (a-d). Note that in (c), where the noun *gotɔ* 'room' contains both [+ATR] vowel and [–ATR] vowels, the possessive pronoun's vowel assimilates the closest vowel in the noun, viz, the [+ATR] /*o*/. Indeed, when the possessed noun begins with a vowel, there is usually a total assimilation such that the possessive pronoun's vowel adopts not only the ATR value but also all other features of the initial vowel of the possessed noun. This becomes possible as there is no intervening consonant between the target and the trigger. This is illustrated in (7e) where the possessive pronoun *me* adopts all the features of the initial vowel /*e*/ of the possessed noun *edutɔ* 'food'.

Alternatively, in (8), the possessive pronoun uses the [–ATR] forms *mɪ* in (a-c) and *mʊ* in (d-e) as a result of the [–ATR] vowels in each of the nouns in (a-e). In (8f), the possessive pronoun form *ma* represents a total assimilation of the initial vowel /*a*/ of the possessed noun *ada* 'name'.

(8).

a.	*mɪ bɪsɪ*	'my kola nut'
b.	*mɪ tɕɛntɕɛ*	'my earth oven'
c.	*mɪ ɲama*	'my boat/canoe'
d.	*mʊ kɔn*	'my neck'
e.	*mʊ dʊrʊwa*	'my needle'
f.	*ma ada*	'my name'

Another domain where ATR harmony features in Efutu grammar is in locative constructions in which the locative noun is preceded by a definite article.[8]When the definite

[8] See Agyeman (2016: 115) for discussion of locative nouns and also Agyeman (2016: 142) for discussion of articles in Efutu.

article occurs without a following locative noun, it is pronounced as an alveolar nasal /n/, and without a vowel (see examples (5b-d) and (6e), above, and also (12b-c), (16a-c), (17a-c), and (18a-b), below). However, when it occurs before a locative noun, the definite article, i.e. the target, is pronounced with a vowel which assimilates the ATR value of the locative noun's vowel. Examples (9)-(10) illustrate ATR harmony in the definite article. In (9a-b), the form *nu* 'DEF' of the definite article, with the [+ATR] vowel, is conditioned by the [+ATR] vowels in the respective locative nouns *so* 'top' and *wo* 'exterior'. The examples in (10a-b) on the other hand use the forms *nʊ* and *na*, respectively, with [–ATR] vowels as a result of the [–ATR] vowels in the locative nouns *tɔ* 'inside' and *ayinɛe* 'under'. In (10b), there is total assimilation since there is no intervening consonant between the target and the trigger; the definite article *na* adopts all the features of the initial vowel /*a*/ of the locative noun *ayinɛe* (see the discussion on (7e) and (8f), above).

(9)

a. *mi-sina me ebiɛ nu so*
   1SG-sit.PST[9]1SGchair DEF top
   'I sat on my chair'
b. *mi-dʒire igo nu wo*
   1SG-stand.PST wall DEF exterior/side
   'I stood by the wall'

(10)

a. *mʊ-sɔ tɕibi nʊ tɔ*
   1SG-hold.PST knife DEF inside
   'I held the knife'
b. *mi-dʒire yibi na ayinɕe*
   1SG-stand.PST tree DEF under/beneath
   'I stood under the tree'

4.2 *Rounding harmony in Efutu*

Rounding harmony in the language requires that all the vowels in a given domain have the same rounding value, that is, either [+Round] or [-Round]. Based on Rounding feature, two harmonic sets could be realised in the language, as presented in Table 3.

Table 3: Efutu rounding vowel harmonic sets

Set 1: [+Round]	Set 2: [–Round]
u	i
ʊ	ɪ
o	e
ɔ	ɛ

[9] In Efutu, the past tense has no morphological marking; the unmarked form is analysed as past tense in dynamic verbs (see Agyeman 2016: 188).

	a

The Efutu rounding vowel harmonic sets are asymmetrical, in that, the central vowel /a/ lacks a [+Round] equivalent, as shown in Table 3. Nevertheless, there are no evidence of dissonance in the harmony system resulting from this asymmetry. In other words, any violation of rounding harmony is not attributed to the existence of the asymmetry (see discussion of violation of rounding harmony in §5).

Rounding harmony may be found in root words, such that, there are root words that contain [+Round] vowels only, as in (11a),as well as words that contain [-Round] vowels only, as in (11b).However, words in the language may contain both [+Round] and [-Round] vowels, as in (11c), suggesting that rounding harmony is not a requirement in root words. Apparently, a random survey of a wordlist of eighty-five (85) root words revealed forty-nine (49) rounding harmonic root words against thirty-six (36) disharmonic ones. Nonetheless, rounding harmony is essential in certain areas of grammar of the language, as discussed below.

(11)

(a)	**[+Round]**		(b)	**[–Round]**		(c)	**Both**	
i.	*odu*	'medicine'	i.	*yɛya*	'arrange'	i.	*inu*	'fish/meat'
ii.	*ɔpʊ*	'sea/salt'	ii.	*bisa*	'ask'	ii.	*oɲi*	'man/male'
iii.	*gotɔ*	'room'	iii.	*tɕɪrɛw*	'write'	iii.	*ɔwʊse*	'faeces'
iv.	*burufɔ*	'urine'	iv.	*bɪɛ*	'greet'	iv.	*editɔ*	'food'
v.	*ɔsʊko*	'somebody'	v.	*ɛbɛɪ*	'herrings'	v.	*buyaa*	'needle'

In Efutu, rounding harmony takes place in verbal affixation where vowels in verbal affixes assimilate the rounding value of the vowels in verb stems. The verbal affixes include pronominal prefixes and aspectual markers. Rounding harmony in Efutu is illustrated in (12) for [+Round] and (13) for [-Round].

(12)

a. *mʊ-ʊ-wɔ ewuso*
   1SG-HAB-go home
   'I go home'

b. *mʊ-ʊ-dɔkʊra esumi n*
   1SG-HAB-finish work DEF
   'I finish the work'

c. *mu-u-ku yibi n*
   1SG-HAB-cut tree DEF
   'I cut the tree'

In (12), the first person singular pronominal prefix '1SG', uses the forms *mʊ* in (a-b) and *mu* in (c), both of which have [+Round] vowels conditioned by the [+Round] vowels in the verb stems *wɔ* 'go' in (a), *dɔkʊra* 'finish' in (b) and *ku* 'cut' in (c). Likewise, the habitual marker 'HAB' uses the [+Round] forms *ʊ* in (a-b) and *u* in (c), both of which are conditioned by the [+Round] vowels in the respective verb stems.

In contrast, in (13), the first person singular '1SG' uses the [-Round] forms *mi* in (a-b) and *mɪ* in (c), conditioned by the [-Round] vowels in their respective verb stems. Likewise, the [-Round] forms of the habitual marker 'HAB' *i* in (a-b) and *ɪ* in (c).

(13)
a. *mi-i-dei*
1SG-HAB-sleep
'I sleep'
b. *mi-i-wir inu*
1SG-HAB-steal fish
'I steal fish'
c. *mɪ-ɪ-ba pʊase*
1SG-HAB-come beach
'I come to the beach'

Another domain where rounding harmony occurs is in possessive constructions. In possessive constructions, the possessive pronoun's vowels adapt the rounding value of the vowels in the possessed noun, as illustrated in (14) for [+Round] and (15) for [-Round].

(14)

a.	*mu kur*	'my husband'
b.	*mu kotoku*	'my sack'
c.	*mʊ pʊsɪrɛɪ*	'my octopus'
d.	*mʊ nkɔba*	'my hook'

(15)

a.	*mi kyibi*	'my knife'
b.	*mi feibi*	'my thread'
c.	*mɪ nkɛtɪ*	'my groundnuts'
d.	*mɪ ka*	'my wife'

In (14), the possessive pronoun uses the forms *mu* in (a-b) and *mʊ* in (c-d) with [+Round] vowels, as a result of the [+Round] vowels in their respective possessed nouns. In (14c-d), where each of the possessed nouns has both [+Round] and [-Round] vowels, the possessive pronoun's vowel assimilates the closest vowel. Thus, in the case of *pʊsɪrɛɪ* 'octopus' in (14c), for instance, the possessive pronoun's vowel assimilates the closest vowel in the noun, that is, the [+Round] vowel */ʊ/*. In (15), on the other hand, the [-Round] variants *mi* in (15a-b) and *mɪ* in (15c-d) of the possessive pronoun occur as a result of the [-Round] vowels in the respective possessed nouns. It should be pointed out that in (14d) and (15c), the initial segment /n/ of the possessed nouns *nkɔba* 'hook' and *nkɛtɪ* 'groundnut', respectively, is syllabic. This then seems to suggest that vowel harmony can prevail over an intervening syllable between the target and the trigger. This may warrant a fuller investigation with more data in a future research.

So far, the discussion has demonstrated that ATR and Rounding harmony are prevalent in certain areas of the grammar of Efutu where they may occur concurrently. Notwithstanding, it is worth noting that neither of the harmonic processes is dependent on the other. In other

words, ATR harmony or disharmony does not necessarily influence Rounding harmony or disharmony, and vice versa. So, for instance, a Rounding harmony or disharmony in a word may not be attributed to the presence of or lack of ATR harmony or disharmony. Differently put, a violation of one harmony process is not a result of an observation of (or a violation of) the other. Thus, each harmony system is independent of the other.

5. Prominence of ATR harmony over rounding harmony in Efutu

As mentioned in §1, in Efutu, ATR harmony is more prominent than rounding harmony. In certain contexts, rounding harmony fails to occur, or it gets violated, whereas ATR harmony persists in all instances[10]. Violation of rounding harmony could be found in verbal affixation involving certain types of pronominal prefixes, including the second person singular, the third person singular (both animate and inanimate), and the third person plural (both animate and inanimate).The second person singular, the third person singular animate and the third person plural pronominal prefixes are found to resist [-Round] harmony while the third person singular inanimate resists [+Round] harmony. Nevertheless, ATR harmony is observed in all these cases.

Unlike other pronominal prefixes, the second person singular, the third person singular, and the third person plural pronominal prefixes, each resists [-Round] harmony and therefore has no [-Round] variants. This violation of rounding harmony is illustrated with the second person singular and the third person singular in (16) and (17), respectively.

(16)

a. *o-o-ku tampɪɪ n*
   2SG-HAB-cut rope DEF
   'you cut the rope'

b. *ɔ-ɔ-fʊ bamba n*
   2SG-HAB-wash cloth DEF
   'you wash the cloth'

c. *o-o-di amanaa n*
   2SG-HAB-eat plantain DEF
   'you eat the plantain'

d. *ɔ-ɔ-ka simpa*
   2SG-HAB-speak Simpa
   'you speak Simpa'

In (16a-b), Rounding harmony is observed, as the verbal prefixes, *o-o-* '2SG-HAB' in (16a) and *ɔ-ɔ-* '2SG-HAB'assimilate the [+Round] feature of their respective stems. One would then expect that in (16c-d), where the stems *di* 'eat' and *ka* 'speak' contain [-Round] vowels, their prefixes will assimilate the [-Round] feature. But that does not happen. The [-Round] stems fails to transfer the unrounded feature to the prefixes. Rounding harmony, or, better still [-Round] harmony, is therefore violated in (16c-d); the prefixes maintain their [+Round]

[10] A similar observation, regarding the prominence of ATR harmony, has been made in Nkami, where rounding and height harmonies are said to be restricted and secondary, in comparison with ATR harmony (Akanlig-Pare & Asante, 2016: 21)

feature. Hence, these verbal prefixes do not have [-Round] variants. Notwithstanding, ATR harmony occurs in (16a-d), thus, the prefixes have both [+ATR] and [-ATR] variants, as could be seen in (16a-d).

In a similar manner, in (17a-b), rounding harmony is observed. The vowels in the prefixes *mu-u*-in (17a) and *mʊ-ʊ-* in (17b) adapt the [+Round] feature of the vowels in their respective verb stems. In (17c-d), however, the verbal prefixes retain their [+Round] feature against the expectation of adapting the [-Round] feature of the vowels in the respective verb stems. Thus, rounding harmony is observed in (17a-b) but violated in (17c-d). Nevertheless, ATR harmony is observed in (17a-d).

(17)

a. *mu*[11]*-u-ku tampɪɪ n*
   3SG-HAB-cut rope DEF
   's/he cuts the rope'

b. *mʊ-ʊ-fʊ bamba n*
   3SG-HAB-wash cloth DEF
   's/he washes the cloth'

c. *mu-u-di amanaa n*
   3SG-HAB-eat plantain DEF
   's/he eats the plantain

d. *mʊ-ʊ-ka simpa*
   3SG-HAB-speak Simpa
   's/he speaks Simpa'

The other instance of violation of rounding harmony in Efutu involves the resistance of [+Round] harmony in the second person singular inanimate pronominal prefix. This is illustrated in (18).

(18)

a. *i-i-ku tampɪɪ n*
   3SG.INAN-HAB-cut rope DEF
   'it cuts the rope'

b. *ɪ-ɪ-fʊ bamba n*
   3SG.INAN-HAB-wash cloth DEF
   'it washes the cloth'

In (18a-b), each of the verb-stems *ku* 'cut' and *fʊ* 'wash' fail to transfer the [+Round] feature of its vowel to its respective prefixes, hence rounding harmony is violated. The third person singular inanimate pronominal prefix therefore does not have [+Round] variants. ATR harmony however is observed in (18a-b). From the above discussion and illustrations, it could be concluded that in verbal affixation in Efutu, ATR harmony is always observed whereas rounding harmony sometimes gets violated. Such a violation was initially thought to be motivated by a sort of feature preservation in these forms, particularly with regards to the

[11] In Efutu, the third person singular pronominal prefix sometimes coincides with the first person singular (compare examples (5c-d), (6d-e) and (10), all in section 4.1., and (12a-c) in section 4.2.). When the form is used out of context, it may create ambiguity.

rounding value of the vowels in the emphatic[12] form of the pronoun, which does not change form. For instance, in the case of the second person singular, it was assumed that the resistance to [-Round] harmony was motivated by the need to preserve the feature [+Round] of the vowels in the emphatic form *ɔwʊ*. This assumption however seems inaccurate because of other instances where such preservation is not observed, as in the case of the first person singular, where the emphatic form *emi* has only [-Round] vowels, and yet the [+Round] variants *mʊ* and *mu* occur in addition to the [-Round] variants *mɪ* and *mi*. A more critical investigation is needed to unearth a possible justification for the above-described exceptions.

Regarding the underlying form of each of the set of morphs in question, this study has analysed as the underlying form the one that uses the vowels in the emphatic form. This analysis is grounded on the fact that the emphatic form does not alternate; it is therefore plausible to suggest that the underlying form is the one that retains the emphatic form's vowels while the other alternatives adjust their vowels based on adjacent vowels. Thus, in the first singular for instance, as a result of the [+ATR, -Round] vowels in the emphatic form *emi*, the form *mi* is analysed as underlying, while the alternative forms *mɪ*, *mu*, and *mʊ* are considered as allomorphs triggered by adjacent vowels. Likewise, in the second singular, based on the emphatic form *ɔwʊ*, the form *ɔ* is analysed as underlying whereas the alternative form *o* is analysed as an allomorph.

6. Directionality

It was mentioned in §1 that the Efutu vowel harmony involves leftward spread in terms of directionality, yet, this needs further consideration. From the illustrations so far, it could be observed that, in each of the examples, the relevant features, viz., ATR and rounding, spread from right to left. In other words, the spread is leftward, such that the target occurs to the left position in relation to the trigger. Thus, in (5a), for instance, repeated here as (19),the features [+ATR, -Round]of the verb stem's vowel /i/ which is the trigger, spread leftwards to influence the verbal prefixes to yield the [+ATR, -Round] forms *i* and *mi* of the habitual aspect marker and the first person singular pronominal prefix, respectively. Thus, the prefixes' vowels assimilate the features of the stem's vowel. The result is the various alternative forms of each affix, as seen in all the examples. The above-described leftward spread illustrates a case of regressive assimilation. Nevertheless, an evidence of how suffixes behave in suffixation is necessary to fully establish the argument. Meanwhile, data available so far has not revealed suffixes in the language. This therefore needs to be investigated further in order to draw a firm conclusion.

(19) *mi-i-di mpuwa*
1SG-HAB-eat bananas
'I eat bananas'

7. Conclusion

[12] For further discussion of the emphatic forms of pronouns in Efutu, see Agyeman (2016: 121-123).

This paper has deliberated on some phonological processes in Efutu, a previously under-studied minority language. The study has used empirical data from a documentation of Efutu to analyse ATR and rounding vowel harmony in the language. The discussion has explained and illustrated how the two vowel harmony types pattern vowels in the language to achieve harmony in words, verb roots and their prefixes, nouns and their possessive pronouns, and locative nouns and their preceding definite articles. The analysis has pointed out apparent asymmetries in the vowel system of the language and has further explained and illustrated that such asymmetries do not obstruct vowel harmony in the language. The discussion has also pointed out the prevalence of ATR harmony over rounding harmony in the language, especially, with regard to violation of rounding harmony in certain pronominal prefixes. Directionality of the Efutu vowel harmony has been shown to be leftward, based on the available data. Essentially, this discussion has centred on vowel harmony in three areas of the grammar in the language, namely, verbal affixation, possessive constructions, and the definite article. Other interesting areas in terms of vowel harmony in the language worth exploring in future research could include nominal affixation, such as plural formation in nouns, as well as compounding in words. Also, this study has provided a descriptive account of vowel harmony in the language; a future research may target a theoretical approach to the analysis.

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Tense or aspect? Semantics of the verbal suffix (-V) in Akan

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The present study investigates the semantics of a verbal suffix, the reduplicated vowel (-V) in Akan, while also addressing the role of tense and aspect (TA) markers in the morphological structure of the Akan verb. The verbal suffix (-V) has been analyzed as an aspectual marker by some but as a past tense by others. Based on data from native speaker's judgements and corpora, three observations are made in the present study: (i) the verbal suffix (-V) encodes a reference time (R) that is anterior to the speech time (S), (ii) the verbal suffix (-V) can be used in conditional and counterfactual sentences which have a reference time that coincides with speech time (R,S) or follows it (S_R), (iii) the completive meaning associated with events marked by (-V) is not asserted but a pragmatic interpretation that is associated with past tense in general. The study shows that the fact that the verbal suffix (-V) does not occur with the progressive and perfect aspects does not count as evidence against its status as past tense. Rather, in Akan, there is a general prohibition of overt marking of tense and aspect in a single clause, such that each verb is inflected for either tense or aspect, not both, in the clause.

Keywords: *past tense, completive aspect, perfect(ive), Akan, semantics*

1. Introduction

In this paper, we revisit the issue of whether the verbal suffix (-V) in Akan encodes tense or aspect. Starting with Christaller (1875), some linguists working on Akan have identified the verbal suffix (-V) as a tense marker (e.g. Dolphyne 1987; Boadi 2008). Departing from earlier works, Osam (1994) puts forward a proposal that the verbal suffix (-V) encodes an aspectual category he identified as the COMPLETIVE (COMPL) and argues against analyzing (-V) as a past tense marker. Since then, the analysis of the verbal suffix (-V) has been inconsistent among researchers. For instance, the choice of glossing of the suffix (-V) appears to be a matter of discipleship rather than based on any new evidence, since Christaller (1875) or Osam (1994). In this study, we examine Osam's (1994) arguments against a past tense analysis of the verbal suffix (-V) and show that the verbal suffix always encodes past time reference in a simple clause whereas completive meaning is merely a pragmatic effect associated with past time events.

Our data is from the Asante dialect, spoken mainly in the Ashanti region of Ghana. The data include grammaticality judgments about test sentences provided to nine (9) speakers aged between twenty-one (21) and twenty-eight (28). We also used sentences from texts written in the language. The paper is organized into the following sections: in section 2, we provide an overview of tense and aspect in Akan, exemplifying all the categories and their markers. Section 3 presents a theoretical discussion of the notion of tense and aspect. In section 4, we examine the semantics of the verbal suffix (-V) in simple clauses by employing various tests involving temporal adverbs and implicature cancellation. Section 5 addresses the apparent past-imperfective incompatibility in simple clauses by showing that the problem is not limited to the suffix (-V), but it is more widespread in the tense-aspect system of the language. Section 6 concludes the paper.

2. Background on Akan tense and aspect

In his seminal grammar on Akan, Christaller (1875) identified ten (10) tense-aspect-mood distinctions, majority of which are marked morphologically. Following Christaller, Dolphyne (1987) and Boadi (2008) isolate two tenses, past and future, and five (5) aspectual categories (Table 1). Christaller (1875) and Dolphyne (1987) distinguished between indefinite and immediate future but Boadi (2008) mentions only one future tense. Also, Christaller's (1875) present tense is identified as habitual by both Dolphyne (1987) and Boadi (2008).

Table 1: Tense-aspect system in Akan

	Christaller (1875)	Dolpyne (1987)	Boadi (2008)	Osam (1994, 2004)
TENSE				
Future (*bɛ-*)	✓	✓	✓	✓
Past (-V)	✓	✓	✓	
Present (HT)	✓			
ASPECT				
Completive (-V)				✓
Habitual (HT)		✓	✓	✓
Progressive (*re-*)	✓	✓	✓	✓
Perfect (*a-*)	✓	✓	✓	✓
Stative (LT)	✓	✓	✓	✓

Osam (2004: 5), on the other hand, argues that "Akan should be seen as a predominantly aspectual language, but with a two-way tense distinction—future vs non-future." According to Osam (2004), the future tense is marked but the non-future (present and past) tense is unmarked. Thus, in Osam's system there is only one overt tense, the future, and six (6) aspectual categories. As shown in Table 1, there is no past tense in Osam's system; the suffix (-V) is analyzed as completive aspect.

In the remainder of this section, we will briefly illustrate the use of tense-aspect in single-clause/simple sentences.[1] Tense-aspect categories are marked morpho-phonologically with morphemes and tones. The presentation here is meant as a quick background for the uninitiated reader (see Boadi 2008; Osam 2008 for more discussion).

As shown in (1a), the future tense is marked by a prefix *bɛ-*, which is attached to the verb. The prefix *bɛ-* encodes a future reference time for the event described by the verb.[2] The habitual is marked by a high tone (1b), which is "is incorporated into one of the syllables of the verb stem" (Boadi 2008: 12); present time reference is inferred from the habitual, since there is no overt making of present time in the language. The habitual can be distinguished from the stative in that the stative has a low tone (1c).

(1) a. *Nana bɛ́-dá há.*
Nana FUT-sleep here
'Nana will sleep here.'

b. *Nana dá há.*
Nana sleep.HAB here
'Nana sleeps here.'

[1] For a discussion on how tense-aspect is marked in serial verb constructions, see Dolphyne (1987) and Osam (2004).

[2] The prefix *bɛ-* can be used to express deontic meanings such as possibility and potentiality. However, Kusmer (2011) notes that *bɛ-* behaves more as a modal in the Fante dialect than in Asante.

c. *Nana dà há.*
Nana sleep.STAT here
'Nana is sleeping here (now).'

The progressive aspect is marked by a prefix *re-*, which expresses the information that the event described by the verb is in progress (2a). In the Asante dialect, however, the progressive surfaces as a lengthening of the final segment of the subject noun (2b) or determiner in the pre-verbal noun phrase (2c) (Dolphyne 1988).

(2) a. *Adoma ré-sì(ẁ) ǹ-tààdé.* (Akuapem, Fante)
Adoma PROG-wash PL-dress
'Adoma is washing dresses.'

b. *Adoma-a sì ǹ-tààdéɛ́.* (Asante)
Adoma-PROG wash PL-dress
'Adoma is washing dresses.'

c. *Pàpá nó-ò sí ǹ-tààdéɛ́.* (Asante)
man DET-PROG wash PL-dress
'The man is washing dresses.'

The perfect is marked by a prefix *a-*, which is attached to the verb stem. According to Osam (2008: 78), the prefix *a-* "links a past event to a present situation by showing that an event that took place in the past is of relevance to the present." Thus, in (4), the prefix *a-* indicates that the event described by the verb *di* 'eat' is completed and its result holds true at present.

(3) *Kofi á-dì àdùànέ nó.*
Kofi PRF-eat food DET
'Kofi has eaten the food.'

The focus of this paper is to provide a way of teasing apart a 'rather complex TMA system with complex ways in which past time reference is signalled' (sic) (Dahl 1985). The discussion concerns the verbal suffix (-V) in the tense-aspect system of Akan, which has been analyzed as past tense by some scholars, and completive aspect by others. This suffix occurs as a doubling of the final vowel or nasal of a verb when it is followed by another word, either a direct object or an adjunct, as shown in (4). However, if there is no (overt) object after the verb the suffix may occur as *-i/-e* (in Fante and Akuapem dialects) (5a) or as a doubling of the final vowel or nasal with *-(y)ɛ* in Asante (5b). For now, we have glossed the variant forms of the suffix as -V in the examples. The suffix -V seems to have two (2) functions: (a) it locates the event described by the verb in the past, (b) the event described by the verb is interpreted as completed.

(4) a. *ɔ̀-dà-à fáḿ.*
3SG.SBJ-sleep-V ground
'He slept on the floor.'

b. *mɛ̀ bù-ù. àbàá nó.*
1SG break-V stick DET
'I broke the stick.'

(5) a. *né màámé sú-ì.*
3SG.POSS mother cry-V

‘His mother cried.b. *né* *mààmé sù-ùyɛ̀.*
3SG.POSS mother cry-V
‘His mother cried.’

In the negative, however, there appears to be a switch between the perfect prefix *a-* and the suffix -V, such that the sequence *neg* + *a-* + *stem* expresses negative past reference (6a) while *neg* + *stem* + *-V* expresses negative perfect (6b).

(6) a. *né* *mààmé à-ǹ-sú.*
3SG.POSS mother V-NEG-cry
‘His mother did not cry.’

b. *né* *mààmé ǹ-sù-ùyɛ̀.*
3SG.POSS mother NEG-cry-PRF
‘His mother has not cried.’

The close relationship between past tense and perfect(ive) aspect has been reported, with varying detail, in different languages. There seems to be a historical semantic link between the past tense and the perfect(ive). One obvious similarity is that events marked by the perfect(ive) tend to be taken for granted as having occurred in the past, since they are no longer in progress (Toews 2015). Thus, in some languages, e.g. South German dialects, spoken French, North Italian dialects, Romanian, some Slavic languages, the perfect(ive) marker has evolved into a past tense marker (see Bybee et al. 1994; Lindstedt 2000; Nurse 2008; Meermann & Sonnenhauser 2015). In Xhosa (Bantu, S42) the perfect suffix *-ile* in (7a) marks the past in (7b).

(7) a. *Ndilambile.*
1SG.SBJ.hunger.PRF
‘I am hungry’ (lit. I have become hungry).

b. *Ndifikile* *izolo.*
1SG.SBJ.arrive.PRF yesterday
‘I arrived yesterday.’

Nevertheless, past tense can be distinguished from perfect aspect in many ways. As far as Akan is concerned, in section 3, we will discuss evidence that the suffix -V is primarily a tense marker, and not aspect as has been claimed. Before that, however, we would like to briefly review some theoretical distinctions between tense and aspect in the literature.

3. Distinguishing tense from aspect

Before accounting for the semantics of the verbal suffix -V in Akan, a clear distinction between the semantics of tense and that of aspect needs to be drawn. According to Comrie (1976, 1985), tense involves the location of an event’s time relative to the moment of speech. Tense is, therefore, a deictic category. By contrast, aspect is not a deictic category, but it represents the perspective from which the internal constituency of the situation is viewed (Comrie 1976). The two definitions are important in that they discern the two grammatical categories.[3]

[3] Comrie’s definition of tense and aspect, however, has been criticized. His view that tense locates an event relative to the moment of speech is not entirely correct, as one and the same past event may be reported in both the past simple, e.g. *Mary ate an apple* and the present perfect, e.g. *Mary has eaten an apple*. The definition of aspect, on the other hand, appears to only be intuitively accessible and ‘metaphorical in nature’ (Klein 2013), but rather

In this study, we will follow the definitions of tense and aspect as formulated by Johnson (1981) and Klein (2013), a time-based approach labeled as *relational theory* by Binnick (2006). The crucial notions in the relational theory are Reichenbach's reference time (R), event time (E), and speech time (S).

Klein (1992, 2013) proposes that tense represents the relation between R and S (and not E and S), where S represents the present moment, the 'now', i.e. the moment at which the utterance is produced, which divides the timeline into the past and the future but E represents the time at which the reported event occurs, and it can be located before S, at S or after S (see Reichenbach 1947). Thus, the possibilities for tense are the present, the past, or the future (or any of the remoteness degrees of the latter two, e.g. remote past, near future, etc.). Klein (2013) defines R as the moment for which a claim is made, as it does not necessarily coincide with the moment when the reported event occurred.[4]

For instance, in (8a), E is placed before another past point in time, R, but in (8b), E and R coincide, whereas in (8c), R is placed at S, and the past event of eating is viewed from the present. The difference between the simple past *ate* in (8b) and the present perfect *have eaten* in (8c) does not depend on the moment when the event occurred, but the time for which the claim is made. Thus, it can be said that tense informs the hearer about where the time for which the claim about the reported event is made is located, relative to moment of speech.[5]

(8) a. Marry had eaten an apple.
(E_R_S)

b. Marry ate an apple.
(E, R_S)

c. Marry has eaten an apple.
(E_R, S)

On the other hand, aspect represents the relation between R and E (Johnson 1981; Klein 1992, 2013). For example, the English progressive aspect indicates that E, e.g. the event of writing in (9a), surrounds R which is a point in time (when I came home). Note the different temporal relation between E and R when the event of writing has the morphologically unmarked non-progressive aspect. Thus, we can distinguish between tense and aspect primarily in terms of whether they relate R to S, or R to E.

(9) a. She was reading a letter (when I came home).
(EEEE_R_EEEE)

b. I read the letter (when I came home).
(R_E)

An aspectual category which does not exist in English but has been argued for Akan is the completive aspect, which marks that an event has reached its point of completion. An example is the morpheme *-sha-* in the Swahili verb in (10a), which gives rise to the interpretation of arrival, as opposed to the same verb without *-sha-* (10b).

impractical when determining the semantics of aspect.

[4] Bohnemeyer (2014) splits R into two different notions, which, in combination with E define relative tense (perspective time) or aspect (topic time).

[5] Thus, such forms as the English past continuous are not pure tenses, but combinations of past tense and progressive aspect.

(10) a. *u-ki-sha-end-a Mombasa, u-ta-ni-sahau.*
SM.2.SG-SIT-COMP-go-FV Mombasa SM.2.SG-FUT-OM.1.SG-forget
'If you get to Mombasa, you will forget me.'

b. *u-ki-end-a Mombasa, u-ta-mw-on-a Henry.*
SM.2.SG-SIT-go-FV Mombasa SM.2.SG-FUT-OM.3.SG-see-FV Henry
'If you go to Mombasa, you'll see Henry.' (Rose et al. 2002: 16)

As has been shown in this section, tense and aspect can be combined in a single clause (or verb form). However, it is important to note that more than one tense cannot be combined within one verb form, as there cannot exist several locations of one R relative to S (Nurse 2008). In the next section, we discuss the semantics of the verbal suffix (-V) by employing several tests to show whether it behaves as a tense category or it is aspectual, like the completive marker *-shi-* in Swahili (10).

4. Semantics of verbal suffix (-V)

In this section, we examine whether the verbal suffix (-V) in Akan encodes primarily a tense (R S) or aspectual (R E) relation. In doing so, we will employ various tests involving time adverb(ial)s and implicature cancellation.

One of the main tests that regards the distinction between tense and aspect markers is the marker's (in)compatibility with different time adverbials. As Klein (1995: 25) notes, time (temporal) adverbs "specify the position of a time span on the time axis in relation to some other time span." Thus, we expect that tense markers will co-occur with time adverbials denoting the same part of the timeline (past, present, or future), whereas aspect markers are not restricted to one part of the timeline. As demonstrated in (11-12), the English past tense marker can only be used in past contexts, but the perfect aspect marker can occur in present, past, and future contexts.

(11) a. I saw their house *yesterday*.
b. ? I saw their house *now*.
c. # I saw their house *tomorrow*.

(12) a. I had already seen their house when you arrived.
b. I have already seen their house / I have seen their house now.
c. I will call you tomorrow when I have seen their house. / Tell me what you think when you have seen their house.

The verbal suffix (-V) in the affirmative (and prefix *a-* in the negative) does not occur with time adverbials which have a non-past reference. As shown in the examples below, both the affirmative suffix and the negative prefix forms can be used with the temporal adverb *ɛ̀nórà* 'yesterday' (13a-b) but not with *sɛ̀ɛ̀séí* 'now' (14a-b) or *ɔ̀kyénáá* tomorrow' (15b-c). Likewise, the future tense prefix *-bɛ* occurs with adverbs which have a future time reference, like *ɔ̀kyénáá* 'tomorrow' (15a), but not with those which refer to present time or past events (13c, 14c). Thus, both the verbal suffix (-V), like the future tense marker, encodes a single temporal delineation, that is, the past.

(13) a. *mɛ̀ hù-ù ɛ̀fíe nó ɛ̀nórà.*
1SG see-V house DET yesterday
'I saw the house yesterday.'

b. *m-à-ǹ-hú èfíé nó ɛ̀nórà.*
1SG-V-NEG-see house DET yesterday
'I did not see the house yesterday.'

c. *# ɔ̀-bɛ́-kɔ́ fié ɛ̀nórà.*
3SG.SBJ-FUT-go home yesterday
'#He will go home yesterday.'

(14) a. *# sèèséí mè tè-è àséɛ́.*
now 1SG hear-V under
'#Now, I understood it.'

b. *# sèèséí m-à-ǹ-té àséɛ́.*
now 1SG-V-NEG-hear-V under
'#Now I did not understood it.'

c. *# sèèséí m-ɛ́-frɛ́ nó.*
now 1SG-FUT-call 3SG.OBJ
'Now I will call him' (intended: #Now, I am calling him).

(15) a. *wó bɛ́-súá àdéɛ́ ɔ̀kyéná.*
2SG FUT-study thing tomorrow
'You will study tomorrow.'

b. *# Kwame bà-à ɔ̀kyéná.*
Kwame come-V tomorrow
'#Kwame came tomorrow.'

c. *# Kwame à-m̀-má ɔ̀kyéná.*
Kwame V-NEG-come tomorrow
'#Kwame did not come tomorrow.'

Aspects in Akan, on the other hand, do not show such restrictions because they may not be limited to a particular 'temporal frame' (Dahl 1985). Thus, as shown in (16) and (17), unlike the past and future tenses, the (affirmative and negative) perfect and progressive aspects can be used with temporal adverbs which have a past or future reference.

(16) a. *m-à-fá àdúró ɛ̀nórà.*
1SG-PRF-take medicine yesterday
'I have taken medicine yesterday.'

b. *mè m̀-fá-à àdúró ɛ̀nórà.*
1SG NEG-take-PRF medicine yesterday
'I have not taken medicine yesterday.'

c. *ɛ̀nórà ɔ́-ɔ́-hwɛ́ sìní nó mè dá-àyɛ́.*
yesterday 3SG.SBJ-PROG-watch movie DET 1SG sleep-V
'Yesterday, as he was watching the movie I slept.'

(17) a. *ɔ̀kyéná ná wó á-dì m̀-fɛ́ɛ́ dù!*
tomorrow PRT 2SG PRF-eat PL-year ten
'You will be ten years old tomorrow!' (lit. you have eaten ten years tomorrow)

b. *ɔ̀kyéná ná wó ń-nì-ì m̀-fɛ́ɛ́ dù!*
tomorrow PRT 2SG NEG-eat-PRF PL-year ten
'You will not be ten years old tomorrow!' (lit. you have not eaten ten years

tomorrow)

c. *ɔ̀kyénáá yè-è-kɔ́ Kumase.*
tomorrow 3PL.SBJ-PROG-go Kumase
'Tomorrow, we will be going to Kumase.'

Further, the suffix (-V) cannot be used to express tense in events which are future (18d) but aspects can be embedded in a future time reference (18a-18c).

(18) a. *frɛ̀ mè béré à ɔ́-bá nó.*
call.IMP 1SG time REL 3SG.SBJ-PRF-come CD
'Call me when she has arrived.'

b. *frɛ̀ mè béré à ɔ́-ɔ́-bá nó.*
call.IMP 1SG time REL 3SG.SBJ-PROG-come CD
'Call me when she is arriving (i.e. when she is on her way).'

c. *frɛ̀ mè béré à ɔ́-bá nó.*
call.IMP 1SG.OBJ time REL 3SG.SBJ-come.HAB CD
'Call me when she arrives.' (i.e. Call me every time she arrives.)

d. # *frɛ̀ mè béré à ɔ̀-bá-àyɛ́ nó.*
call.IMP 1SG.OBJ time REL 3SG.SBJ-come-V CD
'#Call me when she arrived.'

A past tense marker, however, may be used with a non-past temporal reference in conditionals such as sentences that express situations which are 'contrary to facts, false or unlikely' (Karawani 2014). In English, the past tense form of the verb can be used to express a present counterfactual situation (19b) or future counterfactual situation (19c). This use of the past tense morphology, sometimes referred to as 'fake past' (Iatridou 2000), 'hypothetical past' (Bybee et al. 1994) and 'non-actual veridicality' (Karawani & Zeijlstra 2013), in counterfactual conditionals has also been reported in languages such as Greek (Iatridou 2000), Palestinian Ara- bic (Karawani & Zeijlstra 2013; Karawani 2014), Hindi, Zulu (Bjorkman & Halpert 2012; Halpert & Karawani 2012) and Dakaaka (von Prince 2019).

The Akan verbal suffix (-V) is used in conditionals of the type *X* AS SOON AS *Y* marked by the modal emphatic operator *ara* (20) and in counterfactual conditional sentences made up of a subordinate clause with a conditional marker *aa*, a counterfactual modal operator *anka* in the main clause (Amfo 2005). As shown in (20), although the protasis of the conditional has a future reference time the verb is marked by the suffix (-V) Similarly, as (21) shows, the verbal suffix (-V) may be used in a counterfactual conditional which involves a past (21a), present (21b) or future (21c) situation. It can be observed from the sentences in (21) that, unlike English, in the counterfactual conditional the verbal suffix (-V) can be used both in the subordinate and main clause. However, both the *X* AS SOON AS *Y* conditional and the counterfactual conditional, the verbal suffix (-V) is non-indicative and does not necessarily encode past time, therefore, it can be used with temporal adverbs such as *ɔ̀kyénáá* 'tomorrow' and *sèèséí* 'now'. Thus, the verbal suffix (-V) can be used to express a non-temporal meaning in non-actual events.

(19) a. If John had been here (yesterday), the party would have been fun.
b. If John were here (now), the party would have been fun.
c. If John were to be here (next week), the party would be fun. (Karawani 2014: 3)

(20) a. *ɔ̀kyénáá wó bá-àyɛ́ árá nɑ́ mè-è-kɔ́ fíé.*
tomorrow 2SG come-V EMPH PRT 1SG-PROG-go home
'Tomorrow, as soon as you come, I will go home.'

b. *ɔ̀kyénáá wó dúrù-ùyɛ́ árá frɛ́ mé.*
tomorrow 2SG arrive-V EMPH call 1SG
'Tomorrow, as soon as you arrive call me.'

(21) a. *ènórá mè tè-èyɛ́ áà àǹkà mè frɛ́-è nò.*
yesterday 1SG hear-V COND MOD 1SG call-V 3SG.OBJ
'If I heard it yesterday, I would have called her.'

b. *sèèséí wó sìésìè-è wò hó áà àǹkà mè kɔ̀ kyèrɛ́-è wò hɔ́.*
now 2SG dress up-V 2SG body COND MOD 1SG go show-V 2SG there
'If you got dressed now, I would show you the place.'

c. *ɔ̀kyénáá wó bà-àyɛ́ áà àǹkà mè kɔ̀-ɔ́ fíé.*
tomorrow 2SG come-V COND MOD 1SG go-V home
'If you came tomorrow, I would go home.'

Several proposals have been presented to account for why past tense markers are used in counterfactual sentences, especially with regards to sentences with a future time reference. Iatridou (2000) proposed that past tense semantically encodes a distance from the present (or remoteness), which could refer to a world or time in the past or future. In line with this analysis, Karawani & Zeijlstra (2013: 118) speculate that the past tense "semantically always refers to any non-present tense, but in most cases the availability of future tense morphology instead pragmatically blocks a future tense interpretation of the past morpheme." However, as (22) show, in Akan, the past and future tense are interchangeable in a counterfactual conditional that refers to past or future situation. Whether or not a past tense is used in a future time reference or a future tense is used in a past time event depends on pragmatic veridicality. Thus, in the absence of non-veridical operators like *aa...anka* and *ara,* past tense morphology is not usedin a future time event and a future tense is not marked on a past event in Akan.

(22) a. *ɔ̀kyénáá wó bà-àyɛ́ áà àǹkà m-é-tɔ́ bì.*
tomorrow 2SG come-V COND MOD 1SG-FUT-buy some
'If you would come tomorrow, I would buy some of it.'

b. *ènórá mè tè-èyɛ́ áà àǹkà m-é-frɛ̀ nò.*
yesterday 1SG hear-V COND MOD 1SG-FUTcall 3SG.OBJ
'If I heard it yesterday, I would have called her.'

c. *ènórá ɔ̀-bé-bá áà àǹkà ɔ̀-bé-frɛ́ wó.*
yesterday 3SG.SBJ-FUT-come COND MOD 3SG.SBJ-FUT-call 2SG
'Yesterday, if he would come, he would call you.'

Another interpretation associated with the verbal suffix (-V) is 'completion'. According to Osam (2008: 84), "[the suffix] is found only on events that are known to be completed or perfective before the time of speaking [and] it is used to code events that have been brought to a closure before the time of speech." Although Osam (2008) admits that the suffix refers to events located in past time, he maintains that "past time is a secondary meaning" of the suffix.[6] Thus, Osam analyzes the verbal suffix as involving two meanings: (i) it *encodes* a relation E R, where the event (E) is completed at the reference time (R); (ii) the suffix *implies* a relation R S, where the reference time (R) is past to the speech time (S). As (23) shows, Osam's (2008) analysis of the verbal suffix is similar to the past perfect or pluperfect in English.

[6] This idea goes back to Dahl (1985) who identified suffix -V as one of two pluperfects in Akan "which is restricted to past time reference."

(23) $[\text{-V}] \Rightarrow \mathbf{E_R_S}$

As we have shown above, the verbal suffix (-V) is used to mark events whose reference time (R) is anterior to the speech time (S) (except in non-actual situations). Thus, the past time function of this marker appears to be part of the semantics of the suffix. The completive meaning associated with the suffix may not be part of its meaning. If completive meaning were encoded by the verbal suffix (-V), it should not be able to occur in a sentence which contains a clause that cancels the event's completion. However, speakers found it acceptable when the event marked by the verbal suffix (-V) is followed by the clause *did not finish* (8:1 ratio) (24a, 25a). On the other hand, when the perfect *a-* is marked in the initial clause, speakers found it less acceptable to cancel the event with the clause *but did not finish* (6:3 ratio) (24b, 25b).[7]

(24) a. *ò-sì-ì ǹ-tààdéɛ́ nó nàńsó ɔ̀-à-ǹ-wìé.*
3SG.SBJ-wash-V PL-cloth DET but 3SG.SBJ-V-NEG-finish
'He washed the clothes, but he did not finish (the job).'

b. *# ɔ̀-à-sí ǹ-tààdéɛ́ nó nàńsó ɔ̀-à-ǹ-wìé.*
3SG.SBJ-PRF-wash PL-cloth DET but 3SG.SBJ-V-NEG-finish
'#He has washed the clothes, but he did not finish.'

(25) a. *mɛ̀ kɔ̀-ɔ́ sùkúù nàńsó m-à-ǹ-wìé.*
1SG go-V school but 1SG.SBJ-V-NEG-finish
'I attended school, but I did not complete it.'

b. *# m-à-kɔ́ sùkúù nàńsó m-à-ǹ-wìé.*
1SG-PRF-go school but 1SG.SBJ-V-NEG-finish
'#I have attended school, but I did not complete it.'

Similarly, Dahl (1985) noted that the suffix (-V) is compatible with imperfective reading.

He states:

> It is striking that both Akan and Oneida use the 'framepast' in the classical example of a context where the Russian uses an imperfective verb to denote what is in the literature called a 'two-way distinction', that is, an action which led to a result which has later been cancelled (sic). (Dahl 1985: 149)

For instance, in (26a) the suffix (-V) marked on the verb *bɛ* 'open' does not mean that the window is still open, but rather the opposite. On the other hand, the perfect marker *a-* cannot be used in a context where the window is no longer open. Thus, the suffix (-V) does not semantically encode completion. Instead, it locates a reference time (R) as anterior to speech time (S).

(26) Context: It is cold in the room. The window is closed. Did you open the window?

[7] An anonymous reviewer points out that examples (24b) and (25b) are acceptable in the language. While we do not contest the reviewer's observation, it is worth noting that the respondents found the sentences in question to be acceptable only in certain contexts. For instance, in (24b), some speakers commented that the meaning of completion can be canceled if there are other chores that go with washing, but the person did not complete these. Also, regarding (25b), some respondents commented that the completive meaning can be canceled if one is only referring to the activity of going to school. Either way, our results show that there seems to be a stronger association of completive meaning with the perfect aspect rather than the verbal suffix (-V).

a. *wó nà wó bíé-è m̀pómá [n]ó ànáá?*
2SG PRT 2SG open-V window DET QUES
'Was it you who opened the window?' (Dahl 1985: 149, tones and glossing ours)

b. # *wó nà wó á-bíé m̀pómá nó ànáá?*
2SG PRT 2SG PRF-open window DET QUES
'Was it you who has opened the window?'

The evidence considered so far suggests that the verbal suffix (-V) is a past tense marker and not completive aspect. It locates reference time (R) as anterior to speech time (S) (in actual situations) (27) while the perfect *a-* expresses a relation between event time (E) and reference time (R) (28). We will, therefore, gloss the verbal suffix (-V) as past tense (PST) in the remainder of the paper.

(27) [-V] ⟹R_S

(28) [*a*-] ⟹E_R

In the next section, we discuss one restriction on the distribution of the suffix (-V), which led to its analysis as aspect rather than tense in Akan.

5. Co-occurrence restrictions of past tense

The verbal suffix (-V), unlike the English past tense, cannot be used in a clause which has imperfective marking, such as the progressive. As shown in (29), the past tense suffix cannot be used when the verb is marked with the progressive to express past progressive (29b). Likewise, as (30) shows, the perfect aspect cannot be used with the past tense in the same clause to express a past perfect(ive).

(29) a. *mè-è-tɔ́ àtààdéɛ́.*
1SG-PROG-buy dress
'I am buying a dress.'

b. * *mè-è-t-ɔ̀-ɔ̀ àtààdéɛ́.*
1SG-PROG-buy-PST dress
Intended: 'I was buying a dress.'

(30) a. *Yaw à-súá àdéɛ́.*
Yaw PRF-study thing
'Yaw has studied.'

b. * *Yaw à-súá-à àdéɛ́.*
Yaw PRF-study-PST thing
'Yaw had studied.'

According to Osam (2008), the explanation for the ungrammatical sentences in (29b) and (30b) is that the suffix (-V) is completive aspect and, therefore, cannot co-occur with the progressive and perfect aspects. Osam (2008) argues the following:

> If the primary function of the suffix under consideration were to code past time, we should expect to find it used with an event in progress in the past [...] The suffix in question cannot code any imperfective event that occurs in the past prior to the time of speaking. For me, this is the strongest evidence that the suffix I am calling the completive is not primarily a tense marker marking past time. (Osam 2008: 85)

Osam's (2008) argument raises the following questions: (a) if the suffix (-V) is a past tense marker, as we have claimed, why does it not occur with an aspect, such as perfect and progressive? (b) if it is completive aspect, as claimed by Osam (2008), why does it not occur with the future tense marker? (c) Is the suffix (-V) incompatible with imperfective events in general? We address these questions in the remainder of the paper.

The answer to the first two questions can be seen from the syntactic distribution of tense and aspect markers. In Akan, it is generally not possible to combine tense and aspect on the same verb in a simple clause.[8] For example, as shown in (31) and (32), the future tense and the perfect aspect cannot be marked in the same clause [*PRF+FUT]. Neither can we have the future tense and progressive aspect in the same clause [*PROG+FUT]. In fact, combining the progressive aspect and future tense results in immediate future reading (32c). Also, even if we were inclined to analyze the suffix (-V) as completive aspect, as (33) shows, it cannot be used with the future tense, although future completive events should be acceptable.

(31) a. *Ama à-súá àdéɛ́.*
Ama PRF-study thing
'Ama has studied.'

b. * *Ama à-bɛ́-súá àdéɛ́.*
Ama PRF-FUT-study thing
'Ama will have studied.'

(32) a. *pàpá nó-ò tí káà.*
man DET-PROG buy car
'The man is buying a car.'

b. * *pàpá nó-ò bɛ̀-tɔ́ káà.*
man DET-PROG FUT-buy car
Intended: 'The man will be buying a car.'

[8] In a serial verb construction, it is possible to combine tense and aspect, e.g. [FUT-CONS] (6a) or two aspects, e.g. [PRF-PROG] (6b) (see Dolphyne 1987; Osam 2004; Duah 2013).

(i) a. *ɔ̀-bɛ̀-kɔ́ à-bá.*
3SG.SBJ-FUT-go CONS-come
'He will go and come back.'

b. *Kofi á-hóhóró nɛ̀ ǹsá-à dìdí.*
Kofi PRF-wash 3SG.POSS hand-PROG eat
'Kofi has washed his hand and is eating.'

c. *pàpá nó-ò bɛ̀-tɔ́ káà.*
man DET-PROG FUT-buy car
'The man is about to buy a car.'

(33) a. *ɔ̀-bɛ́-wíé sùkúù ɔ̃kyénáː.*
3SG.SBJ-FUT-finish school tomorrow
'He will finish school tomorrow.'

b. * *ɔ-bɛ́-wíé-è sùkúù ɔ̃kyénáː.*
3SG.SBJ-FUT-finish-PST school tomorrow
Intended: 'He will have finished school (by) tomorrow.'

Thus, in Akan only one of each category of tense or aspect may be marked in a clause but not both. If only aspect is marked in the clause it takes a default present tense reference, which is unmarked (34).

(34) a. *ɔ̀-ɔ̀-sòmá nó.*
3SG.SBJ-PROG-send 3SG.OBJ
'She is sending him.'

b. *Kofi á-nyáné.*
Kofi PRF-be awake
'Kofi is awake.'

The complementary syntactic distribution of tense and aspect in a clause can be likened to what has been reported for some Bantu languages. For instance, Simango (2010) observes that in ciCewa "the occurrence of affixes on the verb complex is itself subject to co-occurrence restrictions; that is, when certain nodes in the structure are filled others cannot be." Thus, the non-occurrence of the past tense suffix with the two aspects, perfect and progressive, is due to a morphosyntactic restriction that produces a surface structure of either overt tense or aspect spell-out in a clause (Kusmer 2011).[9]

The third question that we would like to address is whether the past tense is compatible

[9] For instance, in Akan, the future tense marker bɛ́ is in complementary distribution with motional prefixes bɛ̀- and kɔ-. On the other hand, the past tense suffix (-V), the perfect and the progressive markers can co-occur with the motional prefixes.

(i) a. *ɔ̀-bɛ̀-fáː.*
3SG.SBJ-INGRES-take
'She comes to take it.'

b. * *ɔ̀-bɛ́-bɛ̀-fáː.*
3SG.SBJ-FUT-INGRES-take
'She will come to take it.'

c. *ɔ̀-kɔ̀-dáː.*
3SG.SBJ-EGRES-sleep
'She goes to sleep.'

d. * *ɔ̀-bɛ́-kɔ̀-dáː.*
3SG.SBJ-FUT-INGRES-sleep
'She will go to sleep.'

with imperfective semantics. As we have already noted in (31)–(33), in Akan, it is generally not possible to combine tense and aspect in the same clause, which explains why the past tense does not co-occur with the progressive and perfect aspects. As Osam (2008: 86) notes, the only way the language expresses past-progressive is "by using periphrastic expressions and discourse dependent inference of the past time." As shown in (35), the particle *na*[10] can be used to link a clause marked by the past tense and another containing the progressive (35a) or perfect (35b). We observe also in (35) that *na* can link a clause marked by future tense to another clause marked by the progressive (36a) or perfect (36b). The initial clause, which provides the reference time (R) may be deleted in which case a default interpretation of past time reference (R_S) is interpreted for the deleted clause.

(35) a. *(ɔ̀-bá-àyɛ́ nó) ná mè-è-kɔ́ Kumase.*
3SG.SBJ-come-PST CD PRT 1SG-PROG-go Kumase.
'(When she arrived) I was leaving for Kumasi.'

b. *(ɔ̀-bá-àyɛ́ nó) ná Ama á-dwáré.*
3SG.SBJ-come-PST CD PRT Ama PRF-bath
'(When she arrived) Ama had had a bath.'

(36) a. *wó bɛ́-sɔ́ré nó ná mè-è-dìdì.*
2SG FUT-rise up CD PRT 1SG-PROG-eat.RED
'By the time you wake up, I will be eating.'

b. *Yaw bɛ́-dúrú hɑ́ nó ná m-à-wá-ré.*
Yaw FUT-arrive here CD PRT 1SG-PRF-marry
'By the time Yaw gets here, I would be married.

Regarding the issue of whether or not the past tense can be used in imperfective events, we observed in (26) that the past tense suffix (-V) can be used in events which have not come to a completion. It should be noted that Akan does not morphologically mark the imperfective so the claim that the verbal suffix (-V) cannot be used with imperfective events is challenging to test. One option is to resort to lexical aspect, which may be expressed as part of certain events encoded by verbs, as in (26). Thus, the verbal suffix (-V) is not semantically incompatible with imperfective semantics, but it does not occur with any aspectual category in the same clause because of morphosyntactic restrictions in the language.

6. Conclusion

In the present paper, we have shown that Akan has a past tense marker, a verbal suffix (-V) in the affirmative (and a prefix (*a-*) in the negative), which is used to encode events that have a reference time that is anterior to the moment of speech (R_S). Although an event marked by the past tense form may be interpreted as completed, the interpretation of completion appears to be a pragmatic effect that is associated with past events in general but does not constitute the underlying semantics

[10] The particle *na* is sometimes analyzed as a past tense marker (e.g. Saah 2002; Boadi 2008; Kandybowicz 2015). However, *na* is only used to mark a relation between two clauses and their propositions but does not encode any tense by itself (Duah 2019).

of the form. Unlike the past tense, however, events marked by the perfect are understood as completed and, therefore, cannot be followed by a clause that denies the event's completion without resulting in a contradiction. The study shows that like the simple past tense in English, the Akan past tense can be used in conditional and counterfactual sentences in the present or future. In this use, the past tense form is non-indicative, that is, it does not strictly encode the R_S relation, but it marks an event in a non-actual situation. We have also provided evidence that Akan generally does not allow for the use of both tense and aspect in the same simple clause; when both tense and aspect need to be encoded in one verb form, only aspect gets overt expression. If the temporal reference does not include the moment of speech, said verb needs to be introduced by a connector *na* and preceded by another clause with tense specification. This implies that tense and aspect in Akan exhibit significantly different syntactic behavior.

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Abbreviations

1	first person
2	second person
3	third person
AG	agentive
CD	clause final determiner
COMP	complementizer
COMPL	completive
COND	conditional marker
DET	determiner
EGRES	egressive
EMPH	emphatic marker
FUT	future
FV	final vowel
HAB	habitual
IMP	imperative
INGR	ingressive
MOD	modal
NEG	negative
OBJ	object

OM	object marker
PRT	particle
PRF	perfect
PL	plural
POSS	possessive
PROG	progressive
PST	past
REL	relativizer
SBJ	subject
SG	singular
SM	subject marker
STAT	stative
QUES	question marker

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