

COMPOUND FORMATION IN LETɛ (LARTEH)

Mercy Akrofi Ansah
Institute of African Studies
University of Ghana Legon
akrofiansah@gmail.com

This paper describes the phenomenon of compounding in Letɛ¹ (Larteh), a Guan language of the Kwa language phylum. Compounding is a word-formation process which involves the combination of at least two potentially free forms belonging to open word classes (Aikhenvald 2007: 24). Compounding in Letɛ is a productive derivational process which leads to the formation of nominal compounds through the juxtaposition of two free morphemes. Three types of nominal compounds are derived: the noun-noun; noun-verb; noun-adjective compounds. Besides these three, compound numerals are also found in Letɛ. Nominal compounds in Letɛ are of the endocentric type with a fixed order: modifier- head. The formation of compounds involves regressive assimilation, vowel elision and changes in the basic tone pattern of stems. Nominal compounds with the exception of noun-verb compounds inflect for number. Syntactically, the nominal compounds behave like prototypical nouns in Letɛ. Like many of the world's languages, nominal compounds in Letɛ tend to have more specific meanings than any of the words that make up the compound (Payne 1997: 93).

L'article décrit le phénomène de la composition en letɛ (Larteh), une langue Guan du phylum des langues kwa. La composition est un processus de formation de mot qui implique la combinaison d'au moins deux morphèmes potentiellement libres qui appartiennent aux classes ouvertes des mots (Aikhenvald 2007 : 24) La composition en letɛ est un processus dérivationnel productif qui conduit à la formation des noms composés par le biais de la juxtaposition de deux morphèmes libres. Il y a trois types de mots composés qui sont le produit de la dérivation : nom + nom, nom + verbe, nom + adjectif. A part ces trois catégories de mots composés, on trouve des mots composés des numéraux en letɛ. Les noms composés en letɛ sont du type endocentrique avec un ordre fixe : modificateur- tête. La formation des mots composés implique une assimilation régressive, l'élision vocalique et des changements dans le ton de base du radical. Les noms composés, mis à part des mots composés du type nom+verbe, exhibent une inflexion pour le nombre. Au niveau syntaxique, les noms composés se comportent comme les noms typiques du letɛ. A l'instar de beaucoup de langues du monde, les noms composés en letɛ ont tendance à avoir plus de sens spécifiques que chacun des mots qui participent à la composition du nom composé (Payne 1997 :93).

0. INTRODUCTION: SOME TYPOLOGICAL PROPERTIES OF LETɛ.

In this section, typological features of Letɛ which are relevant to the subject matter of this paper are discussed.

Letɛ is a South-Guan language (Lewis 2009) spoken in Larteh, in South-east Ghana, West Africa. The language has a symmetric set of nine vowels: four front vowels paralleled by four back vowels and a low central vowel which is unpaired (1). The low vowel /a/ is opaque; it occurs freely with advanced vowels in roots, where it realized as [ə] before a syllable with /i/ or /u/. The tongue-root harmony principle operates in Letɛ; the principle requires that vowels in a word of two or more syllables must share the [ATR] feature (1).

¹ Speakers of the language under discussion refer to it as Letɛ. In the literature, it is often known as Larteh.

(1)	SET A [+ATR]	SET B [-ATR]
	i u	ɪ ʊ
	e o	ɛ ɔ
	[ə]	a

Available data however indicate that in exceptional cases, vowels from set A and set B may co-occur in a word of two or more syllables, and in such instances, [+ATR] vowels usually precede [-ATR] vowels (see examples (5) and (10)). Vowel harmony in Lete involves a regressive process whereby [+ATR] vowels assimilate [-ATR] vowels that precede them. This is a common phenomenon in compounding.

Similar to most African languages, Lete is tonal with two level tones: high and low. Whereas a change in tone could result in change in meaning,² grammatical tone functions to create tense and aspectual distinctions. Furthermore, tone is known as a category-changing device leading to the nominalization of verb stems. Derivational morphology such as compounding is known to trigger tonal pattern change.

The syllable is the tone-bearing unit. The minimum number of segments a syllable has is one. This may be constituted by a vowel or a nasal. In addition, the approximant /w/ or the alveolar trill /r/ may become syllabic, but in rapid speech only following the elision of a preceding or a following vowel. Consequently, they retain the syllabicity and tone of the elided vowel. Maximally, a syllable of Lete has two segments: a vowel and a consonant.

Vowel elision is a common phonological process which may be due to rapid speech. The first vowel in (2a) is elided during rapid speech, and in the case of (2b), the final vowel is deleted. Following the elision, the tones of the elided vowels dock on the nearest tone-bearing unit. Subsequent discussion will also show that vowel elision is central in compounding.

- (2) a. **sɪrí** → **sr`í** run
 b. **ònúmú** → **ònúm** adult

The morphology of Lete is largely agglutinating. The language is predominantly prefixal with nominal and verbal affixes in the form of number, tense/aspectual and negation prefixes. Suffixes are less prevalent; the few ones that are present denote number in kinship terms. Nominal prefixes are vowels or syllabic nasals which are always homorganic with the initial consonant of the stem. Largely, the language has low tone nominal prefixes. In their plural forms, some nouns get their prefixes replaced with a different prefix.

Seven types of verbal structures with their distinct basic tone patterns are identified in Lete. The base form of the verb is the imperative which is uninflected, and

² Verbs are tone-marked in this paper to indicate tense/aspectual distinctions. Stems that form compounds are also tone-marked to illustrate tone-pattern changes.

subsequently its tone serves as the base tone. The base tone of a verb varies to indicate its tense/aspectual form.

Lete has two broad classes of words and phrases which are used to express property concepts, the underived and derived classes. The underived class (hereafter, adjective class) is constituted by thirteen monomorphemic free lexemes with semantic features of dimension, colour, age or value. Membership of the Lete adjective class is fixed (Table 1).

Table 1 Lete Adjective Class

Dimension	Colour	Age	Value
ətimi 'short'	ofufuru 'white'	ohue 'new'	okose 'good'
ɔtɔntɔ 'tall'	obibi 'black'	ɔdɪde 'old'	ɔkpamkpa 'bad'
əkitibi 'small'	ɔhe 'red'		efe 'true'
ɔkpɔmkpɔ 'big'			enufu 'false'

On the other hand, the second class with derived adjectives is one which is made up of phrases formed from nouns and verbs which are also used to express property concepts.

The basic constituent order of an unmarked transitive clause in Lete is SVO.

The remaining part of the paper is divided as follows: in the next section, there is a general discussion of compound formation in Lete. The three sections that follow dwell on the formation of the three major compound types and their nominal morphosyntactic properties. This is followed in section five by a discussion of the formation of compound numerals. The discussion is summarized and concluded in section six.

1. COMPOUND FORMATION IN LETE

Compounding in Lete is similar to what occurs in related languages like Akan. Dolphyne (1988: 117-124) reports that in Akan, compounds are made up of two or more stems. During the formation of these compounds, phonological processes such as vowel harmony, loss of final vowel or final syllable and changes in the basic tones of stems occur. Compound types that are known to occur in Akan include noun-noun compounds, object-verb compounds and noun-adjective compounds. The rest which operate in the language are the verb-object, adjective-noun and verb-verb compounds. Akan compounds also include reduplicated nouns, verbs and adjectives.

The most common type of compounds in Lete is nominal compounds. This involves a juxtaposition of two free stems which are members of open word classes: nouns, verbs and adjectives. These three combine to form compounds with the components: noun-noun; noun-verb; noun-adjective. Available data indicate that verb-noun compounds which are found in Lete are loaned from Akan which suggests that verb-noun compounding is not a productive process in the language, likewise adjective-noun compounding.

The order of the components in a nominal compound, MODIFIER, HEAD is distinct from the order in a noun phrase: HEAD, MODIFIER. The nominal compounds are of the endocentric type, where the compound signifies a sub-category of items described by one of its elements, usually the head. The second element functions as the

modifier that restricts the meaning. The phenomenon of compounding also produces compound numerals.

The first nominal compound to be described is the noun-noun compound.

2. NOUN-NOUN COMPOUND FORMATION

Two prototypical nouns may be juxtaposed in the order: MODIFIER, HEAD, to form a compound, an order distinct from that of a Lete noun phrase. The first element functions as the modifier, whilst the second component is the categorial part.

A number of morphophonological processes take place in the course of noun-noun compounding. In the first place, and in accordance with orthographic principles, a morphological word results (3-5).

- | | | | | |
|-----|-----------------|---|--------------|-----------------------------------|
| (3) | Stems | | | Compound |
| | à-s ǒ!rí | + | ø-tsá | → às ǒ!rítsà |
| | SG- church | | SG-house | chapel |
| (4) | sùkúú | + | ø-tsá | → sùkúútsà |
| | school | | SG-house | school building |
| (5) | ó-wúrè | + | ə'wú | → ówúrèwù → ówúréwù |
| | SG-chief | | home | palace |

Following the compound formation, no part may be modified independently, but as a whole unit (6).

- (6) a. **àsǒ!rítsà kpotii** big chapel
 b.* **àsǒ!rí kpotii tsa** church big house
 c.* **àsǒ!rí tsa kpotii** church house big

As already stated, a common phonological process that occurs in compounding is vowel elision. When the two nouns are juxtaposed with vowels occurring at word boundary, the initial vowel of the second component is elided (5). If on the other hand, two vowels do not meet at word boundary, there is no deletion as shown in (3) and (4). It can further be observed that after the deletion of /ə/ in (5), there is regressive assimilation where /ɛ / is assimilated to become /e/ in line with vowel harmony principles. In (4), there is a mixture of advanced and unadvanced vowels which illustrates that, where the vowels of the first word in a compound are [+ATR] and those in the second word are [-ATR], there is no harmonization either progressive or regressive.

Furthermore, noun-noun compounding triggers tonal pattern change. In examples (3) and (4), the high tone on the second stem in its citation form becomes low when it combines with the first element. Similarly in (5), there is a lowering of the final tone of the second constituent. It is usual to produce the final syllable of a compound with a low tone when its tone in citation form was previously high. The reverse cannot be however ascertained at this point.

2.1 MORPHOSYNTACTIC PROPERTIES OF NOUN-NOUN COMPOUNDS

Similar to prototypical Lete nouns, noun-noun compounds inflect for number; during the process, the head is marked by the plural markers, /ɛ-, n-/ respectively (7-8). Consequently, the final vowel of the first stem is elided.

- | | | | |
|-----|------------------|--------------------|---------------------|
| (7) | Compound (SG) | Compound (PL) | |
| | àsó!rítsà | àsó!ríè-tsà | → àsó!rètsà |
| | chapel | chapel:PL-house | chapels |
| (8) | ówúréwù | ówúréń'-wù | → ówúré ń'wù |
| | palace | chief:PL-home | palaces |

Similar to any Lete noun, the noun-noun compound may be modified by an adjective, predicatively (9a) and also attributively (9b). In each case, the compound agrees with its modifier in number (see (9b)) except when they are modified by adjectives of value (9c). The noun-noun compound takes an article as shown in (9a).

- (9) a. **Asɔritsa** **a** **gyí** **ɔ-kpɔŋkpɔ.**
 SG. chapel DEF COP.be SG-big
 The chapel is big.
- b. **Asɔritsa** **a** **gyí** **ŋ-kpɔŋkpɔ**
 PL.chapel DEF COP. be PL- big
 The chapels are big.
- c. ***Owureŋwu n-/e-kose**
 palaces PL- good
 good palaces

Syntactically, noun-noun compounds behave like the prototypical Lete noun; they occupy a noun slot in an NP to function as head. This NP may function as subject (9a) or object (10).

- (10) **Adu** **dí-kpùrè** **asɔritsa.**
 Name PROG-build chapel
 Adu is building a chapel.

Furthermore, a noun-noun compound can function as possessum in attributive (11a) as well as predicative possessive constructions (11b).

- (11) a. **Eni** **asɔritsa** **a** **gyí** **kpotii.**
 3PL.POSS chapel DEF COP. be big
 Our chapel is big.
- b. **Eni** **bù** **asɔritsa** **kpotii.**
 3PL have chapel big
 We have a big chapel.

3. NOUN-VERB COMPOUND FORMATION

The second type of nominal compounds to be described is the noun-verb compound. As the label suggests, the categorial stem precedes the verb stem in the compound (12-13). The nominal stem that combines with the verbal stem occurs in the plural form if the former is countable; otherwise the form does not change as shown in (13). In the production of noun-verb compounds, action verbs have been found to combine with nouns, resulting in nominal compounds which denote activities.

A notable phonological process that occurs during the formation of noun-verb compounds is tonal pattern change. The tonal pattern of the uninflected verb stem changes when the verb forms a compound with a noun. In (12), the low tones on the two final syllables are raised. Similarly in (13, 14), the low tone on the monosyllabic verb stem is raised when it forms part of a compound.

Vowel harmony assimilation is absent in (12) although the conditioning environment is present. In (14), there is an occurrence of advanced vowels preceding unadvanced vowels, regressive assimilation therefore does not take place.

	Stems		Compound
(12)	ń -dám`fù PL-friend	+ bùè take	→ ńdám`fùbúé friendship
(13)	ńtế beverage	+ nù drink	→ ńténú drunkenness
(14)	ń-yìrèbí PL-child	+ kyì look	→ ńyìrèbíkyí childcare

3.1 MORPHOSYNTACTIC PROPERTIES OF NOUN-VERB COMPOUNDS

Most noun-verb compounds do not inflect for number. This is to be expected as the nominal part of the compound is in the plural form. However, they may be modified by an adjective, attributively (15) and predicatively (16).

(15) **ńdám`fùbúé okosε**
good friendship

(16) **Mv ńdám`fùbúé bé!-gyí okosε.**
3SG.POSS friendship NEG-COP. be good
His friendship is not good (His method of making friends is bad).

Like the noun-noun compound, the noun-verb compound functions as head in NPs with a variety of roles in the sentence, for example as subject/agent in (17) or possessum in a possessive construction as found in (18).

(17) **ńténú bè-nyéntè mv.**
drunkenness FUT-destroy 3SG.OBJ
Drunkenness will destroy him/her.

- (18) **Ama bé-kyirè Kofi nténú**
 Ama NEG-like Kofi drunkenness
 Ama does not like Kofi's drunkenness.

4. NOUN-ADJECTIVE COMPOUND FORMATION

Nominal compounds may also be formed from a combination of nouns and adjectives in the order: noun-adjective. The modifier is an underived adjective from the thirteen-member adjective class of Lete (Akrofi Ansah 2009). Noun-adjective compounds in Lete have been found to belong to the semantic class of kinship terms.

When the two stems are juxtaposed, the initial vowel of the second stem is elided. In addition, where the final vowel is /u/ or /v/ it is elided as found in (19) and (20). The tone of the elided vowel docks on /m/ which is tone-bearing. With the exception of (21) where the high tones of the nominal stem are lowered in the compound, no tonal pattern change is observed in examples (19) and (20). Tonal pattern change in noun-adjective compound formation is therefore irregular. There is regressive assimilation in (20), but not in (19) as expected. Example (21) has advanced vowels preceding unadvanced vowels. The formation of noun-adjective compounds is illustrated in (19-21).

Stems			Compound (SG)	
(19) ðkyí	+	ðnúmú	→	ðkyínúm
female		elderly		elderly woman
(20) ðnyíné	+	ðnúmú	→	ðnyínénúm
male		elderly		elderly man
(21) óbí	+	ðnyínè	→	ðbìnyínè
child		male		son

4.1 MORPHOSYNTACTIC PROPERTIES OF NOUN-ADJECTIVE COMPOUNDS

Noun-adjective compounds receive number marking on the nominal head. The plural prefixes bear the tongue root features of the immediate following vowels of the compounds.

Compound (SG)	Compound (PL)
(22) a. ð-kyínúm	è-kyínúm
ð-nyínénúm	è-nyínénúm
ð-bìnyíné	è-bìnyíné

Noun-adjective compounds may also be modified attributively (23a) and predicatively (23b) by adjectives, agreeing in number.

- (23) a. **O-nyinenum ɔ-tɔntɔ a.**
 SG-elderly man SG-tall DEF
 The tall elderly man.
- b. **E-nyinenum a gyí ɛ-tɔntɔ.**
 PL-elderly men DEF COP. be PL-tall
 The elderly men are tall.

Similar to prototypical Lẽtẽ nouns, noun-adjective compounds take singular (24) and plural (25) articles.

- (24). **O-nyinenum a bẽ ɔwu.**
 SG-man.old DEF PST.come home
 The elderly man came home.

- (25). **ɛ-kyɪnum ŋ-kv bẽ ɔwu.**
 PL-old woman PL-INDF PST.come home
 Some elderly women came home.

In a possessive construction, a noun-adjective nominal may function as possessum (26) and as possessor as exemplified in (27).

- (26) **Ama mv o-binyinɛ.**
 Ama 3SG.POSS SG-son
 Ama's son.

- (27) **ɔ-kyɪnum a mv sika.**
 SG-old woman DEF 3SG.POSS money
 The old woman's money.

Noun-adjective compounds may occupy the head slot in an NP (28). They can also function as theme in a double object construction (29).

- (28) **O-nyinenum a gyí okuafv.**
 SG-elderly man DEF COP. be farmer
 The elderly man is a farmer.

- (29) **Onyankopɔŋ yɛ-nɛ ɛnɪ o-binyinɛ.**
 God PERF-give 1PL.OBJ SG-son
 God has given us (a) son.

5. COMPOUND NUMERALS

The last type of compounds to be discussed is the compound numerals. In Lẽtẽ, numerals between 'eleven' and 'nineteen' are formed by combining the numerals 'one' to 'nine' and the word for numeral 'ten' (30). Multiples of ten are formed by prefixing the number for ten, **du** with / **ə** -/ and suffixing it with /-**o**/, then adding the numbers 'two' to 'nine' (31). The affixes function as plural markers to indicate the multiplicity of the first component, the numeral 'ten'. Recall that normal regressive vowel harmony assimilation does not occur where advanced vowels precede unadvanced vowels. The phenomenon of compound numeral formation in Lẽtẽ is similar to that in Akan.

- | | | | | | | | | | | |
|------|-----------|---|------------|---|--------------|-----------|---|-------------|---|---------------|
| (30) | du | + | kɔ | → | dukɔ | du | + | nu | → | dunu |
| | ten | | one | | eleven | ten | | five | | fifteen |
| | du | + | nyɔ | → | dunyo | du | + | siɛ | → | duɛ |
| | ten | | two | | twelve | ten | | six | | sixteen |
| | du | + | sa | → | dusa | du | + | sunɔ | → | dusunɔ |
| | ten | | three | | thirteen | ten | | seven | | seventeen |

- | | | | | | | | | | |
|-----------|---|--------------|---|----------------|-----------|---|-------------|---|---------------|
| du | + | nɛ | → | dunɛ | du | + | tɛɕi | → | dutɛɕi |
| ten | | four | | fourteen | ten | | eight | | eighteen |
| du | + | kpunɔ | → | dukpunɔ | | | | | |
| ten | | nine | | nineteen | | | | | |
- (31) **ə-du-o** + **nyɔ** → **əduonyɔ**
 PL-ten-PL + two twenty
ə-du-o-nyɔ + **kɔ** → **əduonyɔkɔ**
 PL-ten-PL –two + one twenty-one
ə-du-o-sa + **sa** → **əduosasa**
 PL-ten-PL- three + three twenty-three

Generally compound numerals do not inflect for number. They are used as nominal modifiers, a function which is shared by some prototypical nouns in Lete. Two nouns may be apposed where the first one functions as modifier (32), but when compound numerals function as modifiers, they follow the head and agree in number with the latter (33).

- (32) **oyi** **adaka**
 wood box
 wooden box
- (33) a. **Kofi** **bù** **o-wure** **kɔ.**
 Kofi PRES. have SG-book one
 Kofi has one book.
- b. **Kofi** **bù** **e-wure** **dunɔ.**
 Kofi PRES.have PL-book twelve
 Kofi has twelve books.

Similar to a prototypical noun, the compound numeral can function as the theme argument in a double object ditransitive construction (34) and the shared object in a benefactive Serial Verb Construction (35). This function is possible when the referent is known by the interlocutors.

- (34) **Ama** **nɛ** **Kofi** **dunu.**
 Ama PST.give Kofi fifteen
 Ama gave Kofi fifteen.
- (35) **Ama** **bítì** **dunu** **nɛ** **Kofi.**
 Ama PST.take fifteen ADP.give Kofi
 Ama gave fifteen to Kofi.

6. SUMMARY AND CONCLUSION

The concern of this paper has been the formation of compounds in Lete, a South-Guan language of the Kwa language phylum. Nominal compounds are the most common type in the language, formed from the combinations: noun-noun; noun-verb and noun-adjective. The two free elements are juxtaposed resulting in one morphological word.

Compound numerals are also formed through a combination of the numerals ‘one’ to ‘nine’ and the word for numeral ‘ten’. Multiples of ten are similarly formed.

Because these free stems combine to form one word, each compound may undergo one or more of certain phonological processes such as vowel harmony, loss of initial or final vowels and changes in the basic tone patterns of stems. It has been observed that with noun-noun compounds and noun-verb compounds, it is the head that bears elision and tonal pattern change. It is however difficult to predict the changes that occur in noun-adjective compounds.

The compounds share some morphosyntactic properties with prototypical Lete nouns. Noun-noun compounds and noun-adjective compounds inflect for number, but noun-verb compounds and compound numerals do not. Furthermore, with the exception of compound numerals, the nominal compounds may be modified by adjectives. Syntactically, the compounds described function as subject/agent and objects in transitive clauses.

Compound formation in Lete may be likened to what occurs in related languages like Akan as reported (Dolphyne 1988:117-124).

ABBREVIATIONS

ADP	Adposition	PL	Plural
+ATR	Advanced Tongue Root	POSS	Possessive
-ATR	Retracted Tongue Root	PRES	Present
COP	Copula	PROG	Progressive
DEF	Definite	PST	Past
FUT	Future	SG	Singular
INDEF	Indefinite	SUB	Subject
NEG	Negative	1PL	1 Plural
OBJ	Object	3SG	3 Singular
PERF	Perfect		

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