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# Berom Exocentric Compounds: A Structural and Semantic Analysis of the N-V Compounds

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## ABSTRACT

In this study, we examine exocentric compounds in Berom; a minority Niger-Congo language that is spoken in parts of central Nigeria and describe the structural and semantic properties of N-V compounds. Basically, the study is designed to achieve three aims: to contribute to the documentation of Berom, to provide the structural classification of exocentric compounds in the language and to provide the semantics of N-V compounds. Contrary to the nominalization process in defining the lexical class of compounds in languages, we show that in Berom compounding, the verbal and adjectival compounds are also attested. Based on a data set of 200 compound words that were previously drawn from Bere Naha (a newsletter publication in Berom), we propose three categories of exocentric compounds in Berom: Nominal Compounds [NC] and Verbal Compounds [VC] and Adjectival compounds and present the structure of each category by showing the class of their constituents. We show that Berom, N-V compounds have a nominal classification that are interpreted as agentive or locative nouns. We conclude that the meaning of Berom N-V compounds may not be solely determined by the sheer interpretation of the constituents of the compound.

**Contribution/Originality:** This study contributes to the available literature on compounding in Berom. The findings reveal three structural classifications of Berom exocentric compounds and further show that Berom N-V compounds have a nominal classification that are interpreted as agentive or locative nouns.

## 1. Introduction

Various studies have treated the nature of compounds in specific languages and across languages. Issues such as the classification and structure of the compound have also been discussed extensively (Bauer, 2006; Bisetto & Scalise, 2005; Fabb, 1998; Fábregas & Scalise, 2012; Montermini, 2010; Scalise & Bisetto, 2009). While it is possible to have a

universal parameter (such as the compound constituents and the lexical classification) to discuss and distinguish the nature of compounds in specific languages, it is always quite challenging to assume a universal classification for compounds and their constituent parts in all languages. It is in this light that Scalise and Bisetto (2009: 50) identified "the difficulty in the adoption of language-specific terminologies to be cross-linguistically relevant" as one of the three challenges[1] with the existing classification of compounds that have been expressed in studies (such as, Bally, 1950; Bauer, 2001; Bloomfield, 1933; Booij, 2005; Fabb, 1998; Haspelmath, 2002; Marchand, 1969; Olsen, 2001; Spencer, 1991).

Discussions on nominal compounds have been carried in several languages and their semantics have been shown to evolve from either the compositional meaning of their constituent parts or from their context of usage (Appah, 2017; El Yagoubi et al., 2008; Güemes et al., 2019). In such studies, the issue of whether the semantics of compounds are deconstructed as whole words has been treated and the factors that may influence the assignment of meaning in compound words have also been specifically analysed. In their study of the morphological structure of Italian noun-noun compounds, El Yagoubi et al. (2008: 265), for instance, claimed that "the head-modifier canonical syntactic word order" in Italian influences the meaning and interpretation of both head-initial (such as **pescespada** 'swordfish [literally, fish-sword]') and head-final (such as **astronave** 'spaceship [literally, star-ship]') compounds.

While conceding to the influence of the head-initial order on the semantics of noun-noun Italian compounds as expressed in El Yagoubi et al. (2008), Arcara et al. (2014) have shown that in head-final compounds and exocentric verb-noun compounds, a separate lexical decision is required to process such compounds. They posited that the syntactic order in compounds (such as those with the N-V and V-N structure) may not be sufficient to determine their meanings and suggested that "the grammatical properties of the constituents such as verbal features" (Arcara et al., 2014: 169) are also considered for meaning processing. A similar opinion on the syntactic order of the compound has previously been expressed in Gagné and Spalding (2009: 27) where they proposed that "the semantic representation of a compound is a conceptual combination and not the coactivation of constituents at the lexical level".

Berom morphology offers very interesting research areas that may pose several challenges for emerging word-formation theories especially those that relate to compounding. Unfortunately, little has been done in the field of Berom morphology and specifically, compounding (Blench, 2000; Marcus et al., 2015) and perhaps no literature exits on the study of exocentric compounds in Berom (Marcus, 2021).

Therefore, this study examines the semantics of Berom exocentric compounds that appear to have a Noun-Verb [NV] structure such as (1) where the referent of the compound **mwat tabak** 'preacher [literary, person shoot]' corresponds to a person who performs an event that is not directly expressed by the V constituent in the same compound; and (2) where the referent of the compound **lɔ basa** 'school [literary, house

[1] The other problems with previous classifications include: the prominence attached in numerous studies to compounds formed by certain lexical categories (mostly N-N compounds) thereby ignoring those formed by other lexical categories, and lastly, the inconsistency in the classification criteria which makes the comparison of their classification quite difficult.

read]' corresponds to a location where the event that is expressed by the V constituent takes place.

**(1) mwat tabak**
person shoot
'preacher'

**(2) lɔ basa**
house read
'school'

Given the illustrations in (1) and (2), Berom NV compounds have a prototypical argument structure[2], since both groups, correspondingly, possess a suitable qualified constituent (N) that satisfy the AS of the agent [in (1)] and location [in (2)] of the V. However, the feature of agentivity and locativity that are respectively associated with the interpretations of both compounds is blurred. This implies that in spite of their obvious NV prototypical structure, their respective agentive and locative meanings cannot be expressively deduced from the AS that their constituents independently possess. As such, the process of their interpretation cannot be realised by their common structure and must be determined by their partial compositionality in order to reveal their individual meanings.

In this paper, we describe Berom NV exocentric compounds and show that they can be categorized into two different groups based on their semantic interpretation. We examine the properties that are expressed by the constituents of NV compounds and show that the meaning of the compounds is not directly related to the meaning of their constituents, and we provide an analysis for their semantic structure.

To achieve the main objectives of this study, we structure the rest of the paper as follows. Sections 2 discusses compound heads. Section 3 focuses on the cross linguistic view of NV compounds. Section 4 presents an overview of exocentric compounds in Berom. Section 5 describes the lexical categories of the attested exocentric compounds in Berom. Section 6 discusses the properties of the compounds including their constituents and their semantic structure.

### 1.1. Compound Heads

To put the discussion of headedness in proper perspective, there is the need to distinguish between at least between a formal head and a semantic head as widely noted in the literature (Bauer, 1983; Guevara & Scalise, 2009; Katamba, 1993; Scalise; Bisetto & Guevara, 2005; Scalise & Guevara, 2006). The semantic head is the constituent that shares its lexical conceptual information with the whole compound, making the whole compound a hyponym of its semantic head (Guevara & Scalise, 2009).

The formal head has sometimes been sub-classified into a syntactic head and a morphological head. In the view of scholars (including Dressler, 2006; Scalise, Fábregas & Forza, 2009) however, the constituent that is considered as the head of a compound should be distinguished based on three different points of view: semantic, syntactic, and

[2] when verbs occur in constructions, they have precise relations with their co-constituents. Expectantly, verbs typically require the co-constituent to be able to satisfy their argument structure (AS) or the co-constituent qualifies as a semantic argument of the verb expressing manner, location, instrument, etc. (Lieber, 1983).

morphological. Dressler (2006), for instance, argues that the compound *pickpocket* lacks a semantic head because of the absence of an obvious referent within the compound. As a result, the constituent *pick* is the syntactic head of the compound because it selects *pocket* as its internal argument (Dressler, 2006, p. 33). The morphological head is *pocket* because it can be inflected for pluralization by a plural marker while the non-head *pick* cannot (as in *pickpocket-s* and not *pick-s-pocket*[3]).

This study will consider the category of compounds that lack an obvious semantic head as expressed in Dressler (2006).

### 1.2. Cross linguistics view of NV compounds

As it has been shown in the literature, the structure and interpretation of complex nominals involving verb can be ambiguous (Alexiadou & Grimshaw 2008; Grimshaw 1990; Melloni, 2007) and the discussion on constructions such as NV are quite challenging (Anderson, 2013; Anderson, 2000). Basically, reasons such as the semantics of the compound, the compound structure, and the status of the V constituent, have been adduced for the challenging phenomenon of NV compounds (Lieber, 1983; Grimshaw, 1990).

Different views on the structure and semantics of NV compounds have been expressed in several studies and the treatment of NV compounds have conflicted in diverse ways across languages. From the semantic view, for instance, NV compounds have been treated either as endocentric compound, where the Synthetic category of the right-hand constituent (V) is considered as a (deverbal) N that is also the semantic head of the compound (Anderson, 2013; Anderson, 2000) or as exocentric compound where the Synthetic category of the right-hand constituent is treated as a V with non-compositional meaning because the compound lacks a structural and semantic head, thereby defying the endocentricity principle at the basis of merge (Chomsky, 1995).

In the English language (and in several other languages such as the German), for instance, NV compounds are analyzed as synthetic compounds in which the V constituents are deverbal (Selkirk, 1982; Lieber, 1983). Such compounds (like, **shoemaker** and **taxi driver**) are usually considered as endocentric constructions in which the right constituent is a deverbal nominal head (like the suffix -**er** that is attached to the verbs **make**[-**er**] and **drive**[-**er**]) that denotes the external argument of the verb (Benczes, 2006; Booij, 1988; Di Sciullo & Wiliams, 1987; Haspelmath, 2002; Lieber, 1983; Selkirk, 1982).

Similarly, Scalise and Bisetto (2009) categorised English verb internal compounds such as the VN and NV as subordinate compounds in which one component of the compound bears an argument relation to the other similar to the synthetic compounds in the English compounds like **truck driver** and the Romance compounds like the Italian **lavapiatti** 'dish washer [literally. wash dishes]'.

Recently, Lieber (2016: 41) treats the English examples (such as **truck driver**) as "endocentric subordinate compounds in which the deverbal nominal head [**driver**

[3] Though Dressler (2006, pp. 32-33) argues that "languages that have either predominantly, or exclusively left-headed compounds may have the tendency to mark inflection categories on the right constituent", the position of the inflectional element, as shown in studies (Bauer, 2010, 2008; Booij, 2012) "may be a default in the language and not necessarily identify a morphological head".

marked by the suffix -**er**] refers to the external argument of the verb". Lieber's position and treatment of the NV compounds is not completely new as a similar view is previously expressed in the characteristic of synthetic compounds in Katamba and Stonham (2006: 321)[4] and in several other studies (Selkirk, 1982; Booij, 1988; Haspelmath, 2002). Contrary to the endocentric view of the English NV compounds, Lieber (2016) analyses the Romance variety as exocentric since the compound as a whole does not refer to either of its constituent parts and concluded that NV compounds are endocentric subordinates in English but are exocentric in the Romance.

In her characterization of synthetic compounds, Grimshaw (1990: 70), however, argues that "the distinction between root and synthetic compounds is not necessarily based on the presence of a deverbal constituent in synthetic compounds but the fact that they contain heads whose argument structure (AS) must be satisfied by the non-head constituent".

Threading on the same line of argument expressed in Grimshaw (1990), Bauer (2008; 2010) separates synthetic compounds into the endocentric and exocentric groupings. He posits that the endocentric synthetic compound has an overt morpheme like the English **-er** which correspond to the external argument of the verb. In the exocentric synthetic compound, however, the verb and its internal argument form a noun that signifies the entity that performs the role of the external argument. Bauer (2008: 61) affirms that "in a number of languages, exocentric compounds which seem to fulfil the same function do not carry the final suffix but are made up of a verb and an argument of that verb".

For instance, in the French compound '**gratte-ciel**, that which scratches the sky, (Lit. scratch-sky)', only the verb (**gratte**) and its internal argument (**ciel**) are present, but the entire compound refers to an external argument- "that which scratches the sky" (Bauer, 2008: 71). Similarly, Contreras (1985) and Yoon (2009) argued for the exocentric structure and claimed that the compound-head is external. They showed that the V constituent in the compounds is responsible for different argument structure patterns which may not be sufficient to ascertain the meaning of the compounds and concluded that the semantics of such compounds can either be that of agents or instruments of the Yoon (2009: 509) illustrates this in her analysis of the Spanish compound **limpiabotas** 'shoeshine boy (literally, cleans [**limpia**] boots [**botas**])'.

In the Niger-Congo languages, the structure of NV exocentric compounds has been shown to be devoid of a deverbal constituent (Good, 2017; Dryer, 2013; Dimmendaal, 2011). Instead, it is composed of an argument-taking predicate whose argument structure (AS) is satisfied by the other constituent present in the compound (Grimshaw, 1990). While conceding that NV constructions are synthetic compounds in Akan, Appah (2017: 148), for example, further illustrated that "their structure contains an argument-taking predicate whose AS must be satisfied by the other constituent in the compound not requiring the presence of a deverbal constituent".

Focusing on the structure of NV compounds, the V constituent selects, in most cases, its direct object [N], and assigns to it a Theme/Patient role, however, the N is not always

[4] Katamba and Stonham (2006: 321) enumerates the following "characteristics of a syntactic compound:
i. Possessing a complex head adjective or noun that is derived from a verb.
ii. The nonhead constituent is interpreted as a syntactic argument of the deverbal noun or adjective head.
iii. The θ-role of the nonhead is that of agent, patient, etc.
iv. The meaning of the compound is transparent."

the direct object[5] but may also be either an adjunct or complement that expresses various relations (like locative/temporal) with the V (Bauer, 2008: 61). However, the status of V in the NV compounds is not clearly defined since it has alternatively been analyzed as either a verb; thereby characterizing the compound as object-verb with the [NV] nominal structure or as a noun with the [N-N] nominal structure (Yumoto, 2010: 1-2; Rio-Torto & Ribeiro, 2012: 134).

Additionally, the N constituent in NV compounds, in several languages, is basically defined with reference to the syntactic notion of either the agent or the patient in the basic transitive structure and NV compounds have been analyzed as encompassing the denotation of an agent that performs an action or an instrument (Clements, 1992; Tuggy, 2007) which Lardiere and Schwartz (1997: 328) summarized as "somebody/something that performs a transitive action on a (generic) object".

As argued by Lardiere and Schwartz (1997), the syntactic notion of object in the NV compound can be defined with reference to the coding of the patient in the basic transitive construction. However, transitivity is not solely restricted to prototypical transitive verbs in several languages and as such the N constituents are not necessarily typical agents and typical patients.

In Japanese, for example, apart from having NV compounds whose arguments are basically satisfied within the compounds, such as in the compound **hon yomi** 'book reading' where the N constituent **hon** 'book' is the direct argument of V **yomi** 'reading', the argument base of several Japanese compounds, like those involving adverbial elements, has also been shown to be satisfied outside the compound (Sugioka, 2002; Yumoto, 2010). Similarly, in Soninke, one of the arguments in the preverbal or postverbal position may also be encoded like a typical adjunct instead of an object or subject (Creissels, 2019: 11). Correspondingly, one of the arguments of the V in the morphosyntax of Mande, which is typically characterized by either the object or subject, may also be occupied by atypical subjects or objects that do not represent an agent or a patient (Creissels, 2019: 15).

Based on the established status of exocentric synthetic compounds in Bauer (2008) which have also been attested for Akan (Appah, 2017), French (Bauer 2008), Spanish (Contreras, 1985; Yoon, 2009) and Japanese (Sugioka, 2002; Yumoto, 2010) languages, we present data for Berom NV exocentric compounds and discuss their general properties. All data presented and discussed herein are drawn from a data set of 200 Berom exocentric compounds previously drawn for a separate study in Marcus (2021).

### 1.3. Berom exocentric compounds

Several compounding patterns are attested in various languages of the world and not all form classes can combine freely with other words to form compounds. In Punjabi, for example, a lot of compounds are formed through a combination of N-N, A-N, A-A, N-V and V-V structure, but none with V-A structure, and very few with V-N structure (Akhtar, 1992). Similarly, while the V-V and A-A structure with nominal output are well attested in Chinese (Scalise, Fábregas & Forza 2009), there are a few nominal outputs with V-V

[5] The argument of the verb, in some instances, may not really be a noun like in Greek **poligrafos** -much+write 'duplicating machine' and in some cases "the synthetic compound does not create an agentive reading, but a nominalization reading parallel to synthetic compounds like map-reading. In these cases, the modifier may not be a nominal argument, but may be adverbial, like over-eating" (Bauer, 2008: 61).

structure in Akan and none with the A-A structure (Appah, 2016; 2017). In Yoruba, the lexical class of compounds can be verbal or nominal and compounds with Verbal output are derived through incorporation and amalgamation and the V-V structure is well attested (Taiwo, 2008). For some other languages, such as Akan (Appah 2016; 2017), Spanish (Moyna, 2000), compounding is basically a nominal process and compound structure involving any of the attested patterns in such languages will naturally yield nominal compounds.

Compounding in Berom has received little attention, and works on the studies on Berom, particularly those that concern the grammar of the language are not within reach (Marcus, 2021; Blench, 2000[6]). Available works, such as Marcus et al. (2015), presented a preliminary view of the morphology of Berom and recognized compounding as a productive means of word formation in the language. Although the study is not in-depth in its treatment of compounds in the language, it remains one of the few reference materials on Berom compounds that are readily available.

Providing satisfactory criteria to define exocentric compounds in Berom requires both "language specific and cross linguistic investigations" (Goldberg, 1995: 7). In this regard, the current section seeks to provide the features that characterize exocentric compounds in Berom and the extent of their productivity.

### 1.4. Constituents of Berom exocentric compounds

Compounding, which basically has an overall defining property as "consisting of the combination of lexemes into larger words" (Booij, 2007: 750), is the most frequent means of producing new words in most languages and exocentric compounds are the most dominant word forms in several languages including Turkana, Kayardild, Seediq (Bauer, 2008; Dimmendaal, 1983; Evans, 1995; Holmer, 1996; Appah, 2017).

In Berom, the prevalence of exocentric compounds is a well attested means of creating new words and the lexical categories of the constituent parts of Exocentric Compounds in Berom (ECB; henceforth) may comprise of either derived or underived nouns, verbs, adjectives, or prepositions. We consider the examples in (3a-c) as free-standing exocentric compounds and those in (4a-c) as derived exocentric compounds with the obvious presence of affixes (such as the HL tone supra-fix in (a) and the pluralization prefix in (b & c)).

(3) a. **gbong mwat**
big person
'person of influence'

b. **lɔ basa**
house read
'school'

c. **rey nuyel**

[6] Blench (2000, p. 4) lamented on the difficulty of conducting a study on Plateau languages which he attributed to "the failure to publish existing data". He affirmed the existence of "very short orthographic lists from students at the University of Ibadan" (p. 5) but decried their inaccessibility because of their existence as personal papers of the authors. Presently, there are many Plateau languages whose grammatical existence are certainly yet to be recorded and many more with recorded grammar which no published data is available.

eat ahead
'to progress'

(4) a. **wunâ to**
join NMLZ head
'act of uniting'

b. **bere ne-ha**
plenty PL-talk
'information'

c. **ne-pel ne-tat**
PL-month PL-three
'quarterly'

The illustrations in (3 and 4) show that for Berom exocentric compounds, the crucial distinction between compounds (which in most languages are believed to consist of free-standing lexemes) and derived words (which in most cases include affixes) may not be determined.

The constituents that make up compounds in Berom are not solely free-standing words (as illustrated in 4a-c) but also stems and roots that may contain affixes (Lieber & Stekauer, 2009). As expressed in Booij (2007: 85) that "a lexeme may develop into a derivational morpheme", in Berom the distinction between constituents that are free-standing lexemes and derived words in compounds is not easily determined. It is in the light of the absence of a clear-cut dissimilarity between the status of the compound constituents that Lieber and Stekuer (2009: 2) emphasized on the term lexeme for the compound constituents and argued that "[it is] specific enough to exclude affixes but broad enough to encompass the roots, stems and free words that make up compounds in typologically diverse languages".

### 1.3. Morphological Structure of Berom Compounds

In line with the presumption that all syntactic structures are always headed (Di Sciullo, 2005; Harley, 2009; Lieber, 1992; Selkirk, 1982), the morphological structure of compounds, such as the English example in **lipstick** is said to be right headed (Williams 1981)[7]. The morphological structure of the illustrated English compound shows that the category and meaning of the compound is determined by the right-hand constituent which is considered as the head of the compound. Thus, **lipstick** is considered as a noun since the head **stick** is also a noun and the meaning of the compound represents a kind (hyponym) of **stick**.

Contrary to the morphological structure of compounds, such as the English example **lipstick** which are said to be right headed (Williams, 1981) in both the lexical category and semantic of the compound in line with the presumption that all syntactic structures are always headed (Di Sciullo, 2005; Harley, 2009; Lieber, 1992; Selkirk, 1982), the morphological structure of ECB is semantically headless, but the default lexical category

[7] In the view of Williams (1981: 34) based on the word structure, the head is described as "the element that determines a whole expression's category". Similarly, other studies, such as Haspelmath (2002: 15); Aronoff and Fudeman (2005: 89); Booij (2007: 65), also identify the head as the element that determines either the semantic; or the category and semantic of the expression and claimed that "the categorial head coincides with the semantic head".

is left headed. Consider the following illustrations in (5) where the category of the left-hand constituent determines the compound's classification.

(5) a. **te yey**
put heart
'to be determined'

b. **wuna gbɛk**
join body
'to engage in sex'

c. **ra nen**
do sin
'to sin'

d. **mwat sele**
person help
'helper'

e. **nu ha**
mouth talk
'opinion'

f. **hwey swelo**
child small
'unexperienced person'

Suffice it to say however that there are compounds in Berom whose syntactic structure is not determined by either of their constituents. As such, the left-hand constituent may not necessarily project its lexical class to the entire compound as earlier posited and illustrated in (5 a-f) above. It is in the light of this class of compounds that Scalise et al. (2009) argue for Absolute Categorial Exocentricity (ACE; henceforth) to explain the inability of a compound to replicate either of the lexical category of its constituent parts. Marcus (2021) has identified ACE in Berom nominal compounds as revealed in the examples in (6a-c).

(6) a. **jut tale**
take run
'a type a traditional marriage'
b. **bere ne-ha**
plenty $_{NMLZ}$-to talk
'information'

c. **ne-pwolo ne-tat**
$_{PL}$-month $_{PL}$-three
'quarterly'

Given the structure of the constituents of ECB as illustrated in (5 and 6) and their default left-headed category, as illustrated in (5), we propose the lexical classification of the attested ECB in the following section.

## 2. Lexical Classification of Berom exocentric compounds

Berom combines nouns, verbs, adjectives, and prepositions to derive exocentric compounds. Basically, compounding is not only a nominalization process or predominantly nominals in Berom as it is in other languages such as Akan (Appah, 2017), Spanish (Moyna, 2000), Portuguese (Rio-Torto & Ribeiro, 2012). ECB are lexically classified into three: nominal, verbal, and adjectival. While the nominal and verbal output categories have been shown to be predominant, the adjectival class is less frequent and residual. We demonstrate in 4.1, 4.2 and 4.3, respectively, the nominal, verbal and adjectival categories of ECB and the constituents predicting their lexical categories.

### 2.1. Berom Nominal Compounds

Like in most languages of the world, nominal compounds are quite productive in Berom and the constituents that predict the lexical categories of ECB, as revealed in Table 1 below, are: NN, NV, NA, NP, VN, VV, AN, and AV.

Table 1: Berom Nominal Compounds

| Group | Compound | Constituents | Literal meaning | Gloss | Structure |
|---|---|---|---|---|---|
| 1 | **yey pyɛng** | heart + white | white heart | happiness | N+A |
| 2 | **lɔ rwak** | house + rain | house rain | cloud | N+N |
| 3 | **bere ne-ha** | plenty+NML-talk | many talk | information | A+V |
| 4 | **lɔ basa** | house + read | house read | school | N+V |
| 5 | **wunâ to** | join + head | join$^{NMLZ}$ head | unity | V+N |
| 6 | **gbɔngmwat** | big + person | big person | influential person | A+N |
| 7 | **da majey** | father + outside | father outside | ward head | N+PP |
| 8 | **jut tale** | carry + run | carry run | a type of marriage | V+V |

The structure of the Berom nominal compounds displayed in Table 1, reveals that their internal constituents may not necessarily contain a noun, like in the example listed in groups 1, 2, 4, 5, 6, and 7, but may also contain constituents that belong to other lexical classes like the compound illustrated in groups 3 and 8. Similarly, not all the constituents of nominal compounds in Berom are primarily independent words as the V constituents in **wunâ to** 'unity (literally, join $^{NMLZ}$ head)', in Group 5, and **bere ne-ha** 'information (literally, plenty $_{NMLZ}$-talk)' in Group 3, are generally not free-standing forms.

Basically, Berom nominal compounds exhibit a noun modifier relation when the structure is [-V] and the verb and argument relation in [+V] compounds. However, these relations are not sufficient to determine the meaning of the compounds. For example, the N '**yey**' in the compound **yey pyɛng** 'happiness (literally, heart white)' in Group 1, is modified by the A '**pyɛng**' and the meaning of the compound is not derived from the noun modifier relation that the constituents reveal.

### 2.2. Berom Verbal Compounds

Verbal compounds are well attested in Berom and the constituents predicting their structure, as revealed in Table 2, are: VN, VV, VA, and VP.

Table 2: Berom Verbal Compounds

| Group | Compound | Constituents | Literal meaning | Gloss | Structure |
|---|---|---|---|---|---|
| 1 | **sɔ yɔm** | drink + suffer | to drink to suffer | to suffer | V+V |
| 2 | **rey jey** | eat + outside | to eat outside | to flirt | V+P |
| 3 | **sɔ kyɛn** | drink + shy | to drink shy | to be disgraced | V+A |
| 4 | **wuna to** | join + head | to join head | to unite | V+N |

Basically, the V is constantly the left-hand constituent in all Berom verbal compounds and both constituents in the structure of the Berom VCs are attested free forms in the language. From Table 2, the constituents **sɔ** 'drink' and **kyɛn** 'shy' in the compound **sɔ kyɛn** 'to be disgraced' in Group 3, for example, are root words that are not inflected by any form of affixes or prosodic features. Similarly, all the constituents in the compounds illustrated in Table 2 are independent lexical items that possess a structural and semantic autonomy in the syntactic structure of Berom.

### 2.3. Berom Adjectival Compounds

Adjectival compounds are quite rare in Berom and the constituents predicting their structure are only the NN as illustrated in Table 3.

Table 3: Berom Adjectival Compounds

| Group | Compound | Constituents | Literal meaning | Gloss | Structure |
|---|---|---|---|---|---|
| 1 | **nu ba** | mouth + two | two mouth | dishonest | N+N |

From the examples in Table 3, none of the constituents of Adjectival compounds is a true adjective as they are basically either simple nouns or nouns that may be inflected by the bound morpheme **ne**-. For instance, the constituents in the compound **nu ba** 'dishonest (literally, mouth two) in Group 2, are both nouns but the lexical category of the entire compound **nu ba** is an adjective.

As illustrated in Tables 1, Table 2 and Table 3, Berom exocentric nominal compounds are developed from constituents of similar or diverse lexical classes that can give rise to disparate interpretations. In the following section, we will focus our discussion on the structure and semantics of the NV ECB.

## 3. NV Compounds in Berom

Berom N-V exocentric compounds are lexically categorized as nominal compounds consisting of a head noun and a complement verb and the overall meaning of the compound does not come solely from either the noun or the verb. Thus, the entire meaning of compounds like those earlier illustrated in (1 & 2) and these presented in Table 4 are not predictable from their constituent parts.

Table 4: N-V compounds in Berom

| | Compound | Constituents | Literal Meaning | Gloss |
|---|---|---|---|---|
| 1 | **lɔ basa** | house + read | house read | school |
| 2 | **lɔ tɔk** | house + know | house know | institution |
| 3 | **duk basa** | room + read | room read | classroom |
| 4 | **kwɔn ro** | place + sell | place sell | market |
| 5 | **kwɔn wusal** | place + fellowship | place worship | prayer ground |
| 6 | **mwat raa** | person + follow | person follow | believer |
| 7 | **mwat tes to** | person + hit head | person hit head | a Moslem |
| 8 | **mwat tabak** | person + shoot | person shoot | preacher |
| 9 | **mwat fugu** | person + trouble | person trouble | enemy |

This makes them exocentric and as such they do not have a compositional meaning even though they show an argument-predicate semantic relation. In the ensuing, we present the properties of their constituent parts and the semantics of their structure.

### 3.1. Properties of Berom NV Compounds

The constituents of N-V Berom exocentric compounds exhibit an argument-verb relation and the grammatical and/or semantic properties of both constituents are non-compositional. Consequently, the constituents do not contribute to the resolve of the meaning of the compound. We discuss each of the constituents of Berom NV compounds in 6.1.1 and 6.1.2 and conclude the discussion with their semantics in 6.2.

#### *3.1.1. The Noun constituent*

Based on the semantic role, the noun constituents of N-V Berom exocentric compounds can be interpreted as the agent (for example **mwat tabak** 'preacher [literally, person shoot]') or the patient (such as in **lɔ tɔk** 'institution [literally, house know]') of the verb constituents. However, some of the nouns, in the N-V exocentric compounds (for instance, **nu ha** 'opinion [literally, mouth to talk]') cannot be interpreted as arguments because of the intransitivity of the verbs.

Thus, in Berom, the grammatical relation between the constituents of N-V exocentric compounds is nuanced as revealed in our data. For compounds which are presented in Table 4 (such as, **mwat tabak** 'preacher [literally, person]' and **mwat raa** 'believer [literally, person follow])' the noun constituent is the agent of the action designated by the verb. In some of the compounds however, the noun constituents are not agentive. They, however, refer to either the place or location where the activity designated by the verb is performed as presented in Table 4 (for example, **lɔ basa** 'school [literally, house read]' and **kwɔn ro** 'market [literally, place sell]') or as objects/instruments (for example, **bwok jɛk** 'writing paper [literally, cover write]' and **bwok basa** 'textbook [literally, cover read]').

#### *3.1.2. The Verb constituent*

In Berom N-V constructions, both transitive and intransitive verbs occur, and the activity designated by the verb and the noun constituents are interpreted metaphorically. For example, in the N-V compound **mwat raa** 'believer (literally, person follow)', the agentive marker is not indicated in either of the constituents, although the compound refers to the agent of the event designated by the verb. Also, the activity of the V constituent **raa** 'follow' is not explicitly named in the construction **mwat raa** 'believer' but instead it has a metaphorical agentive reading (believer).

### 3.2. Semantics of NV compounds

The N-V compounds shown in Table 4 are said to be exocentric as it is evident that "none of the constituents may apparently function as the head … and the exocentricity is a problem for their analysis" (Kornfeld 2009: 439). It is also evident that the compounds (in Table 4) are instances of idiomatic constructions that are used to refer to the entity, place, object etc. involved in the metaphorical activity designated by the verb. With this insight, the compounds are like the Italian **lavatiati** 'dishwasher' type of compound which is mostly considered as being exocentric (Bauer, 2010).

In the subsequent sections, we present two semantic interpretations for Berom NV exocentric compounds: agentive and locative, based on the compounds presented in Table 4.

*3.2.1. NV location*

The semantic relation that can be visible in the structure of NV compounds in Berom may be that of location or place. With the noun constituent naming the location or place of the verb's action, Berom N-V compounds encode location.

In the N-V compound in Table 4, **lɔ basa** 'school (literally, house read)'; for example, the compound nominal constituent **lɔ** 'house' denotes the place for the activity that is expressed by the verbal constituent **basa** 'read'. Yet, the compound **lɔ basa** 'school' is neither interpreted as **lɔ** 'house' nor **basa** 'read' because none of the constituents is a hyponym of the compound. Thus, neither of the meaning of the left-hand constituent **lɔ** 'house' nor the activity expressed by the right-hand constituent **basa** 'read' is expressively contained in the interpretation of the compound **lɔ basa** 'school'. Instead, the meaning of the compound encodes the location or place for the activity that is expressed by the V.

*3.2.2. NV agentive*

N-V compounds can also denote the agent and activity that is expressed in the compound instead of the location or place that is anticipated from the action of the verbal elements contained in the constructions. For example, in the compound **mwat tabak** 'preacher (literally, person shoot)' the N constituent patterns with the action verb to derive the N-V exocentric compound that is agentive while in **nu ha** 'opinion (literally, mouth talk)', the compound expresses an activity by an unexpressed agent.

## 4. Conclusion

Differing to the claim that compounding is a nominalization process in languages such as Akan (Appah, 2017), Spanish (Moyna, 2000), Portuguese (Rio-Torto & Ribeiro, 2012), we have shown in this study that the classification of Berom exocentric compounds derives three lexical forms: nominal, verbal and adjectival; and N-V are nominal compounds with diverse semantics that cannot be determined from their structure and constituents.

We have shown that there are two basic interpretation of NV compounds in Berom: the agentive meaning where the compound denotes a person that performs the action or implied action expressed by the V constitute and the locative meaning where the compound denotes a place where the action expressed by the V is carried.

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The authors reported no conflicts of interest for this work and declare that there is no potential conflict of interest with respect to the research, authorship, or publication of this article.

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