

LEXICAL NOMINALIZATION IN KAAKYE

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Abstract

This paper provides a descriptive account of the formation, structure and distribution of lexical nominalizations in Kaakye (Kwa, Niger Congo). Based on data drawn from fieldwork, the paper shows that lexical nominalizations may be formed from verbs, adjectives and other nouns as well as verb phrases through affixation (prefixation and suffixation), zero-derivation and compounding. The resulting nominals may be grouped primarily into two: action nominals and participant/personal nominals (agentive, provenance, location, instrument, result, etc.). The action nominalizing suffixes (-*ki/-kì*, & -*kù/-kù*) and the participant/personal nominalizing suffixes (-*pù/-pù*, & -*nyì/-àwíé*) are the most productive nominalizers in Kaakye. The morphology, semantics and distributional properties of the derived forms show that they behave generally like prototypical Kaakye nouns, bearing prefixes that are noun-class markers, and allowing determiners, adjectival and numeral modifiers as well as occurring as, subjects, objects and the possessed elements in possessive constructions.

Keywords: Kaakye, lexical nominalization, action, agentive, provenance, locative, de-adjectival

Kètìn

Ɔwùrì ní è kàápó àrì tó òkpá wó ké àrì bùrá sù bá nyá, yé kèñì wó ké àrì kyikyé, yé kòtò wó wáásé wó ké kinyini wáá sínsá kú fée Káakye tó wó (Kwa, Niger Congo). Sé àrì è yiri kináti wó ké àrì è náti sù, òwùrì ní è sà àrì è nù fée àrì ké diyetaa sínsá kibàbùntó bá nyá kinyini àsin, ké yù è lù tòwáá tó wó, yé kinyini kíkàapó tó yé kinyini kùkwisù kùkwisù tó, yé tòwáá kètìn mée tó (kù kèsi yé kámá), sínsá wó ké àrì nyá bá lù sínsá pùpwé tó wó, kibù wó ké àrì á taa sèyi bá bàatè yù, yé àsin kibàatè. Kinyini àsin wó ké àrì nyá wó, àrì ké diyé kètò yù tó kùkwisù ànyò: kùtò wó ké kinyini àsin wáa wó, yé imò ké i yiri bá sà nyinkpùsá wó (Ɔwáapó, mú kílù kèsi, mfun ké yù è lù, kùtò ké yù è wáa wó, yù kámá, yé imò ké i bàatè wó). Tòwáa wó ké kinyini kibàbùntó wáa kámá wó (-*kì/-kì*, -*kù/-kù*) yé kùtò wó ké i wáa wó/ kinyini kibàbùntó wó ké bá báa nyinkpùsá kámá wó (-*pù/-pù*, yé -*nyì/-àwíé*), i kyé àrì yí àrì nyá kinyini kibàabùntó Káakye tó. Kinyini sínsá kùkyú kùkwisù kùkwisù, àsin-kpèrigyí kinyá (Morphology) yé yù kèsi (semantics) yé yù kùtò ké i wáa wó, è kàapó àrì tó dèminásé fée yù wáa yù inyi fée kibàbùntó kùkyú wó ké i bú Káakye sínsá tó wó. Àrì dé kinyini kibàbùntó kùkèsi, yí áribá kùlèbàkàapó, kinyini kíkàapùtò, yé kònkilè kíkàapùtò bá tí òpù ké i wáa fée, òwáapó, yé kòwáa bèkyé yé tònýá wó ké i bú tònýá sínsá tó wó.

Kisìn-tiur: Káakye àsin sínsá kibàbùntó wó ké àrì biriká yù tó wáa yù kinyini kùkyú tó yù tó wáa, yù àkyètápó, yù kùkèsi, mfun ké yù è lù wó àsin-kpèrigyí wó ké àrì nyá bá lù kinyini kíkàapùtò wó tó wó

1. Introduction

The purpose of this paper is to study the formation, form and distribution of lexical nominalizations in Kaakye, a North Guan, Tano language belonging to the Kwa subgroup of the Niger-Congo family and spoken in Ghana. The term nominalization refers to the process and the product of the process of “turning something into a noun” (Comrie & Thompson 2007: 334), a usually trans-categorical operation which derives nominals from various sources. As shown in the English examples in (1) and the Kaakye examples in (2), nominalization is considered a derivational process because it correlates with a change in part of speech and/or a substantive change in meaning.

(1) Verb base	Derived nominal	Derived nominal (Participant)
a. <i>employ</i>	<i>employ-ment</i> ,	<i>employ-er</i> , <i>employ-yee</i>
b. <i>sing</i>	<i>sing-ing</i>	<i>sing-er</i>
c. <i>occupy</i>	<i>occupy-ing</i>	<i>occup-ant</i>

(2) <i>Verb</i>	<i>Derived nominal (Action)</i>	<i>Derived nominal (Participant)</i>
a. kyà ‘to dance’	kì-kyà ‘dancing’	ǎ-kyà-pú ‘dancer’
b. bù ‘to sing’	ǎ-ìṅ-kì-bù ‘singing’	ǎlìṅ-bù-pú ‘singer’
c. gyí ‘to eat’	àgyíbíki gyí ‘eating’	ò-gyí-kpè ‘eating place’

Payne (1997) formulates the formation of such nominalization simply as (3), which indicates that what was previously a verb has become a noun following the application of the relevant process.

(3) Deverbal lexical nominalization
 $V \rightarrow N$ (Payne 1997: 223)

It is worth noting that nominalizations are not formed from individual lexical items only; whole clauses may also be turned into nominals (Comrie 1976; Comrie & Thompson 2007; Payne 1997). Thus, in the literature, there is a distinction between lexical nominalization, as exemplified in (1) & (2) above, and clausal nominalization as shown in (4) where the clause in (4a) has been turned into a noun phrase in (4b). The action nominal *destruction* inherits the arguments of the verb *destroy* in (4a) so that the subject of *destroy* (the enemy) and the complement (the city) are also in the noun phrase in (4b). However, they are rendered as arguments of the derived nominal with the subject rendered as *the enemy’s* and the object rendered as the object of a prepositional phrase (*of the city*).¹

(4) Clausal nominalization
 a. The enemy destroyed the city.
 b. The enemy’s destruction of the city. (Comrie & Thompson 2007: 343)

Further varied distinctions are made within the rather extensive literature on nominalization, including a distinction between action/event nominals such as *destruction* and participant nominals such as agentive, instrumental, locative, objective, reason etc. nominals (Comrie & Thompson 2007; Koptjevskaja-Tamm 2003, 2005, 2006; Payne 1997). In their discussion of nominalization strategies in Asian languages, for instance, Yap; Grunow-Hårsta and Wrona (2011) distinguish three types of nominalization constructions: participant vs. event nominalization; lexical vs. clausal nominalization; and embedded vs. non-embedded nominalization. Concerning event nominals and participant nominals, they write:

The term ‘participant nominalization’ [...] refers to derived nominal constituents that function as arguments with referential status within a clause. [...], first order ontological entities (eg. Persons, Objects, Locations) and they assume semantic roles such as agents, patients, locations or instruments. An event nominalization, on the other hand, refers to the nominalization of an action (i.e., second order ontological entities): hence often also referred to as action nominalization

(Yap; Grunow-Hårsta & Wrona 2011: 3)

Nominalization is recognised cross-linguistically as a major means of increasing the word-stock of languages (Comrie & Thompson 2007; Koptjevskaja-Tamm 2003, 2005; Payne 1997). It has received appreciable attention across Ghanaian languages, including Akan (Adomako 2012; Appah 2003, 2005, 2013; Kambo; Duah & Appah 2019; Obeng 1981), Buli (Akanlig-Pare 1999), Dagaare (Bodomo 2004), Esahie (Broohm 2019; Broohm & Melloni 2020, 2021; Owusu-Ansah & Appah 2024), Ewe (Ameka 1999; Appah; Agbadah & Abunya 2025; Ofori 1988), Gã (Campbell 2017), Lete (Akrofi Ansah 2009, 2012), Logba (Dorvlo 2008), Nkami (Asante 2018), and Tafi

¹ Treating PPs as objects of nouns is considered doubtful (cf. Broohm & Melloni 2021).

(Bobuafor 2013). Studies in these languages reveal that nominalization may be achieved through zero-derivation, affixation, compounding, reduplication, etc.

In Kaakye, nominalization has attracted some scholarly attention (Abunya 2010, 2018; Dundaa 2005; Korboe 2001, 2002; Snider 1990). For instance, in his reconstruction of the tonal system of Proto-Guang nouns, Snider (1990) hints of how deverbal nouns are formed in non-Mountain² Guang languages, including Kaakye, arguing that “in Nawuri, and other Guang languages, there is a process by which almost any verb root can be prefixed by the *gi-* noun-class prefix (realised as *ki-* in non-Mountain Guang languages), thereby making a verbal noun similar in function to the English action nominal” (Snider 1990: 91). Korboe (2001: 30), in examining plural marking in Kaakye, discusses the pluralization of agentive nouns. Dundaa (2005: 3-5) also describes the formation of agentive, action and locative nouns. Finally, Abunya (2010: 130-146) examines action, agentive and locative nominalizations, considering their formation, as well as their semantic and morpho-syntactic properties which were not discussed in Dundaa (2005).

Building on the foregoing, this paper examines lexical nominalization in Kaakye, describing in detail the strategies used in deriving nouns from verbs, adjectives and other nouns. Specifically, it pulls together the various strands of research reported in extant literature as well as examines other hitherto unreported/under-described types of lexical nominalizations in Kaakye, namely deadjectival nouns, action nominals, result/product nominalization, and others denoting identity, including profession, quality, provenance/nationality, inhabitants, etc. It further probes the form and distribution of the derived nouns, paying attention to the affixes used in deriving the nominals as well as the properties of the input to the nominalization process. Thus, this paper provides a comprehensive description of lexical nominalization in Kaakye with the view to contributing to extant knowledge on word formation in Guan languages in general and on nominalization in Kaakye in particular.³ Again, it contributes to cross-linguistic and typological understanding of nominalization.

Section 2 provides information on the Kaakye language and the data sources. Sections 3 discusses nominalization generally. Section 4 examines the types of nominalizations in Kaakye, while section 5 concludes the paper.

2. The Kaakye Language and data sources

Kaakye⁴ is a North Guan Tano language belonging to the Kwa sub-group of the Niger-Congo family (Simons & Fennig 2018; Williamson & Blench 2000). It is mainly spoken in the Krachi West District and some towns in the Krachi East District of the Oti Region of Ghana. The Kaakye people can be found in twenty-eight communities.⁵

The dialects of Kaakye tend to be put into two broad groups: Le-ka Kaakye and Oti-ka Kaakye. Each of them has sub-dialects. This study is largely based on the Le-Ka dialect since it has more speakers than the Oti-ka dialect and has been the basis of literacy promotion in the language.

The dataset for this paper emanates from both primary and secondary sources. The primary data is made up of spontaneous spoken and elicited texts gathered from native speakers at Kete Krachi, one of the major Kaakye-speaking towns. Seventeen

² Snider (1990a:87) classifies the Oti-North Guang languages into two: the Mountain Guang languages and River/non-Mountain Guang languages which includes Kaakye and Chumurung.

³ There are other works on Kaakye (cf. Abunya & Amfo 2013; Abunya & Osam 2022; Adonae 2005; Adonae & Agbedor 2005; Dundaa 2000, 2012; Dundaa & Nyaaba 2007; Kandybowicz & Torrence 2013, 2016, 2017, 2019; Korboe 2002; Snider 1989, 1990; Torrence & Kandybowicz 2013, 2015).

⁴ This term has many alternatives such as Krachi, Kraachi, Krache, and Krakye which appears to be the anglicised misspelling in official documents. However, in this study, the term Kaakye is used to refer to the language and its native speakers.

⁵ They are Ehiamankyene, Brewaniase, Kwajokrom, Ntewusae, Gyengyen, Kajaji, Old Osramanae, New Osramanae, Adankpa, Ayiremo, Tantu, Chamba Akura, Monkra, Kadenkpen, Choreso, Borae, Okuma Kura, Gyaesayor, Nana Sawe, Domabin, Kantakofori, Kwakwae, Kete, Kpachu, Dadekoro, Yaborae and Abujuræ located in the Krachi West and Kparekpare, Tokoroano, Ayoromo, Kwame Akura, Anyabour 1 and 2 located in Krachi East Districts.

(17) native speakers, comprising eleven (11) males and (6) females (with ages ranging between 26 and 70 years), were engaged in spontaneous conversations on given topics, folk stories and narrations, and the data produced were accordingly recorded and transcribed. The language consultants, who were also staff of the Ghana Institute of Linguistics and Literacy Translation (GILLBT) Kaakye Project, and a few other native speakers⁶ helped with data verification and interpretation. We also relied on data from some of the papers and theses mentioned above.

Kaakye, like many African languages, is a register tone language which distinguishes between two basic level tones: high (H) and low (L) which exhibit both lexical and grammatical functions as shown in (5) and (6), respectively (Adonae 2005; Snider 1990).

- (5) a. **bòḍ** ‘to fold’ LL
 b. **bòḥ** ‘to smoke tobacco’ LH
 c. **bòḥ** ‘to them’ HL (Adonae 2005: 87)

- (6) a. **Kèdzifórí** **wú** **è-súḍ** **ḥsòkùtá**
 boy DET PROG-buy sandals
 ‘The boy is buying sandals.’
 b. **Kèdzifórí** **wú** **é-súḍ** **ḥsòkùtá**
 boy DET PAST-buy sandals
 ‘The boy bought sandals.’ (Adonae 2005: 160)

Vowel harmony is a prominent feature of Kaakye phonology. This feature groups Kaakye vowels into two different sets: Set A [+ATR],⁷ (i, e, o, u), produced with an advanced tongue root, and Set B [-ATR], (ɪ, ɛ, ɔ, ʊ), produced with the tongue root in a neutral position or retracted.

Kaakye has a noun class system with a few cases of concordial agreement (Abunya 2018; Korboe 2001; Snider 1989). The number of classes is, however, not exact. Korboe (2001) proposes eleven noun classes using a single set notion of morphological affixes approach, as shown in (7), while Abunya (2018) proposes six noun classes based on singular-plural pairing set notion approach which revealed some semantic basis of the noun classes as shown in (8). The attested noun class prefixes in these studies are: *ò-/ḥ-*, *kì-/kì-*, *kè-/kè-*, *kù-/kv-*, *kò-/kḥ-*, for singular nouns; and homorganic nasal *N-*, *à-*, *ì-/ì-*, for plural nouns. Nouns that lack these nominal prefixes are glossed as: *Ø*. In this work, we follow Abunya (2018, 2025) in the glossing of these nominal prefixes in our data.

- (7) Kaakye noun class system according to Korboe (2001)

- Class 1: **kì-/kì-**
 Class 2: **kè-/kè-**
 Class 3: **kù-/kù-**
 Class 4: **kò-/kḥ-**
 Class 5: **ò-/ḥ-**
 Class 6: **Ø-**
 Class 7: **-nyì**
 Class 8: **N-**
 Class 9: **à-**
 Class 10: **ì-/ì-**
 Class 11: **-àwìè**

⁶ It consists of three native speakers, three males and one female, aged between 34-60 years.

⁷ Abbreviations in this paper are: 1=first person; 2=second person; 3=third person; ACT=Action; AG=Agent; ATR=Advanced Tongue Root; COMPL=Completive, CL=Class; DET=Determiner; FUT=Future; LOC=Locative; N=Noun; NC=Noun Class; NEG=Negative; NMLZ=Nominalizer; PL=Plural; POSS=Possessive; PREF=Prefixes; PRES=Present; PST=Past; SG=Singular; SUBJ=Subject; STAT=Stative; SVO=Subject Verb Object; V=Verb; VP=Verb Phrase;

Just like other Kwa languages, Kaakye has an SVO word order. In a transitive construction (9b), the subject precedes the verb, and the direct object follows the verb, and in an intransitive construction (9a), the subject precedes the verb.

(8) Kaakye noun class system (Abunya 2018)

Class	Singular	Plural	Semantic features
1	A ò-/ò-	a-	Almost all are animate nouns.
	B Ø-		Majority are humans and animals. A few inanimate nouns mostly loanwords denoting plant products
2	kV- ⁸	a-	Mostly body parts, birds and insects, plants
3	A ò-/ò-	ì-/ì-	All are non-human nouns. Majority are inanimate nouns, and a few (4) are animals.
	B kV-		
	C Ø-		
4	A kV-	N-	Majority are domestic tools, collective nouns and cover terms. A few are human nouns denoting stages of life, small sized animals and insects and body parts.
	B ò-/ò-		
	C a-		
	D Ø-		
5	A a-		Many are mass nouns and liquid/fluid/ semiliquids. Some are abstract nouns and a few are paired body parts and human nouns.
	B ì-		
	C ñ-		
6	Ø-	Ø-	Miscellaneous, abstract nouns, borrowed nouns, etc.

- (9) a. ò-nyìní wó é-gèsúù
 1A-man DET PST-belch
 ‘The man belched.’
 b. Kwame é-fùh ò-kyí wó.
 Kwame PST-marry 1A-woman DET
 ‘Kwame married the woman.’

3. Lexical nominalization

Lexical nominalization has been extensively discussed in the literature with some well-known descriptive studies (Comrie & Thompson 2007; Koptjevskaja-Tamm 1988, 1993, 2003; Payne 1997) focusing on the processes through which mostly verbs and adjectives are turned into various types of nouns across languages. In this section, we discuss lexical nominalization strategies, types and the semantic and morpho-syntactic characteristics of the resultant nominals.

3.1 Lexical Nominalization Strategies

Varied strategies are employed across language to derive nouns. Yap; Grunow-Hårsta and Wrona (2011: 3) observe that nominalization can be encoded using “free-morphemes, affixes, suppletive morphemes and reduplicated morphemes.” The English language, for instance, has a rich collection of nominalizing suffixes illustrated in (1) above and in (10) below. The Akan examples in (11) similarly show nominalization through affixation, both prefixation and suffixation (Appah 2003, 2005).

- (10) treat treat-*ment*
 create creat-*ion*
 arrive arriv-*al*
 depart depart-*ure*

- (11) *Base* *Meaning* *Nominal* *Meaning*
dzidzi ‘eat’ a-dzidzi ‘the act of eating’
kyerew ‘write’ a-kyerew ‘the act of writing’
didi ‘eat’ a-didi-e ‘The act of eating’

⁸ The kV type includes kù-, kù-, kò-, kò-, kè-, kè-, kì-, and kì- prefixes.

Ghana	‘Ghana’	Ghana-ni	‘a Ghanaian’
kuna	‘widowhood’	kuna-ni	‘a widow(er)’

Another strategy which is regarded as non-morphological is nominalization through a zero-operator (Appah 2005; Comrie & Thompson 2007; Payne 1997). For example, English employs a zero operator to derive action nominals from action verbs as shown in (12), where the root verb *jog* in (12a) is turned into a noun *jog* in (12b), without a change in form (Payne 1997).

- (12) a. I jog every morning
b. Let’s go for a jog.

A similar thing occurs in the Fante dialect of Akan and Lete. Appah (2005:133) reports that in the Fante data in (13), the difference between the non-stative verb *nàntsèw* ‘walk’ (L-tones throughout) and the action nominal derived from it *nàntséw* ‘walking’ (H-tones throughout) is signalled by the tonal pattern of the words. The Lete examples in (14) show that low tones of verbs are raised, while high tones are lowered in the derived nominal. Thus, there is a reversal of the tonal melody of the base in the derived nominal.

- (13) *Base* **nàntsèw** ‘walk’ *Derived Nominal* **nàntséw** ‘the act of walking’ (Akan: Appah 2005: 133)

- (14) *Base* **nà** ‘walk’ *Derived nominal* **ná** ‘the act of walking’
màsè ‘laugh’ **másè** ‘the act of laughing’
(Lete: Akrofi Ansah 2012: 3)

In the literature, there is a strategy appropriately described as analytical means of nominalization in languages with isolating morphology like Mandarin Chinese where the particle *de* is used to form several types of nominalizations. In (15), we observe that the action nominal *hézuò de* ‘cooperation’ is formed from the verb *hézuò* ‘cooperate’ by the analytic nominalizer *de*.

- (15) **wǒmen** **hézuò** **de** **wèntí** **hěn** **jiǎndān**
we cooperate NOM problem very simple
‘The problem concerning our cooperation is very simple.’ (Payne 1997: 225)

Finally, lexical nominalizations may be achieved through compounding where two or more potentially independent forms are combined to form a nominal (Appah 2004, 2005, 2019a, 2019b; Appah & Ansah 2020; Appah; Duah & Kamboon 2017; Comrie & Thompson 2007; Koptjevskaja-Tamm 2006; Lawer & Appah 2020; Broohm & Marfo 2023). For example, Comrie and Thompson (2007: 334) point out that in languages such as Gwari (16a), spoken in Nigeria, an “action/state noun can be formed from a verb phrase consisting of a verb and its object by reversing the order of the verb and the object”. This is also attested in Kwa languages such as Akan (16b) and Lete (16c) below. Indeed, it has been observed that in Akan, compounding is essentially a nominalization strategy (cf. Appah 2015; Appah 2017b).

- (16) *Input Constituents* *Output Compound*
a. **sī** **shnamá** **shnamási**
buy yams yam-buying (Comrie & Thompson 2007: 336)
b. **yɛ** **edwuma** **edwumayɛ(N)**
do work ‘the act of working’ (Akan: Appah 2005: 132)
c. **dànké** **tégyí** **tégyídànké**
cook food ‘the act of cooking’ (Lete: Akrofi Ansah 2012: 3)

We will show in section (4.1.2) that in the Kaakye equivalents of these nouns, a singular noun class-prefix intervenes between the object and the verb.

3.2 Types of lexical nominalizations

Lexical nominalizations may be classified by varied formal and semantic criteria. Semantically, one prominent means of classification is what the nominal expresses, sometimes relative to the meaning of the base. Thus, the derived noun may encode some semantic aspects of the verbal or adjectival base, either referring to the action, non-physical properties or situation expressed by the base or referring to a participant in the event designated by the base, where it is a verb. Lexical nominalizations, therefore, may be grouped primarily into action/event or state nominals and participants/personal nominals. In this section, we discuss types of nominalizations with the view to establishing the theoretical foundation for the discussion of the types identified in Kaakye.

3.2.1 Action nominalization

Action nominalization is the process of forming nouns from action/stative verbs or adjectives which, according to Payne (1997: 224), refers to “an action, usually in the abstract, expressed by the verb root”. Whereas action and stative nouns are usually discussed together, and some do not even distinguish between the two, it is important that we note the difference between them, as pointed out by Comrie and Thompson (2007) who observe that action nouns name the activity designated by the verb like *creation* and *arrival* while stative nouns name the state or quality designated by the verb (or adjective) like *stupidity* and *quietness*. These nouns retain certain properties of the verbs or adjectives they are derived from, often reflecting the nature of the activity or state they describe. Their formation may be lexical, morphological, etc. Affixal derivation of action nominals may be formulated as shown in (17) which indicates that the noun that is formed from the verb expresses the same action, but as a noun. In (18) are English action nominals formed from dynamic verbs through suffixation.

- (17) Action Nominalization
 $V \rightarrow N_{\text{ACTION}}$ designated by V (Payne 1997: 224)

- | | | |
|------|-------------|---------------------|
| (18) | Base | Derived noun |
| | treat | treat- <i>ment</i> |
| | create | creat- <i>ion</i> |
| | arrive | arriv- <i>al</i> |
| | depart | depart- <i>ure</i> |

Besides the use of affixes, English employs a ‘zero’ operator to derive action nouns from dynamic verbs as shown in example (12), repeated below as (19) for convenience. The word *jog* is a verb in (19a) but a noun in (19b), where it is the head of the noun phrase (*a jog*) which refers to an activity. This type of derivation is regarded as a lexical process (cf. Payne 1997).

- (19) a. I *jog* every morning
 b. Let’s go for *a jog*.

The data in (13) and (14), above are all examples of action nominals in the respective language – Akan (Appah 2005) and Lete (Akrofi Ansah 2012) respectively. Similarly, the examples in (16) above, from Gwari (Comrie & Thompson 2007), Akan (Appah 2005) and Lete (Akrofi Ansah 2012) are action nominals formed through compounding. We will show in section (4.1.2) below that similar range of action nominals occur in Kaakye.

Comrie and Thompson (2007: 334) observe that “nouns derived from action verbs, stative verbs or the adjectives retain certain properties of the verbs or adjective

they are related to". Indeed, a feature of actional nominals is that they tend to inherit properties of the underlying verbs, including the argument structure (Appah 2009; Booij 1988, 1992, 2000; Grimshaw 1990; McIntyre 2009a). We will not discuss the inheritance and realisation of argument structure in this paper, however.

3.2.2 Participant nominalization

As noted above, derived nominals may refer to a participant in an event/situation designated by the base, including the doer of an action (agentive nominals), sufferer/undergoer of the effect of the action/state (patient nominal), the instrument for performing some action (instrumental nominal), the place where some action takes place (locative nominal), effect or result of the action designated by the base (result nominal), why some action was performed (reason nominal) etc. The range of participants nominals posited by authors may differ, sometimes varying only in the choice of nomenclature.

We will briefly discuss and exemplify these classes. We will show later in section 4 that there is reason to posit a class of identificational nouns as a subtype of personal nouns – the “owner” where the referent of the derived noun is the owner of/possessor of/person associated with, etc the referent of the nominal base. We may exemplify this with Akan $[[sika]_{N-ni}]_{NMLZ}$ ‘rich person’ ($[[money]_{N-person}]_{NMLZ}$). This type is quite common in Kwa languages.

Agentive nominals are those that refer to the doer of the action designated by the underlying verb. That is, nouns meaning one who “verbs” (Comrie & Thompson 2007: 336) or “nominalization that refers the AGENT⁹ of the nominalized verb” (Payne 1997: 226). The process of Agent nominalization can be formulated, as shown in (20).

- (20) Agent Nominalization
 $V \rightarrow N_{AGENT \text{ of } V}$ (Payne 1997: 226)

In (21) are English examples of agentive nominals which “generally refer to things with reference to characteristic activities, rather than specific events” (Payne 1997: 226).

- | | |
|-----------------------|-------------------------|
| (21) <i>Base verb</i> | <i>Agentive nominal</i> |
| a. create | creat- or |
| b. teach | teach- er |
| c. attend | attend- ant |
| d. rape | rap- ist |

The opposite of the agentive nominal is the one that refers to the undergoer of the effect of the action or state designated by the base verb. Such nouns are called patient nominals (Appah 2005; Payne 1997). They include English nouns derived from verbs by means of the suffix *-ee* such as *employee*, *returnee*, *refugee*, *retiree*, *divorcee*, etc., and their formation may be schematised as shown in (22).

- (22) Patient Nominalization
 $V \rightarrow N_{PATIENT \text{ of } V}$

An instrument nominal is formed from a verb with the resulting noun referring to an instrument used to accomplish the action designated by the base (Payne 1997: 228). The derivation is schematised as shown in (23).

- (23) Instrument Nominalization
 $V \rightarrow N_{INSTRUMENT \text{ for } V}$

⁹ Comrie and Thompson (2005:336) point out that nouns derived from this process need not be in an agent relationship with the verb from which it is derived. Thus, in some literature, they are rather referred to as subject nominals because in typical SVO languages the referent of the nominal would be the subject argument of the base verb in a simple declarative construction.

In some languages instrumental nominalizations are formed by nominalizers which are identical to agentive nominalizers. English is a typical example where the nominalizing suffix *-er/-or* forms both agentive and instrument nominals (cf. Payne, 1997; Koptjevskaja-Tamm, 2006). Examples of instrumental nouns are *mower* (instrument for mowing), *cooker* (instrument for cooking), *blender* (instrument for blending), *cutter* (instrument for cutting), etc. Clearly, instrument nominals have a lot in common with agentive nominals in terms of form and semantics. Other languages have completely different form for instrumental nominalization. Akan, for example, uses the multi-functional nominalizing suffix $[-(e)\epsilon]$ to form instrumental nominalizations, as in (24).

- | | | | |
|------|--------------------------|--|--------------------------|
| (24) | <i>Input</i> | <i>Output</i> | |
| a. | sɔne
'to sift' | sɔne-ε
sift-NMLZ _{INST}
'colander' | |
| b. | pra
'to sweep' | pra-ε
sweep-NMLZ _{INST}
'broom' | (Akan: Broohm 2019: 132) |

Instrumental nominalization in Esahie is achieved parasynthetically through the simultaneous prefixation of $[n-]$ and the suffixation of $[-le\epsilon]$, as in (25), or through compounding as in (26) and (27).

- | | | | |
|------|------------------------|--|--|
| (25) | <i>Base</i> | <i>Affixal-derivation</i> | |
| | zà
'to hang' | n-zà-lèε
PL-hang-NMLZ _{INST}
'a stick used to stake yam plant' | |
-
- | | | |
|------|--|--|
| (26) | $[V-N]_N$ compounding | |
| a. | sòngyì tùróó
sieve soup
'colander (an item used to sieve soup)' | |
| b. | sèsà wúra
pick rubbish
'dustpan' | |
-
- | | | |
|------|---|----------------------------|
| (27) | $[N-N]_N$ compounding | |
| | bàngú bàkàá
banku stick
'a stick used for preparing <i>banku</i> (a dough meal)' | (Esahie: Broohm 2019: 133) |

The result of nominalization may refer to the place where the event or state designated by the base occurs, usually a physical location. This derivation is captured in (28).

- (28) Location Nominalization
 $V \rightarrow N_{\text{LOCATION}}$ where V occurs

Examples of location nominals include those in (29) from the Austronesian language Sundanese where the circumfix *paŋ- . . . -an* is used to form a noun that refers to the place where the verb tends to occur (see Comrie & Thompson 2007: 340).

- | | | | | | |
|---------|-------------|---------|---|------------------|----------------------------|
| (29) a. | diuk | 'sit' | > | paŋdiukan | 'place of sitting' (=seat) |
| b. | sare | 'sleep' | > | paŋsarean | 'place of sleeping' (=bed) |

The nominal that is formed may refer to the object that results from the effect of the action designated by the base verb and may be a cognate to the verb. This is called *product nominal* (Payne 1997) or *objective noun* (Comrie & Thompson 2007). The

derivation is schematised as shown in (30)

- (30) Result Nominalization
 $V \rightarrow N_{\text{RESULT of } V}$

Reason nominals name the reason for the action designated by the base verb. In the Sundanese examples listed in (31), the nouns derived by the prefix *paŋ-* refer to the reasons for the meaning of the base verb (Comrie & Thompson 2007). The derivation is schematised as shown in (32)

- | | | | | |
|----------------------|--------------|---|-----------------|----------------------------|
| (31) a. dataŋ | 'arrive' | > | paŋdataŋ | 'reason for arrival' |
| b. daek | 'be willing' | > | paŋdaek | 'reason for being willing' |
| c. indit | 'leave' | > | paŋindit | 'reason for leaving' |

- (32) Reason Nominalization
 $V \rightarrow N_{\text{REASON for } V}$

The next type is the manner nominal which refers to the way in which the action designated by the base happens. Comrie and Thompson (2007: 339) refer to this as “a special derivation pattern for forming nouns that mean ‘way of “verbing”’ from verbs”. The derivation may be schematised as shown in (33).

- (33) Manner Nominalization
 $V \rightarrow N_{\text{MANNER of Verbing}}$

The Turkish language forms manner nominals by means of the suffix *-(y)*, as the examples in (34) show.

- | | | | | |
|---------------------|-------------|---|----------------|---------------------|
| (34) a. yürü | 'to walk' | > | yürüyüş | 'manner of walking' |
| b. ye- | 'eat' | > | yeyiş | 'manner of eating' |
| c. yap-ıl | 'make-PASS' | > | yapılış | 'way of being made' |
- (Comrie & Thompson 2007: 339)

3.3 Morpho-syntactic behaviour of lexical nominalizations

From the Morphosyntactic perspective, the behaviour of deverbal nominals is interesting because their properties seem to straddle the class of verbs from which they are derived, and whose semantics they partly inherit, and the class of nouns into which they fall. As Comrie and Thompson (2007: 334) put it, “nouns derived from action verbs, stative verbs or the adjectives retain certain properties of the verbs or adjective they are related to”. The observed shared semantic and formal properties of verbs or adjectives and the nouns derived from them typically manifest in the syntactic constructions in which the nominals occur. This is captured by Koptjevskaja-Tamm (2006: 656) who argues that “action nominals should at least occur in typical nominal positions and show inflectional properties, such as case inflection, and/or combinability with adpositions, typical of nouns”. Again, it is observed that the argument structure of underlying verbs is usually inherited by action nominals derived from them and that the arguments inherited by derived nominals manifest as arguments of nouns in the action nominal construction which is headed by the action nominal (Koptjevskaja-Tamm 1988, 2003, 2005). Because of these issues, Koptjevskaja-Tamm (2006: 652-653) observes that for an insightful discussion of nominals, attempts should be made to answer certain questions. As she puts it:

A clear definition of nominalizations and any serious attempts to approach them cross-linguistically should take into account at the least the following parameters:

- What expression types are turned into a noun?

- What are the meanings of the resulting expressions?
- What does turning into a noun really mean, i.e., in what sense is the resulting expression a noun?
- How regular is this process, e.g., is it derivational or inflectional?
- Do the resulting expressions show mixed properties (partly nominal, partly stemming from the base expression type)?
- What are the functions of the resulting expressions?

In view of this, it is necessary for any work on nominalization to establish the nouniness of the derived nouns by comparing their distributional properties (where it occurs and what it occurs with within phrases, clauses, and texts) as well as structural properties (the internal structure of the noun itself) with those of a prototypical noun. This is consistent with the view expressed by Payne (1997: 33), that “the grammatical category of a questionable word can usually be determined according to how closely the word follows the morphosyntactic pattern of prototypical nouns” which are words that express high and obvious time-stable concepts (Givón 2001).

Syntactically, prototypical nouns function as subjects and objects in clause structure. They may also function as the possessed element in a possessive construction. Thus, we may test the nouniness of lexical nominalizations by the extent to which they behave like prototypical nouns in their syntactic distribution. We may also measure the nouniness of deverbal nouns by the number of prototypical nominal modifiers the nominal takes, such as case markers, determiners, plural markers, classifiers, and possessive adjectives. In the next section, we discuss how the properties of the classes of lexical nominals discussed in the foregoing manifest in Kaakye.

4. Deriving the Kaakye lexical nominal

As the discussion in the previous section shows, nominalization is usually a deverbal process. Indeed, the largest group of nominals tend to be formed from verbs, making nominalization an essentially de-verbalization process (Alexiadou & Stavrou 1998; Newmeyer 1971; Payne 1997; Rappaport 1983; Rozwadowska 2006). Payne (1997), for example, discusses nominalization under verb and verb-phrase operations. However, it is acknowledged that nominals may be formed from other word classes, especially adjectives as well as other nouns. In section 3, various types of nominalizations were identified and exemplified. In this section, we explore how the various types manifest in Kaakye, where nominalization appears to be the most productive word formation strategy compared to the formation of words of other syntactic categories (cf. Abunya 2010). In what follows, we discuss Kaakye nominals which are derived morphologically through the concatenative processes of compounding and affixation. We also discuss zero-derived nouns and nouns formed from verb phrases. We note that the most productive Kaakye nominalization affixes are *kì-/kì-*, *kù-/kù-*, *-pù/-pù* followed by *-kpè/-kpè*. The form of the vowel in the nominalizers may change according to the regular rules of ATR vowel harmony in Kaakye. Thus, all Kaakye nominalizers have phonologically conditioned allomorphs based on ATR vowel harmony rules. In what follows, we discuss Kaakye lexical nominals formed from verbs (§4.1), other nouns (§4.2) and adjectives (§4.3).

4.1 Deverbal nominalization

In this section, we discuss nominals formed from verbs in Kaakye, dividing them primarily into action/state nominals (§4.1.1) and participant nominals (§4.1.2).

4.1.1 Action nominals

Also called event nominals, action nominals are formed from verbs, and they name the action designated by the verb. We will discuss action nominals according to the processes involved in their formation, highlighting their general properties and showing that action nominalization is an actively productive process in Kaakye.

4.1.1.1 Action nominals derived through affixation

Kaakye action nominalization is achieved by prefixing a low tone action nominalizer *kì-/kì-* to the verb stem. In (35a-b), -ATR nominalizer *kì-* turns the verbs *káàkì* ‘to teach’ and *sìrì* ‘to run’ into nouns that refer to the actions designated by the base verbs – *kì-káàkì* ‘(act of) teaching’ (35a) and *kì-sìrì* ‘(act of) running’ (35b). Again, in (35c) the +ATR version *kì-* turns the verb *kìní* ‘to roam’ into a noun. The nominalizer has the two phonologically conditioned variants due to the vowel harmony rule that requires that the prefixal vowel agrees with the ATR status of the vowels in the base. The tonal melody of the verb stem, however, remains unchanged.

(35) <i>Verb</i>	<i>Derived nominal</i>
a. káàkì ‘to teach’	kì-káàkì NMLZ _{ACTION} -teach ‘the act of teaching’
b. sìrì ‘to run’	kì-sìrì NMLZ _{ACTION} -run ‘the act of running’
c. kìní ‘to roam’	kì-kìní NMLZ _{ACTION} -roam ‘the act of roaming’

In (36) are more examples of action nominalization which, together with the examples in (35), show that the action nominal may be formed from both transitive and intransitive verbs which designate dynamic events.

(36) <i>Verb</i>	<i>Derived Nominal</i>
a. nètí ‘to walk’	kì-nètí NMLZ _{ACTION} -walk ‘the act of walking’
b. wòrí ‘to crawl’	kì-wòrí NMLZ _{ACTION} -crawl ‘the act of crawling’
c. mòsí ‘to laugh/smile’	kì-mòsí NMLZ _{ACTION} -laugh/smile ‘the act of laughing/smiling’
d. dí ‘to sleep’	kì-dí NMLZ _{ACTION} -sleep ‘the act of sleeping’

Aside from the appearance of nominalizers which may show that the derived forms in (35) and (36) are noun, we observe that the relevant action nominals do not take plural markers, numeral modifiers or determiners which are typical of Kaakye nouns. We may put this down to the fact that they are abstract nouns and, therefore, non-count nouns (see Appah 2005). Notwithstanding that, we may show, through their distribution and meaning, that they are nouns, as exemplified in (37) below:

(37) a. kì-mòsí NMLZ _{ACTION} -laugh/smile ‘Laughing/smiling is good’	bùárè good
b. ò-bùtí 3SG.SUBJ-PRES.like ‘S/he likes dancing.’	kì-kyà NMLZ _{ACTION} -dance

Just as distributionally, prototypical nouns may function as subjects and objects in clauses, the distribution of *kìmòsí* ‘laughing/smiling’ and *kìkyà* ‘dancing’ in (37) shows that the forms derived from the verbs *mòsí* ‘laugh/smile’ and *kyà* ‘dance’ are nouns.

Again, action nominals, like underived nouns, can be the possessed element in possessive constructions as seen in (38) where the nominal has a manner reading ('a way of performing an action'). Again, we see that *kikyà* 'dancing' occurs with the possessive pronoun *fù* 'your' and can also be modified by an adjective.

- (38) *fù* *kì-kyà* *búàdèn.*
 2SG.POSS NMLZ_{ACTION}-dance beautiful
 'Your way of dancing is beautiful.'

4.1.1.2 Action nominals derived through compounding

Another means by which Kaakye forms action nominals is through synthetic compounding. This strategy combines a transitive action verb and its internal argument, permuting the constituents so that the verb's internal argument becomes the first part of the compound. This type of action nominal is called the incorporating (INC) type and is described as "valency-lowering" in the sense that their head nominals, [...] have only one argument (of the set (A, P)), as compared with the corresponding verbs with two. The other argument, the P, is compounded with the action nominal" (Koptjevskaja-Tamm 1993: 184-185).

As already noted in section 3.1, this strategy is attested in other Kwa languages like Akan (13), Lete (14), and Nkami (39), where it appears that the noun-verb compounding itself constitutes the nominalization strategy (cf. Appah 2013, 2015, 2017b; Appah; Duah & Kambon 2017).

- | (39) Input VP | Meaning | Output noun | Meaning |
|----------------------|-----------------------|-------------------|------------------------|
| a. <i>yì obu</i> | 'stand house (build)' | <i>obu-yì</i> | 'building' |
| b. <i>tu ɔkpa</i> | 'throw path (travel)' | <i>ɔkpa-tu</i> | 'travelling' |
| c. <i>dʒi adʒuro</i> | 'eat food (eat)' | <i>adʒuro-dʒi</i> | 'eating' (Asante 2018) |

Kaakye is different in the way this strategy is used. In addition to the fronting of the object of the verb, there is what appears to be a nominalizer, a noun-prefix *kì-/kì*, *kù-/kù*- which occurs on the verb, harmonizing with the vowels in the verb stem in terms of ATR harmony, as shown in (40).

- | (40) Input VP | Output Nominal |
|---|---|
| a. <i>nú</i> <i>ń-té</i>
drink 5C-alcohol | <i>ńté-kù-nú</i>
alcohol-drink-NMLZ _{ACTION}
'the act of drinking (of alcohol)/alcoholism' |
| b. <i>gyí</i> <i>à-gyíbí</i>
eat 5A-food | <i>àgyíbí-kì-gyí</i>
food-NMLZ _{ACTION} -eat
'the act eating' |
| c. <i>dìkà</i> <i>à-gyíbí</i>
cook 5A-food | <i>à-gyíbí-kì-dìkà</i>
food-NMLZ _{ACTION} -cook
'the act of cooking' |
| d. <i>sũè</i> <i>à-tó</i>
learn 5A-thing | <i>àtò-kù-sũè</i>
thing-NMLZ _{ACTION} -learn
'the act of learning' |
| e. <i>bù</i> <i>ò-lìṅ</i>
sing 3A-song | <i>òlìṅ-kì-bù</i>
song-NMLZ _{ACTION} -sing
'the act of singing' |
| f. <i>nú</i> <i>ń-kyú</i>
drink 5C-water | <i>ńkyú-kù-nú</i>
water-NMLZ _{ACTION} -drink
'the act of drinking (of water)' |

While we may analyse the intervening elements as action nominalizers, it is worth noting that the prefix together with the verb does not have the expected meaning as derived nominals. For instance, on its own, *kùnú* in *ńtékùnú* (40a) does not mean

‘drinking’ (it means ‘fish’), *kìgyí*¹⁰ in *àgyíbkìgyí* (38b) does not mean ‘eating’ (it means ‘offspring’), and *kibù* in *àlìnkibù* refers to ‘time’ rather than ‘singing’. The prefix-verb combo must go together with the fronted complements to derive the intended meaning in the action nominal. Thus, we may conclude that the prefix attached to the verb creates a bound stem that must be attached to the complement noun to form the desired action nominal. This observation is consistent with what has been observed in other Ghanaian languages like Ewe (Essegbey 1999), Esahie (Broohm & Melloni 2021); Lete (Akrofi Ansah 2012); and Akan (Anderson 2013; Appah 2013; Appah; Duah & Kambon 2017; Korsah 2017).

Semantically, nominals derived through this strategy are very close in meaning to the verbs as they denote the events or states that the verbs express. Syntactically, the nominals, like underived nouns, may occur in subject and object positions as shown in (41a-c). Additionally, example (41d) shows that such derived nouns can be the possessed items in possessive constructions.

- (41) a. **Abena m̀-̀kírí à-tókùsũ̀**
 Abena NEG.PRES-like 5A-act of learning
 ‘Abena does not like learning/studying.’
 b. **Kwame i-̀kírí à-lìnkibù**
 Kwame PRES-like 3A-act of singing
 ‘Kwame likes singing.’
 c. **Nt́ékúnú m̀-buàré f̀ Ø- nyìnkpùsá.**
 Act of drinking NEG.PRES-good for 1B-human body
 ‘Drinking (of alcohol) is not healthy.’
 d. **mú à-gyíbkìdìkà í-buàré**
 3SG.POSS 5A-cooking PRES.be good
 ‘Her cooking is good/She cooks well.’

We noted above that action nominals tend to inherit the argument structure of their underlying verbs, and that the formal realization of the argument may pattern after the realization of nominal arguments (Comrie 1976; Grimshaw 1990; Malouf 2000; McIntyre 2009b). The question of argument inheritance and realization, while very interesting, will not be discussed further in this paper for want of space. It will be the subject of a separate study dedicated solely to the discussion of the properties of action nominals.

4.1.2 Participant/Personal Nominalization

We showed in Section 3.2 that the major group of nominals, aside from action nominals, are participants nominals which refer to varied participants in events designated by the underlying verbs or bear the property expressed by the adjective, where the nominal is formed from an adjective. Because the nominals refer to persons involved in the action, this class of nouns are sometimes called personal nouns, hence personal/participant nominalization. Kaakye participant nominals include agent(ive) nominals, location nominals, instrument nominals, property nominals, etc. We discuss these types in the rest of this section.

4.1.2.1 Agent(ive) Nominalization

In 3.2.2, we observed that agent(ive) nominalization turns action verbs into nouns that refer to the entity that performs the action of the verb. While Payne (1997: 226) characterises it as “nominalization that refers the AGENT of the nominalized verb”, Comrie and Thompson (2007: 336) note that nouns derived through this process need not share an agent relationship with the verb from which it is derived. Agent nominalization in Kaakye is highly productive. It is formed through the prefixation of low tone *à-/ò-* (singular) or *à-* (plural) and the suffixation of the morphological agent

¹⁰ *Kìgyí* also refers to a kind of traditional sacrifice occasionally made to strengthen amulets or talismans.

nominalizers *-pú/-pú* to verb, harmonizing with the vowel of the base in terms of ATR harmony, as exemplified in (42a-e) below:

(42) <i>Base</i>		<i>Derived noun_(SG)</i>	<i>Derived Noun_(PL)</i>
a. kísí	‘to hate’	ò-kísí-pú 1A-hate-NMLZ _{AGENT} ‘a hater/enemy’	à-kísí-pú 1A-hate-NMLZ _{AGENT} ‘haters/enemies’
b. gyìyé	‘to baptize’	ò-gyìyé-pú 1A-baptize-NMLZ _{AGENT} ‘a baptizer/baptist’	à-gyìyé-pú 1A-baptize-NMLZ _{AGENT} ‘baptizers/baptists’
c. wàḁsú	‘to follow’	ḁ-wàḁsú-pú 1A-follow-NMLZ _{AGENT} ‘a follower’	à-wàḁsú-pú 1A-follow-NMLZ _{AGENT} ‘followers’
d. kpèrí	‘to prophesy’	ḁ-kpèrí-pú 1A-prophesy-NMLZ _{AGENT} ‘a prophet’	à-kpèrí-pú 1A-prophesy-NMLZ _{AGENT} ‘prophets’
e. dùì	‘to destroy’	ḁ-dùì-pú 1A-destroy-NMLZ _{AGENT} ‘a destroyer’	à-dùì-pú 1A-destroy-NMLZ _{AGENT} ‘destroyers’

In (42a-b) the agentive nominalizer *-pú* turns the verbs *kísí* ‘to hate’ and *gyìyé* ‘to baptize’ to a person that does the action designated by the verb, and the nominalizer *-pú* turns the verbs *kpèrí* ‘to prophesy’, *dùì* ‘destroy’ in (42c-d) also to a person that does the action of the verb. Again, in (42a-b), we notice that due to vowel harmony, the singular noun class prefix is realized as +ATR *ò-* and the agent nominalizer as +ATR *-pú*. In (42c-e) the singular noun class prefix is realised as -ATR *ḁ-* and the agent nominalizer as *-pú*.

The derived nouns can be pluralised, providing the first morphological evidence that the derived words are nouns. There is also syntactic evidence for the nouniness of the derived words as the derived agentive nouns *ḁ-fùní-pú* ‘hunter’ and *à-kpè-pú* ‘sweepers’ occur as subjects of the verb *néti* ‘walk’ and object of the verb *nyí* ‘see’ in sentences (43a) and (43b) respectively. Again, like underived nouns, the derived nouns can be modified by adjectives as in (43a) and can admit numeral classifiers as in (43b), and both can take determiners like *wú*. Furthermore, agentive nouns can be the possessed element in possessive construction as exemplified in (44).

(43) a. ḁ-fùní-pù	ḁ-tìntìn	wú	é-néti
1A-hunter	1A-short	DET	PST-walk
‘The short hunter walked.’			
b. nyí-ká-nyí	à-kpè-pù	ànyó	wú
1SG.SUBJ-see	1A-sweepers	two	DET
‘I have seen the two sweepers.’			

(44)	mù	ḁ-kààkí-pù	ké-bé	nyí
	1SG.POSS	1A-teach-NMLZ _{AGENT}	FUT-come	here.
‘My teacher will come here.’				

4.1.2.2 Instrument nominalization

As noted above, instrument nominalization forms nouns from dynamic verbs where the derived noun refers to an instrument for accomplishing the action designated by the verb. In some languages are achieved through affixation, with nominalizers that are identical to agentive nominalizers (e.g., English *-er/or*), or completely different nominalizer (e.g., Akan agentive *-nyi/-foɔ* as against instrumental *-e(ɛ)*). Instrumental nominalization may also be formed parasyntactically through simultaneous prefixation and suffixation (e.g., Esahie *n-BASE-lee*) or through compounding (Broohm 2019).

Kaakye forms instrument nominals through Verb+Noun or Noun+Verb

compounding¹¹ as in (45), where the nouns are the direct complements of the verbs, or Noun+Noun compounding as in (47). In (45), the complements directly follow the verb while in (46), it precedes the verb. In both cases, the compounding yields nouns that name the instruments for performing the action described by the verb(+complement).

(45) <i>Input</i>	<i>Compound</i>	<i>Meaning</i>
a. kyikyé ò-yú write 3A-stick	kyikyéòyú write stick	‘pen’
b. kò à-tò fight 2-thing	à-kòtò 5A-fightthing	‘weapons’
c. swàté à-nyéǵú catch 2-breasts	kù-swàtéànyéǵú 2-catchbreasts	‘brassiere’
(46) ò-firé kwèsé 3A-machine grind	òfiré kwèsé machine grind	‘cornmill machine’
(47) <i>Constituents</i>	<i>Compound</i>	<i>Meaning</i>
a. kì-léǵ kù-mú 2-tank 2-head	kì-léǵ kù mú	‘dustpan’
b. à-nyisì ì-pùtú 2-eyes 3A-ladle	à-nyisì ì-pùtú ¹² eyes ladles	‘spectacles’
c. Ø-kyémá kù-bú 6-pepper stone	kyémákùbú peppercrusher	‘grinding stone’
d. ò-yú ñkù má 3A-stick small	ò-yú ñkù má sticksmall	‘walking stick’
e. lòwú à-dú death 4A-drug	lòwú à-dú deathdrug	‘poison’

The resulting compounds may be semantically endocentric (45a-b) where the instrumental meaning is formally represented in their internal structure (*à-kòtò* ‘weapon’ is a thing for fighting and *kyikyé-òyú* ‘pen’ is an instrument for writing). In the same way, the verb-noun compound in (46) is endocentric because the whole is a subtype type of the referent of the lefthand constituent (Appah 2016a, 2019a; Appah & Ansa 2020). However, (45c) is exocentric (i.e., without a head) because the compound *kù-swàtéànyéǵú* ‘brassiere’ is neither a type of *swàté* ‘catch’ nor a type of any *anyéǵú* ‘breast’. Rather, it is a tool for supporting/catching breasts. Also, the Noun-Noun compounds in (47), excluding (47c), are all semantically exocentric since the instrumental meaning is not represented in the internal structure (Appah 2016b, 2017a, 2019b; Appah; Duah & Kambon 2017). The instrumental meaning of *kì-léǵ kù mú* ‘dustpan’ (a thing for collecting waste) is neither derived from *kìléǵ* ‘tank’ or *kù mú* ‘head’, hence it is exocentric. Similarly, in (47b) *ànyisì ì-pùtú* ‘spectacle’ is neither a type of ladle nor a type of eyes. However, *kyémákùbú* [pepper-stone] ‘a stone used for grinding’ is semantically endocentric with *kùbú* ‘stone’ as the head of the compound because the compound is a type of stone.

The compounds can be shown to be nominals because they bear prefixes which indicate the noun class they belong to as in (48). They can also occupy subject and object positions in a sentence. In (49a) *kyémákùbú* ‘grinding stone’ occurs with a possessive pronoun and occupies the object position of the sentence, while in (49b) *ìyúwìsè* ‘chewing sticks’ occupies the subject position in the sentence.

(48) <i>singular</i>	<i>plural</i>
a. kyikyé write	ì-kyikyéòyú PL-writestick
ò-yú SG-stick	

¹¹ Note that the vowel harmony rule is not always applicable in the formation of compounds.

¹² This is a plural noun.

- | | | | | |
|----|-----------------------------|-------------------------|---|---------------------|
| b. | ò-firé
3A-machine | kwèsé
grind | ì-firé'kwèsé
3A-machine grind | 'cornmill machines' |
| c. | ò-yú
3A-stick | ̀̀kù má
small | ì-yú̀̀kù má
3A-sticks small | 'walking sticks' |
| d. | ò-yú
3A-stick | wisé
chew | ì-yú wisé
3A-stick chew | 'chewing sticks' |
- (49) a. **Ama é-tà m̀́ kyè má kù bú wú**
Ama PST-take POSS grinding stone DET
'Ama took her grinding stone.'
- b. **ì-yú wiséi wú bú ò-lò ńtá**
3A-chewing sticks DET be.LOC 3A-home
'The chewing sticks are at home.'

4.1.2.4 Location Nominalization

Kaakye locative nouns are formed by prefixing the singular noun class prefixes ò-/ò- to verb stems and suffixing a low tone locative suffixal nominalizer *-kpè/-kpè*, as shown in (50a) and (50b). The suffixation of the locative nominalizer *-kpè* and *-kpè* to the verbs *yìrì* 'to stand' and *gyì* 'to eat' forms nominals that refer to the location where "standing" and "eating" respectively take place. Further examples of locative nominalization are in (51a-e).

- | | | | |
|------|-------------|----------------|---|
| (50) | <i>Base</i> | <i>Meaning</i> | <i>Derived noun</i> |
| a. | yìrì | 'to stand' | ò-yìrì-kpè
3A-stand-NMLZ _{LOC}
'a standing place' |
| b. | gyì | 'to eat' | ò-gyì-kpè
3A-eat-NMLZ _{LOC}
'an eating place' |
-
- | | | | |
|------|--------------|----------------|--|
| (51) | <i>Base</i> | <i>Meaning</i> | <i>Derived noun</i> |
| a. | kyà | 'to dance' | ò-kyà-kpè
3A-dance-NMLZ _{LOC}
'a dancing place.' |
| b. | sèrí | 'to play' | ò-sèrí-kpè
3A-play-NMLZ _{LOC}
'a playing place/playground' |
| c. | kyìré | 'to sit' | ò-kyìré-kpè
3A-sit-NMLZ _{LOC}
'a sitting place.' |
| d. | kpè | 'to sweep' | ò-kpè-kpè
3A-sweep-NMLZ _{LOC}
'a sweeping place.' |
| e. | dù | 'to plant' | ò-dù-kpè
3A-plant-NMLZ _{LOC}
'a planting place.' |

The nouniness of location nominals can be shown in their morphology by the presence of singular/plural prefixes and their syntactic distribution which cannot be differentiated from those of underived nouns in that they take determiners and occupy both subject and object positions of the sentence. For instance, in (52a-b) *ò-kyà-kpè* 'dancing place' and *ò-sèrí-kpè* 'playing place' are the objects of the verbs *yó* 'go' and *kpè* 'sweep' respectively, while in (52c) the locative noun *ò-gyì-kpè* 'eating place' is the subject. Finally, we see in (52a&c) that *ò-kyà-kpè* and *ò-gyì-kpè* occur with the definite determiner just like underived nouns.

- (52) a. **Kofi ké-yó ò-kyà-kpè wú òké**
 Kofi FUT-go 3A-dance-NMLZ_{LOC} DET tomorrow
 ‘Kofi will go to the dancing place tomorrow.’
- b. **Sèà-kpè ò-sèrí-kpè**
 allow-2PL.SUBJ.OPT-sweep 3A-play-NMLZ_{LOC}
 ‘Let us sweep the playing place.’
- c. **ò-gyi-kpè wú ɪ-wa nààsí**
 3A-eat-NMLZ_{LOC} DET STAT-do dirty
 ‘The eating place is dirty.’

4.1.2.5 Result Nominalization

A result or product nominalization refers to something that comes into existence because of the action/event described by a verb. Kaakye primarily employs a compounding strategy to form result nominalization, as shown in (53). The compound can be Noun+Noun, as in (53a) or Noun+Verb, as in (53b). For example, in (53b), we get *ìgyó-kùrí* ‘mashed yam’ only after the yam has been *mashed*.

(53) Base ₁	meaning	Base ₂	Meaning	Compound	Meaning
a. kɔ-nɔ	4A-mouth	àsìŋ	message	kɔnɔ-àsìŋ	‘speech’
b. ì-gyó	3B-yams	kùrí	mash	ìgyó-kùrí	‘mashed yam’

Finally, we find that the prefix *lo-* may be used as a result nominalizer, although it is unproductive because the example in (54) is the only one found in our dataset. We call *lo-* a result nominalizer because the referent of *lò-wú* ‘death’ is the result of what is expressed by the verb *wú* ‘to die’.¹³

- (54) **wú** ‘to die’ → **lò-wú** ‘death’

Like typical nouns, result nominals can occupy object position in clause structure as illustrated in (55a), be the possessed element (55b) or occur as the definite subject of a predicate (55c).

- (55) a. **ŋ-gyifòrí wú é-gyí ìgyó kùrí wú**
 4A-children DET PST-eat mashed yam DET
 ‘The children ate the mashed yam.’
- b. **Káàkyè-wùrá kɔnɔ-àsìŋ é-bù dé**
 kaaakye-owner mouth-message PST-COP.be sweet
 ‘The Kaakye chief’s speech was interesting.’
- c. **Tìrèpù lò-wú nyítá kèbùrègyí**
 mother death destroy.PRES family
 ‘The death of a mother destroys a family.’

In this section we have discussed verb-based nominalizations, showing that various aspects of what is designated by the verb may be turned into nouns by means of varied strategies and the resultant nouns will have both morphological and distributional properties that show that they are nouns.

4.2 Nouns derived from other nouns

Nouns may be formed from other nouns, usually moving the resultant nouns from one semantic class to another. For example, whereas English *neighbour* is a noun, suffixing

¹³ We find the prefix *lò-* quite unusual because it is not a known Kaakye nominal affix. The opacity and unproductiveness of the prefix could be attributed to lexicalization. Like the *-th* suffix in English nouns *warmth* and *length*, the lexicalization of *lò-wú* ‘death’ may be argued to have arisen because the *lò-* prefix is unavailable in synchronic Kaakye, but also because the root *wú* ‘to die’ in the form is unproductive (see Bauer (1983) and Fernández-Domínguez (2010) for more on the relation between lexicalization and productivity).

-hood to it yields another noun *neighbourhood* which refers to a location, unlike the base which refers to a person. In this section, we discuss nouns derived from other nouns, identifying types like personal nouns (4.2.1) provenance nouns (4.2.2), identificational nouns (4.2.3) and location nouns (4.2.4).

4.2.1 Personal nouns

Denominal personal nouns may be formed through the suffixation of *-nyi* and its plural counterpart *-àwié*. Phonologically, *-nyi/-àwié* do not harmonise with the vowels of the base in terms of their ATR specification. The derived nouns may refer to people who are associated with or identified by the feature/property named by the base noun. When *-nyi* occurs, the derived noun usually carries the meaning ‘one who is associated with the property/feature designated by the base noun’, where association with the property is construed broadly to include an “agentive” reading where the referent of the derived noun is associated with some activity as the entity that regularly performs the activity, probably as a profession. Thus, in addition to the personal semantics, there is what may be called secondary agentive reading, as shown in (56) where the suffixes are attached to professions to form nouns that refer to professionals in the relevant field.

(56) Noun		Singular/plural	
a. pòlisi	‘police’	pòlisi-nyi/-àwié	‘police man/police men’
b. ɔ̌-fisí	‘office’	ɔ̌-fisí-nyi/-àwié	‘office worker/office workers’
c. dɔ̌kítá	‘doctor’	dɔ̌kítá-nyi/-àwié	‘doctor/doctors’

What is worth noting about this class of personal nouns, however, is that all the bases are not native nouns. Thus, the occurrence of the native suffixes may be construed as signalling the nativization of the bases which are all borrowed from English.

4.2.2 Provenance/nationality nouns

The nouns in (57) and (58) show how *-nyi* and *-àwié* are attached to place names to form provenance or nationality nouns, those nouns that refer to the origins of the referents or inhabitants of some geographical area named by the base. For example, *Togo* names a location. Thus, to form a noun that refers a person who comes from Togo, Kaakye speakers attach the relevant suffix to *Togo* (57a).

(57) Noun	Singular/plural	
a. Togo	Togo-nyi/-àwié	‘a person from Togo/people from Togo’
b. Nkwanta	Nkwanta-nyi/-àwié	‘a person from Nkwanta/the Nkwantas’
c. Kaakye	Kaakye-nyi/-àwié	‘a person from Kaakye/the Kaakyés’

(58) Noun	Singular/plural	
a. kó-kùrató	kó-kùrató-nyi/-àwié	‘a villager/villagers’
b. ì-fèsé	ì-fèsé-nyi/-àwié	‘a bushman/bushmen’

It appears that the referent of the noun that serves as base for the provenance noun does not have to be a specific location like what we in example (58b) where one can argue that, unless a specific bush is in reference, the referent of the base, *ì-fèsé* ‘bush’ can be any bush at all and the word will be well-formed and meaningful.

4.2.3 Identificational nouns

Like the ones discussed in the preceding section, the couple of personal nouns in (59) is formed from other nouns through the suffixation of *-àwié*. The nouns which we call identificational nouns, refer to the person who is identified with that which is named by the base, abstract or concrete. Here, there is no possible agentive reading, unlike the occupational nouns discussed in sections 4.2.1. For example, in example (59a) the derived noun refers to a person associated with *àtìrènyí* ‘money’ as one who has a lot

of is. The referent of the noun in (59b) is associated with the referent of the base *nkpèrè* 'poverty'.

(59) <i>Noun</i>		<i>Singular</i>
a. àtìrènyí	'money'	àtìrènyí-àwíé 'a rich person'
b. ̀̀kpèrè	'poverty'	̀̀kpèrè-àwíé 'a poor person'

This type of personal nouns does not seem to have been discussed very much in extant literature. Thus, we have not found an established term for the class of nouns in major descriptive studies on nominalization (cf. Comrie & Thompson 2007; Koptjevskaja-Tamm 1993, 2006; Malchukov et al. 2008; Payne 1997). Hence, our choice of identificational noun because the referent of the nominal is simply identified with the referent of the base. However, all the personal nouns discussed in 4.2.1 and 4.2.2 as well may be called identificational nouns, specifying different aspects of the identity of the referents.

It is worth pointing out that all the nominals derived by the nominalizers *nyí/-àwíé* have human referents with *-nyí* forming singular nouns which are pluralised by *-àwíé*. However, we observed from (59) that *-àwíé* does not only pluralize *-nyí* nominals but can also derive singular nouns. Thus, we must say that *-àwíé* may be underspecified for number in some nouns.¹⁴

4.2.4 Location nouns

The last class of nouns formed from other nouns in Kaakye refer to location and are formed by the suffixation of *-sú* which is not subject to the ATR harmony rule in the language, therefore, has an invariant form, notwithstanding the quality of the vowels in the base. The suffix is also not very productive. It is usually attached to nouns to denote the place where the referents of the nouns are found. Finally, location nominalization can be achieved through N-N compounding as in (61).

(60) <i>Base noun</i>	<i>Derived noun</i>
a. ̀̀kyèŋ ¹⁵	̀̀kyèŋ-sú
'the demarcation of a grave site'	the demarcation-NMLZ _{LOC}
b. kùmuná	kùmuná-sú
'garbage'	garbage-NMLZ _{LOC}
c. òyú	òyú-sú ¹⁶
'tree'	tree-NMLZ _{LOC}
	'latrine'

(61)	<i>Base₁ meaning</i>	<i>Base₂ Meaning</i>	<i>Compound</i>	<i>Meaning</i>
	lòwú death	àyíé home	lòwúàyíé	'hades'

We have shown in this section the various nouns that are formed from other nouns. Some of these nominals may belong to the same semantic class as those derived from verbs which refer to various participants in the events designated by the base verbs. Besides, their form and syntactic distribution confirm their nouniness. We illustrate this with a couple of sentences where the derived nouns occupy the subject and object

¹⁴ A similar feature is found in Esahie (Broohm 2019) and Akan. A future study may explore the features of the bases that allow the referent of *-àwíé*-derived nouns to be singular or plural.

¹⁵ This refers to the demarcation of a portion of land prior to the digging of a grave. Our language consultant explained that in the Kaakye tradition, before a bereaved family is allowed to dig a grave, the *Asafoakye* (the chief's appointees) have to demarcate a piece of land for the grave. The whole process is described as *kyèŋ*. After this, the bereaved family constructs the grave. *Nkyèŋ-sú*, therefore, literally means 'the place where the demarcation of the grave takes place' and that place is where one is buried.

¹⁶ This is euphemism for the latrine. The direct way of expressing this is *̀̀k̀̀ẁ̀kpè* 'toilet place'

positions of the sentence respectively.

- (62) a. **kó-kùrátó-nyì/-àwíé** **wú** **é-néti**
 village-NMLZ_{PROV.SG/PL} DET PST-walk
 ‘The villager/villagers walked.’
 b. **ṅ-ká-ṅú** **àtìrènyí-àwíé** **wú**
 1SG.SUBJ.PERF-see money-NMLZ_{IDEN.SG/PL} DET
 ‘I have seen the rich person.’

4.3 Nouns derived from Adjectives

De-adjectival nominalization is well documented (cf. inter alia, Koptjevskaja-Tamm 2006; Spencer 2005). In Kaakye, adjectives modifying nouns typically, bear the same class prefixes as the nouns to signal number agreement with the nouns they modify, as illustrated in (63), where the adjective *ḍ-lélé* agrees with the noun it modifies *òbú* (66a), in terms of singularity whereas in (63b) it agrees with its modifier in terms of plurality.

- (63) a. **mì-dé** **ò-bú** **ḍ-lélé** **ḍkúnkú.**
 1SG.SUBJ-have 3A-house 1A-big one
 ‘I have one big house’.
 b. **mì-dé** **ì-bú** **à-lélé** **ànyó.**
 1SG.SUBJ-have 3A-houses 1A-big two
 ‘I have two big houses.’

To nominalize the adjectives, the noun which the adjective modifies is dropped and the adjective takes its place, standing alone as the head of the noun phrase without a change in its structure, as examples (64) – (67) show. Thus, we must say that the adjectives are nominalised through a zero-operator.

- (64) a. **ḍ-nyini** **ḍ-lélé** **ké-bé** **mfi** **wú**
 1A- man 1A-big FUT-come here DET
 ‘The big man will come here’
 b. **ḍ-lélé** **wú** **ké-bé** **mfi** **wú**
 1A-big DET FUT-come here DET
 ‘The big one will come here.’
- (65) a. **mì** **ḍ-wurí** **ḍbibi** **é-títi**
 1SG.POSS 3A-book 1A-black PST-tear
 ‘My black book is torn.’
 b. **ḍbibi** **wú** **é-títi**
 black DET PST-tear
 ‘The black one is torn.’
- (66) a. **Ama** **é-gyíé** **mú** **kù-kwé** **ké-gyíngyí**
 Ama PST-break 3SG.POSS 2-drum 4A-small
 ‘Ama broke my small drum.’
 b. **Ama** **é-gyíé** **mú** **ké-gyíngyí** **wú**
 Ama PST-break 3SG.POSS 4A-small DET
 ‘Ama broke the small one.’
- (67) **alé-tí** **ḍ-buríé** **wú** **bú** **Monkra**
 3PL.SUBJ.PST-call 1A-fat DET at Monkra
 ‘We called the fat one at Monkra.’

Regarding the question of the nouniness of de-adjectival nominals, it can be shown that syntactically, deadjectival nouns can occupy both subject and object positions in clause structure, as shown in (65b) & (66b) above, and may admit determiners (e.g., *wú*) and

numeral modifiers. However, they cannot function as the possessed element in possessive constructions, as the unacceptable example in (68) shows.

- (68) *mú ɔ̀bìbí wú é-tìtì
 3SG.POSS black DET PST-tear
 ‘Her black one has torn.’

Section 4 of this paper has dealt with the formation, morphology and syntactic distribution of derived nominals in Kaakye. We divided it into three main sub-sections for deverbal nouns, denominal nouns and de-adjectival nominals. It has become clear that each derived nominal behaves somewhat like proto-typical nouns in Kaakye. They all occupy subject and object positions, whereas most take determiners, plural markers, and appear in possessive constructions. Others also take numeral modifiers while some are modified by adjectives. Kaakye nominalizers have allomorphic variants which are phonologically conditioned, based on ATR vowel harmony rules.

5. Conclusion

This paper has discussed lexical nominalizations in Kaakye. We presented the literature on nominalization and the types identified which primarily divide into action/state nominals and participant nominals. We observed that the relevant nominals tended to be deverbal. We then went on to discuss the types of nominalizations that occur in Kaakye, including action nominals and participant nominals – agentive, locative, instrument and result nominalizations. As expected, these types are mostly deverbal, but there are other nominals formed from nouns which share properties with those derived from verbs. We also identified some nominals that are formed from adjectives.

The pattern that emerged was that lexical nominalizations in Kaakye are primarily formed through affixation, compounding and by a zero-operator in a few cases. We also made specific observations about the various types of lexical nominalizations. Firstly, Kaakye employs two strategies in action nominalization: prefixation of *kì/-kì-* to both transitive and intransitive verbs and the permutation of the constituents of verb phrases, followed by compounding of the transitive action verbs and their complements. Secondly, Kaakye agentive nouns are formed by the suffixation of the nominalizers *-pú/-pú*, and *nyí/àwíé*. Thirdly, locative nouns, like agentive nouns, are mostly derived through suffixation of the locative nominalizer *-kpé/-kpé* and in a few cases by *-sú*. Fourthly, nouns derived from adjectives are formed by a zero-operator. Fifthly, instrument and result nominalization are achieved by compounding. Finally, we observed semantically endocentric as well as exocentric types of compounds.

We tested and established the nouniness of the derived nominals by comparing their structural and distributional properties to those of underived nouns. In terms of their form, we showed that, aside from the nominalizing affixes, the nominals may carry class markers which additionally show that they belong to specific noun classes. Also, the nominals may occur in subject and object positions of simple sentences and appear as the possessed element in possessive constructions. They may also take numeral modifiers, determiners, and be modified by adjectives. The only class that cannot be modified by adjectives, probably because of their derivational provenance, are deadjectival nominals.

In conclusion, this paper has identified nominalization in Kaakye as an established derivational process. It has also proven that, although the nouns derived from nominalization process may be encoded by various strategies, they all have the tendency of functioning as prototypical Kaakye nouns.

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