Obed Nii Broohm* and Chiara Melloni

# Action nominalization: a view from Esahie (Kwa)

**Abstract:** The paper provides a comprehensive account of the derivation of action nominals in Esahie, a Ghanaian language of the Tano subgroup (Kwa, Niger-Congo) which has been undocumented thus far, especially as far as morphosyntactic phenomena are concerned. The aim of the research is threefold: to contribute to language documentation, to provide a systematic description and analysis of the morphosyntactic properties of Esahie action nominals, and to offer a typological assessment of these constructions. We argue that action nominalization in Esahie primarily involves a composite strategy: a morpho-syntactic operation, invariably involving affixation, and a concomitant prosodic operation in the form of a change in tonal melody. As far as the derivation of action nominals is concerned, it appears that in Esahie, tone raising is not simply a phonologically-conditioned prosodic effect, but plays a morphemic role. Further, depending on the arity of the base verb, nominalization may or may not be coupled with incorporation of the internal argument, which derives a form of synthetic compounding, as in the English *truck-driving* type. Based on the seminal works by Koptjevskaja-Tamm, Maria. 1993. *Nominalizations*. London: Routledge; Koptjevskaja-Tamm, Maria. 2006. Nominalizations. In *Encyclopedia of language and linguistics*, vol. 8, 652–659. Boston: Elsevier, the current work argues that Esahie belongs to the POSSESSIVE-INCORPORATING subtype of the INCORPORATING languages.

**Keywords:** action nominalization; Esahie; incorporation; Kwa; synthetic compounding

**Muabɔlɛdwirɛ:** *Akhyen nɔmenas* lè kyɛ ɛɛkakyi nikyeyɔlɔ asɛmvua te kyɛ '*nàtè*' maa ɔyɛ dumaa asɛmvua te kyɛ '*nàtélɛ̀*'. Sɔ krataa hé tè krataa bɔ ɔkyirekyire sɛ bɔ *akhyen nɔmenas* yɛ adwuma wɔ Esahie (Tano-Aĩã, Kwa, Niger-Kongo) dwudwolɛ n'anu. Krataa hé botae tè nzã: (1) bɔ olimua ne kyɛ yɛkɔ hwirɛ Esahie dwudwoɔlɛ ne kogua krataa soɔ, (2) bɔ ɔtɔ so nyɔ ne kyɛ yɛkɔ kyirekyire Esahie *akhyen nɔmenas* nwõ mɔɔfosintas suban nu, (3) nza yeɛ ole kyɛ yɛkɔfa Esahie *akhyen nɔmenas* nemɔ

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suban ne kototo edwudwolɛ pĩĩ bɔ ɔwɔ ewiase n'anwõ. Yɛ nwu kyɛ *akhyen nɔmenas* wɔ Esahie dwudwolɛ n'anu nate atẽẽn nyɔ so yeɛ obaɔ: (1) bɔ olimua ne kyɛ ɛkɔfa *sɔfis /-lɛ/* kɔboka nikyeyɔlɔ asemvua te kyɛ '*nàtè* aso, (2) bɔ ɔtɔ so nyɔ ne kyɛ ɛkɔfa *tone* so kɔkakyi asemvua ne.

**Nzemfua titiri:** *akhyen nɔmenas*; Esahie; Kwa; nkɔɔpirahyin

# 1 Introduction

Action Nominals (henceforth ANs) have traditionally been defined as "nouns derived from verbs with the general meaning of an action or process" (Comrie 1976: 198). Morphologically, the derivation can be overtly signalled by the concatenation of an affix, by conversion/zero derivation or prosodic alteration (a stress pattern change is reported in (1c)):

(1)  a. **examine (V)**  →  **examination (N)**
     b. **break (V)**  →  **break (N)**
     c. **in'crease (V)**  →  **'increase (N)**

While nouns prototypically refer to persons, places, things, and more or less concrete entities, and usually introduce participants and "props" and deploy them (Hopper and Thompson 2004: 708), ANs typically make reference to events, either directly or as part of a larger proposition/fact. Hence, nominalization transposes the verb into a noun while leaving its semantics unaltered (see, among others, Beard 1995; Payne 1997); but whereas verbs "assert the occurrence of an event of the discourse" (Hopper and Thompson 2004: 708), ANs name them.

The proximity of ANs to verbs is not exhausted in common semantic properties, but concerns syntactic behaviour, too: it has long been acknowledged that ANs retain the argument structure of the verb from which they are derived, as shown in (2). In spite of their verbal properties, ANs are nouns morpho-syntactically speaking: they show the distribution of nouns and, notwithstanding their argument-taking properties, are unable to assign case to their arguments (Grimshaw 1990). Therefore, their arguments are typically introduced by means of (light) prepositions in English, as in the following example.[1]

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1 An anonymous reviewer pointed out the dubious status of the *by*-phrase as a true argument of the deverbal noun. We refer the interested reader to Grimshaw's (1990) seminal investigation for insightful remarks on *by*-phrases as AN satellites whose status is in-between arguments and adjuncts (i.e., they are A-adjuncts, in Grimshaw's definition, because they are licensed by argument structure but behave like adjuncts in many respects, like their being optional rather than obligatory).

(2)     **The examination *of* the patient *by* the doctor took longer than expected**.

ANs can express events (dynamic processes) or states, depending on the *Aktionsart* of the base verb. As noted in the literature, it is possible to extend the core eventive meaning of ANs to additionally connote the end-product or the results of the event designated by the base verb, such that, while ANs such as **deception** or **misappropriation** and **hatred** or **belief** designate events and states, respectively (i.e. the 'eventive' reading), others like **construction**, **translation** and **destruction** do not only designate events, but could also refer to the products or the resultative state of the events themselves (i.e. result object and result state readings, respectively; see Melloni 2007, 2011, 2015 on 'result' interpretations).

Languages make use of one or more devices in creating event and state nouns from dynamic and stative verbs (or adjectives), respectively. English, for instance, has a rich array of suffixes for this purpose, a few of which are illustrated below (others are -**age**, -**y**, -**ment**, -**ure**, -**ance**, -**t/th**, and -**Ø**):

(3)          <u>**Input**</u>    <u>**Output**</u>
    a.    **react**      **react-ion**
    b.    **dismiss**    **dismiss-al**

Another notable and productive strategy for forming ANs in English is synthetic compounding (see Comrie and Thompson 2007; Grimshaw 1990; Melloni 2020(Comrie and Thompson 2007; Grimshaw 1990; Melloni 2020) for an overview). Synthetic compounding is a mechanism involving both compounding and derivation simultaneously (we give a closer look at this in Section 3.2). As shown in (4), such compounds are formally headed by verbs, though resulting in non-existing NV compounds.

(4)     **write a letter**    →    **letter-writing (\*to letter-write)**
        **find a fault**      →    **fault-finding (\*to fault-find)**
        **plan a city**       →    **city-planning (\*to city-plan)**

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

(5)     Thai    a.    **chyâ**          'to believe'
                b.    **kaan chyâ**     'the process/art of believing'
                c.    **khwam chyâ**    'belief (non-process)'

                                      (Comrie and Thompson 2007: 336)

This is also attested in Dutch, where the deverbalizing suffix [-**ing**] strictly derives eventive nominals while the suffix [-**sel**] derives only referential nouns (cf. Ackema and Neeleman 2004: 2).

(6)  Dutch  a.  **kaap-ing**      b.  **bouw-sel**
            hijack-NMLZ<sub>E</sub>        build-NMLZ<sub>R</sub>
            'hijack (ing)'        'building (something built)'

Action nominalization in European languages has been studied from an areal or genetic perspective by Koptjevskaja-Tamm (1993, 2005). Within West African languages too, the subject has received some attention in recent years, including Gã: Adams (2001), Ewe: Ofori 2002, Akan: Appah (2005), Wan: Nikitina (2009), Edo: Adéníyì (2010), Igbo: Maduagwu (2010), Lɛtɛ: Akrofi Ansah (2012a), Tee: Anyanwu and Omego (2015), and Nkami: Asante (2018). While the works on Akan (Kwa, Central-Tano), Lɛtɛ (Kwa, Guang), Gã (Kwa, Ga-Dangme) and Nkami (Kwa, Guan) are crucial to the present analysis on typological grounds, because of their genetic affiliation with Esahie, the strength and relevance of the works on Edo and Tee lie in the argument they make for the role of tone in action nominalization.

The subsequent sections explore the derivation of ANs and their morpho-syntactic properties in Esahie. The rest of the paper is organized as follows: Section 2 presents the problem statement that motivates this work and provides a general overview of the grammar of Esahie. Section 3 discusses various aspects of the form and function of ANs in Esahie. Section 4 offers concluding remarks.

# 2 Some background/typological features of Esahie

Esahie (ISO 639-3: sfw)[2] is a Central-Tano (Kwa, Niger-Congo) language spoken mainly in the Western-North region of Ghana and parts of the Ivory Coast. The language is generally under-described in that, so far, only few aspects of the grammar including the morphology, phonology, and syntax/pragmatics have been described.[3] The nominal morphology of Esahie remains largely unexplored. The works of Broohm (2017) and Broohm and Rabanus (2018), for instance, focus on some aspects of inflectional morphology. With the exception of Broohm (2019a)

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[2] The language is alternatively referred to as Asahyue, Sanvi or Sehwi.
[3] Frimpong (2009), for instance, discusses some phonological processes and features of Esahie including assimilation, vowel harmony, and tonology *inter alia*. Information structure (i.e. focalization and topicalization) in Esahie is investigated in Broohm (2014).

and Broohm and Melloni (2020), word formation in Esahie has yet to receive scholarly attention, hence, the need for the present work.

Like Akan, and indeed other Kwa languages (cf. Aboh and Essegbey 2010), Esahie is a strictly SVO language. This implies that, in an unmarked transitive clause, the agent precedes the verb and the patient follows the verb. The subject of an intransitive clause also precedes the verb, as exemplified in (7).

(7)　a.　**Soah　po-le　　ataadeɛ　ne**
　　　　Soah　wash-PAST　dress　　DEF
　　　　'Soah washed the dress.'
　　b.　**Soah　la-le**
　　　　Soah　sleep-PAST
　　　　'Soah slept.'

Esahie is a tonal language. Tone plays both grammatical and lexical roles in Esahie. This means that tone is used phonemically to bring about differences in meaning between two or more otherwise identical words. This explains why the form **s**ɔ has two meanings, depending on the tone it bears. It can either be produced with a high pitch, as in (8a), or low pitch, as in (8b), to convey different meanings. Similarly, depending on its tonal melody, the form **gya** has different meanings in (8c) and (8d). Thus, the meaning of a phonological word in Esahie does not only depend on the sound segments and their sequencing, but also on the pitch patterns associated with them.

(8)　a.　**sɔ́**　'to turn light/fire on'
　　b.　**sɔ̀**　'thigh'
　　c.　**gyá**　'to marry'
　　d.　**gyà**　'leg'

In terms of morphological typology, Esahie is an isolating language (cf. Broohm 2017). Therefore, Esahie has a fairly limited inflectional morphology (cf. Broohm and Rabanus 2018). As a result, nouns and DPs in general are not inflected for gender or case, but only for number (see Aboh 2010 on other Kwa languages). Thus, grammatical relations are determined structurally via constituent order as shown in example (9).

(9)　a.　**kyía　a-hye　　　e-bote**
　　　　dog　PERF-catch　SG-rabbit
　　　　'A dog has caught a rabbit'
　　b.　**e-bote　　a-hye　　　kyía**
　　　　SG-rabbit　PERF-catch　dog
　　　　'A rabbit has caught a dog'
　　　　Broohm and Rabanus (2018: 102)

Although inflection is poorly marked in Esahie, the language displays several types of word formation phenomena, ranging from compounding, to reduplication and derivation, hence featuring a substantial number of derivational affixes (cf. Broohm 2019a, 2019b; Broohm and Melloni 2020).

# 3 Action nominalization in Esahie

In this section, we focus on the prosodic and morphosyntactic features of ANs in Esahie. We argue that action nominalization in Esahie primarily involves a composite strategy: a morpho-phonological operation, invariably involving affixation, and a resultant change in tonal melody. Concerning the realization of argument structure, nominalization may or may not be coupled with incorporation of the internal argument, resulting in what is commonly acknowledged as synthetic compounding.

We first discuss the condition that triggers the change in tonal melody in the derivation of ANs in Section 3.1, and then proceed to discuss cases of action/event nominalization involving synthetic compounding in Section 3.2. Inflectional features of Esahie ANs are discussed in Section 3.3, while Section 3.4 considers the distributional properties of ANs in an attempt to situate Esahie in its proper typology of nominalization.[4]

## 3.1 Morpho-prosodic features: AN-derivation via affixation and tonal modification

ANs in Esahie are typically derived from verbs (mainly monosyllabic CV roots) through affixation concomitant with a conditioned change in the underlying tonal melody of the base verb. With the affixation strategy, a nominalizing suffix is attached to the verbal base. A prefix, if present, is typically a vowel signalling the declension class of the noun, while the suffix /**-lɛ**/, which appears to be the most regular and productive nominalizing affix in Esahie, has three allomorphs [**-lɛ**], [**-rɛ**] and [**-nɛ**].[5] Like the English **-ing** and *ATK*-derivatives,[6] the Esahie nominalizing affix **-lɛ**, as we shall see later, is semantically multifunctional since it derives

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**4** Esahie is not only understudied but also critically undocumented: data used in this work is based on a series of fieldworks conducted in the Western Region of Ghana.

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

**6** An acronym coined by Borer (2013) in collective reference to "-*ation* and kin" nominalizing affixes of English, which have the capacity to derive both eventive and resultative nominals.

both eventive and resultative nominals, *E/R* nominalizations henceforth. For the general derivation of deverbal nominalizations, however, other suffixes such as **-niɛ** and **-fʊɛ**, which roughly correspond to the English **-er, -ee, -ist, -ant** nominalizers, are also productive in Esahie. The difference between these nominalizers and **-lɛ** is that the latter derives *E/R* nominalizations while the former derive personal/participant nominalizations. In (10) are base verbs from which ANs are derived via suffixation.[7]

(10)    **CV structure**
    **Input**        **Output**
    a.  **tìè**      **e-tìé-lɛ̀**
        '(to) listen'  SG-listen-NMLZ$_{E/R}$
                '(act of) listening'
    **CVC (C)V structure**
    **Input**        **Output**
    b.  **nàtè**     **nàté-lɛ̀**
        '(to) walk'   walk-NMLZ$_{E/R}$
                '(act of) walking'
    c.  **nwɛ̀tĩ̀**    **nwɛ̀tĩ́-nɛ̀**
        '(to) run'    run-NMLZ$_{E/R}$
                '(act of) running'

In examples (10a–c), different sets of verb structures with their underlying tonal patterns are presented together with their correspondent ANs in order to show the structural and formal changes involved in the derivation of ANs. We observe from the examples that affixation is accompanied by a change in tonal melody. In (10a), for instance, the base verb **tìè** 'listen' bears a sequence of low-low tones, while the ouput AN **etìélɛ̀** '(act of) listening' bears a sequence of low-high tones. The prosodic change in the tonal melody of the base verb from a low-low to a low-high sequence affects, at least, the ultimate syllable of the base. The prosodic change in AN-derivation, therefore, manifests itself in the form of tone raising, where the tone of the ultimate syllable of the base is raised from a low to a high tone, if it is not underlyingly high.

    As we shall see from other Kwa languages including Akan (Appah 2005), Gã (Korsah 2011), Lɛtɛ (Akrofi Ansah 2012a), and Ewe (Akorli 2017; Ameka 1996, 1999), it appears that in Kwa, *tone raising* is not a phonologically conditioned prosodic effect, but plays a morphemic role in the derivation of ANs (see Broohm and Melloni 2020 for more on this). Consider the examples in Table 1.

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**7** The prefix in (10a), which functions as a declension marker, appears to have a lexically-determined distribution.

**Table 1:** Nominalizing role of tone in Kwa languages.

| Language | Verbal base | Resultant AN |
|---|---|---|
| Akan | kàsà 'speak' | kásá 'language/speeach' |
| | nàǹtsèẁ 'walk' | náńtséẃ 'walking' |
| | dwònsɔ̀ 'urinate' | dwónsɔ́ 'urination/urine' |
| | dùà 'cultivate' | dùá 'tree/cultivation' |
| Lɛtɛ | gyì 'eat' | gyí 'eating' |
| | wùò 'descend' | wúó 'descending' |
| | nà 'walk' | ná 'walking' |
| Gã | **wìé(-mɔ̀)**[a] | **wìé-mɔ́** |
| | 'say/talk' | talk-NMLZ_{E/R} |
| | | 'language/speech' |
| Esahie | sɔ̀̃ 'serve' | ɛsɔ̃́nɛ̀ 'service' |
| | **Underlying VP** | **Resultant AN** |
| Akan | **bàà~bàè** ànó | **ànò-bààbá⌐é** |
| | RED-open mouth | mouth-RED-open |
| | 'engage in verbal exchanges' | '(act of) verbal exchanges' |
| Gã | **yè òmɔ́** | **òmɔ́-yé-li** |
| | eat rice | rice-eat-NMLZ_{E} |
| | 'eat rice' | 'rice-eating'[b] |
| Lɛtɛ | **bùè èsúmì** | **èèsúmí-búé** |
| | do work | work-do |
| | 'work' | 'act of working' |
| Esahie | **bɔ̀ ndírè** | **ndírè-bɔ́-lɛ̀** |
| | ICV weeds | weed-ICV-NMLZ_{E/R} |
| | 'weed' | '(act of) weeding' |
| | **bɔ̀ mbáé** | **mbáé-bɔ́-lɛ̀** |
| | ICV prayer | prayer-ICV-NMLZ |
| | 'pray' | '(act of) praying/prayer' |
| | **dì awùé** | **awùé-lí-lɛ̀** |
| | ICV death | death-ICV-NMLZ |
| | 'murder' | '(act of) murder(-ing)' |
| | **hyè ɛhɔ́ɛ̀n** | **ɛhɔ́ɛ̀n-hyé-lɛ̀** |
| | ICV hunger | hunger-ICV-NMLZ |
| | 'fast' | '(act of) fasting' |
| | **sɛ̀kyè dùmàà** | **dùmàà-sɛ̀kyé-lɛ̀** |
| | destroy name | name-destroy-NMLZ |
| | 'defame' | 'defamation' |
| | **sɛ̀kyè agyaa** | **agyaa-sɛ̀kyé-lɛ̀** |
| | destroy marriage | marriage-destroy-NMLZ |
| | 'commit adultery' | '(act of) adultery' |

[a]**-mɔ̀** appears to be an imperative marker and is tonally distinct from the nominalizing affix. [b]Examples taken from Korsah (2011: 41).

The Akan and Lɛtɛ examples in Table 1, respectively, involve what has been described as 'conversion', where the categorial status of the relevant verbal bases are transposed without the use or introduction of any segmental element (Beard 1995). Rather, the transposition is signalled prosodically via tone raising in the relevant tone bearing units, i.e. the syllables. In some cases, as in the Akan and Lɛtɛ examples, the prosodic change (tone raising) spreads even onto the penultimate syllable or the entire word. In the Gã example, on the other hand, the transposition is signalled both prosodically and segmentally, through suffixation. In the Akan, Gã and Lɛtɛ examples in Table 1, nominalization involves a kind of synthetic compounding with the verb object realized within the nominalization. Again, the Akan and Lɛtɛ examples do not involve any kind of overt affixation; instead, the synthetic compound appears to derive from a re-ordering of elements within a VP in addition to the usual prosodic signalling, through tone raising. In the Gã and Esahie examples, respectively, nominalization involves overt suffixation, coupled with tone raising, with the ante-position of the noun stem playing the role of the verb internal argument, as in standard synthetic compounding. The crucial difference between Esahie and Gã as against the other Kwa languages is that, in Esahie, deverbal nominalization obligatorily requires both overt affixation and tone raising.[8]

In keeping with what has been observed for other African languages such as Edo (Adéníyì 2010) and Tee (Anyanwu and Omego 2015), the Esahie data, as discussed above, presents yet another piece of evidence in support of the view that tone plays a crucial role in the derivation of (deverbal) nominals. Interestingly, however, unlike some Kwa languages such as Akan and Lɛtɛ, where ANs have been argued to be (typically) derived via a zero operator, in Esahie this is not possible. Attempting to derive ANs in Esahie solely through change in tonal pattern leads to unacceptable structures, as shown in (11).

(11)    **Input**                          **Nonce**
   a.   **wònzɛ̀**    'to impregnate'    *****wònzɛ́**
   b.   **kùrò**      'to love'          *****kùró**

The unacceptability of both examples in (11) as possible nominals points to the fact that AN-derivation in Esahie obligatorily requires the use of the nominalizing suffix, together with tone raising. It is instructive to clarify that "zero operator" *à la* Appah (2005) and Akrofi Ansah (2012a) means category-changing derivation without (overt) affixation.

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**8** This implies that in Esahie, every nominalized element is distinguished by its nominalizing affix and an ultimate syllable with high tone.

Given the ubiquity of this phenomenon, it would not be out of place to argue that, as far as AN-derivation is concerned, the nominalizing toneme (i.e. the floating high tone) plays a morphemic role. Given the morphemic role of the toneme in AN-derivation in Kwa, we reckon that it is inaccurate to describe AN-derivation in Akan and Lɛtɛ as involving a "zero operator". In particular, we can talk of a zero operator only as far as segmental morphology is concerned, since nominalization is signaled by prosodic marking in these languages. It is, therefore, justifiable to take to task earlier accounts such as Appah (2005) and Akrofi Ansah (2012a), as far as zero-derivation is concerned.

## 3.2 Morphosyntactic features: AN-derivation via synthetic compounding

As mentioned earlier, synthetic compounding is a cross-linguistically notable strategy for deriving ANs. Synthetic compounds (also called *verbal/verbal-nexus* compounds) are the products of the simultaneous application of both derivation and compounding, and they are headed by nominalizing affixes (cf. Iordăchioaia et al. 2017; Melloni 2020; Olsen 2015). As remarked in Melloni (2020), "the hallmark of a synthetic compound is the presence of a derivational affix having scope over a compound/complex form, though being linearly attached and forming an established (or possible) word with one constituent only" (see also Bisetto and Melloni 2008; Melloni and Bisetto 2010). Under a binary branching analysis of these constructs, two possilities arise: either affixation or compounding comes first, as schematically represented in (12).

(12)    a.    [[**truck**] [**driv-ing**]]
        b.    [[[**truck**] [**drive**]] -**ing**]

The analysis in (12b) is the one that preserves the structure-semantic mapping more directly, since the affix scopes over the complex base. In effect, English synthetic compounds derived using -**ing** or -**er** are like reversed active verb phrases with equivalent components. Consider the examples below.

(13)    **brand a product**    →    **product-branding**
        **read the Bible**    →    **Bible-reading**
        **drive a bus**    →    **bus-driving**

The examples in (13) point out another crucial feature of these structures, i.e. the thematic relation between the verbal and nominal constituents, which parallels the relation established at the VP level between the verb and its object. As Grimshaw (1990: 70) points out, "[t]he essential difference between the root and

synthetic compounds, then, is the argument-taking properties of their heads. The characteristic differences between the two kinds of compounds follow from this difference". Generally speaking, however, synthetic compounds have been argued to *inherit* argument structure from the base verb, and realize only the verb's lowest (i.e., internal) argument (cf. Ackema and Neelman 2004; Grimshaw 1990; Harley 2009; McIntyre 2015; Roeper and Siegel 1978). We shall now take a look at synthetic compounding in Esahie in the light of AN-derivation.

Analogous to what was shown for English earlier, synthetic compounding in Esahie involves a re-ordering of the constituents of an underlying verb phrase through a compounding mechanism which resembles noun incorporation; further, compounding (or noun incorporation) is coupled with affixation, namely, suffixation of the verbal constituent. VPs that undergo the process are typically made up of a transitive action verb and its internal argument.

It is worth remarking that the class of transitive verbs in Esahie is a heterogeneous one: consider the following examples of transitive verbal constructions in Esahie.

(14)     **Transtive Verb Construction**
   a.  **Atta        tae         kenga       nwumaa**
       Atta        often       read        book
       Atta often reads (lit. Atta often reads books).
       **ICV Construction**
   b.  **Abena       tu-le       Adjoa       foɛ**
       Abena       ICV-PAST    Adjoa       advice.IC
       'Abena advised Adjoa.'

The examples reported in (14) show that there are at least two types of transitive verbs in Esahie: besides lexical verbs, contributing their own semantic content, the language also displays numerous cases of Inherent Complement Verbs,[9] ICVs henceforth (cf. Avolonto 1995; Essegbey 1999, 2010). The latter resemble light verb constructions (cf. Butt 2010), since without the inherent complement (IC), the verb root is somewhat semantically vacuous. Hence, the verb together with the IC contribute the main semantic content of the construct. The relation between verb and IC in these constructions is fixed and, on account of this and other peculiar properties, current research on other Kwa languages has debated whether ICVs and their ICs are lexical units, where the noun is part of the verb entry, or instead are

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**9** "… verbs the citation form of which includes a nominal element which may or may not be cognate with the verb" (Nwachukwu 1984: 109). As far as the verbal system of Kwa languages is concerned, ICVs constitute a pan-Kwa syntactic feature.

cases of mono- or di-transitive constructions (see Essegbey 2010 for the latter stance concerning Gbe languages).

Independently of the correct analysis of ICVs in Esahie (clearly beyond the scope of this article), it is a fact that the nominalization of monotransitive verbs, be they lexical transitives or ICVs, invariably gives rise to a form of synthetic compounding, since the verb internal argument gets realized as the first element of an N–V complex. The N–V complex is nominalized by means of a suffix and concomitant tonal change, as can be seen in the examples in (15).

(15)     **Input (VP)**     **Output (AN)**
   a.  **kṹ    sona**     **sòná-hṹ-nɛ̀**
       kill   person      man-kill-NMLZ$_{E/R}$
       '(to) murder'      '(act of) murdering'
   b.  **pɛ̀    yaen**     **yaen-pɛ́-lɛ̀**
       ICV    sneeze      sneeze-ICV-NMLZ$_{E/R}$
       '(to) sneeze'      'act of sneezing'
   c.  **bɔ̀    tàǹgɔ́**    **tàǹgɔ́ -bɔ́-lɛ̀**
       ICV    cough       cough-ICV-NMLZ$_{E/R}$
       '(to) cough'       'act of coughing'

Not only direct objects but also verb complements indicating location can occur within these synthetic compounds. This can be seen in example (16):

(16)  **tù    atẽ̃ẽ    atẽ̃ẽ-tú-nɛ**
      fly    road    road-fly-NMLZ$_{E/R}$
                     'journey'

In (16), **atẽ̃ẽ** 'road'[10] is a locative complement of the verb **tu** 'fly', which is an unergative predicate, as can be seen in the following sentence.

(17)  **Abuburo    bie      tu-le      fa-le      abronsan**
      dove       INDEF    fly-PAST   pass-PAST   mansion
      **n'         aso**
      DEF        over
      'A dove flew over the mansion.'

We will analyze these and other challenging cases more in detail in Section 3.2.1.

A crucial observation is that Esahie typically appears to disallow the nominalization of lexical transitive verbs and ICVs without their internal arguments. In consonance with what has been observed for other Kwa languages, Esahie

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**10** Lieber (1980) calls them *semantic arguments* and specifies the conditions under which they become part of the compound.

(strictly) requires transitive verbs to obligatorily incorporate their objects when they undergo nominalization, especially if the verbs are ICVS[11] (cf. Lɛtɛ: Akrofi Ansah 2012b; Anderson 2013; Appah 2013; Appah et al. 2017; Ewe: Essegbey 1999; Akan: Korsah 2016). Below, we show that the nominalization of lexical transitives (18a–b) and ICVS (18c–d) without their internal arguments is forbidden.

(18)  a.  **kṹ**             →    **\*kṹnɛ̀**
        'kill'

      b.  **kṹ**     **sònà**    →    **sòná-hṹ-nɛ̀**
        kill       person       person-kill-$\text{NMLZ}_{E/R}$
        'murder'                'act of murdering'

      c.  **bɔ̀**             →    **\*bɔ́lɛ̀**
        'hit'

      d.  **bɔ̀**    **ndírè**    →    **ndírè-bɔ́-lɛ̀**
        hit       weeds       weeds-ICV-$\text{NMLZ}_{E/R}$
        'weed'                'style/act of weeding'

The compulsory nature of representing the internal argument finds its utmost expression in the case of optionally transitive verbs that may allow for argument drop under specific pragmatic/discourse conditions (cf. 19a), but obligatory take an argument under nominalization (cf. 19b–c).

(19)  a.  **Ntaa**    **wura-le**     **nyemene-nyemene**
        NAME      score-PAST   beautiful-RED
        'Ntaa scored beautifully.'
        <u>**VP**</u>               <u>**Nominalization**</u>

      b.  **wura**    **goo**       **goo-wura-lɛ̀**
        score      goal       goal-score-$\text{NMLZ}_{E/R}$
        'score a goal'       '(act of) scoring'

      c.  **wura**            **\*wura-lɛ̀**
        score            score-$\text{NMLZ}_{E/R}$

As shown in (19c), nominalization of the sole verb, at the exclusion of its object, is ungrammatical in Esahie. On the basis of the expression of the internal arguments which apparently get incorporated into the verb, we can conclude that the synthetic compounding strategy in Esahie typically derives argument-supporting nominals.

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**11** As argued above, these verbs may be considered semantically minimal so that they require to collocate with their internal arguments in order to make full meaning.

### 3.2.1 In defence of the embedded VP and noun incorporation analysis

The argument taking properties of Esahie nominalizations do not *per se* clarify the question of whether affixation applies 'after' or 'before' compounding/noun incorporation, as represented in the schemas in (12). In fact, as discussed in the literature about other instances of synthetic compounding across languages, the argument taking feature of the [V + suffix] constituent could be explained under a thematic inheritance analysis according to which the deverbal nominal preserves the argument taking properties of the verb (see Di Sciullo and Williams 1987; Selkirk 1982). In this analysis, synthetic compounds would be another case of (root) N-N compounding, whereby the right-hand head would take an argument optionally realized as the non-head / modifier constituent, as in **[truck]-[driving]**. However, this analysis is problematic in Esahie, since – different from English where the deverbal noun is an existing word – in Esahie, the deverbal noun does not represent an existing constituent:

(20)        **N + V + suff.**            **\*V + suff.**
   a.  **foɛ-tú-lɛ̀**              **\*tu-lɛ**
       advice-ICV-NMLZ$_{E/R}$
       'advice/act of advising'
   b.  **agyaa-sɛ̀kyé-lɛ̀**        **\*sɛkye-lɛ**
       marriage-destroy-NMLZ$_{E/R}$
       'act of divorce'
   c.  **sua-sí-lɛ̀**             **\*si-lɛ**
       house-build-nmlz$_{e/r}$
       'act of constructing houses'

If the nominalizing suffix cannot combine with the transitive verbal head, it can (or must) select for a NV complex combining a verb and its object. Likewise English, where **(to) truck-drive** is not a word, the NV compound does not correspond to a freestanding, autonomous word in Esahie. However, different from English where NV compounds are at least possibile formations (e.g., **to colour-code**, **to bar-tend**, and the like), [N + V]$_V$ compounds are not attested at all in Esahie, where the combination of N + V gives typically nouns, rather than verbs, as output forms (**mogyafra** 'incest' < **mogya** 'blood' + **fra** 'mix', see Broohm 2019a). Therefore, we could argue that the N–V base is not a *sensu-stricto* morphological compound at any stage of the derivation; instead, we would like to suggest that the nominalizing suffix targets a VP triggering object incorporation in all those instances where the verb takes an internal argument. This amounts to stating that the derivation of ANs is not strictly morphological, but that it embeds syntactic structure, as argued extensively for other languages (see, among others, Alexiadou 2001 and Borer

2003; see especially Iordachioaia et al. 2017 on synthetic compounds in English and Greek).

There are at least two arguments in favor of the embedded-VP analysis that we would like to put forward here. The first one concerns the idiomatic reading of VPs and the meaning of the corresponding nominals. In the literature (see Ackema and Neeleman 2004: 56–57), it has been observed that idiomatic readings are typically expressed by VPs but are lost when the verb is nominalized, as in (21).

(21)    **break the ice**          'idiom., to make people who have not met
                                    before feel more relaxed with each other'[12]
        **the break(ing) of the ice** only literal meaning[13]

Although the same parallelism is impossible to draw in Esahie (because of the compulsory expression of the internal argument), the data show that idiomatic meanings are systematically preserved under nominalization:

(22)          **<u>VP</u>**                                  **<u>Nominalization</u>**
        a.    **dé**              **ngoa**                   **ngoa-lé-lὲ**
              receive            life                        life-receive-NMLZ$_{E/R}$
              '(to) save'                                    'salvation'
        b.    **di**              **eyile**                  **eyile-lí-lὲ**
              eat                medicine                    medicine-eat-NMLZ$_{E/R}$
              'be spiritually                                'state of spiritual
              fortifed'                                      fortification'
        c.    **to**              **eyile**                  **eyile-tó-lὲ**
              throw              medicine                    medicine-throw-NMLZ$_{E/R}$
              '(to) cast a spell'                            'act of casting a spell'
        d.    **kɔ**              **bondua**                 **bondua-hɔ́-lὲ**
              go                 behind.the.house            behind.the.house-
                                                             go-NMLZ$_{E/R}$
              '(to) defecate'                                'act of defecation'

The preservation of the noncompositional meaning typically associated with the VP in the nominalization points in favor of a VP inside these nominals: an idiomatic interpretation would not be guaranteed if nominalization applied first to the verb, and were followed by NN compounding since, as shown in (21), thematic inheritance does not preserve idiomatic meanings.

More compelling evidence about an underlying VP structure in AN derivation comes from the licensing of adverbials. This is considered as one of the major arguments in favor of the presence of VP structures within nominalizations, as has

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**12** Definition from *Cambridge Dictionary*, online version.

**13** Notably, the synthetic compounds *icebreaking* and *icebreaker* express the idiomatic meaning.

been argued by various scholars (for an influential analysis, see Basciano et al. 2011; Bresnan and Mugane 2006; Fu et al. 2001 on Gĩkũyũ, Bantu on other Bantu languages). Specifically, 'low' VP adverbials are expected to occur with ANs if the nominalization contains a VP structure. Data of nominals modified by manner adverbials, for instance, have been reported in the literature on English as a reliable indication of VP structure within deverbal nouns.

(23)    **His explanation of the accident *thoroughly* (did not help him).**
        (Fu et al. 2001: ex. 7.a)

Esahie ANs too allow for adverbial modification. Distributionally, adverbs in Esahie occur post-verbally in VPs. We begin by considering the licensing of 'low' adverbials such as the manner adverbials in Esahie ANs.

(24)    a.  **Sũã-niɛ        ne      kèngà       *gidigidi***
            learn-NMLZ_AG    DEF     read.HAB    hurriedly
            'The student reads hurriedly.'
        b.  **Kèngà-lɛ    *gidigidi*    de      ɔ-n-yɛ         nyemene**
            read-NMLZ    hurriedly    TOP     3SG-NEG-COP    nice
            'Reading hurriedly is not nice.'

From the example above, we note that manner adverbs such as **gidigidi** 'hurriedly' typically licensed in VPs as in (24a) may also be licensed in ANs as in (24b). The possibility of having adverbial modification in ANs as shown in (24b) points to the fact that these ANs contain underlying VP structures. Beyond this, frequency adverbials (including **da-biala** 'always, every day', **daa-daa** 'constantly', and **afoɛ-afoɛ** 'seldom, occasionally') may also be licensed in ANs. Interestingly, while the distribution of adverbials in VPs is typically postverbal, frequency adverbials may occur in a prenominal position within AN constructions, replicating a sort of 'reversed' distributional pattern in the DP domain which is a common feature among Kwa languages (see Aboh 2004):[14]

(25)    a.  **Kofi    [_VP bɔ    ndire]      da-biala       *daa-daa***
            **Kofi**    ICV    weeds       day-every     always-RED
            'Kofi weeds constantly (lit Kofi weeds everyday/always).'
        b.  ***Daa-daa*    ndire-bɔ́-lɛ̀      tè      pa      ma**
            always-RED    weed-ICV -NMLZ_E/R    COP     good    for
            **kua-yɛ́-lɛ̀**
            farm-make-NMLZ_E/R
            'Constant weeding is good for farming.'

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**14** While frequency adverbs occur in a highly marked prenominal position, adjectives and other elements in the DP all occur post-nominally (see Section 3.4).

(26)   a.   **Yaa          sua          nikye        *afoɛ-afoɛ***
            Yaa          learn        thing        year-RED
            'Yaa seldom studies (lit. Yaa studies once a year).'
       b.   ***Afoɛ-afoɛ*  nikye-suá̰-nɛ̀            de       ɔ-n-gɔ-boka        wɔ**
            year-RED     thing-learn-NMLZ_{E/R}   TOP      3SG-NEG-FUT-help   you
            'As for infrequent (seldom) studying, it will not help you.'

Furthermore, in order to understand if the occurrence of adverbials is restricted to event-denoting nominals that contain a verbal component, we asked our Esahie informants for acceptability judgements concerning event denoting nominals that do not derive from verbs. As expected, informants homogenously reject sentences such as the following, where the adverbial modifies a mophologically-simple event noun (i.e., not containing a verb):

(27)   a.   **ɛsɛen** 'funeral'
            ***daa          ɛsɛen        bɔ      kerɛ**
            frequently   funeral(s)   ICV     cost
            'Frequent funerals are costly.'
       b.   **ehum** 'storm'
            ***afoɛ-afoɛ        ehum         ne       a-yakyi**
            year-RED                  storm    DEF    PERF-stop
            'The infrequent (occasional) storms have ceased.'
       c.   **manzaa** 'menstruation'
            ***da-biala     manzaa       kyire    fokyɛ-lɛ**
            day-every    menstruation show     sick-NMLZ_{E/R}
            'Constant menstruation is symptomatic of sickness.'

The unacceptability of the examples in (27) reveals that the distribution of these adverbials cannot be explained on a semantic basis but depends on syntactic licensing conditions.

   Although a detailed syntactic analysis of ANs exceeds the scope of the present study, the empirical facts discussed above speak in favor of a nominalization process that embeds a VP. This type of nominalization is reminiscent of what Baker and Gondo (2020) call *high nominalization*, where the nominalizer is analyzed as a noun head that takes a VP as its complement. In the Esahie case, the nominalizer ***-lɛ̀*** selects a verb after the verb has already combined with at least some of its arguments or modifiers, hence, the nominalization applies to a phrase and not to a "word" (terminal node).[15] By implication, the nominalizer combines with an internally

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**15** Baker and Gondo (2020) label the alternative analysis to this nominalization type as *low nominalization*, where the nominalizing morpheme can combine directly with a lexical head,

complex, distinctively syntactic object, and therefore, appears higher in a syntactic tree than constituents inside the projection of the lexical base (hence the label *high nominalization*): see Figure 1 for a (simplified) representation of the internal structure of an AN like **dùmàá-sɛ̀kyé-lɛ̀** [[name-destroy]-NMLZ] 'defamation'.
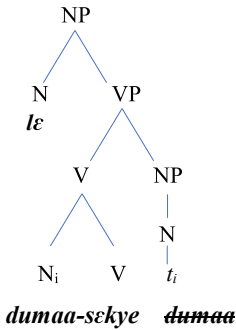


**Figure 1:** Formal representation of high nominalization in Esahie.

It is worth noting that, under this analysis, the NV complex would not be a morphological compound, but a case of noun incorporation triggered by the nominalization operation, arguably, as the only way of expressing the verb internal argument.[16] The nominalization operation cannot strand the object because the latter has no other way of independent realization within the DP in Esahie. In this respect, Esahie strongly differs from English and Indo-European languages in general, where nominals can take arguments as independent satellites that are case-assigned by the deverbal noun through (light) prepositions. In Esahie and other Kwa languages, there is no place for post-nominal genitives within the DP and, as we will see in Section 3.4.1, the arguments of a noun can only be expressed as prenominal possessors or as non-head constituent within compounds. Therefore, synthetic compounding, analyzed here as a form of noun incorporation followed by affixation, is the only way of expressing the verb internal argument.

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before the lexical head combines with any of the arguments (or adjunct modifiers) that it would normally appear with. As we have shown, the Esahie data does not support this kind of analysis.
**16** As will be discussed in Section 3.3, Esahie ANs feature a form of noun incorporation targeting phrasal units (NumP) rather than heads. Therefore, the noun incorporation structure in Figure 1 should be actually reinterpreted as an instance of phrasal movement, along the lines of analysis of Barrie and Mathieu (2016).

Quite interestingly, nominals derived from ditransitive or double object con-
structions cannot be realized via synthetic compounding. In such contexts, nomi-
nalization is clausal rather than lexical since it involves either relativization and/or
genitivization. Irrespective of the type of verb (i.e. ICV or lexical), nominalization here
does not involve incorporation/compounding and none of the arguments are
incorporated into the verb. If one of the arguments has to be 'promoted' or preposed,
it is usually the theme argument (examples (28) and (29) involve a lexical verb and
an ICV, respectively).

(28)   a.   **Akua   ma-ne      Adwoa    sikaa**
            Akua   give-PAST   Adwoa    money
            'Akua gave Adwoa money.'
            **Nominalized version**
       b.   **Akua ye    sikaa    bɔ    ɔ-fa-ma-ne**
            Akua POSS   money    REL   3SG.SUBJ-AUX-give-PAST
            *Adwoa      ne*
            Adwoa      DEF
            'Akua's money which she gave to Adwoa.'
       c.   **sikaa    bɔ   Akua   fa    ma-ne      Adwoa    ne**
            money    REL  Akua   AUX   give-PAST  Adwoa    DEF
            'The money which Akua gave to Adwoa.'

(29)   a.   **Fuachie   bɔ-le      Kwame    bosĩã̀**
            Fuachie   ICV-PAST   Kwame    loan
            'Fuachie lent Kwame a loan.'
            **Nominalized version**
       b.   **Fuachie   ye     bosia    bɔ    ɔ-bɔ-le**
            Fuachie   POSS   loan     REL   3SG.SUBJ-ICV-PAST
            *Kwame     ne*
            Kwame     DEF
            'Fuachie's loan which he lent to Kwame.'
       c.   **Bosĩã̀   bɔ   Fuachie   bɔ-le      Kwame   ne**
            Loan    REL  Fuachie   ICV-PAST   Kwame   DEF
            'The loan which Fuachie gave Kwame.'

## 3.2.2 More on the incorporated noun in Esahie synthetic "compounds"

As shown in several studies (Baker 1988; Mithun 1984), noun incorporation is
subject to restrictions: not all nouns can incorporate but, prototypically, direct
objects/themes freely incorporate whilst agentive subjects rarely do. Similar

restrictions are found within synthetic compounds (see Basilico 2016) for a contrastive analysis of synthetic compounding and noun incorporation). Therefore, synthetic compounding is not expected to target the agentive subjects of both unergative and transitive predicates.

As discussed in Section 3.2, nouns that typycally incorporate in Esahie ANs are verb direct objects but there are exceptions. Let us consider the data in Table 2.

**Table 2:** AN/VP correspondence.

| Morphemic makeup | Base/source construction |
|---|---|
| **anye-boro-lɛ** | **X (a)nye a-boro** |
| eye-ripe-NMLZ$_{E/R}$ | X eye PERF-ripe |
| 'the state of being/getting serious (seriousness)' | 'X is serious (lit. X' eye has ripened)' |
| **anye-bukye-lɛ** | **X anye a-bukye** |
| eye-open-NMLZ$_{E/R}$ | X eye PERF-open |
| 'civilization (lit. opening of the eye)' | 'X is civilized (lit. X's eyes are open)' |

At a superficial analysis, these cases seem to challenge the internal argument analysis defended in Section 3.2, since the N surfaces as the subject, rather than the object of the predicate in the corresponding sentences. However, as in the corresponding English glosses, the nouns occurring in these ANs appear to be the (internal) arguments of unaccusative/ergative predicates,[17] and their thematic role (Theme, rather than Agent) makes them compatible with an internal argument analysis. Therefore, an internal argument analysis is feasible for these examples as well, although a deeper study of unaccusative predicates in Esahie is necessary to pursue this argument further. Also, to the best of our knowledge, no true external argument can occur as the N component of these complex nominals. Further, examples of unergative predicates that take a subject as in English **man-walking**, are unacceptable according to our Esahie informants, in compliance with the expected restrictions on both synthetic compounding and noun incorporation.

As we have shown above with the example in (15), however, not only direct objects/internal arguments are incorporated in Esahie synthetic "compounds". There are also instances where the noun is actually one that might be considered an indirect complement (or even an adjunct) in the corresponding VP. Indeed, as Lieber (2004) points out, relying on data from English, it is possible for some complements in synthetic compounds to be interpretable as semantic arguments/

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**17** This is a hypothesis that may be tested with unaccusativity tests which, as far as we know, are still to be identified for Esahie.

participants in the event expressed by the verb, i.e. as a locative, manner, agentive, instrumental, or benefactive argument, if the verbs in question lack an obligatory internal argument. Let us consider the English examples in (30), taken from Roeper and Siegel (1978: 207).

(30)     a.    **church-goer**
           b.    **cave-dweller**
           c.    **sea-going**

The Esahie examples in (31) are analogous to the English examples in (30), in that their incorporated nouns are not interpretable as direct objects, but are instead complements of the corresponding intransitive verbal heads.

(31)         <u>**Input**</u>               <u>**Output**</u>
       a.    **da**       **afiase**           **afiase-lá-lὲ**
            sleep     prison        prison-sleep-NMLZ
            'be imprisoned'         'act/state of imprisonment'
       b.    **di-di**     **dwaso**         **dwaso-dì-dí-lὲ**
            eat-RED   outside      outside-eat-RED-NMLZ
            'eat from outside sources'    'act of eating from outside sources'[18]

One would note that the verbs in question are typologically intransitive to start with, hence, any "argument" they select is not a true argument of the verb (the reduplicated form **di-di** 'eat' is an only-intransitive verb). In other words, the nouns licensed in these constructions are those whose presence is not determined by the selectional and subcategorization properties of the verb. This explains why semantically, these nouns may designate the location for the event denoted by the verb. As such, they are not interpretable as direct objects. The resultant [N–V] complex structure of Esahie synthetic compounds is in conformity with Roeper and Siegel's (1978: 208) *First Sister Principle*, which predicts that all verbal (synthetic) compounds are formed by incorporation of a word in first sister position of the

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**18** The possibility of having locative and similar complements as non-heads is not restricted to action nominals but can be found with agent nominals too. Esahie has agentive nominalizations that involve synthetic compounding, along the model of the English **church-goer**:

(i)    **kɔ̀**               **asɔre**            **asɔre-kɔ́-niɛ**
       go               church          church-go-NMLZ
       'church-goer                   (unserious Christian)'
In this case, the nominal takes a different nominalizing suffix, **-niɛ**, and may be semantically classified as an *agent noun* or what conforms to a *personal/participant* noun in Lieber's (2016) classification.

verb.[19] In the examples in (31), the elements in *'first sister'* position, i.e. the non-head elements, are all interpretable as semantic arguments functioning as locatives. The observed restriction is also captured by the *First Order Projection Condition,* proposed by Selkirk (1982: 37), which stipulates that all non-SUBJ[ect] arguments of a lexical category $X_i$ must be satisfied within the first order projection of $X_i$. In consonance with the *First Sister Principle* and the *First Order Projection Condition*, complements which are not internal arguments are also admissible in such non-head positions once they are the first sister of the verbal head in the corresponding verb phrases. These principles straightforwardly account for the lack of external argument incorporation: as argued before, external arguments in Esahie cannot be licensed within AN derivation, neither in the case of transitive verbs nor in the case of unergatives. When present, external arguments are licensed as prenominal possessors in AN constructions (see Section 3.4.1).

## 3.3 Inflectional features of ANs

Typical morpho-syntactic categories for which nouns may be specified include *case*, *number*, *gender*, *declension class*[20] and *definiteness*. Of these possible categories, only *number* and *definiteness* are applicable to prototypical nouns in Esahie, which lack the other morphosyntactic categories (see Broohm 2017). Let us consider the distinctions in the relevant features as outlined in Table 3.

**Table 3:** Distinction in inflectional features.

| Gloss | Number distinctions | |
|---|---|---|
| | Singular | Plural |
| lady | brasua | **m**-mrasua |
| canoe | ɛ-lɛn | **a**-lɛn |
| sibling | aliemaa | aliemaa-**mɔ** |
| | **Definiteness distinctions** | |
| | Indefinite | Definite |
| lady | brasua (bie) | brasua **ne** |
| canoe | ɛlɛn (bie) | alɛn **ne** |
| sibling | aliemaa (bie) | aliemaa **ne** |

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**19** While Roeper & Siegel claimed that synthetic compounds are the result of a lexical transformation in English, we have argued that there are indications of VP structure in Esahie ANs that make them compatible with a syntactically oriented analysis of these constructs.

**20** This category, unlike the others, is purely morphological since it is irrelevant for syntax.

The derived nouns are not marked for number because they are typically abstract nouns showing the properties of mass nouns (see Appah et al. 2017). In (32) and (33) below, we find examples of ANs and their corresponding ungrammatical plural forms: specifically, only the singular forms in examples (32a & 33a) are attested. Possible plural forms in examples (32 & 33b–c) are ungrammatical.

(32)   a.   **e-sṹ-nɛ**          b.   **\*n-sṹ-nɛ**          c.   **\*sṹ-nɛ-mɔ**
            SG-cry-NMLZ$_{E/R}$          PL-cry-NMLZ$_{E/R}$          cry-NMLZ-PL
            '(act of) crying'

(33)   a.   **e-hùró-lɛ**          b.   **\*n-hùró-lɛ**          c.   **\*hùró-lɛ-mɔ**
            SG-love-NMLZ$_{E/R}$          PL-love-NMLZ$_{E/R}$          love- NMLZ$_{E/R}$-PL
            '(act/state) of love'

Regarding the form of the verb in this nominalization, it is worth noting that the verb appears in its root/stem form and does not preserve the tense/aspect and/or agreement morphology typical of verbs functioning as predicates in ordinary sentences (see Comrie and Thompson 2007 for some typological remarks on this frequent property of ANs). We observe from the example below that, an AN form **nwʊmaa-kèngá-lɛ̀** '(the act of) book-reading' in (34b) may be the nominalization of an underlying VP in (34a). We also notice that the resultant AN loses all the verbal features (i.e. the tense-aspect marking) which are present in the underlying sentence in (34a). Most striking is the ungrammatical AN form in (34c), whose unacceptability arises from the presence of the past tense marker [-*le*].

(34)   a.   **Nkuah   kengà-le   nwʊmaa   ne**
            Nkuah   read-PAST   book        DEF
            'Nkuah read the book'
       b.   **nwʊmaa-kengá-lɛ   yeɛ   Nkuah   kro-ɔ**
            book-read-NMLZ$_{E/R}$   FOC   Nkuah   like-CD
            '(the act of) book-reading is what Nkuah likes'
       c.   **\*nwʊmaa-kengá-*le*-lɛ   yeɛ   Nkuah   kro-ɔ**
            book-read-PAST-NMLZ$_{E/R}$   FOC   Nkuah   like-CD
            Intended: '(the act of) book-reading is what Nkuah likes'

Therefore, we can conclude that, although these AN constructions contain a VP, they do not embed an extended VP projection such as TP, as neither semantic or morphological clues support this analysis.

Finally, regarding the form of the (incorporated) noun, it must be noted that it cannot occur with definiteness markers or modified by an adjective within these complex forms. However, the noun does not come in its bare stem form: plural markers, in the form of prefixes, may be licensed, as in **m-mrasua** + **hurólɛ**, lit.

pl-woman + loving 'womanizing'. This implies that the noun is not a bare root, different from English that disallows for plural nouns within synthetic compounds (***trucksdriving***). Arguably, Esahie ANs feature an instance of noun incorporation targeting phrasal units (NumP) rather than heads, as indicated by the incorporation of inflected nouns instead of bare roots (see Barrie and Mathieu 2016 for a phrasal movement analysis of noun incorporation). Ultimately, this is also indication for rejecting the root compounding or derivation-before-compounding argument, as in (12a), as an analysis of transitive ANs: root compounding targets bare roots and, accordingly, plural nouns should not occur within AN construction. However, since they do appear in Esahie ANs, NN root compounding cannot be the correct analysis for these forms.

## 3.4 Syntactic and typological characterization of Esahie ANs

In the next two subsections, we discuss some of the distributional properties shared between prototypical Esahie nouns and ANs in Section 3.4.1, and assess the typological features of Esahie ANs (see Section 3.4.2) against the seminal categorization proposed by Koptjevskaja-Tamm (1993, 2005).

### 3.4.1 External syntax of ANs (distributional properties)

Distributional properties have to do with where a word occurs and with what it occurs in a phrase or in a sentence; restricting this brief overview to nouns, it is worth noticing that prototypical Esahie Determiner/Noun Phrases, for instance, can function as subjects and objects of verbs and either precede or follow the verb. Furthermore, looking at the structure of the Esahie DP, like many Kwa languages, the noun in Esahie precedes all its modifiers (Aboh 2004, 2010). The relative order of elements in Esahie DP follows the pattern in (35):

(35)     0 modifier on the left/3 on the right.
         N–Adj–Numeral–Dem (e.g., Selepet, Yoruba)
         Hawkins (1983:119)

This is illustrated in the examples provided in (36) and (37).

(36)     Noun–Adjective–Demonstrative
         **Sua**          **tenden**      **hé**
         building        tall            DEM
         'This tall building'

(37)      Noun–Adjective–Numeral-Demonstrative

        **m-mrokua**      **fufue**      **nza**      **hé-mɔ**

        PL-squirrel      white      three      DEM-PL

        'These three white squirrels'

From the data shown above, we notice that for non-derived NPs in Esahie, dependents typically follow the head. Regarding DPs made up of relational nouns licensing post-nominal genitives such as **a bag of rice/ a box of chocolate** or **un sacco di riso/ una scatola di cioccolatini** in English and Italian, it is important to point out that, unlike such Indo-European languages, where post-nominal genitives may be expressed as independent PPs (*of*-phrases) following the noun, in Esahie (and indeed in Kwa languages in general) nominal genitives may occur but not as independent *of*-phrases, and not post-nominally. Consider example (38) and (39):

(38)      **ɛmõ**      **bɔtɔ**      **(ko)**

        rice      bag      (one)

        'a bag of rice'

(39)      **baana**      **betre**      **(ko)**

        plantain      bunch      (one)

        'a bunch of plantain'

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

(40)      a.    **kwaadu**      **betre**      **(koma)**

            banana      bunch      one

            'a bunch of bananas'

     b.    **\*betre**      **kwaadu**      **(koma)**

            bunch      banana      one

     c.    **\*kwaadu-ye**      **betre**      **(koma*)**

            banana-POSS      bunch      one

The crucial point to be noted here is that, as far as underived nouns in Esahie are concerned, genitives (out of the range of nominal modifiers) behave differently from other modifiers in the DP. They must always occur pre-nominally, as shown by the ungrammaticality of (40b). Another crucial point is not only the unavailability of the *of*-genitivization modification operator but also of a possessive construction for these nouns, as shown in (40c). Prenominal possessors are

possible in Esahie, but cannot be used to express DP-internal complements as in the case of the inalienable possession relations in (38–40) (see Nikitina 2008 for an analysis of relational nouns in Wan; see Baker and Gondo 2020 for possession relations and nominalizations in Dan).

The impossibility of expressing nominal genitives post-nominally and/or via an independent *of*-phrase appears to extend also to nominalizations of mono-transitive verbs, as we anticipated in Section 3.2, and as is shown below:

(41)  **baabro-kengá-lɛ**   **ne**
      Bible-reading-NMLZ   DEF
      'The reading of the Bible'

(42)  **aleɛ-tó̌-nɛ**   **ne**
      food-cook-NMLZ   DEF
      'The cooking of food'

Unlike the Italian **la costruzione *della casa*** or the English **the construction *of the house***, where internal arguments of (deverbal) eventive nominals may be expressed post-nominally as independent genitival phrases, in Esahie, internal arguments of eventive nominals as in **Baabro** 'Bible' in (41) and **aleɛ** 'food' in (42) are licensed via incorporation in the corresponding deverbal nominal, resulting in a form of synthetic compounding. In derived ANs, modifiers in the form of internal arguments precede the deverbal noun in the resultant complex form. This implies that the distribution of elements in the ANs is analogous to that of non-derived (genitivized) NPs, in that, in both types of nominal construction, complements precede the head nouns. As argued by Nikitina (2008) and Baker and Gondo (2020) for other languages, there are similarities between relational nouns encoding inalienable possession and nominalization constructions taking internal arguments.

In particular, Baker and Gondo (2020) analyzed the two structures alike by virtue of the fact that relational nouns, different from other nouns, take a complement (the inalienable possessor) to which they assign a theta-role. This makes them similar to nominalizations derived from monotransitive verbs, whereby there is a complement-head relation between the complement noun and the verb, and where the latter assigns a Patient/Theme role to the former. Although we do find this analysis fascinating and the arguments in its favor compelling, Esahie shows a slightly different picture that allows us to point out some interesting differences between inalienable possession constructions (38–40), on the one hand, and ANs (41–42), on the other. Firstly, relational nouns such as those indicating containers or collectives can be used without the prenominal argument: words such as **bɔtɔ** 'bag' or **betre** 'bunch' license but do not obligatorily require a complement. ANs, conversely, systematically require the realization of the internal argument and the

deverbal noun does not independently exist. Secondly, as discussed in Section 3.2, ANs need not be analyzed as the combination of two nouns; as extensively argued in the literature for synthetic compounds, the suffixation operation could target a N–V complex, either resulting from compounding or noun incorporation. This analysis is of course not available for relational nouns that do not contain a verb. In Section 3.2, we provided evidence, based on semantic and syntactic clues, for an embedded VP analysis speaking in favour of noun incorporation. Finally, an important difference lies in the licensing of *number* within these constructions. Relational nouns only take bare stems as their complements, see (40): although **kwaadu** 'banana' is semantically plural in this example, a plural prefix on the noun cannot be licensed. On the other hand, plural nouns are licensed in AN constructions (e.g. **m-mrasua-huró-lɛ** [PL-woman-love-NMLZ] 'womanizing'), again supporting the hypothesis that ANs are not fully lexical as they contain functional categories (see Section 3.3).

An important parallelism between these classes of argument-taking nouns, relational nouns and transitive ANs, lies in the ban on the licensing of internal arguments as post-nominal genitival arguments. The possible, though restricted, word-internal licensing of arguments stems from the fact the post-nominal genitives are simply disallowed in Esahie, and in Kwa in general (Akrofi Ansah 2012b; Akan: Appah 2013, 2016; Lɛtɛ: Dangme: Lawer 2017).

Like prototypical nouns, the derived ANs take descriptive modifiers, and may also be modified by relative clauses. Prototypical Esahie nouns may be modified by adjectives attributively and predicatively. Examples (43a) and (43b) demonstrate that ANs may be modified by both adjectives (either attributively or predicatively) and definiteness markers.

(43)　a.　**Baabro-kengá-lɛ　tɛɛ~tɛɛ　nen**
　　　　　Bible-read-NMLZ　　RED-bad　DEF
　　　　　'The bad Bible-reading'
　　　b.　**dwirɛ-bisá-lɛ　he　tè　suro**
　　　　　matter-ask-NMLZ　DEM　COP　scary
　　　　　'This question is intimidating'[21]

The derived nominal may also be modified by a relative clause (i.e. **bɔ osile dɔ** in (44)).

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[21] As we shall see in Section 3.4, this and other nominals may also express a result/referential reading in the appropriate context.

(44)  **aseɛ-wosó-lɛ**       **bɔ**        **o-si-le**          **dɔ**      **ne**
      earth-shake-NMLZ       REL          3SG-happen-PAST     there     DEF
      **té**                  **angorɛ**
      COP.NEG                 play
      'The earth-quake which happened there is no joke'

With examples (45) and (46), we show that derived ANs also possess these distributional properties. The AN may function as subject of a clause as in (45), and as object as illustrated in (46).

(45)  **e-sṹ-nɛ**          **ŋ-gɔ-boka**         **wɔ**        **kekesaala**
      SG-cry-NMLZ          NEG-FUT-help          2SG.OBJ      now
      'Crying will not help you now'

(46)  **Salo**   **ŋ-gro**    **dwùdwó-lɛ**
      **Salo**   NEG-like    talk-NMLZ
      'Salo dislikes talking'

As in English, Agents can be encoded as prenominal possessors, still playing the role of arguments in the nominal's argument structure. So, in (47), *Kwamina* does not necessarily 'possess' the reading, rather he does the reading, hence he is an Agent.

(47)  **Kwamina-ye**          **kengá-lɛ**   **té**        **maye**
      Kwamina-3.SG.POSS       read-NMLZ     COP.NEG      good
      'Kwamina's reading is terrible'[22]

Furthermore, an AN may be preposed into an extra-sentential slot for the purposes of focalization. As Broohm (2014) observes, in Esahie, when verbs are focalized, a nominalized copy of the predicator is fronted to the left periphery and is immediately followed by the focus marker **yeɛ**. When the (transitive) verbs in (48a) and (49a) are preposed for the purposes of focalization, they show up, as in (48b) and (49b), together with their respective internal arguments, as AN constructions. These nominals are hosted in a pre-sentential position (cf. Broohm 2014).

(48)  a.  **Kwadwo**       **krò**        **mmrasua**
          Kwadwo          love.HAB      ladies
          'Kwadwo loves women/ Kwadwo womanizes'

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

b. **m-mrasua-hró-lɛ**      **yeɛ**   **Nyameɛ**   **kyì**        **ɔ**
   PL-woman-love-NMLZ   FOC   God            dislike.HAB   CD
   'Womanizing is what God abhors'

(49)   a.   **Kofi**   **kṵ̀**        **sona**
             Kofi    kill.HAB    person
             'Kofi murders'

       b.   **sona-hṵ́-nɛ̀**        **yeɛ**          **ɔ-fa**        **ye**
            person-killing-NMLZ   FOC           3SG.SUBJ-take   3SG.OBJ
            **hɔ-le**                     **afiase-ɔ**
            go-PAST                   prison-CD
            'Murdering is what sent him to prison.'

Both examples given above corroborate the argument that nominalization of obligatorily transitive verbs in Esahie requires the incorporation of the internal argument.[23]

### 3.4.2 Internal syntax of ANs: typological considerations

In her wideranging typological approach to nominalization, Koptjevskaja-Tamm (1993) distinguishes between eight typological categories of languages, based on a cross-linguistic sample of patterns of AN constructions. The defining criterion for this typological classification is the manner in which the languages of the world encode the arguments of their nominalizations. These eight cross-linguistic patterns fall into two broad categories: the more frequent (major) type, namely, the SENTENTIAL, POSSESSIVE-ACCUSATIVE, ERGATIVE-POSSESSIVE, NOMINAL languages, and the less frequent (minor and restricted) type, namely, the MIXED, INCORPORATING (INC), RELATIVE (REL), ARGUMENT-REDUCING languages. A discussion of the characterization of the individual typologies is beyond the scope of this paper, which focuses on Esahie. The interested reader is referred to Koptjevskaja-Tamm (1993, 2005, 2006) for more detailed descriptions.[24]

Based on morphological typology and the characterization of argument realization in AN constructions, Esahie belongs to the INCORPORATING (INC) type of

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**23** A different case is that of verbs allowing object drop, such as **kengá-lɛ** 'read-NMLZ, reading' versus **baabro-kengá-lɛ** 'Bible-reading': in these cases, the nominalization can either incorporate the object or not, like the verb in standard syntax.
**24** Note that languages that have different nominalization characterizations may belong to more than one typology.

languages,[25] where the Theme/Patient (object) argument forms a part of the complex AN, while the Agent (subject) argument retains its sentential marking. As Koptjevskaja-Tamm's (1993: 62) generally notes, the INC and REL types are both 'valency-lowering' because even ANs derived from transitive verbs encode only one overt argument (the external one), though the corresponding finite verbs have two. Specifically, in the case of transitive ANs, both the Agent and the Patient may be expressed at the same time, but one of them either builds a part of the compound AN, or constitutes a part of the relative clause referring to the AN.

In Esahie, an AN's syntactic relation with its internal argument is expressed by means of word order, as we have seen earlier in Section 3.2.1. Recall that, unlike English and other languages, where the internal argument can be expressed as a phrase, we have shown that in Esahie it cannot be expressed by an independent phrase. Instead, the internal argument has to be realized as the non-head of a synthetic compound and the relation between the AN and its internal argument is expressed via incorporation. Hence, the noun is non-referential (it acquires a generic interpretation, as in standard noun incorporation structures) and cannot be modified internally in the compound. As a result of the incorporation, the internal argument gets preposed to the verb, resulting in an $[[N + V]+SUFF]_N]_N$ order, while the corresponding underlying sentence has an SVO order. Consider example (50).

(50)    Sentence (with canonical SVO order):

a.    
| **Ama** | **taa** | **kenga** | **Baabroo** |
|---|---|---|---|
| Ama | often | read | Bible |

'Ama often reads the Bible'

Nominalization with **full argument structure**:

b.    
| **(Me-nye-gye)** | **Ama-ye** | **daaadaa** | **Baabroo-kenga-lɛ** |
|---|---|---|---|
| (1SG-eye-take) | Ama-POSS | frequently | **Bible**-read-NMLZ |

'(I admire) Ama's frequent Bible-reading'

Nominalization with **internal argument**:

c.    
| **(Daadaaa)** | **Baabroo- kenga-lɛ** |
|---|---|
| '(frequently) | **Bible**-read-NMLZ |

'(frequent) Bible-reading'

d.    
| ***Baabroo-ye** | **kenga-lɛ** |
|---|---|
| Bible-POSS | read-NMLZ |

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**25** There are three sub-groups of languages within this typology, namely the Sentential-Incorporating (SENT-INC), the Oblique-Incorporating (OBL-INC) and the Possessive-Incorporating (POSS-INC).

The canonical (S)VO order is reversed in synthetic compounds such that the internal argument now precedes the verb, as seen in (50b). Since this reversal of order invariably characterizes synthetic compounds, it is possible to predict that the left-hand member of any synthetic compound in Esahie is the internal argument or a complement in the case of some unergative verbs (see Section 3.2.2). Word order, therefore, provides a cue in determining the relation between an AN and its internal argument, at least in these constructions. From (50d), we also realize that unlike English, where an internal argument may be expressed as a possessive in a passive construction such as *Rome's destruction by the enemies*, in Esahie the internal argument cannot be expressed as an (alienable) possessive, while this option is restricted to external arguments.

Typologically, the synthetic compounding mode of AN-derivation, as discussed above, puts Esahie in Koptjevskaja-Tamm's (1993) INCORPORATING (INC) type of languages, where structurally, the patient (or internal argument) constitutes the first part of the complex AN and the external argument may be expressed through a preposed possessive. In consonance with Koptjevskaja-Tamm's (1993: 184) observation, this type of AN-derivation via incorporation makes action nominalization in Esahie a valency-lowering operation, as a result of the fact that the deverbal head noun retains only one argument (of the Agent/Patient set), notwithstanding the fact that the corresponding verb takes two arguments.[26]

With this pattern of AN-derivation, Esahie would more precisely instantiate the POSSESSIVE-INCORPORATING (POSS-INC) subtype of the INCORPORATING languages. As such, the behaviour of Esahie is analogous to that of Kwa languages such as Ewe, Ifè (Yoruba), Nupe (cf. Hyman 1975; Koptjevskaja-Tamm 1993: 186),[27] and Akan where, although in non-derived NPs dependents follow the head, in derived complex ANs, internal (patient) arguments precede the deverbal noun in the resultant construction.

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

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**26** In *valency-lowering* languages, an incorporated noun satisfies one of the argument positions of the verb, thus reducing its valency.
**27** In the case of Ewe and Ifè, as Koptjevskaja-Tamm (1993) rightly points out, the deverbal head of these (synthetic) compounds are formed via reduplication, and are quite distinct from the corresponding finite verbs, as well as the typical cases of synthetic compounding involving affixation.

# 4 Conclusion

The paper set out to discuss the form and function of action nominals in an otherwise under-described Kwa language.

It has been shown that action nominalization in Esahie is a productive derivational process that primarily involves a composite strategy: a morpho-syntactic operation, invariably involving affixation and a resultant change in tonal melody, which may be coupled with noun incorporation, hence resulting in a form of synthetic compounding.

We have also argued that nominalizing affixation must be overt, so that unlike Gã, Akan, and Lɛtɛ, action nominals in Esahie cannot be derived through a zero operator. On the role of prosodic morphology in AN-derivation, it appears that in Kwa, and in tonal languages in general (cf. Edo: Adéníyì 2010; Tee: Anyanwu and Omego 2015), tone raising (modification in tonal melody) is a nominalizing marker (toneme) or cue that may be used independently or in addition to affixation to signal nominalization (Broohm and Melloni 2020).

Synthetic compounding, as a mode of nominalization, has been observed to be a recurrent strategy in the grammar of Esahie, being the only way to realize the verb internal argument when the verb is a monotransitive predicate. However, we have also questioned the strictly 'morphological' nature of the compounding operation involved in AN formation. In fact, ANs derived from monotransitive verbs provide evidence in favour of an embedded VP analysis, based on empirical arguments holding in Esahie and other languages, such as adverbial licensing and idiomatic reading. Therefore, we have suggested that the N-V complex be understood as resulting from incorporation of the noun into the verb, making ANs argument taking nouns. Also, we have argued that the suffix takes scope over the N-V complex, favoring an analysis that preserves the syntax-semantics mapping.

Finally, it has been discussed how, in a typological perspective, Esahie falls within the POSSESSIVE-INCORPORATING subtype of the INCORPORATING languages. This accounts for the behavior of Esahie relative to that of some Kwa languages such as Ewe, Ifè (Yoruba), Nupe (cf. Hyman 1975; Koptjevskaja-Tamm 1993: 186), and Akan, where there is a parallelism between underived and derived nouns, in that, in underived NPs like *ɛmo bɔtɔ* 'bag of rice', dependents precede the head, just as dependents precede heads in ANs like *nikye-sùánɛ* 'education/learning (lit. thing learning)'. This implies that although other elements like specificity markers, demonstratives and adjectives may follow the noun, the 'internal argument' of the noun apparently uniformly precedes it, and may be licenced in its singular or plural form within the nominalization. However, the line was drawn between

action nominals and other relational nouns, based on a number of empirical differences between the two types of argument taking nouns.

While a finer morphosyntactic analysis of Esahie ANs is left for future research, we hope to have paved the way for a better understanding of the derivation of action nominals both from an interlinguistic and crosslinguistic perspective, besides achieving the primary scope of documenting a thus far unexplored language.

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