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CHAPTER 5

The noun phrase in Shilluk

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Abstract • This chapter presents a descriptive analysis of the noun phrase in Shilluk, surveying the variety of modifiers that combine with a nominal head. For the sake of accountability, 270 sound clips are embedded, many of them drawn from spontaneous speech. The set of noun-phrase modifiers includes possessors, adjectives, verbs, non-possessor nouns, quantifiers (including numerals), determiners, and a diminutive. Of all of these modifiers, the diminutive is the only one that precedes the head. This fits with the interpretation that the diminutive represents an instance of grammaticalization, which developed out of a possessive noun phrase construction. Of particular interest in relation to the numeral system is the fact that, for numbers below 10, the cardinal is morphologically derived on the basis of the ordinal, rather than the way around. Also, in noun phrases modified by a verbal predicate, we find past tense marking on the modification marker. Noun phrases are conjoined in an asymmetric manner, with the non-initial noun phrase representing a prepositional phrase. We also describe vocatives and associative plurals, both of which involve morphological marking at the right edge of the noun phrase. As such, they stand out in the context of Shilluk morphology, which is primarily head-marking in nature.

1. Introduction

This chapter presents a descriptive analysis of the noun phrase in Shilluk, surveying the variety of modifiers that combine with a nominal head. The analysis builds on the description of the inflectional paradigm of nouns in Chapter 2.

We start out with describing possessive noun phrases (Section 2). While the morphological marking that is found on nouns that are modified by a possessor has been laid out in Chapter 2, here we will focus on the syntactic and functional properties of nominal possession, and also describe a periphrastic possessive construction.

Section 3 presents a descriptive analysis of diminutives. This topic is closely related to possessive noun phrases, in the sense that the diminutive is a grammaticalized possessed term. This explains why it appears to the left of the noun, whereas all other modifiers follow the head.

Section 4 covers modification by a) adjectives, b) verbs, and c) nouns that are not possessors. These three types of modifiers are treated together because the morphosyntactic constructions involved are the same, with certain limitations that we will point out along the way. Note that relative clauses do not constitute a discrete phenomenon in Shilluk grammar, separate from nominal modification, because the morphosyntactic marking of verbal modifiers is no different from that of adjectival or non-possessor nominal modifiers.

Section 5 describes the various ways quantifiers are expressed within the noun phrase. Quantifiers are a semantic notion, relating to the expression of quantity, and it encompasses both numerals and non-numeral quantifiers. The numerals present various points of interest. One is the relation between ordinals and cardinals. Across the world's languages, ordinals commonly are morphologically derived from cardinals; we know of no reports in which the relation is the reverse. Nonetheless, that is precisely the state of affairs in Shilluk: in relation to the numerals 1 to 9, the ordinal is the base from which the cardinal is derived. Another salient property is that numerals are nouns, both in morphological and in syntactic terms. Among the non-numeral quantifiers we find considerable variation, with some presenting nominal properties and others presenting characteristics of adjectives and verbs.

Section 6 focuses on deixis and definiteness marking. Deixis is expressed either as a bound morpheme on the noun, i.e., as an inflection, or through free morphemes. The choice depends on the point of deixis – only proximal deixis can be expressed as a bound morpheme – and on the presence of other

modifiers within the same noun phrase. We discuss deictic markers along with the definiteness marker for two reasons: a) deictic markers and definiteness marking have the same distribution and are mutually exclusive; b) they overlap in their functional range.

Sections 7 and 8 describe two morphological markers that are most often found on nouns, but which are not specific to them: associative plural (Section 7) and vocative (Section 8). The associative plural extends reference from one referent to others that either belong with it or are similar to it (Moravcsik 2003). Of particular typological interest in relation to the Shilluk associative plural is that it can be formed on any noun, including inanimate ones. While the associative plural and the vocative are most often found to be marked on nouns, they are actually marked on the final word in the noun phrase, irrespective of its lexical category (noun, verb, adjective, or functional category). The fact that associative plural and vocative can be morphologically marked on a wide variety of lexical categories leads us to infer that they do not form part of the inflectional paradigm of nouns.¹ This is also why they were not covered in detail in Chapter 2.

The final two sections cover noun phrase conjunction (Section 9) and focus marking (Section 10). Conjoined noun phrases are formed using the preposition *kí*, which also expresses comitative semantic roles. This means that, in the expression of comitative / noun phrase conjunction, there is macrofunctionality between the use of an adjunct within the noun phrase vs. an adjunct within the predicate. Focus marking is outside the noun phrase. We discuss it briefly in this chapter nonetheless, because the focus marker is formally identical to a modification marker, and it is therefore worthwhile to set out the difference between them. Moreover, the position of the focus marker relative to the noun phrase and its specification for tone differ depending on the syntactic position of the noun phrase within the clause.

Just as in the earlier chapters, this descriptive analysis of noun phrases results from a combination of controlled elicitation methods and the analysis of spontaneous speech. Our annotated corpus of spontaneous speech is publicly available (Remijnsen & Ayoker, no date). This corpus has played an important role in corroborating and developing our interpretations of the functions of morphological forms and morphosyntactic constructions. In the numbered




1 We define the inflectional paradigm as the set of word forms that are productively available for a particular lexical category, expressing grammatical meanings (cf. Haspelmath & Sims 2010). These meanings are marked within the word through affixation and/or stem-internal markers.

illustrations, examples drawn from this corpus are signposted with a $\hat{\cdot}$.

We represent the Shilluk speech forms using the descriptive analysis of Shilluk phonology as developed in our earlier work. A brief summary of this system can be found in Section 1.3 of Chapter 1.² More detailed analyses of aspects of the Shilluk sound system can be found in various other publications (Remijsen, Ayoker & Mills 2011; Remijsen & Ayoker 2014, 2020; Remijsen, Ayoker & Jørgensen 2019). For the sake of accountability, sound examples are embedded in relation to all numbered illustrations.

2. Possessive noun phrases

Possessive noun phrases appear in two distinct morphosyntactic constructions. One construction involves inflection, i.e., bound morphological marking, on the head noun, which represents the possessed term within the possessive noun phrase. We label this inflection ‘pertensive’ (Dixon 2010), glossed *prt*. The other construction involves a function word positioned between the possessed term and the subsequent possessor term. These two constructions are illustrated in (1). The head-marking construction is shown in (1b). Note that the head noun, **lwáaak̄^μ**, the possessed term, is morphologically marked for pertensive.³ This can be seen by comparing it to the corresponding base form, which is **lwáak**, shown as a citation form in (1a). While the pattern of exponence of the pertensive inflection is purely stem-internal in the case of nouns like **lwáak**, in other cases the pattern of exponence includes a suffix (cf. Section 2.1).

- (1) a. **lwáak** b. **lwáaak̄^μ** **pâac** c. **lwáak m̄ñ** **pâac**
 barn  barn:PRT village  barn MDF.SG:PRT village
 ‘barn’ ‘the barn of the village’ ‘the barn of the village’

In the other possessive construction, which is illustrated in (1c), the head noun and the possessor are separated by a segmental function word, and now the head noun **lwáak** is not morphologically marked. Note that it is identical to the citation form in (1a).

2 That summary does not include the phenomenon of floating quantity, which is described in Remijsen & Ayoker (2020).



3 In the transcription **lwáaak̄^μ**, the superscript μ (mora) stands for floating quantity: an abstract weight unit that is not associated with segmental content to begin with. This weight unit remains unrealized unless the following word begins with a vocalic prefix, in which case it conditions increased duration on that vowel. The phenomenon of floating quantity is described in detail in Remijsen & Ayoker (2020).

The head-marking possessive construction illustrated in (1b) is found with greater frequency, whereas instances of the alternative construction (1c) are rare. We will describe the formal properties of both of these constructions in Section 2.1, and their functional properties in Section 2.2.

2.1 Formal properties

In the more frequently used possessive construction, the possessed term (head) is morphologically marked, signposting the presence of a possessor (dependent). This possessor follows its head, and it is not morphologically marked for its role in the possessive noun phrase construction.⁴ This is illustrated in (1): whereas the base form of the word meaning barn (for cattle) is **lwáak**, as in (1a), it appears as **lwáaak̄^u** in (1b), where it is followed by a possessor. The possessor in (1b), **pâac**, appears in the base form. Following Dixon (2010), we label the inflection marking the possessed term ‘pertensive’. Pertensive marking stands in contrast to genitive marking, whereby it is the possessor term that is morphologically marked. A detailed descriptive analysis of the morphophonological properties of the pertensive inflection can be found in Chapter 2. Here we will point out some key properties, and then shift focus to the syntactic properties of this construction.



Depending on the grammatical number and the formal properties of the noun in question, the pertensive inflection is either purely suprasegmental or it includes a suffix. On plural nouns, the pertensive inflection is regularly marked through the suffix **-í**, as in the case of **máan** ‘women’, which yields pertensive **máan-í**. There are only a handful of exceptions to this generalisation.⁵ On singular nouns, the pertensive is marked either stem-internally or through suffixation. Pertensive marking is stem-internal if the base form is suffixless, as in the case of **lwáak** ‘barn’, which yields **lwáaak̄^u** (2a). In contrast, nouns that have a suffixed base form have the suffix **-i** in the pertensive inflection. This is shown in (2b), which shows the pertensive of **jáaak̄-ɔ̄** ‘chief’.

- (2) a. **gín^u** **băa** **lwáaak̄^u** **pâac** b. **kùl** **băa** **jáaak̄-ī** **pâac**
 thing:DXS NOMP barn:PRT village  Kul NOMP chief-PRT village
 ‘This is the barn of the village.’ ‘Kul is the chief of the village.’



4 The possessor noun may be morphologically marked as a head within its own domain. See, for example, the discussion of the recursive possessive construction further on in this section.

5 These include **câak** ‘milk’, **pîi** ‘water’ and **ɣɔk** ‘men’. The corresponding pertensive forms are **căaak**, **pîii**, and **ɣɔ̄ɔ̄**. The fact that **câak** ‘milk’ and **pîi** ‘water’ are grammatically plural is evident from agreement marking.

Moreover, singular nouns present not one pertensive inflection but two, as a function of the number of the possessor (singular or plural).⁶ In the examples considered so far, the possessor is grammatically singular. A singular head noun with a plural possessor is marked by an additional High tone. In suffixed pertensives, this High tone target is found on the pertensive suffix. This is illustrated in (3b), which is to be compared with (2b). In suffixless pertensives, it appears on the stem, combining with the lexical-morphological specification that is already there. For example, **lwáak** has a High Fall to Mid in the pertensive with singular possessor, i.e., **lwáaak**^H (2a), which becomes a High tone if the possessor is plural: **lwáaak** (3a) (cf. Chapter 1, 11-12). The pertensive inflection is described in detail in Chapter 2.

- (3) a. **gîn**^H **băa lwáaak jî** b. **kùl băa jáaŋ-í jî**
 thing:DXS NOMP barn:PRT:PL people  Kul NOMP chief:PRT:PL people
 ‘This is the barn of the people.’ ‘Kul is the chief of the people.’

Finally, inflectional marking for pertensive also appears on nouns that have a pronominal possessor. This is shown by the forms in (4), in relation to **lwáak** ‘barn’ in (4a) and **jáaak-ŋ** ‘chief’ in (4b). Further details on the pronominal expression of possessors as bound morphemes can be found in Section 3.1.3 of Chapter 2.


- (4) a. **gîn**^H **băa lwáaak-āa** b. **kùl băa jáaŋ-āa**
 thing:DXS NOMP barn:PRT-1SG  Kul NOMP chief:PRT-1SG
 ‘This is my barn.’ ‘Kul is my chief.’

We now consider two syntactic properties of this construction: first recursivity, and then possessor fronting. It is possible for pertensive marking to apply recursively, when a possessive noun phrase in turn constitutes the possessor of a superordinate nominal head.⁷ This is shown in (5). The brackets mark the domains of noun phrases. Starting from the inside out, **àbóon** ‘priest’ is the possessor of the possessed noun **kâal** ‘camp’. Marked for pertensive, **kâal** yields **kâaal**^H ‘camp:PRT’, in a noun phrase that means ‘mission post’. The


6 We gloss as PRT both the pertensive with singular possessor, which is marked on a singular noun, and the pertensive marked on a plural noun, which does not distinguish between the number of the possessor. We gloss as PRT:PL the pertensive with plural possessor, which is marked on a singular noun. The reason for doing so is that the pertensive with plural possessor form of a singular noun can be conceived of as further morphophonological marking on the basis of the pertensive with singular possessor form of a singular noun.

7 Related to this, see the discussion of chained adnominal modification in Dinka (Andersen 2020).


possessive noun phrase **káaal^u àbóon** is in turn the possessor of the compound noun **ᵛᵛt-jāaᵛ** ‘hospital’ (lit. ‘house-medicine’). The latter noun, being a possessed term, appears in the pertensive **ᵛᵛt-jāaat^u**.

- (5) ^ˆ **já ní kīᵛ a [ᵛᵛt-jāaat^u [káaal^u [àbóon]]]**
 PR.1SG HAB carry:OV FOC⁸ house-medicine:PRT camp:PRT priest
 ‘They used to take me to the hospital of the Catholic mission (lit.: to the hospital of the camp of the priest).’
 [DownWithIllness 120.2-123.6]


As for possessor fronting, while the possessor consistently follows the possessed term, it may be fronted and then resumed pronominally. This is illustrated in (6). The possessor **màaaj ání** ‘that fishing technique’ is fronted and then resumed by the 3rd singular pronominal **gᵛ**, in the possessor slot following the head noun, **ᵛᵛᵛ-í** ‘name’.

- (6) ^ˆ **màaaj ání ᵛᵛᵛ-í gᵛ cwólì áa dwááᵛᵛ-ᵛ**
 fishing:CS DEF name.PL-PRT PR.3SG call:ITER NOMP.SG surface-DVN
 ‘That kind of fishing, the name of it is “surfacing”.’
 [FishingPart2 1.8-3.3]



We hypothesize that this fronting with resumption serves to present the possessor as a topic in an information-structural sense. Illustration (6), for example, is part of a narrative in which the speaker discusses the ‘surfacing’ technique as part of a more extensive discussion of fishing methods. This hypothesis is supported by the fact that dislocation with resumption is often found with possessors that have persons as referents, i.e., constituents that are prone to represent the discourse topic. This is illustrated by the examples in (7). In (7a), **bᵛᵛᵛ ᵛᵛᵛ-mēn** ‘the siblings of Bol’ has the possessor term **bᵛᵛᵛ** ‘Bol’ fronted; it is equivalent in referential meaning to **ᵛᵛᵛ-mīi bᵛᵛᵛ**. And in (7b), **ᵛᵛᵛᵛᵛ-ᵛ pāaar-ē** ‘the village of Rat’ has the possessor **ᵛᵛᵛᵛᵛ-ᵛ** ‘Rat’ fronted. This is equivalent to **pāaar^u ᵛᵛᵛᵛᵛ-ᵛ**. In both cases, the fronted possessor is center stage in the discourse at that point.

- (7) a. ^ˆ **cᵛᵛᵛ bāa wáááᵛᵛ-kjèl dé bᵛᵛᵛ ᵛᵛᵛ-mēn gíiᵛ**
 Chol NOMP son:PRT-first CONJ Bol offspring:PRT-mother:3SG many
 ‘Chol is an only son, but as for Bol, his siblings are many.’
 [KeepTheSecret 23.9-26.7]

8 To the best of our knowledge, the focus marker is the only morpheme in the Shilluk language that is not specified for tone, specifically when it immediately follows the verb. In this environment, it copies the final tone target of the preceding syllable for its specification. In other positions it is specified for Low tone.

b. [^] káā jéecē-ṽ pāaar-ē ò-mùt-ò
 CONJ rat-SG village:PRT-3SG IMPF-drown
 ‘And then the village of Rat flooded.’
 [RatAndCat 4.1-6]



The alternative possessive construction involves a function word that is positioned between the possessed and possessor terms. It is realized as **míí**, **míí**, **mók**, or **móó**, which are inflected forms of the modification marker **mé** (singular) / **mó** (plural). The forms **míí** and **míí** are used when the head (possessed term) is singular. Their use is illustrated in (8). In (8a), the possessor is singular, and we find **míí**. This can be interpreted as the pertensive with singular possessor of **mé**, with the singular pertensive marker **-ī** / **-ì** coalesced to it.⁹ In (8b), the head is again singular, but here the possessor is plural, and this is why we find **míí**. This form can be analyzed as the combination of the pertensive form of **mé**, coalesced with the plural pertensive marker **-í**. That is, **mé** inflects for pertensive just as a singular noun does: it presents separate forms as a function of the grammatical number of the possessor, and this difference is expressed through the specification for tone. For the sake of comparison, note that the specifications for tone on **míí** and **míí** parallel those on High-toned noun like **lwáak** ‘barn’, which has pertensive with singular possessor **lwáaak**¹⁴ and pertensive with plural possessor **lwáaak** (1).

- (8) a. lwáak míí pāac ò-mùt-ò
 barn MDF.SG:PRT village
 ‘barn of the village’
 b. lwáak míí jìì
 barn MDF.SG:PRT:PL people
 ‘barn of the people’

The lack of case marking on the head noun when it is followed by **míí** / **míí** matches the state of affairs when **mé** is used to mark a modifier that is not a possessor. That is, when a head is accompanied by a modifier other than a possessor, it will in most cases appear in the construct state inflection, which is an instance of head marking, just like a pertensive is (see Chapter 2, Section 2). The construct state form is an inflection that signposts the presence of a modifier that is not a possessor (cf. Creissels 2009). It is used, among other situations, when a noun is followed by a modifier marked by the modification marker **à**, by a deictic marker, or by the definiteness marker **ání**. The use of the construct state form is shown in (9a), where **lwáak** is modified by an adjective using the modification marker **à**, and therefore appears in its



⁹ The distribution of the allomorphs of singular pertensive marker **-ī** / **-ì** is governed by the specification for tone of the stem syllable (cf. Chapter 2, Section 3.1.2).

construct state form: **lwáaaŋ**. The construct state form is distinct from both the pertensive with singular possessor (**lwáaak^u**) and from the pertensive with plural possessor (**lwáaak**). However, when the same adjectival modifier is marked using **mé**, as in (9b), then the noun **lwáak** appears in its base form, just as in (8a,b).¹⁰



- (9) a. **gĩñ^u bǎa lwáaaŋ à dwóŋŋ**
 thing:DXS NOMP barn:CS MDF big
 ‘This is the big barn.’
- b. **gĩñ^u bǎa lwáak mé dwóŋŋ**
 thing:DXS NOMP barn MDF.SG big
 ‘This is a big barn.’

In summary, we find **mĩĩ** and **mĩ** with singular possessed terms, and the choice between these specifications for tone depends on the number of the possessor: it is **mĩĩ** if the possessor is singular; and **mĩ** if the possessor is plural.

In contrast, if the possessed term is plural, the function word between the possessed and possessor terms is **mók** or **móɔɔ**. This is shown in (10), where all of the examples have as possessed term the noun **lwàlak^u** ‘barns’, which is the plural of **lwáak**. Both **mók** and **móɔɔ** can be interpreted as derived from the modification marker **mó**, which is the plural counterpart of **mé**. But whereas the alternation between **mĩĩ** and **mĩ** – which go with singular head nouns – is governed by the grammatical number of the possessor, this is not a factor with **mók** and **móɔɔ**. This is shown in (10). Note that, in (10a,b), **móɔɔ** is used both with singular possessor **twóŋŋ** ‘Twong’ and also with plural possessor **málan** ‘women’. And likewise in (10c,d), **mók** is used both with singular possessor **ájwǒm** ‘monkey’ (10c) and with its corresponding plural **ájwòm-ì** ‘monkeys’ (10d). These examples show that the alternation between **mók** and **móɔɔ** is not governed by the number of the possessor. This matches the situation with plural nouns, which also do not present separate pertensive forms as a function of the grammatical number of the possessor.



- (10) a. **lwàlak^u móɔɔ twóŋŋ** b. **lwàlak^u móɔɔ málan**
 barn:PL MDF.PL:PRT Twong  barn:PL MDF.PL:PRT women
 ‘barns of Twong’ ‘barns of the women’

10 The functional difference between these two modification constructions relates to definiteness. We will return to it in Section 4.



- c. **lw̩l̩l̩l̩k^h mók ájwòm** d. **lw̩l̩l̩l̩k^h mók ájwòm-ì**
 barn:PL MDF.PL:PRT monkey  barn:PL MDF.PL:PRT monkey-PL
 ‘barns of the monkey’ ‘barns of the monkeys’

Instead, the alternation is conditioned by a phonological factor: the critical difference between (10a,b) on the one hand vs. (10c,d) on the other is that the possessors **twóŋ** and **málan** (which combine with **mówo**) are consonant-initial, while the possessors **ájwòm** and **ájwòm-ì** (which combine with **mók**) are vowel-initial. The same conditioning factor also governs pronominal possessors: we find **mówo géŋ** ‘the ones belonging them’, but **mók-é** ‘the ones belonging to her / him’.

Interestingly, this phonological conditioning of the allomorphy between **mók** and **mówo** is identical to the one in the pertensive with plural possessor of the phonologically similar noun **ḍók** ‘mouth’ (cf. Chapter 2, page 56). As seen from (11), we find **ḍók** before consonant-initial plurals (11a), and **ḍówo** before vowel-initial plurals (11b). Importantly, however, **ḍók** ‘mouth’ is grammatically singular, unlike **mók** and **mówo**.

- (11) a. **ḍók ájwòmì** b. **ḍówo málan**
 mouth:PRT.PL monkey-PL  mouth:PRT.PL women
 ‘entrance of the monkeys’ ‘entrance of the women’


Examples of the second possessive construction drawn from narratives are presented in (12–14). In (12a), the possessor that is marked by **míí** is **jàaap-ò**, an infinitive nominalization of the transitive verb {jap} ‘search’. This nominalization **jàaap-ò** itself heads a possessive noun phrase. In (12b), the possessor is pronominal, the 2nd singular suffix **-ì**, which coalesces with **míí**, yielding an overlong vowel.

- (12) a. [^] **mén n̩uʊt̩ a kóok-ì míí jàp-ì cáŋ**
 IDP.SG:DXS show:NT FOC reward-INST MDF.SG:PRT search:INF-PRT eat:INFA
kì báaŋ^h ŋàan mǝɛk-ó
 PRP behind:PRT person.CS other-SG
 ‘This shows the reward of looking for food from another person.’
 [DogAndJackal 62.6-67.4]
- b. [^] **kìní ée ò-bwōŋ-ò / kwòŋ míí ù-bèet-ò**
 QUOT EXCL ML:VOC-Arabs-SG / tradition MDF.SG:PRT:2SG FUT-remain
 ‘O Arab, your tradition will remain.’
 [GoodBehaviour 104.8-106.8]


As seen from this description, the function word **míí** / **míí** / **mók** / **mówo** has the morphological properties of a noun. If the possessed term is singular, then

the alternation between **míí** vs. **míi** is conditioned in the same way as on a noun: as a function of the number of the possessor. If the possessed term is plural, then the alternation between **mók** vs. **móɔ** is governed by the same phonological condition as in the paradigm of the singular noun **ḍók** ‘mouth’: by the initial segment of the following word.

The parallel with nouns extends to the syntactic level, in that **míí** / **míi** / **mók** / **móɔ** can head a noun phrase, without a preceding possessed term. This is illustrated in (13). The copula **băa** marks nominal predicates only, indicating that **míí** heads the possessive noun phrase. This means that **míí** **ápwootḥ** ‘the one of Apwodho’ is the noun phrase argument to the head of the predicate. This shows that **míí** / **míi** / **mók** / **móɔ** have some of the properties of an independent pronoun. This is equally the case for other forms in their paradigms, such as **mé** and **mó**.

- (13) ^ˆ **płłłłł mēñ à kwókí kí nłłłłł-ə băa míí ápwootḥ**
 hippo IDP.SG MDF be.first:OV PRP kill-INF NOMP MDF.SG:PRT Apwodho
 ‘The hippo that is killed first belongs to Apwodho.’
 [TheDescendantsOfWaang 691.2-694.1]

While possessive modifiers are most frequently expressed using the construction illustrated in (1b), i.e., with the possessed term in the pensive and without an intervening function word, there is one context in which only the second construction can be used: when possessed and possessor terms are separated by another constituent, such as an adjective or another modifier. Illustration (14) presents an example of this from a narrative. Here the 3rd plural pronoun **gén** modifies the head noun **jíí** ‘name.pl’. The pronominal possessor **gén** does not immediately follow this head noun; they are separated by **ḍwłłłłł**, another possessor. Importantly, there is no ambiguity as to which of the two nouns **gén** modifies: the presence of **móɔ** signposts that the possessed term modified by **gén** is morphologically plural, which matches up with plural **jíí** ‘name.pl’ but not with singular **ḍwłłłłł** ‘status’. If **gén** had modified **ḍwłłłłł**, we would have found **míi gén**.

- (14) ^ˆ **gé cwól-ì gáa àkool bëen^h**
 PR.3PL call-ITER PR.3PL:NOMP leader:PL all
à jíí jíí-í ḍwłłłłł móɔ gén
 MDF NOMP name.PL-PRT:PL status MDF.PL:PRT PR.3PL
 ‘They were all called leaders, which was their title (lit.: their names of status).’¹¹
 [TheDescendantsOfWaang 226.8-230.4]




11 In the recording of this utterance, the nominal predicate marker **jíí** is accidentally

2.2 Meaning

Across the world's languages, nominal possessors express a wide variety of semantic relations between the possessor and the head noun, the possessed term. Aside from the most obvious one, which is ownership, Dixon (2010:262-263) distinguishes part-whole relationship, kinship, orientation/location, attribute relationship, and association. The two possessive constructions described in Section 2.1 diverge in their ability to express these relations. Both can express ownership. This is illustrated in (15). Illustration (15a) displays the head-marked possessive construction, where the head is inflected for pertensive and the possessor is unmarked. Example (15b) illustrates the other possessive construction, where neither of the nouns is case-marked but a function word (**mńĩ**, **mńĩ**, **mńk**, or **mńw**) appears between them.



- (15) a. **dāaak^u** **twńwŋ** **lńuս** **ń** b. **dńk** **mńĩ** **twńwŋ** **lńuս** **ń**
 pipe:PRT Twong black  pipe MDF.SG:PRT Twong black
 'Twong's pipe is black.' 'Twong's pipe is black.'

While ownership can be expressed using either of these two constructions – the head-marked one or the alternative possessive construction – other semantic relations between possessor and the head are expressed through the head-marking construction only. This is illustrated in (16), for part-whole relation (16a,b), kinship (16c), and location or orientation (16d). If the alternative construction is used in these sentences, the result is either ungrammatical, or the meaning is different. For example, the alternative possessive construction for (16a) is **wńc mńĩ twńwŋ**. This means 'the head belonging to Twong', where the head can be interpreted, for example, as the head of a slaughtered goat, but not as Twong's own head. As for the examples in (16b-d), in each case the corresponding alternative possessive construction is ungrammatical – e.g. ***dńoor-ń mńĩ lwńak**.

- (16) a. **wńc^u** **twńwŋ** **dńwńwŋ** PART-WHOLE RELATION
 head:PRT Twong big:CTG
 'Twong's head is big.'
- b. **dńoor-ń** **lwńak** **tńoor-ń** PART-WHOLE RELATION
 wall-PRT barn break-NEVP
 'The wall of the barn is broken.'
- c. **kńwńj-ń** **twńwŋ** **bńa** **ńwńoor-ń** KINSHIP RELATION
 grandfather-PRT Twong NOMP be.generous-DVN
 'Twong's grandfather is generous.'

mispronounced **lńŋ**.

possessive noun phrase, headed by the pertensive form of **jwɔ́ɔk-ɔ́**, which is the patient-oriented infinitive nominalisation of {jwɔ́ɔk} ‘mourn’. Note that the possessor term **máááĩ-ē** expresses the patient. In addition, however, the transitive verbs present another infinitive nominalization, the possessor of which expresses the agent associated with the event referenced by the verb. This is shown in (18b), which differs from (18a) in relation to the possessive noun phrase only. Here the subject of the clause is the constituent **jwɔ́ɔk^u máááĩ-ē** ‘the mourning by his friend’. This is again a possessive noun phrase, this one headed by the pertensive form of **jwɔ́ɔk**, which is the agent-oriented infinitive nominalization of {jwɔ́ɔk} ‘mourn’.

- (18) a. [^] **rùuu wɔ́ɔw, kɛ̃ɲ à á-béeeñ jwɔ́ɔk-ì máááĩ-ē**
 arrival:PRT time time:CS MDF PST-come:XV mourn-INF:PRT friend:PRT-3SG
 ‘At the arrival of the time, at which the mourning of his friend came round, [...]’
 [KeepTheSecret 150.8-153]
- b. **rùuu wɔ́ɔw, kɛ̃ɲ à á-béeeñ jwɔ́ɔk^u máááĩ-ē**
 arrive:PRT time time:CS MDF PST-come:XV mourn:INFA:PRT friend:PRT-3SG
 ‘At the arrival of the time, at which the mourning by his friend came round, [...]’






Crucially, the semantic roles of patient and agent can be expressed in relation to these infinitive nominalisations only when the head-marked possessive construction is used, as in (18a) and (18b), respectively. The corresponding alternative possessive constructions, i.e., with the function word positioned between possessed and possessor terms are not grammatical: ***jwɔ́ɔk-ɔ́ mĩĩ máááĩ-ē** ‘mourning of his friend’ (cmp. 18a); ***jwɔ́ɔk mĩĩ máááĩ-ē** ‘mourning by his friend’ (cmp. 18b). This fits with the generalization that the construction using a function word positioned between possessed and possessor terms is grammatical only in the expression of ownership.

In conclusion, head-marked possessive noun phrases express a wide range of semantic relations. In contrast, the possessive noun phrase using a function word positioned between possessed and possessor terms is used exclusively to express ownership. This difference in functional scope explains, at least in part, why the latter is used less frequently than the former.

3. Diminutives

In general, noun-phrase modifiers follow the head in Shilluk. There is one apparent exception to this: the diminutives. They are **ɲāa**, **ɲāaa**, and **ɲwɔ́ɔl-í**. The use of the first two is illustrated by the examples in (19), all of which

are drawn from narratives. When a diminutive is used in relation to a plural referent, this may convey either small size or small number.

- (19) a. [^] **nāa** **pwòot-è** **jāa** **η̄λλac^u** **pāac**
 DIM field:PRT-3SG LOCP:FOC behind:PRT village
 'His small field is located behind the village.'
 [AchangVillagePart1 216.6-218.2]
- b. [^] **nāa** **ówéēñ-ī** **gūur**, **é** **bāa** **ábóooḡ-ḡ**
 DIM tilapia-PRT Nile.perch PR.3SG NOMP ambatch-SG
 'A small tilapia-like Nile perch, it was (made of) ambatch wood.'
 [TheDescendantsOfWaang 95.7-98.1]
- c. [^] **kì** **báaañ^u** **nāa** **kēj** **mé** **tínnḡ** **kāā** **ḡḡol** **gé-kí**
 PRP after:PRT DIM time MDF.SG small:CTG CONJ rope PR.3P-PRP
kwàr-ī **ñéew**
 roofbeam-P buy:OV
 'After a very short time, the rope and the roofbeams were bought.'
 [AchangVillagePart1 439.5-443.2]
- d. [^] **kāā** **nāa** **jāaak** **ání** **dḡḡk-é** **(kí)** **cwḡool-ḡ**
 CONJ DIM man DEF repeat-3SG PRP call:PET-DVN
 'Then he called the teenagers (lit. small men) again to come.'
 [PearStory 108.4-109.9]
- e. [^] **lámàn** **ñíñ-í** **à** **á-cāaak** **ján** **ñ** **ñāaa** **gík-tḡñ-ḡ**
 INTERJ name.PL MDF PAST-name:XV PR.1S PRP DIM:PL children(thing.PL-small-PL)
 'So the name which the small children gave to me, [...].'
 [DownWithIllness 205.6-207.6]

The forms **nāa** and **ñāaa** are related to the pertensive inflections of **ñūr** 'child, daughter, offspring'; **nāaar^u** is its pertensive with singular possessor form, and **ñāaar** is its pertensive with plural possessor.¹³ Their lexical use is illustrated by **nāaar-āa** 'my daughter', **nāaar^u djèl** 'female offspring (sg.) of a goat' and **ñāaar djêk** 'offspring (sg.) of goats'. In the examples in (19), however, this meaning does not fit: in (19e), for example, **ñāaa gík-tḡñ-ḡ** does not mean 'the offspring of children', but 'small children'. In other words, **nāa** and **ñāaa** are, in a semantic sense, attributes in relation to the following noun. Also in divergence with their origin in kinship terms, they can be used with inanimate referents, as in (19a).

The diminutive **nāa** is a phonologically reduced form of the pertensive form **nāaar^u**. While coda /r/ is often elided in Shilluk, the length of the vowel

13 While the base form can refer to a male or female child, the pertensive is specific to female gender.

is specific to dialect. Of these two, **ɲǎaa** is used in the Gar (northern) dialect. Its use is illustrated by the narrative example in (19e), and by the elicited example in (21b). In the southern Lwak (southern) dialect region, speakers use the plural pertensive **ɲwɔɔl-í** as a diminutive, as in (21c); and hence the use of a construction like (21c) is ambiguous.

In summary, the diminutives **ɲāa**, **ɲǎaa**, and **ɲwɔɔl-í** modify the following noun semantically, even though morphosyntactically the construction has at least some properties of a possessive noun phrase in which they are the head. While all three of these forms are based on the pertensive inflection, they show the effects of grammaticalization to different degrees. The furthest along the cline of grammaticalization is **ɲāa**, which is reduced in form relative to its lexical source and is no longer sensitive to the patterns of number agreement in possessive noun phrases.

4. Lexical-category modifiers (excluding possession)

The following three subsections describe how a Shilluk noun can be modified by an adjective (Section 4.1), a verb (Section 4.2), and another noun that is not a possessor (Section 4.3). Adjectives and verbs are used as noun-phrase modifiers by means of the same morphosyntactic structures. In relation the use of verbs as modifiers, we know of no compelling arguments to distinguish between verbal modifiers and relative clauses.


4.1 Adjectives as modifiers

The use of adjectives as modifiers has already been covered in Chapter 4, which is about adjectives in general. Here we merely summarize the key facts, and we refer the reader to Section 3.2 of Chapter 4 for an in-depth descriptive analysis of adjectival modification, supported by evidence from spontaneously uttered examples.


Adjectives can modify nouns using three different constructions, illustrated in (22). Note that, in every one of them, the adjective follows the head noun. This is a general characteristic of noun phrase modification. First, there is the construction in (22a), involving the function word **mé** (sg.) / **mó** (pl.), positioned between the head noun and the adjective.¹⁴ When this modification

¹⁴ This function word is also involved in the periphrastic possessive noun phrase construction (Section 2), in which it is marked for pertensive.

modifier is a relative clause headed internally by an intransitive verb form, and the function word **mé** is positioned between the head noun and the modifier. As for the functional meaning of the use of this construction, this is the first mention of this referent in the story: the man working in the hospital is introduced for the first time here. Hence, we interpret the referent of **jàal mé gòook-ò (kì) òt-jāaṭ** as both indefinite and semantically specific.

- (24)[^] wó á-pêekì a búuṭ-ī jàal mé gòook-ò (kì) òt-jāaṭ
 PR.1PEX PST-settle FOC area-PRT man MDF.SG make:ATP-NT PRP house-plant
 ‘We stayed at the place of a man who worked in the hospital.’
 [DownWithIllness 330.7-340.1]

The second spontaneously uttered example illustrating the modification construction using **mé** (sg.) / **mó** (pl.) illustrates the morphological flexibility of the modifier verb. In (25), the modifying verb {càm} ‘eat’ is inflected for applicative voice, which promotes a peripheral argument from an oblique (i.e., in a prepositional phrase) to a core argument in the preverbal topic slot (cf. Section 3.2.3 of Chapter 1). When this voice is used with a transitive verb, as in (25), the P argument follows the verb. The scope of peripheral arguments that can be promoted in this way includes Instruments. All of these characteristics are in evidence in (25). First, the verb is marked for applicative voice: **cāam** is the applicative form of transitive {càm} ‘eat’. Second, **ákèl-ó** ‘sorghum noodles’ is the promoted peripheral role (Instrument), licensed to appear in the topic slot by the applicative voice marking on {càm}.¹⁶ And finally, the P argument **mòok** ‘kind of fish’ follows its verb.

- (25)[^] káā ò-tāaṭ-ò kí ákèl-ó mé cāam mòok
 CONJ IMPF-cook:ATP-IMPF PRP sorghum.noodles-SG MDF.SG eat:XV kind.of.fish
 ‘And then she cooks sorghum noodles to eat the fish with.’
 [DengsFish 50.4-52.6]



Erlewine, Levin & van Urk (2017) note that in voice systems, the topic slot is characteristically the only position in the relative clause that can serve as the common argument with the superordinate clause. As seen from (25), the applicative has an important role to play in making it possible for the peripheral role to appear in the topic slot.

The use of the modification construction in (23b), whereby the head noun is in the construct state and not followed by a function morpheme, is



state form, which is **jāaal**.

¹⁶ The fact that it appears in a prepositional phrase relates to its syntactic role in the main clause.

illustrated by the narrative examples in (26). In (26a), the verb **mâar** is in subject voice and modifies the construct-state noun form **ɲàaan**, without any intervening function word. Presumably because it conveys semantic non-specificity, this construction fits well in negation. In (26b), the referent of **gìc-ò** ‘something’ is also semantically non-specific. Here the verb appears in the associated-motion derivation, and it is inflected for object / applicative voice,¹⁷ which allows for the inclusion of the Destination (mouth) as an additional internal argument.

- (26) a. [^] bōŋ ɲàaan mâar cwɔ̄l-ò kɪnì áa ɲàaan bōŋ rúm-é
 NEG person:CS love:NT call:ITER QUOT NOMP.3SG person:CS NEG thoughts-3SG
 ‘There is no one who loves to be called a person who has no thoughts of their own.’
 [PrayerSongForPeace 214.8-218]
- b. [^] dâa gɪn tíŋ ɖók cɔ̄n
 EXSP=FOC something:CS lift:SPAT:OXV mouth ADV
 ‘Is there anything at all to lift to the mouth?’
 [AchangVillagePart1 48.0-49.4]

The examples in (27), finally, include noun phrases heading relative clause modifiers marked by **à**. In (27a), the pears (lit. fruits of tree) that have been given to the children have been mentioned earlier, and they are therefore definite at this point in the discourse. In relation to (27b), we hypothesize that the modification construction with **à** is used because reference is restricted. Just as in (26b), the verb is in an associated-motion derivation, here the centripetal form, so that the Destination (that place) can be included as a core argument.

- (27) a. [^] gé ò-ɲàam-ò kí ɲwɔ̄l-í jāaŋ à
 PR.3PL IMPF-chew:ATP-IMPF PRP offspring.PL-PRT tree:CS MDF
á-méek-i gɪn
 PST-select:BNF:OV PR.3PL
 ‘They are chewing the tree fruits that had been given to them.’
 [PearStory 147.6-149.7]
- b. [^] ɲii à á-júuuì kɛɲ aní bāa bōŋ-ì
 people:CS MDF PAST-find:PET:OXV place:CS DEF NOMP craftsman-PL
tjéeeɲ àpūɲ
 people:PRT Funj
 ‘The people they came to find in that place were craftsmen, Funj people.’
 [TheDescendantsOfWaang 198.9-203]



17 Object voice and applicative voice are not formally distinct from one another in the associated-motion derivations (cf. Chapter 3, page 20).

As seen from the above examples, both transitive and intransitive verbs can be used as modifiers to nouns, and these verb forms can be in the base paradigm or in derived paradigms, and also in wide range of inflections. This variety is representative, in the sense that almost all of the verb forms that can be used as a main-clause predicate can equally be used as a modifier in a noun phrase using the three constructions in (23). This is particularly important in relation to voice, which makes it possible for A, P and a variety of peripheral arguments to appear in the topic slot (cf. Erlewine et al. 2017).¹⁸

There is, however, one limitation on the range of morphological forms that verbal modifiers can take, relating not to voice but to tense-aspect-modality (TAM). We describe this in Section 4.2.1. Finally, Section 4.2.2 describes a construction whereby the head noun dominating a relative clause is co-referent with a possessor within the topic noun phrase of this relative clause.

4.2.1 Limitations on the morphological paradigm of verbal modifiers of nouns

As noted above, verbal modifiers within the noun phrase display a variety of derivations and inflections. There are however some restrictions relating to Tense-Aspect-Modality, which we describe in this section. To begin with, consider the inflections marking tense-aspect-modality of the intransitive verb {twàar} ‘snore’ when it appears in a main clause. Illustration (28a) shows the forms of this verb used as a predicate in a simple main clause, inflected for Past, Non-evidential Past, Imperfective, and Future; (28b) shows it inflected for No Tense form in a serialisation.¹⁹

- (28) a. **gwôk á-twàar / twáaar-ó / ò-twáaar-ó / ú-twâar**
 dog PST-snore / snore-NEVP / IMPF-snore-IMPF / FUT-snore
 ‘The dog was snoring / was apparently snoring / is snoring / will snore.’
- b. **gwôk twâar é ò-níim-ó**
 dog snore:NT PR.3SG IMPF-sleep-IMPF
 ‘The dog is snoring while sleeping.’

Of these five Tense-Aspect-Modality (TAM) forms, only the Imperfective cannot be used as a modifier at all. As for the other four – Past, Non-evidential

¹⁸ Throughout this chapter, we use P for the argument of a transitive verb that expresses the most patient-like semantic role, and A for the argument expressing the most agent-like semantic role (cf. Croft 2001:136).

¹⁹ The use of the No Tense form in a simple main clause needs to be licensed by a constituent that provides an aspectual setting. Serialisation is one of the ways this requirement can be fulfilled. This phenomenon is described in Section 6 of Chapter 1.

Past, No Tense and Future – all four of these can be used in the modification construction in which they are preceded by **mé / mó** (23a), and also in the modification construction in which they are preceded by **à** and in which the head noun is in the construct state (23c). This is shown in Table 1. As for the modification construction involving the construct state without a segmental function morpheme, as in (23b), it can be used in the No Tense form and in the Non-Evidential Past, but not with Past and Future tense forms. That is, ***gwóooŋ á-twàar** and ***gwóooŋ ú-twâar** are ungrammatical.

Table 1. Orthogonal crossing of the distinctions of Tense-Aspect-Modality with the three constructions for verbal modifiers. The phonetic outcome of hiatus resolution between the verb form and preceding vowel in continuous speech is included between square brackets.


	N mé (sg.) / mó (pl.) V	N:cs V	N:cs à V
No Tense	gwôk mé twâar 'a dog that is snoring'	gwóooŋ twâar 'a dog that is snoring'	gwóooŋ à twâar 'the dog that is snoring'
NEvP	gwôk mé twâaar-ó 'a dog that was apparently snoring'	gwóooŋ twâaar-ó 'a dog that was apparently snoring'	gwóooŋ à twâaar-ó 'the dog that was apparently snoring'
Past	[máatwâar] gwôk mé á-twâar 'a dog that was snoring'	*gwóooŋ á-twâar	[ãatwâar] gwóooŋ a á-twâar 'the dog that was snoring'
Fut	[móutwâar] gwôk mé ú-twâar 'a dog that will snore'	*gwóooŋ ú-twâar	[öutwâar] gwóooŋ a ú-twâar 'the dog that will snore'

Summarizing this descriptive analysis of verbal modifiers so far, there are three constructions, which diverge in terms of definiteness and semantic specificity. The derivational and inflectional forms of verbs when used as nominal modifiers are largely the same as those of verbs used as predicates. However, the Imperfective form of the verb is not used as modifier at all, and the construction without a segmental modification marker cannot be used with the Past or Future tense forms (cf. Table 1).


4.2.2 Relativization from the possessor within the topic slot

As seen from the description in Section 4.2 so far, noun modifiers headed by verbs, are formed using the same morphosyntactic structures as adjectival modifiers. For this reason the description of relative clauses fits within the

discussion of noun phrase modifiers. The current subsection describes a phenomenon re. the relation between the main clause and the relative clause. Given that the modifier verb is itself the head of the predicate of a subordinate clause, the head noun typically represents an argument shared by the subordinate clause and the superordinate clause, i.e., the common argument. There is one situation in which the common argument can fail to be identical to the topic of the subordinate clause. This is illustrated in (29). The referent of the common argument here is Pakwan, which is resumed as **jàaal** ‘man’. But the topic constituent of the subordinate is **kwéj-ē** ‘his (i.e., Pakwan’s) grandfather’, which represents the Agent in relation to the verb **á-côop**. As seen from this example, the common argument can be represented in the subordinate clause as the *possessor* within the topic slot, rather than by the topic as a whole.

- (29) **káā pākwan jàaal [à-á kwéj-ē á-côop áclŋ] ò-kôoop-ò**
 CONJ Pakwan man:CS MDF-PST ancestor:PRT-3SG PST-found Achang IMPF-say-IMPF
 ‘And Pakwan, the man whose grandfather had founded Achang, said [...]’
 [AchangVillagePart1 103.9-107.1]



In the narrative example in (29), **kwéj-ē** ‘his ancestor’, is the topic of the subordinate clause, which is the position through which a relative clause can link to a superordinate clause. This topic represents the A argument of the predicate of the subordinate clause, which is headed by **á-côop**. In fact, the topic can express a range of semantic roles within the relative clause. This is illustrated in (30), where the topic **báaaŋ-ē** of the subordinate clause represents a Reason.²⁰ The promotion of an argument expressing a Reason to the topic slot is licensed by the inflection for applicative voice on {**dòoŋ**} ‘stay behind’, the verb of the subordinate clause. The common argument is represented in the main clause as **ŋjēep mós nók** ‘little money’, and in the subordinate clause as the pronominal possessor on **báaaŋ-ē** ‘due to it’.

- (30) **jòut a ŋjēep mós nók, à báaaŋ-ē dōoŋī gēn**
 find:NT FOC money MDF.PL little MDF reason:PRT-3SG stay.behind:XV:NT PR3.PL:NOM
 ‘[They] have little money, which is the reason why they stay behind (= do not return).’
 [AchangVillagePart1 649.9-652.6]



20 The morpheme **báaaŋ**[#] is a deictic noun, expressing the meanings ‘behind (location), after (time), due to (reason)’. It is only used in the pertensive. We hypothesize that it is a noun, because it can serve as the argument of a preposition, and because it inflects for pertensive as a regular noun: note that it distinguishes pertensive with singular possessor **báaaŋ**[#] **bòoŋ-ò** ‘because of the craftsman’ from pertensive with plural possessor **báaaŋ** **ji** ‘because of people’, through the addition of a High tone target (cf. Chapter 2, Section 3.4.3).

This fits with the general characteristic for voice systems, i.e., that the topic slot is the only position in the relative clause that can serve as the common argument with the superordinate clause (cf. Erlewine et al. 2017). Examples (29) and (30) show that this applies not only when the head noun is the common argument, but also when the head noun is co-referential with a possessor within the subordinate clause.


In summary, there are two options: a) the referent of the common argument can be identical to referent of the topic of the subordinate clause; b) the referent of the common argument can be identical to referent of the possessor within the topic of the subordinate clause. These options are illustrated by the elicited examples in (31a) vs. (31b), respectively.



- (31) a. **já néení a lwáaaŋ à t̥ík**
 PR.1SG look:NT FOC barn:CS MDF fix:OV
 'I am looking at the cattle barn that is being repaired.'
- b. **já néení a lwáaaŋ à d̀oor-è t̥ík**
 PR.1SG look:NT FOC barn:CS MDF wall:PRT-3SG fix:OV
 'I am looking at the cattle barn whose wall is being repaired.'

Relative clauses in which the possessor of the topic serves as the common argument shared with the main clause can also be formed using the other two constructions through which nouns can be modified. The construction using **mé / m̀** is illustrated in (32a) – here the referent of the noun phrase that includes the relative clause is indefinite and specific. The construction without a segmental marker is illustrated in (32b) – here negation gives rise to an indefinite and non-specific interpretation of the noun phrase that includes the relative clause.



- (32) a. **já néení a lwáak mé d̀oor-è t̥ík**
 PR.1SG look:NT FOC barn MDF.SG wall:PRT-3SG fix:OV
 'I am looking at a cattle barn the wall of which is being repaired.'
- b. **b̀ŋ lwáaaŋ d̀oor-è t̥ík**
 NEGP barn:CS wall:PRT-3SG fix:OV
 'There is no cattle barn the wall of which is being repaired.'

The same three modification structures are available for relative clauses with adjectival predicates, as seen in (33).



- (33) a. **já néení a lwáaaŋ à d̀oor-è b̀ááá̀r̀**
 PR.1SG look:NT FOC barn:CS MDF wall:PRT-3SG tall:CTG
 'I am looking at the cattle barn whose wall is high.'

- b. **já nénéí a lwáak mé dòor-è bállàt**
 PR.1SG look:NT FOC barn MDF.SG wall:PRT-3SG tall:CTG
 'I am looking at a cattle barn whose wall is high.'
- c. **būŋ lwáaaŋ dòor-è bállàt**
 NEGP barn:CS wall:PRT-3SG tall:CTG
 'There is no cattle barn whose wall is high.'




The illustration from the narrative in (29) presents something unexpected, which we will address now. Note the marking for Past tense immediately following the modification marker: **jàaal à-á kwéj-ē**. To allow for a more detailed examination of this, we present an elicited example in (34b), contrasting it with the configuration in which the common argument is coreferent with the topic of the subordinate clause (34a). These are analogous to (31a) and (31b), now both in Past tense. The phenomenon observed in spontaneously uttered example in (29) presents itself here as well: there is an additional High-toned **á** to the left of the topic of the Past tense subordinate verb.

- (34) a. **já nénéí a lwáaaŋ à á-ŋík**
 PR.1SG look:NT FOC barn:CS MDF PST-fix:OV
 'I am looking at the cattle barn that has been repaired.'
- b. **já nénéí a lwáaaŋ à-á dòor-è á-ŋík**
 PR.1SG look:NT FOC barn:CS MDF-PST wall:PRT-3SG PST-fix:OV
 'I am looking at the cattle barn whose wall has been repaired.'

It is appropriate to gloss this marker as a Past tense marker, not only because it is identical in phonological form to the Past tense prefix, i.e. **á-**, but also because it appears in this position only when the verb of the the subordinate clause is in the Past tense. Illustration (31b) already showed that the additional Past tense marker is not there when the verb of the subordinate clause is in the No Tense form; illustrations (35a,b) below show that it is equally absent if the verb of the subordinate clause is inflected for Non-Evidential Past (35a) or for Future (35b).

- (35) a. **já nénéí a lwáaaŋ à dòor-è ó-ŋík-ò**
 PR.1SG look:NT FOC barn:CS MDF wall:PRT-3SG NEVP.OV-fix-NEVP
 'I am looking at the cattle barn whose wall apparently has been repaired.'
- b. **já nénéí a lwáaaŋ à dòor-è ó-ŋík**
 PR.1SG look:NT FOC barn:CS MDF wall:PRT-3SG FUT-fix:OV
 'I am looking at the cattle barn whose wall will be repaired.'

We speculate that this additional morphological marking of Past tense can be understood with reference to hiatus resolution²¹, which is rife in Shilluk utterances. That is, both nouns and verbs carry vocalic prefixes and suffixes, resulting in hiatus, for example between a pronominal possessive suffix of a noun and the TAM prefix on a following verb, as in (34b) and (35a,b). The way hiatus is resolved is not fixed. Note that the Non-Evidential Past verb prefix wins out against the preceding modification marker **à**. This is shown in (36a), where **lwáaaṅ à ú-ṭíkò** yields [lwáaaṅúṭíkò]. In contrast, the pronominal possessive suffix **-è** is prosodically stronger, to the effect that, followed by the same verb, as in (36b), the vowel quality of the prefix and that of the suffix are realised phonetically in **dòor-è ú-ṭíkò** [dòorèúṭíkò]. And when the same suffix **-è** appears in a juncture with the Past tense prefix **á-**, as in (36c), then the former wins out completely in terms of vowel quality, where **dòor-è á-ṭík** is realized as [dòorèṭík].


- (36) a. [já néenáa lwáaaṅ ʊo ṭíkò]
 já néení a lwáaaṅ à ú-ṭík-ò
 PR.1SG look:NT FOC barn:CS MDF NEVP.OV-fix-NEVP
 'I am looking at the cattle barn that apparently has been repaired.'
- b. [já néenáa lwáaaṅ à dòor èú ṭíkò]
 já néení a lwáaaṅ à dòor-è ú-ṭík-ò
 PR.1SG look:NT FOC barn:CS MDF-PST wall:PRT-3S NEVP.OV-fix-NEVP
 'I am looking at the cattle barn whose wall apparently has been repaired.'
- c. [já néenáa lwáaaṅ áa dòor èe ṭík]
 já néení a lwáaaṅ à-á dòor-è á-ṭík
 PR.1SG look:NT FOC barn:CS MDF-PST wall:PRT-3SG PST-fix:OV
 'I am looking at the cattle barn whose wall has been repaired.'

These examples show that, when the topic is marked by a pronominal possessor, the marking of TAM on the verb is often not realized phonetically in a transparent way. In this context, the additional marking of Past tense on the relativizer can play an important communicative function.

As noted above (32), the construction in which the common argument represents the possessor within the relative clause is also found with the modification marker **mé / mǒ**. Like the modification construction with **à**, **mé / mǒ** combines with No Tense, Past, Non-Evidential Past, and Future inflections.

21 Hiatus refers to the phenomenon whereby two vowels appear in sequence, typically across a word boundary, as in English *be inside*. Such a phonological juncture is unstable, and languages tend to have mechanisms to 'resolve' such junctures, for example by deleting one of the vowels, or by merging the two vowels into one.

Illustration (37) shows the combination with Past tense, which, like the construction with modification marker *à*, features the additional Past tense marking *á* in a juncture with the relativizer, i.e., /*mé-á*/ realized phonetically as [*máa*].

- (37) **já néení a lwáak mé-á dòor-è á-ṭík**
 PR.1SG look:NT FOC barn MDF.SG-PST wall:PRT-3SG PST-fix:OV
 ‘I am looking at a cattle barn whose wall has been repaired.’

And just as when the common argument is the head noun of the topic of the subordinate clause, the construct-state construction (without segmental modification marker) is found only with the subordinate verb in No Tense and Non-Evidential Past (cf. Table 1).

4.3 Noun phrases as modifiers

When a noun phrase serves as a modifier to another noun, then the modifier noun phrase is most often a possessor. However, nouns can also take nominal modifiers that are not possessors. Such modifiers fulfill either a locative function or an equative function. These two functions are illustrated by the elicited examples in (38a) and (38b), respectively. Note that, in both cases, the head noun **bòwṭ-ḍ** is in the construct state form, and it is followed by the modification marker *à*, a construction that is familiar from adjectival modification (Section 4.1) and verbal modification (Section 4.2).



- (38) a. **bòwṭ-ḍ à lwáak bǎa júr**
 craftsman-CS MDF barn NOMP foreigner
 ‘The craftsman in the cattle barn is a foreigner.’
- b. **bòwṭ-ḍ à jàal-ḍ bǎa júr**
 craftsman-CS MDF man-SG NOMP foreigner
 ‘The male craftsman is a foreigner.’

Illustration (39) presents spontaneously-uttered examples of the locative use of nominal modification. In (39a), we find **jám-ī à nâam** ‘the things in the river’ and **jèt-ī à nâam** ‘the passages in the river’. Crucially, there is no locative predicate marker, such as the locative copula **jîŋ**, which marks locative predicates in main clauses. At the same time, the speaker is not using possessive noun phrases, which would have been: **jám-í nâam** and **jèt-í nâam**. In (39b), **jǎk à kâl** illustrates the same phenomenon.

5. Quantifiers





This section is organized in two main subsections: the first one describes numeral quantifiers (Section 5.1), the second one non-numeral quantifiers (Section 5.2).

5.1 Numerals


Numerals are possible modifiers within the noun phrase. Before addressing how they are used as modifiers, it is worthwhile to consider the properties of this set of morphemes more generally, because they have not yet been analysed in detail in earlier work. Section 5.1.1 presents a descriptive analysis of ordinal and cardinal numbers, their morphological formation, and how complex numbers are formed. Section 5.1.2 then goes into the status of numerals in the context of the lexical categories of verbs, nouns, and adjectives. Section 5.1.3 describes the morphosyntactic properties of numerals within the noun phrase.

5.1.1 Cardinals and ordinals


Numerals are used in several ways, illustrated by the elicited examples in (42). The cardinal numeral references the number of units of a given entity. This form is illustrated in (42a), for the numeral meaning ‘3’, which has the cardinal form **á-dłk**. The cardinal form is also used when counting in the abstract, as seen in (42b). Then there is the ordinal form, which is used when referring to a ranked position. This is illustrated in (42c) by **dłk** ‘3rd’. The ordinal form is also used in the expression of a proportion. This is shown in (42d), where the ordinal represents the possessed term in a construction that can be translated literally as ‘the third of the parts of the cake’.

- (42) a. **á-dłk tšək**
 CRD-3rd absent
 ‘Three are gone.’
- b. **á-kjèl, á-rjēw, á-dłk**
 CRD-1st CRD-2nd CRD-3rd
 ‘One, two, three.’
- c. **dłk tšək**
 3rd absent
 ‘The third one is gone.’
- d. **dłłłk bût-í ópũun tšək**
 3rd:PRT:PL part:PL-PRT:PL cake absent
 ‘A third (part) of the cake is gone.’



Of note in this example is the relation of the form of the cardinal in relation to the form of the ordinal: **á-dłk** ‘3’ is morphologically complex, in the sense that it is derived from the corresponding ordinal **dłk** ‘3rd’ through the addition of a prefix **á-**. This relation between cardinals and ordinals is characteristic for Shilluk numerals in general. Table 2 presents the numerals from 1 to 10,

- (43) **dâa l̥ʔ^{pl} p̥j̥l̥l̥l̥r-ð w̥ic dâa á-d̥l̥k**
 EXSP:FOC stick:PL 10th-CRD head EXSP:FOC CARD-3rd
 ‘There are 13 sticks.’

The tens, i.e. the numbers from 20 to 90, are expressed using **p̥j̥l̥l̥r** ‘ten:pl’, the plural of **p̥j̥l̥l̥r-ð** ‘10’, plus a unit number from 2 to 9, as in **p̥j̥l̥l̥r á-r̥j̥ēw** ‘20’. This is further illustrated in (44). This example also provides a further illustration of the use of **w̥ic dâa** to express the units in complex numbers.


- (44) **dâa l̥ʔ^{pl} p̥j̥l̥l̥r á-b̥i̥ŋw̥ēn w̥ic dâa á-b̥i̥ŋw̥ēn**
 EXSP:FOC stick:PL 10:PL CRD-9th head EXSP:FOC CRD-9th
 ‘There are 99 sticks.’

In numbers over 10, the difference between cardinal and ordinal numbers is morphologically marked on the final numeral only. This is illustrated in (45a,b), which show the ordinal numbers 13th and 99th, corresponding to the cardinal numbers ‘13’ and ‘99’ in (43) and (44) above, respectively. Note that the units are in the ordinal form, i.e., without the cardinal-marking prefix **á-**: it is **d̥l̥l̥k** and not **á-d̥l̥l̥k** in (45a), and **b̥i̥ŋw̥ēn** and not **á-b̥i̥ŋw̥ēn** in (45b). In contrast, the earlier part of these numbers – **p̥j̥l̥l̥r-ð** in (45a) and **p̥j̥l̥l̥r á-b̥i̥ŋw̥ēn** in (45b) – are the same as in the corresponding cardinals in (43) and (44), respectively. In (45a,b) alike, the constructions involving the ordinal are possessive noun phrases – we will return to this in the following subsections.

- (45) a. **dâa p̥j̥l̥l̥r-ð w̥ic dâa d̥l̥l̥k l̥ʔ^{pl}**
 EXSP:FOC 10th-CRD head EXSP:FOC 3rd:PRT:PL stick:PL
 ‘There is the thirteenth stick.’
- b. **dâa p̥j̥l̥l̥r á-b̥i̥ŋw̥ēn w̥ic dâa b̥i̥ŋw̥ēn l̥ʔ^{pl}**
 EXSP:FOC 10:PL CRD-9th head EXSP:FOC 9th:PRT:PL stick:PL
 ‘There is the 99th stick.’


The hundreds and thousands are expressed using **m̥i̥ŋj-ð** ‘hundred’, borrowed from Arabic *mi’a*, and **á-l̥ip** ‘thousand’, borrowed from Arabic *alf*. The word **m̥i̥ŋj-ð** ‘hundred’ has the ordinal form **m̥i̥ŋj**, parallel to the situation with ‘10’, where the suffix /-ɔ/ occurs in the cardinal but not in the ordinal. In contrast, **á-l̥ip** does not have an ordinal form; here the ordinal nature of a number is evident only from the fact that the noun it modifies is in the singular. Just as we found in relation to the multiple tens, multiple hundreds and multiple thousands are expressed by the plural forms of these words, **m̥i̥ŋj** ‘hundred:PL’ and **á-l̥ip** ‘thousand:PL’, followed by a cardinal numeral. The hundreds and the thousands

are both separated from lower numbers using the preposition **kí**, as in (46). This use of **kí** fits with its use in the conjunction of noun phrases (cf. Section 9).

- (46) [^] **băa rûun míu pjááar-ə wíc dâa á-bíikjèl kí pjáar á-bíiwèen**
 NOMP year.PL 100:PL 10-CRD head EXSP:FOC CRD-6th PRP 10:PL CRD-9th
 'It was the year 1690.'
 [TheDescendantsOfWaang 542.4-546.2]

5.1.2 Numerals are nouns

Central to an accurate understanding of the morphological and syntactic properties of numerals is the fact that they belong to the lexical category of nouns. This interpretation is based on morphological and syntactic evidence. First, Shilluk numerals behave as nouns morphologically: both ordinal and the derived cardinal inflect for number (singular vs. plural). The use of the plural is illustrated in (47), where **á-dǎáak**, the plural of **á-dǎk** '3', refers to several sets of three. In contrast, adjectives and verbs do not mark number stem-internally.





- (47) **léemúuuñ^u jí cíp gáa á-dǎáak**
 lemon:PL HAB put:OV:NT PR.3PL:NOMP CRD-3rd:PL
 'Lemons are usually placed in sets of three / threes.'

The inflectional paradigms of the singular and plural forms of numbers are identical to those of nouns (cf. Chapter 2). That is, they have a pertensive form, a construct state form, and a proximal form. Table 3 presents the paradigm of the ordinal numbers '3rd', '5th', and '10th', each both in singular and in plural. As described in relations to nouns in Chapter 2, singular numerals present two pertensive inflections, depending on the grammatical number of the possessor; plural numerals have just a single pertensive form.

Table 3: The inflectional paradigms of three ordinal numerals, each in singular and in plural.

Base	dǎk 'third'	dǎáak 'thirds'	bíc 'fifth'	bíic 'fifths'	pjááar 'tenth'	pjáar 'tenths'
Pertensive, sg. poss.	dǎáak	dǎk-í	bíic	bíc-í	pjáar-ì	pjáar-í
Pertensive, pl. poss.	dǎáak	dǎk-ì	bíic	bíc-ì	pjáar-í	pjáar-ì
Construct state	dǎáaŋ	dǎk-ì	bíiŋ	bíc-ì	pjáar-ì	pjáar-ì
Proximal deixis	dǎáaŋ	dǎk-ì	bíiŋ	bíc-ì	pjáar-ì	pjáar-ì



for an ordinal number and in (50b) for a cardinal number. For the sake of comparison, (50c,d) show how an adjective is used as an argument to a verb. Crucially, to be used in this way, adjectives require a pronominal head.

- (50) a. **d̀̀k á-k̀̀l̀̀l̀̀l̀̀l̀̀-á**
 3rd PST-carry-1SG
 'I carried the third one'
- b. **á-d̀̀k á-k̀̀l̀̀l̀̀l̀̀l̀̀-á**
 CRD-3rd PST-carry-1SG
 'I carried three'
- c. **méñ à d̀̀ẁ̀d̀̀ẁ̀ẁ̀ẁ̀ á-k̀̀l̀̀l̀̀l̀̀l̀̀-á**
 IDP.SG:CS MDF big PST-carry-1SG
 'I carried the big one.'
- d. **mé d̀̀ẁ̀d̀̀ẁ̀ẁ̀ẁ̀ á-k̀̀l̀̀l̀̀l̀̀l̀̀-á**
 MDF.SG big PST-carry-1SG
 'I carried a big one.'

Further syntactic evidence in support of the interpretation that numerals are nouns comes from their role as nominal modifiers. This is the topic of the next subsection.

5.1.3 The use of numerals as modifiers


The way a numeral modifies a noun depends on whether it is a cardinal or an ordinal number. When a cardinal number modifies a noun, the juncture is not morphologically marked. This is shown in (51). Note that the nouns **l̀̀ʃ̀̀ʃ̀̀** in (51a) and **ḍ̀̀ḍ̀̀ḍ̀̀-ḍ̀̀** 'basket' in (51b) both appear in their base forms rather than in their construct state forms, which are **l̀̀ʃ̀̀ʃ̀̀-ì** and **ḍ̀̀ḍ̀̀ḍ̀̀-ì**, respectively.²⁴ They are immediately followed by the numeral, without an intervening function word. Neither adjectives nor verbs can be used as modifiers in this way. That is, of the three constructions through which adjectives (22) and verbs (23) modify nouns, two involve a function morpheme – either **à** or **mé / ḿ** – and the one that does not has the nominal head in the construct state (cf. Sections 4.1, 4.2).

- (51) a. **l̀̀ʃ̀̀ʃ̀̀ á-d̀̀k á-k̀̀ẁ̀à̀̀à̀̀-á**
 stick:PL CRD-3rd PST-take-1SG
 'I took three sticks.'
- b. **káā ḍ̀̀ḍ̀̀ḍ̀̀-ḍ̀̀ á-k̀̀j̀̀èl̀̀ ù-ḗ̀̀̀̀̀̀̀̀̀̀-ḍ̀̀**
 CONJ basket-SG CRD-1st IMPF:become.full-IMPF
 'And one basket became full.'
 [ThePearStory 37.5-38.9]


Ordinal numerals can modify nouns using two different constructions. First, there is the construction in which the marker **à** follows the head noun in the

²⁴ The same is true in Dinka (Andersen 2020:278). There as well, nouns appear in the construct state form when followed by most modifiers, but not when the modifier is a numeral above '1'.


construct state. It is illustrated in (52), where **lòuou** is the construct state form of **lòu**. The other two modification structures described in Section 4, the one with **mé / mɔ́**, as in (52b), and the one marked purely through construct state, as in (52c), are both ungrammatical in a juncture with an ordinal modifier. The explanation for the ungrammaticality of the latter constructions may be semantic. Both of the latter constructions are indefinite, and this may be incompatible with inherent definiteness of a ranked entity.

- (52) a. **lòuou à dɔk á-kwàaap-á**
 stick:CS MDF 3rd PST-take-1SG
 'I took the third stick.'
- b. ***lòu mé dɔk á-kwàaap-á**
 stick MDF.SG 3rd PST-take-1SG
 'I took a third stick.'
- c. ***lòuou dɔk á-kwàaap-á**
 stick:CS 3rd PST-take-1SG
 'I took a third stick.'

Second, the meaning expressed in (52a) can equally be communicated using a construction in which the ordinal is the head in a syntactic sense, and the noun it combines with the possessor. This is shown in (53). This construction can be paraphrased literally as 'the third one of the sticks'. Note that the ordinal is inflected for a plural possessor, and that the nominal referent is represented by its plural form.

- (53) **dɔk lɔ́^{pl} á-kwàaap-á**
 3rd:PRT:PL stick:PL PST-take-1SG
 'I took the third stick.'




An illustration of the latter construction from a narrative is presented in (54).

- (54) **kì rí dɔk cɔ́ káá jì dɔ́k a bɛɛ jwàac-í rí gén**
 PRP RFL 3rd:PRT:PL day:PL CONJ people turn:NT FOC SUB drag:ITER:DVN-PRT:PL RFL 3PL
 'On the third day, the people started dragging themselves.'
 [TheVillageAchang 641.1-643.9]


5.1.4 Numbers in combination with modifiers

Both ordinal and cardinal numerals are nouns in Shilluk. This means that they can function morphosyntactically as a head in relation to other modifiers, and this is what we demonstrate in this section.

When another modifier follows within the same noun phrase, an adjective for example, then this modifier follows the numeral, and the numeral is inflected for having a modifier. This is shown in (55). As noted above, an adjectival modifier is marked by the relativizer *à* if the referent of the noun phrase is definite. This is illustrated in (55a). In this construction, the head noun appears in the construct-state form. When the noun phrase includes a numeral and an adjective, the noun immediately preceding the adjective appears in the construct state form (55b). In contrast, the head noun **gwóook^u** appears in the base form, as the following constituent is a numeral, that is, another noun rather than a modifier. The adjective cannot come between the head noun and the numeral. Alternatively, when the referent of a matrix noun phrase with a numeral and an adjective is indefinite, as in (55c), the adjective is marked by **mé / mó**, and in this environment the numeral appears in the base form.

- (55) a. **jǎλ dâa gwók̄-ī à t̄ɛk**
 AD:1SG EXSP:FOC dog:PL-CS MDF strong
 'I own the dogs that are strong.'
- b. **jǎλ dâa gwóook^u á-dλλak à t̄ɛk**
 AD:1SG EXSP:FOC dog:PL CRD-3rd:CS MDF strong
 'I own the three dogs that are strong.'
- c. **jǎλ dâa gwóook^u á-dλk mó t̄ɛk**
 AD:1SG EXSP:FOC dog:PL CRD-3rd MDF.PL strong
 'I own three strong dogs.'





Example (55b) suggest that the numeral heads a noun phrase within a larger noun phrase. The same interpretation is supported by (56): here a noun combines with a numeral, an adjective, and a deictic marker. Again the numeral is inflected for construct state. Cross-linguistically, it is more common for the adjective to be closer to the noun than the numeral, and Greenberg hypothesized this state of affairs to be universal (Greenberg 1963).²⁵ The deviation from this pattern in Shilluk can be explained on the basis of the fact that the numerals are nouns themselves.

- (56) **jǎλ dâa gwóook^u á-dλλak à t̄ɛk èk**
 AD:1SG EXSP:FOC dog:PL CRD-3rd:PL-CS MDF strong DXS.PL
 'I own these three strong dogs.'




25 Greenberg's (1963) universal 20: "When any or all of the items (demonstrative, numeral, and descriptive adjective) precede the noun, they are always found in that order. If they follow, the order is either the same or its exact opposite."

5.2 Non-numeral quantifiers

Non-numeral quantifiers include words with meanings such as ‘all’, ‘some’, and ‘many’. In Shilluk, while some display characteristics of adjectives, others display properties of verbs and nouns. Those with a resemblance to adjectives are illustrated by **gíiir** ‘many (countable)’ in (57). Just like an adjective (57a), **gíiir** does not require a copula when it is used as a predicate (57b). This heuristic sets adjectives apart from noun and pronouns (cf. Section 5.1 in Chapter 4). And again like adjectives, specification for past tense requires serialization with a dummy verb that carries the tense marking. This is shown in (57c) for an adjective and in (57d) for **gíiir**. This heuristic sets adjectives apart from verbs (cf. Section 5.2 in Chapter 4).

- (57) a. **gwóok^u téɛk**
 dog:PL strong:CTG
 ‘The dogs are strong.’
- b. **gwóok^u gíiir**
 dog:PL many
 ‘The dogs are many.’
- c. **gwóok^u á-bèet gé téɛk**
 dog:PL PST-stay PR.3PL strong:CTG
 ‘The dogs were strong.’
- d. **gwóok^u á-bèet gé gíiir**
 dog:PL PST-stay PR.3PL many
 ‘The dogs were many.’

Moreover, when **gíiir** is used as a modifier, it combines with nouns in the same way as adjectives whose contingent inflection²⁶ follows the stem-internally marked form class (cf. Section 3.2.2 of Chapter 4). That is, **gíiir** can modify a noun using **mé / mɔ́**, in which case the head noun is in the base form, as in (58a). Second, it can modify a noun using **à**, in which case the head noun is in the construct state, as in (58b). Finally, **gíiir** cannot occur after a head noun in its construct state (58c); the same is true for adjectives in the contingent inflection that belong to the stem-internally marked form class.

- (58) a. **gwóok^u mɔ́ gíiir** b. **gwók-í à gíiir** c. ***gwók-í gíiir**
 dog:PL MDF.PL many  dog:PL-PRT MDF many  dog:PL-PRT many
 ‘Many dogs.’ ‘The dogs that are many.’ ‘Many dogs.’

Also like adjectives (Section 3.2.2 of Chapter 4), **gíiir** cannot serve as an argument to a predicate by itself. This is shown in (59a). Instead, it needs a pronominal head – either **mé / mɔ́**, as in (59b), or the independent pronoun **mók**, as in **mók à gíiir**.

²⁶ The contingent inflection of an adjective is found when the attribute is referenced a) with time-limited scope, b) to a limited degree, or c) subjectively (cf. Chapter 4, Section 2.1.2).

- (59) a. *gíiṛ ù-níṛṛ-ṣ
many IMPF-sleep-IMPF
'Many are sleeping.'
- b. mṣ gíiṛ ù-níṛṛ-ṣ
MDF.PL many IMPF-sleep-IMPF
'Many are sleeping.'

Two other non-numeral quantifiers that display adjective-like properties are **ḡḡḡḡ-ḡ** 'a lot of' and **nḡk** 'few, a little'. Both of them are used with countable and uncountable referents, be they singular or plural. This is illustrated for **ḡḡḡḡ-ḡ** in (60a,c,e), and for **nḡk** in (60b,d,f). In (60a,b) these two quantifiers modify a plural countable noun. Then in (60c,d) the same quantifiers are combined with an uncountable noun that is grammatically singular, as indicated by the singular modification marker **mé**. Finally, (60e,f) shows the same quantifiers modifying an uncountable noun that is grammatically plural, as indicated by the plural modification marker **mṣ**.




- (60) a. wēeel^m mṣ ḡḡḡḡ-ḡ
guest:PL MDF.PL a.lot
'a lot of guests'
- b. wēeel^m mṣ nḡk
guest:PL MDF.PL few
'few guests'
- c. àjéec-ṣ mé ḡḡḡḡ-ḡ
sand-SG MDF.SG a.lot
'a lot of sand'
- d. àjéec-ṣ mé nḡk
sand-SG MDF.SG few
'a little sand'
- e. càak mṣ ḡḡḡḡ-ḡ
milk MDF.PL a.lot
'a lot of milk'
- f. càak mṣ nḡk
milk MDF.PL few
'a little milk'

An additional adjective-like characteristic of these quantifiers comes from derivational morphology. While none of them has a contingent form, **ḡḡḡḡ-ḡ** 'a lot of' and **nḡk** 'few, a little' both present an intransitive derivation, yielding **ḡḡḡḡ-ḡ** 'be more / become more' and **nḡḡ-ḡ** 'be less / become less', respectively. This kind of derivation is also available for adjectives (cf. Section 4.1 in Chapter 4). There is no such verb derivation for **gíiṛ**.


The quantifiers **bēen-è** / **bēen^m** 'all, every' are different from the above-mentioned adjective-like quantifiers: when they are used as modifiers, they appear with neither function words nor with inflectional marking on the head. These patterns are seen in (61). The quantifier **bēen^m** 'all, every' is used in relation to referents that are grammatically plural (61a). The quantifier **bēen-è** 'all, every, a lot of, many' is used with referents that are grammatically singular, be they countable as in (61b) or uncountable as in (61c).

- (61) a. wēeel^m bēen^m
guest:PL all
'all the guests'
- b. ḡáaḡ-ḡ bēen-è
person-SG all-3SG
'every person'
- c. mḡk-ḡ bēen-è
alcohol-SG all-3SG
'all alcohol'

The quantifiers **bēen-è** and **bēen^u** are structurally outside the noun phrase, and they can be syntactically separated from the noun they are co-referential with by other constituents.²⁷ This is illustrated in (62), and also in (109b) below. In (62a), **bēen^u** is outside the noun phrase, which is delimited on the right by the determiner **ání**. In (62b), **bēen^u** is separated from the pronoun it is associated with by the verb. Finally, (62c) has **bēen^u** in clause-final position, and here there is ambiguity as to which of the two grammatically plural arguments it is co-referential with: **càak** ‘milk’, which is grammatically plural, or **bōot̚-ì** ‘craftsmen’.

- (62) a. [^] j̚k-ání bēeñ^u jáa g̃ɪɪl-ī j̚áa júuur d̚òk á-p̚l̚l̚h̚ì
 men-DEF all IDP Gilo-APL IDP Jur-APL cows PST-divide:OV
 ‘All those men – the clan of Gilo, the clan of Jur (etc.) –the cows were divided (among them).’
 [TheDescendantsOfWaang 438.5-441.9]
- b. [^] gé á-d̚wòt̚ bēeñ^u
 PR.3PL PST-get.up all
 ‘They all got up.’
 [TheDescendantsOfWaang 430.3-431-4]
- c. càak á-m̚áat ī bōot̚-ì bēeñ^u
 milk PST-drink:OV ERG:PL craftsman-PL all
 ‘All the milk was drunk by the craftsmen.’
 OR ‘The milk was drunk by all the craftsmen.’

Interestingly, it is ungrammatical in relation to (62b) for **bēen^u** to follow immediately after the pronoun, i.e., ***gé bēeñ^u á-d̚wòt̚**. In contrast, if the subject is a full noun, as in (63), then both constituent orders are grammatical. We interpret this as evidence of the verb-like nature of **bēen-è** and **bēen^u**. That is, in verb serializations, the topic is obligatorily resumed as a pronoun immediately before the second constituent verb. This can explain why ***gé bēeñ^u á-d̚wòt̚** is ungrammatical. The adjective-like quantifiers (**gíi̚r̚, n̚òk, η̚è̚ɛ̚ɛ̚ɛ̚-ḁ̚**) cannot be separated from the head noun in this way.



- (63) w̚eel^u á-d̚wòt̚ bēeñ^u / w̚eel^u bēeñ^u á-d̚wòt̚
 guest:PL PST-get.up all guest:PL all PST-get.up
 ‘The guests all got up.’

²⁷ Andersen (2020:279) reports a similar phenomenon for Dinka.

At the same time, **bēen-è** and **bēeen^u** cannot be used as an argument to a verb by themselves. This is illustrated in (64): the use of **bēeen^u** as the subject is ungrammatical (64a); instead, this argument needs to be expressed separately (64b).

- (64) a. ***bēeen^u** ù-nííñ-ṣ b. **gé** ù-nííñ-ṣ **bēeen^u**
 all IMPF-sleep-IMPF  PR.3PL IMPF-sleep-IMPF all
 ‘All are sleeping.’ ‘They are all sleeping.’

A third morphosyntactic pattern found among the non-numeral quantifiers is that of **kwìii** / **kwíii** ‘some of’, which are akin to nouns. Examples from narratives are presented in (65). The form **kwìii** is used with singular nouns or pronouns, and **kwíii** with plural ones. Hence, even though nouns such as **tèeet-ḍ** ‘community’ in (65a) and **jìi** ‘people’ in (65b) are very similar in terms of their semantic reference, **tèeet-ḍ** ‘community’ combines with **kwìii**, because it is grammatically singular, and **jìi** ‘people’ combines with **kwíii** because it is grammatically plural. The quantifier **kwìii** / **kwíii** is semantically akin to a possessed term with a partitive meaning and the marking of the number through tone is similarly like that of the pertensive. That is, on a singular possessed term, the plural nature of a following possessor is regularly marked by the addition of a High tone target (Chapter 2, Section 3.4).


- (65) a. [^] **kwìii** **tèeet-ḍ** **á-rùm** **kínì** **gé** **ú-dáaḷḷ** **īi**
  some.of community-SG PST-think QUOT PR.3PL FUT-fall.apart:CAUS PRP:PL
 máḷḷ-í **gén**
 women-PRT PR.3PL
 ‘Some in the community thought that their wives would divide them, [...]’
 [KeepTheSecret 15-17.7]
- b. [^] **kwíii** **jìi** **á-réep-ì** **kí** **jíkāaḷḷ**
  some.of:PL people PST-add-AMB PRP Nyikango
 ‘Some people joined Nyikango.’
 [TheDescendantsOfWaang 36.2-38.9]

In summary, non-numeral quantifiers diverge in their morphosyntactic properties, and present similarities with all three of the lexical categories. While **gíiit̄**, **nók**, and **ḡeep-ḍ** present characteristics of adjectives, **bēen-è** / **bēeen^u** patterns in some respects with verbs, and **kwìii** / **kwíii** with nouns.

6. Other determiners: deictic markers and the definiteness marker

As determiners, deictic and definiteness markers are function morphemes that provide information about the referentiality of the noun phrase. Deictic markers can be conceived of – at least in some of their uses – as positioned on a spatial continuum. This continuum is anchored by the point of reference, typically the speaker. For example, the English demonstrative *this* in *this book* is near relative to the speaker, the demonstrative *that* in *that book* is further removed from this point of reference. On this continuum, Shilluk deictic markers present four levels in terms of increasing distance from the speaker. However, spatial distance from point of reference is only one of the functional dimensions of the Shilluk deictic markers. Nonetheless, this spatial dimension is crucial in distinguishing the deictic markers from the definiteness marker **ání**, which is also a determiner, but one whose functional scope does not include spatial distance to the point of reference at all. Definiteness marking has come up in Section 4, in relation to lexical-category modifiers marked by **à**. Recall that, when a lexical-category modifier is expressed using **à**, then the referent is definite. Similarly, **ání** renders a noun phrase definite. All of the determiners that are discussed in this section are listed in Table 4.

Table 4: The markers covered in this section, by function and formal status.

Function		Free morpheme	Bound morpheme
Spatial deixis	Near	èn / èk	cf. Chapter 2
		(àn)àn, èè (sg.) / (àg)àk (pl.)	–
		àcàa	–
	Far	àcínée	–
Definiteness		ání	–

We treat the definiteness marker together with the deictic markers because they are in complementary distribution within the noun phrase, and because their functional scope presents overlap. We will describe first the various functions of the deictic markers and the definiteness marker (Section 6.1), and then their morphological and syntactic properties (Section 6.2).


6.1 Functions of the deictic markers and the definiteness marker

Without discourse context, deictic markers express spatial orientation of the referent of the noun phrase relative to the point of reference. In addition, deictic markers fulfill several related functions: time reference, discourse reference, and pragmatic specificity in relation to indefinite referents. Here their functional range overlaps with that of **ání**, the definiteness marker that is not used as a marker of spatial deixis. We will discuss all of these functions in the following subsections.


6.1.1 Spatial deixis

Shilluk deictic markers distinguish four points on the spatial continuum anchored by the speaker: ‘with speaker’, which we will also refer to as proximal; ‘with hearer’; and away from both speaker and hearer, where two points are distinguished.

The spatial use of the proximal deictic marker is illustrated in (66). In this example from an animal fable, Cat tells the children of Rat that they and their mother should come live in Cat’s village. Note that **pâaan**^u is the proximal inflection of **pâac** ‘village’.


(66)[^] **kôop-ù** **měj-í** **wún** **kínì** **dłłη-ù** **pâaan**^u
 say-IMP.2PL mother-PRT.PL PR.2PL QUOT migrate:PET-IMP.2PL village:DXS
 ‘Tell your mother: “Migrate to this village!”’ [RatAndCat 47.6-50.1]

The second spatial point of reference is away from the point of reference. This is illustrated in (67). The discourse context is that the protagonist is offered two portions of food, the one set out for him, and the one set for his deceased brother. In this context, **túuuḡ èe** ‘that side’, refers to the portion away from the protagonist.


(67)[^] **kàa béeen-é,** **ńí** **càaam-é** **túuuḡ**^u **gòn**
 SUB come:VS-3SG HAB eat-3SG side-PRT PR.3SG.OBL
ù **túuuḡ** **èe** **ńí** **wńj** **én**
 CONJ side-PRT DXS HAB leave.behind:OV:NT PR.3SG
 ‘When he comes, he eats his part and leaves that part untouched.’
 [RevengeKilling 17.7-20.0]

Example (68) illustrates deictic reference to a spatial location away from speaker and hearer. In the narrative from which this utterance is drawn, a man called Chol and his guest are talking in Chol’s village. The guest explains to Chol that, earlier on the same day, he visited another village in the area. This village has not been introduced earlier in the conversation, and is therefore



indefinite. Importantly, the village in question is away from both speaker and hearer. This spatial reference is expressed by **àcàa**.

- (68) [^] **já á-tòon-ì páaan àcàa bēe mât-ò kí pīi**
 PR.1SG PST-turn-AMB:NT village:CS DXS SUB drink:AMB-DVN PRP water
 'I turned to a village over there to drink some water.'
 [KeepTheSecret 349.9-352.1]

Example (69) shows a second example in which the referent's location is away from both speaker and hearer.

- (69) [^] **ńíkāaaŋō ú-řá jállaj-ē gò kōoop ên**
 Nyikango ML-back:PRT boat:PRT-3SG PR.3SG.OBL say:ATP:NEVP 3SG:NOM
kīni kəl jállaj kīřī māan-í jīrw kún àcàa
 QUOT carry boat carry:DEST channel.PL-PRT Jiw direction:CS DEM
 'Nyikango, he had told the rower of his boat: "Take the boat, take it to the channel of Jiw over there."
 [TheDescendantsOfWaang 456-460.4]

Another deictic marker, **àcínéé**, also references a spatial point away from speaker and hearer. Its use is illustrated in (70a,b). They are drawn from an animal fable, at a point where the Rabbit and a girl called Nyagul are in conversation. Both the girl (70a) and the Rabbit (70b) use **àcínéé** to refer to the location of the Jackal, who is not with them. The second example has both **àcínéé** and **àcàa**. Native speakers judge **àcínéé** to refer to a more remote spatial point relative to the point of reference than **àcàa**.



- (70) a. [^] **dāa úgwóóǰ-k-ō mé á-júuut ìr ján é řóó**
 EXSP:FOC jackal-SG MDF.SG PST-find:PET:OV PRP PR.1SG PR.3SG die:NEVP
kún àcínéé
 direction:CS DEM
 'There is a dead Jackal I came to find over there.'
 [Nyagul 56.3-58.2]
- b. [^] **bjél-ír á-kál ìr úgwóóǰ-k-ō**
 grain:PRT-2SG YNQ PST-carry:OV PRP jackal-SG YNQ
úgwóóǰ-k-ō a wíc" jāaaŋ àcínéé àcàa
 jackal-SG FOC head:PRT tree:CS DXS DXS
 'Your grain? The jackal took it? That very jackal is in that tree over there.'
 [Nyagul 70.18-72.96]

6.1.2 Discourse reference


The function morpheme **ání** marks nouns as definite in an anaphoric sense. That is, **ání** is used when a noun is semantically specific in its reference for

both the speaker and the hearer because its referent has been mentioned earlier in discourse. It cannot be combined felicitously with nouns whose reference is inherently definite because they are unique. Hence, for example, **c̣ɔŋ** ‘sun’ cannot yield ***c̣ɔŋ ɔ́nɪ** ‘sun:CS DEF’. In this respect, the functional range of **ɔ́nɪ** is different from that of a definiteness marker like English the, whose scope encompasses inherent definiteness.


ɔ́nɪ appears frequently in narratives. Its use is illustrated in (71), which is drawn from the beginning part of a narrative. A village named Acaro is introduced at the very beginning of the story (71a). A little later in the narrative, the same village is referred to by means of **pāaan ɔ́nɪ** ‘village:CS DEF’ (71b).

- (71) a. [^] **ácàaarò pāaa jǎá dǎɛɛŋ**
 Acaro village:PRT.PL IDP Deng:APL
bǎa pāac mé dǎwɔŋ ò bǎa pāac mé dɔɔcè
 NOMP village MDF.SG big CONJ NOMP village MDF.SG good:CTG
 ‘Acaro, the village of the people of Deng, is a big village and it is a good village.’
- b. [^] **kì pāaan ɔ́nɪ tɛɛt-ò bǔt-ì a rí gén kí cám**
 PRP village.CS DEF group-SG cheat:ITER:NT FOC RFL PR.3PL PRP eat:INFA
 [...] ‘In that village, people are cheating one another in relation to eating.’
 [DengsFish 4.4-8.2 [...] 14.1-17.6]


Differently from the deictic markers, the marker **ɔ́nɪ** is neutral in spatial terms, i.e., it is not specific for its position relative to the speaker. This is illustrated in (72). In the first sentence, a protagonist mocks someone for lying under a fig tree all day, and this fig tree is introduced as proximal to the speaker, through **mén**, which expresses proximal daxis. When the fig tree is referenced again in the following clause, it is marked by **ɔ́nɪ**. Here, just as in (71), **ɔ́nɪ** can be translated as either ‘this’ or as ‘that’ because its meaning is not referential in a spatial sense but rather in terms of the discourse.

- (72) [^] **pǎt kí bǔt-ɔ̀ kǐ ɣá ɔ́láam mén à bǎa**
 NEG PRP lie-INF PRP bottom:PRT fig IDP.SG:DXS FOC NOMP
gwɔɔk-ì
 work:INFA:PRT-2SG YNQ
 ‘Lying under this fig tree, is that not your job?’
ɔ́láam ɔ́nɪ á-pǐt a jín cǎn
 fig:CS DEF PST-plant:BNF:OV FOC PR.2SG ADV
 ‘This fig tree was planted specifically for you really, [...]!’
 [AchangVillagePart1 182.8-187.3]

speaker as important (cf. Dryer 2014:237). To the best of our knowledge, only the proximal deictic marker can be used in this way. The phenomenon is illustrated in (75), drawn from the story of the migration of Nyikango, which led to the founding of the Shilluk nation. The noun phrase marked for proximal deixis in this sentence is **jàaal**^u, through inflection on the nominal head **jàal-ò** ‘man-SG’. This utterance is drawn from the beginning of the story, when various key figures in the story are introduced. The noun phrase **jàaal**^u is the first mention of one of the protagonists, who is soon after identified as Jiw. The function of the use of the proximal inflection can be understood along the lines of indefinite this in English (cf. Wright & Givon 1987), as in the idiomatic translation ‘There was this man who travelled with them. He is Jiw, their cousin.’ That is, the proximal deixis signposts the fact that the referent of this noun phrase will come back later on in the story. It is noteworthy that it appears in the topic slot before the verb. This position usually holds arguments whose referents are part of the common ground – this is not the case here: as noted, this is the first mention of Jiw in the narrative.

- (75)^u **jàaal**^u á-cλλtì (kí) gén tǰéew, bǎa jìw ówǐii gén
 man:DXS PST-walk PRP PR.3PL also NOMP Jiw cousin:PRT.PL PR.3PL
 ‘This man also goes with them. He is Jiw, their cousin.’
 [TheDescendantsOfWaang 58-63.1]

A second example of the use of proximal deixis (76) to signpost pragmatically specific indefinite referents appears later in the same narrative. The proximal deictic marker **èn** modifies the nominalization **à-ηòl**, which means ‘insult’. Immediately after this, the use of insults as clan names is explained in the narrative.

- (76)^u ò kwàar-í tǰéer-ì à ó-cλk-ò
 CONJ descendant:PL-PRT people-PRT MDF NEVP.OV-name-NEVP
kí jín-í à-ηòl èn
 PRP name.PL-PRT NOM-cut DEM
nì mé-í jáa kwàar-í ó-mâat pǐii
 SIM MDF.SG:PRT IDP descendant:PL-PRT NOM-drink water:APL
 ‘And the descendants of people who were named using the name of an (lit. this) insult, such as the one of those like the descendants of the water drinker.’
 [TheDescendantsOfWaang 779.4-783.3]





6.2 Formal properties of deictic markers (within the noun phrase)

The deictic markers and the definiteness marker appear at the right edge of the noun phrase they modify. Structurally, the juncture between these markers

and the preceding part of the noun phrase can take one of two forms: a) an inflection, i.e., a bound morpheme, marked on the head noun through an affix and/or through stem-internal exponence (Section 6.2.1); b) a free morpheme in the noun phrase (Section 6.2.2). These two forms of realization can also be found in relation to a pronominal head (Section 6.2.3). Finally, Section 6.2.4 covers the use of deictic markers as heads in non-verbal predicates. While this topic is outside the scope of this chapter (= the noun phrase), deictic predicates involve the same segmental morphemes as deictic modifiers, and for this reason the description of deictic predicates fits well immediately after the description of deictic modifiers to the noun phrase.

6.2.1 Inflectional marking


The inflectional expression of deixis is available only for the proximal, and its use is further conditional on there being no other modifiers within the same noun phrase. Consider (77), which shows the base and proximal forms of singular ‘dog’ (77a,b) and plural ‘dogs’ (77c,d). On singular nouns, the pattern of exponence of proximal deixis can be either purely stem-internal, as in (77b), or it may include a suffix; on plural nouns, proximal deixis invariably includes a suffix, as in (77d).

- | | | |
|------|--|---|
| (77) | a. gwôk băa mjáā
 dog NOMP MDF.SG:1SG
‘The dog is mine.’ | b. gwóooŋ^h băa mjáā
 dog:DXS NOMP MDF.SG:1SG
‘This dog is mine.’ |
| | c. gwóook^h băa mók-áa
 dog:PL NOMP MDF.PL-1SG:PL
‘The dogs are mine.’ | d. gwóok-ì băa mók-áa
 dog:PL-DXS NOMP MDF.PL-1SG:PL
‘These dogs are mine.’ |

The proximal inflection can be interpreted as a formal operation on the construct-state form of the noun, to which it contributes a Low tone target and – in singular suffixless nouns only – floating quantity. For example, the construct state form of **gwôk** is **gwóooŋ**, which carries a High Fall to Mid. The addition of a Low tone and floating quantity yield the proximal inflection **gwóooŋ^h**. For suffixed nouns whose construct-state form ends in a Low tone to begin with, the proximal form is identical to the construct state form. For example, the noun **bòwɔ̄t-ə** ‘craftsman’ has the construct-state form **bòwɔ̄t-ì**, which is also the proximal form. These patterns of exponence are described in detail in Chapter 2.

There is one apparent exception to the generalization that the inflectional expression of proximal deixis is limited to contexts in which there is no



intervening modifier: numerals. Proximal deixis can be expressed inflectionally on a numeral, as in (78). However, this exception is only apparent: on the hypothesis that numerals are nouns themselves (Section 5.1.2), it follows that, being nouns, they can be inflected for proximal deixis.

- (78) gwóook^a á-bíiɲ̃ á-línt-à
 dog:PL CRD-5th:DXS PST-look-1SG
 'I looked at these five dogs.'

We hypothesize that the proximal inflection has its diachronic origin in the segmentally realized proximal deictic markers **èn** and **èk**, which will be described in the following section. Several of the exponents of the proximal inflection can be attributed to this segmental origin: the Low tone target, and – specifically in relation to singular forms – the nasalization and the floating quantity.



6.2.2 Free morpheme

If the conditions for inflectional realization of the determiner – a) proximal deixis, and b) there are no other modifiers – are not met, then the deictic markers and definiteness markers are realized as a segmental morpheme that is separate from the nominal head. In this section, we will describe this pattern. We start with the expression of proximal deixis. Illustration (79) shows its realization with a singular and with a plural noun. As seen from these examples, the proximal deictic marker cross-references the grammatical number of the head: **èn** combines with singular nouns and **èk** with plural ones.



- (79) a. gwóooŋ à t̄ɛk èn bãa mjáaā
 dog:CS MDF strong DXS.SG NOMP MDF.SG:1SG
 'This strong dog is mine.'
- b. gwók-ī à t̄ɛk èk bãa mók-áa
 dog:P-CS MDF strong DXS.PL NOMP MDF.PL-1SG.PL
 'These strong dogs are mine.'

In (79), the head noun and the deictic marker are separated by an adjectival modifier, and this construction is marked using **à**, the structure that conveys definiteness. This is not a coincidence: the construction with **à** is the only one of the three modification structures outlined in Section 4.1 and 4.2 that can be used if there is a deictic marker in the noun phrase. This limitation can be explained on semantic grounds: specification for deixis implies definiteness, and the other two modification structures are indefinite. It follows then that marking for deixis is incompatible with the latter. This limitation holds for all

to tone, their Low specification for tone conditions the High Fall to Mid on the preceding stem syllable to become a High tone, a process that applies at the level of the phonological word. This sandhi process is represented in the phonetic transcriptions in (82a,b).



- (82) a. [gwóooŋàn bǎa mjáaā]
 gwóooŋ àn bǎa mjáaā
 dog:CS DXS.SG NOMP MDF.SG:1SG
 'That dog is mine.'
- b. [gwógàk bǎa mógáa]
 gwók-ī àk bǎa mók-áa
 dog:PL-CS DXS.PL NOMP MDF.PL-1SG:PL
 'Those dogs are mine.'

The two further points on the continuum are marked by **àcàa** and **àcínée**. Both refer to locations away from both speaker and hearer, and between themselves, **àcínée** is further away than **àcàa**. These two deictic markers do not present separate forms for singular vs. plural number. Moreover, the same forms are found when the deictic marker follows the noun immediately as when it is separated by an adjective. This is shown in (83).

- (83) a. gwóooŋ (à tɛɛk) àcàa bǎa mjáaā
 dog:CS MDF strong DXS NOMP MDF.SG:1SG
 'That (strong) dog is mine.'
- b. gwóooŋ (à tɛɛk) àcínée bǎa mjáaā
 dog:CS MDF strong DXS NOMP MDF.SG:1SG
 'That (strong) dog is mine.'

The final marker to discuss is the definiteness marker **ání**. As seen from (84), it does not present an alternation for grammatical number. Unlike the deictic markers, **ání** cannot be separated from its head by another modifier. This makes sense, because non-possessor modifiers can be marked by the construction with **à**, which conveys definiteness, to the effect that the addition of the definiteness marker in such noun phrases would be redundant.


Just like the segmental deictic markers, **ání** cliticizes to the noun in the sense that it forms part of the phonological word of the nominal or pronominal head. This is evident from the way it interacts with the specification for tone of the stem. As noted above, the High Fall to Mid (C^hV^hC̄) cannot be followed by a High tone within the same word. When the morphology would otherwise produce this output, the High Fall to Mid changes to a High tone. Hence, **gwóooŋ** = **ání** is realised as [gwóooŋání], and **gwók-ī** = **ání** as [gwógání].

- (84) a. [gwóooŋání bã mjááã] b. [gwógání bã mógáa]
 gwóooŋ ání bã mjááã  gwók-ī ání bã mók-áa
 dog:CS DEF NOMP MDF.SG:1SG dog:PL-CS DEF NOMP MDF.PL-1SG:PL
 ‘The dog is mine.’ ‘The dogs are mine.’

6.2.3 Use with independent pronouns and semantically empty nouns

The deictic markers and the definiteness marker can modify not only full nouns, but also the independent pronoun **mén** (sg.) / **mók** (pl.).³⁰ This matters because the deictic markers and the definiteness marker are not pronominal elements with anaphoric reference by themselves. That is, they cannot be used as a core argument to a predicate in their own right, nor as an argument to a preposition.

The combination of the definiteness marker with the independent pronoun is illustrated in (85). The second clause has three arguments: the specification for time, which occupies the preverbal topic slot;³¹ the prepositional phrase expressing the Agent; and the argument following immediately after the verb: **mók ání** (**mók** = **ání**). The independent pronoun **mók** ‘these things’ represents a pronominal head with which the definiteness marker **ání** can combine.


- (85)ˆ káã tɛɛt-ɔ̀ ù-kùt-ɔ̀ kìnì ðìw
 CONJ community-SG IMPF-be.silent-IMPF QUOT silence.IDEOPHONE
 kɛŋ à á-kwɔ̀ɔ̀p mók ání ìr pākwan̄
 time:CS MDF PST-say:XV IDP.PL DEF PRP Pakwan
 ‘And then the group suddenly became silent, when Pakwan said these things.’
 [AchangVillagePart1 154.6-157.8]

In some cases, the independent pronoun is used even though the referent is additionally expressed as a full noun. This is illustrated by the narrative examples in (86). In both cases, spatial deixis could have been marked on the head noun itself, i.e., **óláaam̄** ‘this fig tree’ in (86a), and in **gìn-cáaam̄** ‘this food’ (86b). We speculate that marking the demonstrative on the independent pronoun instead lends emphasis.

30 The forms **mén** (sg.) / **mók** (pl.) are the construct state forms; in addition, they present the proximal inflections **mén** (sg.) / **mók** (pl.), and the pertensive forms **mín**, **mú** (sg.) / **mók**, **móɔ** (pl.), as outlined in Section 2.1. There are no base forms, i.e., these morphemes as not used without modification.

31 The specification of time is licensed in the preverbal topic slot by the inflection for applicative voice on the verb.



argument. Crucially, this sentence is ungrammatical. However, the deictic markers can be used as modifiers to the noun **kēɲ** ‘place, time’ within a preposition phrase, as in (91b).³³

- (91) a. ***būol á-cállam èn / àcàa**
 Bol PAST-eat:ATP DXS.SG / DXS
 ‘Bol ate here / there.’
- b. **būol á-cállam kì kēɲ³⁴ / kì kēɲ àcàa**
 Bol PAST-eat:ATP PRP place:DXS PRP place:CS DXS
 ‘Bol ate here / there.’

In summary, neither the definiteness marker nor the deictic markers are independent pronouns: they cannot be used as a core argument to the head of the predicate, nor as an argument to a preposition. Instead, they combine with semantically poor morphemes, in particular the independent pronoun **mēñ** (sg.) / **mók** (pl.) and the nouns **kēɲ** ‘place, time’ and **kún** ‘direction’.



6.2.4 Use of deictic markers as predicate markers

The deictic markers are not only used as modifiers but also as predicate heads. This is a characteristic they share with adjectives (cf. Chapter 4). While the phenomenon of deictic predicates goes beyond the topic of the noun phrase, we address it here nonetheless, in order to contrast it with the use of the same morphemes within the noun phrase. The phenomenon is illustrated in (92). In (92a), **áwàc-í** ‘your *awajo* fruits’ is the topic, and **èk** is the predicate; in (92b), **kēɲ à á-wâaɲì ì ján** ‘the place I meant’ is the topic, and **ànàn** is the predicate. In both cases, the predicate expresses spatial deixis.



- (92) a. ³⁴ **wìj-ó, áwàc-í èk, mók ó-mùuuc-á mēj-āa**
 father-SG k.o.fruit:PL-2SG DEICP.PL IDP.PL:DXS FUT-give:SPAT-1SG mother-1SG
 ‘Father, your *awajo* fruits are these, these (other) ones I will go give to my mother.’
- b. ³⁴ **kēɲ à á-wâaɲì ì ján ànàn**
 place:CS MDF PST-mean:OV PRP PR.1SG DEICP
 ‘The place I meant is that one.’
 [TheVillageAchang2 106.9-108.3]

33 The juncture of **kēɲ** ‘place:CS’ with the ‘with-hearer’ deictic marker **àn**, i.e., **kì kēɲ = àn** ‘in that place, there’ is often reduced to **kì kâa**.


34 There is no reference to a text here – it is a recollection of a conversation by the second author.

- (96) a. **lòuṭ ànàn**
 stick DEICP
 ‘The stick is there.’
- b. **lòuṭṭ àn**
 stick:CS DXS.SG
 ‘that stick’

At the third and fourth point on the spatial continuum, the deictic markers do not present separate forms for singular and plural; the forms are **àcàa** and **àcínéé**. The modifiers only appear in the full form, i.e., they cannot be marked as an inflection, nor as a reduced clitic form. If the deictic marker follows immediately after the noun, it is still clear whether it functions as a predicate or as a modifier within the noun phrase, because the latter goes with the construct-state form of the noun. This is shown in (97a) vs. (97b).

- (97) a. **lòuṭ àcàa**
 stick DEICP
 ‘The stick is there (far).’
- b. **lòuṭṭ = àcàa**
 stick:CS = DXS
 ‘that (far) stick’

But if the noun takes another modifier in addition to the deictic marker, the construction with a deictic predicate is identical to the one with a modifier. This is illustrated in (98), which is ambiguous between a clause headed by a non-verbal predicate and a noun phrase. The situation is the same with **àcínéé** ‘that/those (very far away)’.

- (98) **lòuṭṭ à b̂l̂ar àcàa**
 stick:CS MDF long DEICP/DXS
 ‘The long stick is there (far).’ OR ‘that (far) long stick’



7. Associative plural

7.1 General description


The associative plural widens the scope of reference from a central entity to a set that belongs with it or that is conceptually similar to it (Moravcsik 2003). In Shilluk, the associative plural construction involves the constituent **jáā** followed by a noun phrase referring to the central entity within the set. The noun heading this noun phrase can be grammatically singular or grammatically plural. The final word in this noun phrase is morphologically marked either stem-internally and/or through affixation. This marking is what we label ‘associative plural’ (apl) in a morphological sense.³⁵ The phenomenon is

³⁵ Associative plural has also been reported for closely-related Dinka (Andersen (2020:280),

illustrated in (99). In (99a), the associative plural expression is **jáā dĕĕɛŋ**. The base form of the name ‘Deng’ is **dĕɛŋ**, and **jáā dĕĕɛŋ** refers to Deng and his associates, in this case his kinship group. Similarly in (99b), **jáā gīnl-ī** and **jáā júuur** refer to groups of people on the basis of a prominent member – the corresponding base forms are **gīnl-ɔ̄** ‘Gilo’ and **júur** ‘Jur’. We gloss **jáā** as an independent pronoun, because a) it is a function morpheme without referential content other than 3rd plural, and b) it is a free morpheme.

- (99) a. [^] **ácàaarò pǎaa** **jáā dĕĕɛŋ**
 Acaro village:PERT:PL IDP Deng:APL
 ‘Acaro, the village of the people of Deng, [...]’
 [DengFish 4.4-6.3]
- b. [^] **ɔ̄k** **ání bĕĕēñ[#]** **jáā gīnl-ī** **jáā júuur** **ɖòk** **á-pλλŋì**
 men:CS DEF all IDP Gilo-APL IDP Jur-APL cow.PL PST-divide:OV
 ‘All those men – the group of Gilo, the group of Jur (etc.) – cows were divided (among them).’
 [TheDescendantsOfWaang 438.4-441.9]

In most languages that present an associative plural, the phenomenon is restricted to human referents (Moravcsik 2003:472). In Shilluk this is not the case: this construction is used with animate and inanimate referents alike. This is evidenced by the spontaneously uttered example in (100). The noun **àkwàricòoot-ò** refers to a particular bitter herb, and **jáā àkwàricòoot-ī** extends the reference to the wider set of herbs that it belongs to, i.e., to bitter herbs in general.

- (100) [^] **jáā àkwàricòoot-ī cĕk** **káa** **gúuur-ò** **ò** **ní kít-ì** **kĕŋ** **ání**
 IDP k.o.herb-APL AUX:OV PRP:FOC grind-INF CONJ HAB carry-DEST place:CS DEF
 ‘Herbs like *akwaricoto* [a bitter kind of herb] were ground and then put on the place.’
 [DownWithIllness 152.1-155.4]










While associative plural was brought up briefly in Section 2.4.2 of Chapter 2, we did not treat it in detail there because it is an instance of morphological marking that applies at the level of the noun phrase as a whole, rather than at the level of the noun. Specifically, it is marked on the final word within the noun phrase, irrespective of whether this is a function word or a content word. The fact that it appears at the right edge of the noun phrase is shown in (101). The noun phrase **kwàar-í ó-mâaɖ pīi** means ‘the descendants of the water drinker’. This is the name of a clan group, and the narrator is invoking this example to show that many clans have an anecdote – or even an insult

but there it does not involve morphological marking.

7.2 The pattern of exponence of the associative plural

Associative plural is morphologically marked on the final word of the noun phrase, either through a stem-internal pattern of exponence, or through a suffix. In this section, we will describe these two patterns of exponence in detail specifically in relation to nouns, the lexical category on which marking for associative plural is found with greater frequency than on other lexical categories. However, the patterns described below for nouns apply equally to instances where associative plural is found on members of other lexical categories or on function words.

A first factor determining whether the associative plural is marked stem-internally or through a suffix is whether the word is suffixed to begin with. If the base form is suffixed, as in (103a), then the corresponding associative plural is suffixed as well (103c). In contrast, if a word is suffixless, as in (103d), then so is its associative plural (103f).

- | | | |
|---|--|---|
| (103) a. pùk-ì [pùkì]
 turtle-PL
'turtles' | b. puk-ì á-d̀̀k [pùk áad̀̀k]
 stick.P CRD-third
'three turtles' | c. jáā pùk-ì
 IDP turtle:PL-APL
'animals like turtles' |
| d. p̀̀t [p̀̀t]
 spoon:PL
'spoons' | e. p̀̀t á-d̀̀k [p̀̀t ád̀̀k]
 spoon.P CRD-third
'three spoons' | f. jáā p̀̀t
 IDP spoon:P.PL
'things like spoons' |
| g. l̀̀ṭ [l̀̀ṭ]
 stick:PL
'sticks' | h. l̀̀ṭ á-d̀̀k [l̀̀ṭ áad̀̀k]
 stick.P CRD-third
'three sticks' | i. jáā l̀̀ṭ
 IDP stick:PL-APL
'things like sticks' |

The second factor determining whether the associative plural is marked stem-internally or through a suffix is whether the word has floating quantity. Floating quantity is a morphophonological feature that is realized as greater duration on the initial vowel of the following word, but not at all in other contexts. This is illustrated in (103g-h). Note that **p̀̀t** 'spoons' in (103d) and **l̀̀ṭ** 'sticks' (103g) are both realized as closed monosyllables in utterance-final position. However, **l̀̀ṭ** conditions increased vowel duration on the prefix of the following numeral (103h) – as if there had been a vocalic suffix there, which triggers greater duration (cmp. [103b]). This indicates that **l̀̀ṭ** has floating quantity. A detailed analysis of this phenomenon can be found in Remijsen & Ayoker (2020). Crucially, whereas associative plural tends to be realized stem-internally on suffixless nouns that do not have floating quantity (103d,f), it is realized through suffixation on nouns that do have floating quantity (103g,i).

All of the instances of morphological marking for associative plural that we encountered in our collection of narratives fit with the descriptive analysis provided in the following subsections. However, we have observed instances of the suffixal pattern of morphological marking (Section 7.2.2-3) being extended analogically to suffixless nouns without floating quantity. We speculate that this may represent a diachronic shift, extending the suffixed pattern of exponence.

7.2.1 Suffixless noun forms without floating quantity

The majority of singular base forms are suffixless and do not have floating quantity. The associative plural is marked stem-internally on such nouns, through vowel length and tone. This is illustrated by the examples in Table 5. If the noun displays a vowel length alternation, then the stem vowel is overlong when the noun is marked for associative plural. This is shown by the examples on the left in Table 5. The Short with Grade noun **kwān** ‘porridge’ is overlong in the associative plural, and the same goes for a Long with Grade noun such as **gʌʌt** ‘riverbank’. Only the Fixed Short nouns remain with a short vowel in the associative plural, as seen from **tɔŋ** ‘spear’ and **kùl** ‘warthog’. As for tone, the stem-internal pattern of exponence for associative plural adds a High target to the specification of the stem syllable. The addition of this High target applies vacuously in cases like **twɔŋ** ‘Twong’ **tɔŋ** ‘spear’, and **ugĩik** ‘buffalo’, as these nouns end in a High target to begin with. If the stem syllable is Low-toned, the addition of a High target yields a Low Rise, as in the case of **gʌʌt** ‘riverbank’. And if the specification of the base form is Mid, the associative plural carries the High Rise, as in the case of **kwān** ‘porridge’.

Table 5: Examples of the associative plural on suffixless singular nouns without floating quantity.

Base	+ APL		Base	+ APL	
bāk	bāaak	‘garden’	gwók	gwóook	‘dog’
kwān	kwāaan	‘porridge’	kàl	kāaal	‘compound’
twɔŋ	twɔŋ	‘Twong’	ugĩik	ugĩiik	‘buffalo’
gʌʌt	gʌaʌt	‘river bank’	gwáŋ	gwāaʌŋ	‘wildcat’
tɔŋ	tɔŋ	‘spear’	átāaj	átāaaj	‘big clay bowl’
kùl	kùl	‘warthog’	lwáak	lwāaak	‘cattle barn’

In the case of suffixless singular nouns that have a Low Fall, there is apparent unpredictability. Note that, in Table 5, the nouns **gwôk** ‘dog’ and **bâk** ‘garden’ both have a Low Fall in the base form; but in the associative plural, the former has a High tone (**gwóook**), whereas the latter has a High Rise (**băaak**). Evidently, the tonal specifications in the associative plural are not predictable on the tone in the base form for these nouns. However, this divergence is in line with a divergence between these nouns in the inflectional paradigm. This is shown in Table 6, which shows the base, proximal and associative plural for eight nouns. Note that the specifications for tone present two patterns: **gwôk** ‘dog’ and the other three nouns on the left, all of which have a High tone in the associative plural, have a Late Fall in the proximal deixis form. In contrast, **bâk** ‘garden’ and the other three nouns on the right, which have a High Rise in the associative plural, have a Low Fall in the proximal deixis form. This division among nouns that have a Low Fall in the base form is described in detail in Section 3.4.4 of Chapter 2, where we refer to the former as Low Fall (High) nouns and to the latter as Low Fall (Low Fall) nouns.

Table 6: Associative plurals marked Low Fall (High) nouns on the left vs. Low Fall (Low Fall) nouns on the right. The proximal deixis form is included to demonstrate the difference between the two classes.

Base	Proximal	Base + APL		Base	Proximal	Base + APL	
gwôk	gwóooŋ^u	gwóook	‘dog’	bâk	bâaaŋ^u	băaak	‘garden’
pîl	pîl^u	pîl	‘grindstone’	kêel	kêeel^u	kěeel	‘cheetah’
búp	búŋ^u	búp	‘mud’	tôk	tôŋ^u	tôk	‘side’
wât	wáλλλ^u	wáλλλ	‘son’	wât	wâaan^u	wăaat	‘relative’

The High Rise as on **băaak** can be interpreted as the compositional outcome of adding a High target to a Low Fall – the same happens in the pertensive with plural possessor (cf. Section 3.4.4 of Chapter 2); the High as on **gwóook** can be interpreted as identical to the root specification the Low Fall (High) nouns have in the inflected forms.

Plural nouns that are suffixless and do not have floating quantity represent a minority among plural base forms. In our lexicographic data, they make up 10 percent – 72 out of 694 plurals in our dataset.³⁶ As noted in Section 4.3

³⁶ The remaining 90 percent are made up roughly in equal measure of suffixed plurals and suffixless plurals with floating quantity.

of Chapter 2, the set of suffixless plural base forms without floating quantity includes all suffixless plural nouns that have either Mid tone or High tone on the stem syllable in the base form. Nouns with these two specifications for tone make up 60 out of the 72 suffixless plurals without floating quantity in our lexicographic data mentioned earlier. The other 12 present other specifications for tone. Overall, many of these nouns appear to be semantically unmarked in the sense of Dimmendaal (2000).

Table 7 shows the various types of suffixless plurals without floating quantity, and how they form the associative plural. These plural forms marked for associative plural present the same formal properties as the singular ones discussed above. Again, the pattern of exponence includes both vowel length and tone. With respect to vowel length, we find the three patterns: Fixed Short (as in the the case of **ḍòk** ‘cows’), Short with Grade – i.e. short going to overlong (as in the case of **pât** ‘spoons’), and Long with Grade (as in the case of **málan** ‘women’). The instances of morphological lengthening are striking here, because plural nouns such as **cwôw** ‘men’, **dōor** ‘walls’, **cjêṭ** ‘excrement (pl)’, **djêk** ‘goats’, and **pât** ‘spoons’ do not present morphological lengthening anywhere in their inflectional paradigms. This follows from the fact that the inflected forms of plural nouns take the suffix **-i**, which does not combine with morphological lengthening. However, **dōor** ‘walls’, **cjêṭ** ‘excrement (pl)’, **djêk** ‘goats’, and **pât** ‘spoons’ do have a corresponding singular that presents a vowel length gradation. As for **cwôw** ‘men’ and **málan** ‘women’, in contrast, these are suppletive plurals, so that there is no other form with morphological lengthening within its paradigm.

Table 7: Examples of the associative plural on suffixless plural nouns without floating quantity.

Base	+ APL		Base	+ APL	
ríc	ríc	‘fish’	cwôw	cwócw	‘men’
lĕk	lĕk	‘teeth’	ḍòk	ḍòk	‘cows’
málan	málan	‘women’	pât	pálat	‘spoons’
dōor	dōoor	‘walls’	cjêṭ	cjĕēṭ	‘excrement(pl)’
lálak	lálak	‘dreams’	djêk	djĕēek	‘goats’

As for tone, we find either a High tone or a High Rise, and these specifications can be analysed in the same way as in the singular nouns discussed above: the stem-internal pattern of exponence of the associative plural adds a High

target, which results in a High, a Low Rise, or a High Rise, depending on the specification of the stem. This addition applies vacuously if the noun is High-toned to begin with. On a noun specified for Low, this results in a Low Rise. And on a noun specified for Mid or Low Fall, this addition results in a High Rise. An exception is **cwôw**, which has the associative form **cwôwôw**. This reminds of the pattern of the Low Fall (High) nouns reported in Table 6.

7.2.2 Suffixed noun forms

The affixal pattern of exponence of the associative plural is found, to begin with, on all singular base forms that carry the suffix **-ɔ̄**. This is illustrated in Table 8. Note that, in all of these examples, the associative plural is marked by the suffix **-ɪ̄**. This suffix carries a Mid tone, i.e., **-ɪ̄**, unless the base form ends with a High tone, in which case the suffix is High-toned, i.e., **-í̄**. The latter scenario is illustrated by **ɲʌʌʌɪ-ɔ̄** ‘python’. As for the stem, the specification for tone is unaffected, except for the fact that a High Fall in the base alternates with a High Fall to Mid in the associative plural, presumably because of time pressure. The length of the stem vowel is not affected by the morphological marking for associative plural. This means that, if the noun has a grade alternation, as the nouns in the top row of Table 8 do, then the associative plural remains in the long grade. In contrast, if the nouns are Fixed Short (cf. Chapter 2, Section 3.2), as in the case of **cól-ɔ̄** ‘Shilluk’, then they remain short in the associative plural. The small set of suffixed nouns that have a long stem vowel in the base form also do not lengthen. This is illustrated by **tāan-ɔ̄** ‘roof’.

Table 8: Examples of associative plural marking on singular suffixed nouns ending in **-ɔ̄**.

Base	+ APL		Base	+ APL		Base	+ APL	
ɲʌʌʌɪ-ɔ̄	ɲʌʌʌɪ-í̄	‘python’	bðɔ̄ɔ̄ɔ̄-ɔ̄	bðɔ̄ɔ̄ɔ̄-ɪ̄	‘craftsman’	ǰáaak̄-ɔ̄	ǰáaak̄-ɪ̄	‘chief’
átút-ɔ̄	átút-í̄	‘duck’	cól-ɔ̄	cól-ɪ̄	‘Shilluk’	tāan-ɔ̄	tāan-ɪ̄	‘roof’

The other suffix that is found in the base form is **-ɪ̄**, which marks instruments derived from transitive verbs, as in **góooc-ɪ̄** ‘machete (hit-inst)’, **ɲíc-ɪ̄** ‘symbol (recognize-inst)’, and **rʌʌʌɲ-ɪ̄** ‘mirror (inspect-inst)’. The suffix on these instrument nouns is identical in form to the suffix marking associative plural, and the stem vowel is already overlong. Hence, the morphological

derivation of the associative plural applies vacuously: **jáā góoc-ī** ‘things like a machete’.

Plural suffixed base forms derive the associative plural in the same way, i.e., using **-ī**. In the base form, suffixed plurals have either Low-toned **-ì** or Mid-toned **-ī**. Hence the associative plural is marked consistently with **-ī**, as there is no input that ends in a High target that could result in an associative plural ending in High-toned **-í**. Some examples are presented in Table 9.

Table 9: Examples of associative plural marking on plural suffixed nouns ending in **-ī**.

Base	+ APL		Base	+ APL	
bùl-ì	bùl-ī	‘drums’	tùuk-ì	tùuk-ī	‘cooking stones’
ṫùlì	ṫùl-ī	‘owls’	bòot-ì	bòot-ī	‘craftsmen’
ḡíċ-ī	ḡíċ-ī	‘symbols’	káál-ī	káál-ī	‘compounds’

As noted above (102j), morphological marking for associative plural can also be added on top of the inflection for proximal deixis. This is illustrated in Table 10, for the proximal inflections of the suffixed singular nouns in Table 8. As seen from these examples, the suffix is consistently **-ī**, which follows from the fact that the inflected form to which it attaches ends in Low-toned **-ì**. Note that, in the case of singular nouns that display a morphological length alternation, the vowel remains in the short grade, just like in the proximal deixis form. This distinguishes the associative plural formed on the basis of the proximal from the associative plural formed on the basis of the base form, which is in the long grade.

Table 10: Examples of associative plural marking on the proximal deixis inflection of singular suffixed nouns.

Prox.	+ APL		Prox.	+ APL		Prox.	+ APL	
ḡáál-ì	ḡáál-ī	‘python’	dòon-ì	dòon-ī	‘iron’	jáañ-ì	jáañ-ī	‘chief’
átún-ì	átún-ī	‘duck’	cól-ì	cól-ī	‘Shilluk’	tāan-ì	tāan-ī	‘roof’

In relation to plural nouns, the proximal deixis form is invariably suffixed, ending in **-ì**, whether the base form is suffixed or not. Hence, the associative

plural forms formed on the basis of plurals inflected for proximal are also invariably suffixed using **-ī**. This is shown by the examples in Table 11.

Table 11: Examples of associative plural marking on the suffixed proximal deixis forms of plural nouns.

Prox.	+ APL		Prox	+ APL	
μάλη-ì	μάλη-ī	‘women’	γόρ-ì	γόρ-ī	‘honey badgers’
ḍòk-ì	ḍòk-ī	‘cows’	bòoḥ-ì	bòoḥ-ī	‘craftsmen’
κάλι-ì	κάλι-ī	‘compounds’	tùuk-ì	tùuk-ī	‘cooking stones’

There is considerable syncretism between the associative plurals formed for plural proximals and those formed for plural base forms; the forms are distinct only in two situations. One is if the plural base form is suffixless and does not have floating quantity, in which case the associative plural is marked stem-internally. A case in point is **ḍòk** ‘cows’, which has associative plural **ḍòk**; the corresponding proximal forms are **ḍòk-ì**, with the associative plural **ḍòk-ī**. Second, if the plural base is suffixed and has a High Fall to Mid, then its associative plural and the corresponding associative plural formed for the proximal are distinguished through tone. Consider **κάλι-ī** ‘compounds’, which has the associative plural **κάλι-ī**. The proximal is **κάλι-ì** ‘compounds’, which then becomes **κάλι-ī** in the associative plural. The two forms, **κάλι-ī** and **κάλι-ī**, are very similar in phonetic realization: fundamental frequency will start falling early in the vowel in the former, and at the end of the vowel or during the intervocalic consonant in the latter. If the stem vowel is short, the difference may be close to being imperceptible. A case in point is **γόρ** ‘honey badgers’, which has associative **γόρ-ī**; the corresponding proximal deixis form **γόρ-ì** has the associative **γόρ-ī**.

Nouns with a pronominal possessor are not marked for associative plural in any way. For example, the noun **μάλλḥ-āa** ‘my friend’ and **μάλλḥ gén** ‘their friend’ are unchanged in the juncture **jàā μάλλḥ-āa** ‘the associates of my friend’ and **jàā μάλλḥ gén** ‘the associates of their friend’, respectively.

7.2.3 Suffixless noun forms with floating quantity

As noted at the beginning of Section 7.2, some consonant-final nouns condition increased duration on following vocalic prefix vowels, i.e., across a word boundary. We have analysed this phenomenon by postulating a floating weight

unit or mora (Remijsen & Ayoker 2020), transcribed as a superscript μ , as in **lɔ̃^μ** ‘sticks’. Associative plural is marked differently on such nouns than on suffixless nouns that do not have floating quantity. There are four sets of nouns that carry floating quantity: a) the majority of suffixless plural base forms; b) all proximal inflections of suffixless singular nouns; c) a small set of suffixless singular nouns in the base form; d) the pertensive inflection (with singular possessor) of suffixless singular nouns. Of these four, only the last cannot form an associative, because it is necessarily followed by a possessor and thus it cannot appear as the final word in a noun phrase. In this section, we will describe the formation of the associative plural for the former three sets.

On the basis of our lexicographic data, we estimate that roughly 80 percent of suffixless plural nouns have floating quantity. Table 12 presents examples that illustrate the diversity of specifications for vowel length and tone. As seen from these examples, the suffixless plurals with floating quantity invariably form the associative plural using the suffix **-ĩ**. They never present the allomorph **-ī**, which follows from the fact that High- and Mid-toned plurals do not have floating quantity (cf. Section 7.2.1). If the paradigm of the plural noun with floating quantity presents a morphological length alternation, then the associative plural has the stem vowel in the long grade, just like the corresponding plural base form. Crucially, the floating quantity feature is visible to the allomorphy of the associative plural, to the effect that these plurals are marked for associative plural in the same way as plurals that end in a suffix.

Table 12: Examples of associative plural marking on plural nouns with floating quantity.

Base Pl.	+ APL		Base Pl.	+ APL	
pèl^μ	pèl-ĩ	‘grindstones’	gɔ̃ɔɔt^μ	gɔ̃ɔɔt-ĩ	‘corners’
dòŋ^μ	dòŋ-ĩ	‘baskets’	dɔ̃ɔɔk^μ	dɔ̃ɔɔk-ĩ	‘pots’
gɔ̃ɔ̃^μ	gɔ̃ɔ̃-ĩ	‘honey badgers’	ŋúuu^μ	ŋúuu-ĩ	‘cow dung (pl)’
tɔ̃ŋ^μ	tɔ̃ŋ-ĩ	‘spears’	jɔ̃ɔ̃ɔ̃^μ	jɔ̃ɔ̃ɔ̃-ĩ	‘boats’
tòk^μ	tòk-ĩ	‘edges’	wòɔ̃ŋ^μ	wòɔ̃ŋ-ĩ	‘grandmothers (biol.)’

Table 13 shows how the associative plural is marked on the proximal inflection of suffixless singulars which do not have floating quantity in the base form. Suffixless singular proximals consistently have floating quantity.

The nouns in Table 13 are the same ones presented in Table 5 above. The associative plural forms invariably carry the suffix **-ī**. Just as in the case of the plurals with floating quantity (Table 12), the floating quantity conditions the suffixed allomorph of the associative plural. If the nouns present a morphological length alternation, then the stem vowel remains in the long grade, just as in the proximal inflection.

Table 13: Examples of associative plural marking on suffixless singular proximal noun forms.

Prox.	+ APL		Prox.	+ APL	
bâaaŋ ^μ	bâaaŋ-ī	‘garden’	gwóooŋ ^μ	gwóooŋ-ī	‘dog’
kwāllāh ^μ	kwāllāh-ī	‘porridge’	tāaaŋ ^μ	tāaaŋ-ī	‘lake’
twóccŋ ^μ	twóccŋ-ī	‘Twong’	úgìiŋ ^μ	úgìiŋ-ī	‘buffalo’
gāllāh ^μ	gāllāh-ī	‘river bank’	gwàaaŋ ^μ	gwàaaŋ-ī	‘wildcat’
tóŋ ^μ	tóŋ-ī	‘spear’	átāaaŋ ^μ	átāaaŋ-ī	‘big clay bowl’
kùl ^μ	kùl-ī	‘warthog’	lwáaaŋ ^μ	lwáaaŋ-ī	‘cattle barn’

Finally, there is the set of suffixless singular nouns that have floating quantity in the base form (cf. Section 3.6.2 of Chapter 2). Examples are presented in Table 14. The inflected forms of these nouns are suffixed,³⁷ suggesting that the floating quantity in the base form has its diachronic origin in a lost segmental suffix. In the marking for associative plural, these nouns still pattern along with the suffixed nouns. That is, when these base forms are marked for associative, they are marked with the suffix **-ī** / **-í**. All but one of these nouns carry a rising tone, i.e., the base form ends in a high target. Hence, the fact that the associative plural is marked by High-toned **-í** is as expected. The exception is **apwâaak**^μ ‘Anywa’, which ends in a Low target, and has the allomorph **-ī**. This confirms the conditioning of the allomorphy: **-í** if the word ends in a High target, **-ī** otherwise.

37 Except for the ones that are open syllables, whereby a suffix is in hiatus with the stem vowel, resulting in stem-internal marking: **jōō**^μ ‘road’ has pertensive **jūū**^μ.

Table 14: Examples of associative plural marking on suffixless singular base forms that have floating quantity.

Base	Associative		Base	Associative	
bět^u	bět-í	‘fishing spear’	dīim^u	dīim-í	‘sieve’
kǔc^u	kǔc-í	‘adze’	ǰǎaaw^u	ǰǎaaw-í	‘domestic cat’
kít^u	kít-í, kít	‘mountain, rock’	ŋòoom^u	ŋòoom-í	‘awl’
kīiil^u	kīiil-í	‘crutch’	áɲwáaak^u	áɲwáaak-ī	‘Anywa’

There is one noun, **kít^u**, for which the suffixless pattern of associative formation is acceptable in addition to the suffixed one. This is unexpected. We interpret this as a case of analogy with the pattern of associative formation of suffixless nouns that do not have floating quantity.

7.2.4 Summary of the pattern of exponence of the associative plural

Overall, the pattern is clear. First, suffixless nouns that do not have floating quantity form the associative through stem-internal marking. Second, suffixed nouns form the associative using a suffix. Third, suffixless nouns that have floating quantity form the associative in the same way as suffixed nouns. A rare exception is **kít^u** ‘mountain’, which presents a stem-internally marked associative in addition to the suffixal one.



The fact that suffixless nouns with and without floating quantity diverge saliently in terms of the way they form the associative supports the hypothesized floating quantity feature. That is, while nouns like **tǔk^u** ‘edges’ vs. **ǰòk** ‘cows’ and **bět^u** ‘fishing spear’ vs. **gwǎŋ** ‘wildcat’ are identical in their phonotactic composition and specification for tone, they diverge in the associative: **tǔk-ī** vs. **ǰòk**, and **bět-í** vs. **gwǎaŋ**. This divergence follows from the postulated floating quantity feature, which is motivated independently on the basis of its influence on following prefix vowels (cf. Remijsen & Ayoker 2020).

Apart from these nouns that have floating quantity, suffixless singulars are not marked for associative plural using the **-ī** / **-í**. This is not surprising because this suffix marks 2nd singular possessors. In suffixless nouns, this also involves morphological lengthening. Hence, **bâk** ‘garden’ yields **bâaak-ī** ‘your garden’ – which is exactly how the associative plural would be formed, were the latter formed using the suffixal pattern. Such confusion is at issue for some suffixed nouns, in particular those that do not present a vowel length

alternation. That is, **m̀̀k-ə̀** ‘alcohol’ yields **m̀̀k-ī** ‘your alcohol’, which is also the associative plural. There is no such syncretism in the case of suffixed nouns that alternate in vowel length, because they are in the short grade in the possessed forms. **b̀̀ə̀ə̀t-ə̀** ‘craftsman’ yields **b̀̀ə̀t-ī** ‘your craftsman’, with a reduction in vowel length, whereas the associative plural is **b̀̀ə̀ə̀t-ī**.

8. Vocative

The vocative is used when a noun phrase is used as a term of address. Its use is illustrated by the narrative examples in (104). In (104a), the vocative noun phrase is **jáaak gól** ‘Men of this family!’ Without vocative marking, it would have been **jáaak gól̩**, with a Late Fall marking proximal deixis on the possessor. In (104b), **m̀̀l̀̀t̀̀** is a vocative form of **m̀̀l̀̀t̀̀** ‘friend’. In both instances, the vocative contributes a High end target to the tonal specification.³⁸

- (104) a. [^] **jáaak gól** **bá kɛ́t̩-āa** **b̩ɛ l̩t̩-t̩**
 men:PRT family:DXS:VOC HORT go.away-1PL.IN SUB look.at:INF-PRT:PL
jám-ì
 things-PL
 ‘Men of this family, let’s go check out the things.’
 [TheDescendantsOfWaang 428.4-430.4]
- b. [^] **cùŋí** **m̀̀l̀̀t̀̀**, **tóŋ kóo pùt̩**
 stand:2SG friend:VOC spear PROH pull.out:2SG
 ‘Wait my friend, don’t pull out the spear!’
 [KeepTheSecret 56.1-57.95]

Vocative is marked at the right edge of the noun phrase. Note, for example, how in (104a) it is marked on the possessor **gól̩** ‘this family’, rather than on **jáaak** ‘men’. Further examples showing this appear in (105). Each row displays a noun phrase (105a,d,g,j,m) and how it is marked for vocative (105b,e,h,k,n). For the sake of comparison, the way the same noun phrase is marked for associative plural is also included (105c,f,i,l,o). These examples illustrate that the vocative does not involve an increase in quantity – in contrast with the associative plural, which does involve morphological

38 In the case of **jáaak gól**, the vocative of **jáaak gól̩**, we are assuming that the vocative form does not preserve the floating quantity. However, there is no way to assess this because the vocative constituent is invariably followed by a prosodic domain boundary. This makes it impossible to ascertain whether there is floating quantity on the basis of increased duration on a following vocalic prefix.

lengthening. Marking of vocative is not grammatical on the proximal deixis form, presumably for semantic reasons.

(105) a. ბღვჳჳ-ღ  craftsman-SG ‘craftsman’	b. ბღვჳჳ-ღვ  craftsman-SG:VOC ‘craftsman!’	c. ჯაა ბღვჳჳ-ჲ  IDP craftsman-APL ‘craftsman’s associates’
d. ბღვჳჳ-ღ à tḗek  crafts.-CS MDF strong ‘the strong craftsman’	e. ბღვჳჳ-ღ à tḗek  crafts.-CS MDF strong:VOC ‘strong craftsman!’	f. ჯაა ბღვჳჳ-ღ à tḗek  IDP crafts.-CS MDF strong:APL ‘asss. of the strong craftsman’
g. ბღვჳჳ-ღ à nḡm  crafts.-CS MDF sleep ‘the sleeping craftsm.’	h. ბღვჳჳ-ღ à nḡm  crafts.-CS MDF sleep:VOC ‘sleeping craftsman!’	i. ჯაა ბღვჳჳ-ღ à nḡm  IDP crafts.-CS MDF sleep:APL ‘asss. of the sleeping craftsm.’
j. ბღვჳჳ-ღ àcàa  craftsman-CS DXS ‘this craftsman’	k. ბღვჳჳ-ღ àcàa  craftsman-CS DXS:VOC ‘craftsman over there!’	l. ჯაა ბღვჳჳ-ღ àcàa  idp craftsman-CS DXS:APL ‘asss. of this craftsman’
m. ბღვჳჳ-ღ  craftsman-DXS ‘this craftsman’	n. *ბღვჳჳ-ჲ craftsman-DXS:VOC ‘this craftsman!’	o. ჯაა ბღვჳჳ-ჲ  IDP craftsman:DXS-APL ‘asss. of this craftsman’

8.1 The pattern of exponence of the vocative

In the following subsections, we will describe the pattern of exponence of the vocative in detail in relation to nouns, the lexical category on which it is found the most often. Just as in relation to the associative plural, the descriptive analysis is structured on the basis of two characteristics: a) whether the noun is suffixless or suffixed; and b) in the former case, whether it has floating quantity.

8.1.1 Suffixless nouns without floating quantity

The marking of vocative on suffixless nouns without floating quantity is illustrated in Table 15. The vocative retains the level of vowel length of the base form, and adds a High target. This High target results in Low Rise when added to a Low target, as in the case of **kuḷ** ‘Kul’. It is added vacuously to a High target, as in the case of **twóŋ** ‘Twong’. When added to a Mid or a Low Fall, the outcome is a High Rise. The situation with **mḷḷt**, where the vocative is High-toned, is a lexical exception.

Table 15: Examples of the vocative on suffixless singular nouns without floating quantity.

Base	Base + Voc		Base	Base + Voc	
kùl	kǔl	‘Kul’	gwòk	gwǒk	‘dog’
ábác	ábác	‘Abac’	m̂l̂t	m̂l̂t	‘friend’
twóŋ	twóŋ	‘Twong’	àbóun	àbóún	‘priest’
děeŋ	děeŋ	‘Deng’	úraap	úraáp	‘spider’

The most interesting situation is when the base form has a High Fall, in which case the falling contour is retained, phonetically truncated, before the realization of the High target. Here the addition of the High target is not structure-preserving. That is, the sequence of a High Fall followed by High on a single syllable is, to the best of our knowledge, unattested elsewhere in the system.

In Section 7.2.1, in relation to the morphological marking of associative on suffixless nouns without floating quantity, we noted that there is a difference between the Low Fall (High) vs. Low Fall (Low Fall) nouns.³⁹ While both of these sets of nouns have a Low Fall in the base form, they diverge in their specification in inflections such as the proximal deictic form, and equally in the associative. This is shown again in Table 16. Note that a Low Fall (High) noun like *wât* has a Late Fall in the proximal, and a High tone when the base is marked for associative plural. In contrast, *wât* ‘relative’ has a Low Fall in the proximal and a High Rise when the base is marked for associative plural. Considering the vocative forms, we can see that they are indistinguishable: they all have a High Rise, which is the compositional outcome of the addition of a High target to a Low Fall. This means that the specification for tone in the vocative is based on the specification found in the base form, without the inflectional paradigm being a factor. In the same vein, the vocative is insensitive as to whether the noun is Fixed Short, Short with Grade, or Long: the vocative does not display morphological lengthening, again unlike the associative plural.

³⁹ The Low Fall (High) nouns and the Low Fall (Low Fall) nouns are subsets within the set of suffixless singular nouns that have a Low Fall in the base form. The Low Fall (High) nouns alternate between Low Fall and High specifications for tone in their inflectional paradigm; the Low Fall (Low Fall) nouns do not alternate. This division is explained in Chapter 2, Section 3.4.4.

Table 16: Examples of vocative vs. associative plural formation on suffixless singular nouns without floating quantity that belong to the Low Fall (High) vs. Low Fall (Low Fall) paradigms.

	Base	Prox.	Base + APL	Base + Voc	
Low Fall (H)	wât	wáλλλḥ ^u	wáλλλt	wắt	‘son’
	bâλη	báλλλḥ ^u	báλλλη	bắλη	‘servant’
	gwôk	gwóooḥ ^u	gwóook	gwốk	‘dog’
Low Fall (LF)	wât	wâaan ^u	wắaat	wắt	‘relative’
	bâη	bâλλλη ^u	bắλλλη	bắη	‘community leader’
	kêel	kêeel ^u	kě́eel	kě́el	‘cheetah’

Suffixless plurals without floating quantity represent a minority of suffixless plurals (most suffixless plurals do have floating quantity). Examples of how vocative is marked on such nouns appear in Table 17. Note that plural nouns that display morphological lengthening, as assessed on the basis of the associative, remain morphologically short in the vocative. The addition of the High tone combines with the specification for tone of the stem in the same way as in singular nouns. That is, the addition of this High target yields a Rise following a Low target; it is added vacuously following a High target; and it yields a High Rise following a Low Fall or Mid.

Table 17: Examples of the vocative on suffixless plural nouns without floating quantity.

Base	Base + APL	Base + Voc	
máλλη	máλληη	mắλλη	‘women’
ḍòk	ḍòk	ḍòk	‘cows’
djêk	djě́eek	djě́k	‘goats’
ríc	ríc	ríc	‘fish (pl)’
cwôw	cwóów	cwốw	‘men’

8.1.2 Suffixed nouns

In suffixed nouns, the marking of vocative does not affect the length of the stem vowel. It does, however, lengthen the vocalic suffix if it is short to begin

with. To the best of our knowledge, the vowel length contrast in vocalic suffixes is binary, i.e., short vs. long, even though it is ternary in the stem. This is illustrated in Table 18. Note that *-ɔ* lengthens to *-ɔɔ*, *-ɪ* to *-ɪɪ*, whereas *-aa* does not lengthen. As for tone, the vocative adds a High tone target in suffixed nouns. If the suffix is Low to begin with, the outcome is a Low Rise; if the suffix carries a Mid tone to begin with, the outcome is a High Rise; finally, the addition of the High tone applies vacuously if the suffix is High-toned, as in the case of *ɲʌʌʌl-ɔ* ‘python’.

Table 18: Examples of the vocative on suffixed nouns.

Noun	Noun + Voc		Noun	Noun + Voc	
<i>ɲʌʌʌl-ɔ</i>	<i>ɲʌʌʌl-ɔɔ</i>	‘python’	<i>ʒáaak-ɔ</i>	<i>ʒáaak-ɔɔ</i>	‘chief’
<i>átút-ɔ</i>	<i>átút-ɔɔ</i>	‘duck’	<i>ʈúl-ɪ</i>	<i>ʈúl-ɪɪ</i>	‘owls’
<i>bðɔɔɔɔ-ɔ</i>	<i>bðɔɔɔɔ-ɔɔ</i>	‘craftsman’	<i>bðoɔɔ-ɪ</i>	<i>bðoɔɔ-ɪɪ</i>	‘craftsmen’
<i>cɔ́l-ɔ</i>	<i>cɔ́l-ɔɔ</i>	‘Shilluk’	<i>mʌʌʌɫ̄-āa</i>	<i>mʌʌʌɫ̄-āa</i>	‘my friend’

The proximal inflection cannot be marked for vocative, presumably for semantic reasons.

8.1.3 Suffixless nouns with floating quantity

Among suffixless nouns, there are four sets that have floating quantity (Remijsen & Ayoker 2020): a) all suffixless singulars, in the perturbive inflection (singular possessor); b) all suffixless singulars, in the proximal inflection; c) a small set of suffixless singulars in the base form; d) the majority of suffixless plural nouns in the base form. Of these four sets, only the last two can be used in the vocative.⁴⁰ We describe their vocative forms here, starting with the plurals, and then moving on to the small set of singular base forms.

Plural base forms with floating quantity take the suffix *-ɪɪ* in the vocative. This is illustrated in Table 19. In this respect, they pattern along with suffixed plurals (Table 18). And just like suffixed plurals, a High tone target is also added. The addition of this High target in the vocative invariably results in a rising contour: a Low Rise if the stem has a Low or a Low Fall, and High Rise

40 As for the other two sets: the perturbive with singular possessor cannot appear at the right edge of the noun phrase, where vocative is marked; and the proximal inflection also cannot be marked for vocative, presumably for semantic reasons.

otherwise.⁴¹ The fact that the plurals with floating quantity take the suffixal allomorph of the vocative mirrors the situation in the associative plural. This is also illustrated in Table 19.

Table 19: Examples of the vocative on suffixless plurals with floating quantity. The associative plural (APL) is provided alongside for the sake of comparison.

Base	Base + Voc	Base + APL	
góŕ ^u	góŕ-í	góŕ-ī	'honey badgers'
dúuuŕ ^u	dúuuŕ-í	dúuuŕ-ī	'mice'
máááŕ ^u	máááŕ-í	máááŕ-ī	'friends'
jáaak ^u	jáaak-í	jáaak-ī	'chiefs'
wòòŋ ^u	wòòŋ-í	wòòŋ-ī	'grandmothers'

Most singular nouns with floating quantity also take the suffix **-í** in the vocative. This is shown in Table 20. In this respect, they pattern together with the plural nouns with floating quantity, and with suffixed nouns. All but one of the singular nouns with floating quantity have either the Low Rise or the High Rise; in other words, the end target is High to begin with. Compositionally, we can therefore expect to find the High tone on the suffix marking vocative, which is indeed the case. The exception is **ájwâaak^u** 'Anywa (ethnic group)', which has a Low Fall. Its vocative is unexpectedly marked stem-internally: instead of ***ájwâaak-í**, we find **ájwâaak**, following the same pattern as suffixless nouns that do not have floating quantity.


Table 20: Examples of the vocative on suffixless singulars with floating quantity. The associative plural is provided alongside for the sake of comparison.

Base	Base + Voc	Base + APL	
cèew ^u	cèew-í	cèew-ī	'porcupine'
lèew ^u	lèew-í	lèew-ī	'house lizard'
ŋâaaw ^u	ŋâaaw-í	ŋâaaw-ī	'domestic cat'
ájwâaak ^u	ájwâaak	ájwâaak-ī	'Anywa (ethnic group)'


41 Suffixless plurals with floating quantity never have a High tone as their lexical specification (Chapter 2, Section 4.3). This means that the addition of a High tone target on suffixless nouns with floating quantity never applies vacuously.

8.1.4 Exceptions


There are a few exceptions in the marking of vocative, in relation to high-frequency nouns. In the case of **jàal-ḏ**, we find both the regularly formed **jàal-ḏḏ** ‘man’, and also **jàal**, which expresses a negative disposition, as in ‘Man, watch what you are doing.’ In the case of **m̂l̂l̂t̂** ‘friend’, we find **m̂l̂l̂t̂**, with High tone, rather than **m̂l̂l̂t̂**. This is shown in (106).

- (106)[^] **cùŋ-f** **m̂l̂l̂t̂**
 stand:2SG friend:VOC
 ‘Wait friend!’
 [KeepTheSecret 56.1-57.0]

There also is a special rule for male names that have the prefix **ú-**. When names beginning with this prefix are used in the vocative, the tonal specification on the prefix changes to Low. For example, **útòor** ‘Otor’, which is derived from **tòor** ‘low-lying area near river’, has the vocative **ùtòor**, and **ùŋǎaaw^u** ‘Onyaw’, which is derived from **ŋǎaaw^u** ‘cat’, has the vocative **ùŋǎaawí** ‘Onyaw’. An example from a narrative is presented in (107): the base form **úŋáaj** changes to **ùŋáaj** in the vocative. And similarly in (12b) above, **ùbwōŋḑ** is the vocative of **úbwōŋḑ** ‘Arab (man)’. The prefix **a-** that is found on women’s names is not affected in this way.

- (107)[^] **bǎa** **djēer** **cēt̂** **ùŋáaj**
 NOMP truth exactly Ongay:VOC
 ‘It is completely true Ongay!’
 [AchangVillagePart1 168.4.8-169.9]

Finally, the 2nd person pronouns – **jín** (singular) and **wún** (plural) – which have a High tone to begin with, have the Low Fall in the vocative, i.e., **jín̂** and **wún̂**, respectively.⁴² This is illustrated in (108) in relation to the 2nd singular personal pronoun.

- (108)[^] **jín** **jín̂** **à** **m̂aal** **ànàa**
 PR.2SG:VOC PR.2SG:CS MDF sky DXS
 ‘You, you up there!’
 [Nyagul 86.3-87.7]

42 Note that they have the Late Fall in yes/no questions, i.e., **jín̂** and **wún̂**, respectively.

9. Noun phrase conjunction

Across the world's languages, noun phrases are conjoined using a coordinate strategy and/or a comitative strategy (Stassen 2000). Shilluk presents a comitative strategy exclusively, using the preposition *kí*. However, this preposition can be combined with a pronoun to yield an inclusory interpretation, similar to what has been described in recent work on Lopit (Moodie 2019, Moodie & Billington 2020)



The use of *kí* to conjoin noun phrases is illustrated in (109). This preposition conjoins two noun phrases in (109a), and four in (109b). The nature of the conjoining is asymmetric, with the non-initial noun phrase(s) structured as prepositional phrases within the matrix initial noun phrase.

- (109) a. [^] **pôŋ-ì kí pôŋ-ì gé cáā béeeñ-ō**
 land:DXS PRP land:DXS PR.3PL AUX:NT come-DVN
 ò còook-ó cék kí=a tók-ò
 CONJ bone-SG AUX PRP=FOC break.by.hitting-DVN
 'This village and this village they come (together) and the bone is broken.'
 [RevengeKilling 96.2-98.9]
- b. [^] **jók ání à lók jók-dòŋò à lók júur kí míilō kí jiw**
 men:CS DEF FOC NOMP men-big-PL FOC NOMP Jur PRP Milo PRP Jiw
 kí gīlō gé bāa kàl béeeñ"
 PRP Gilo PR.3PL NOMP family all
 'Those men were the leaders, they were Jur, Milo, Jiw and Gilo,
 they were all related.'
 [TheDescendantsOfWaang 277.6-286.3]

The marker *kí* cannot be used to conjoin clauses. In turn, markers that conjoin clauses in Shilluk equally cannot be used to conjoin noun phrases. A case in point is *ò*, which appears in (109a) to conjoin two clauses; it cannot be used to conjoin noun phrases. In conjoining noun phrases asymmetrically using a comitative construction, Shilluk is similar to other Nilotic languages such as Lopit (Moodie 2019), and markedly different from languages such as English, in which a marker like *and* is used to express conjunction symmetrically both at the phrase level and at the clause level.



In both of the examples of noun phrase conjunctions provided so far, the conjoined subject is pronominally resumed through the pronoun *gé*, immediately before the head of the predicate. The sentences are equally grammatical without *gé*. These two options are illustrated by the elicited examples in (110). There is however a difference in meaning. With *gé* there, the referents of the two noun phrases are presented as equally important. In contrast, without *gé* the referent of the first noun phrase is presented as more

prominent, and the referent of the noun phrase marked with **kí** represents an accompanying entity. This interpretation is expressed by the translations (110).

- (110) a. **ábác kí kùl gé á-wàṭṭi** b. **ábác kí kùl á-wàṭṭi**
 Abac PRP Kul PR.3PL PST-arrive  Abac PRP Kul PST-arrive
 'Abac and Kul arrived.' 'Abac arrived with Kul.'

In relation to the Eastern Sudanic language Lopit, Moodie (2019:288) uses the label 'inclusory' to qualify the semantic/pragmatic quality of a comitative construction in which the two constituents are presented as equally important. While this inclusory function is signposted in Lopit using subject indexing on the verb, in Shilluk this function is marked by an independent pronoun, which distinguishes the inclusory comitative and (110a) from the non-inclusory one (110b).

In (110a,b), the prepositional phrase headed by **kí** has a comitative function, and it can be interpreted syntactically as a modifier to the noun phrase. However, a prepositional phrase headed by **kí** can fulfill the same function (comitative) when it is positioned to the right of the verb. This is illustrated in (111a). In this configuration, **kí kùl** can be analysed as a clause-level peripheral constituent, just like a prepositional phrase that expresses an instrument (111b), which is expressed using the same preposition.⁴³ Crucially, **kí kùl** is not part of the subject noun phrase in (111a).

- (111) a. **ábác á-wàṭṭi kí kùl** b. **ábác á-wàṭṭi kí j̣Λaj**
 Abac PST-arrive PRP Kul  Abac PST-arrive PRP vehicle
 'Abac arrived with Kul.' 'Abac arrived by boat/car.'

It is ungrammatical for a prepositional phrase headed by **kí** to appear to the left of the verb when it is not modifying a noun phrase. That is, in spite of the fact that 3rd singular topics may be dropped in Shilluk, ***kí kùl á-wàṭṭi** 'S/He arrived with Kul' and ***kí j̣Λaj á-wàṭṭi** 'S/He arrived by boat' are both ungrammatical. This supports the interpretation that in the expression of comitative, a prepositional phrase headed by **kí** may modify either the verb predicate, as in (111a,b) or the noun phrase, as in (110a,b).

There is another way noun phrase conjunction can be marked, using a juncture of a plural pronoun with **kí**. This is illustrated in (112). The two

43 Aside from its role in the expression of Comitative and Instrument semantic roles, the preposition **kí** also expresses Patients / Themes in relation to transitive verbs in antipassive and ambitransitive derivations. Clearly, **kí** is a 'broad-spectrum' preposition.

entities that are linked are presented as equally important in a pragmatic sense; we analyse this as an inclusory comitative (cf. Moodie 2019). When **gé** appears in a juncture with **kí**, it cannot appear again before the verb. Similarly, in a variation on the sentence in (109b) above, ***ǰúur gé kí míilǵ gé kí ǰirw gé kí gīilǵ bǵa kǵl bǵeen** ‘Jur, Milo, Jiw and Gilo are family.’ is ungrammatical, because **gé** appears more than once.





- (112) **ábac gé kí kǵl á-wǵtǵ**
 Abac PR.3PL PRP Kul PST-arrive
 ‘Abac and Kul arrived.’

Illustration (113) presents two examples of the use of **gé kí** drawn from a narrative. In (113a), **gé kí** conjoins two noun phrases in the preverbal topic slot. In (113b), it fulfills this role within a matrix noun phrase. In (113b), it is also of interest that the noun **kǵaam** ‘distance, between’ appears in the pertensive with singular possessor, rather than in the pertensive with plural possessor. That is, its possessor argument is **ǰíkǵaaǵǵ**, rather than the **ǰíkǵaaǵǵ gé kí ǰǵrǵ** as a whole. This fits with the asymmetric interpretation of conjunction using **kí**.



- (113) a. **ǰíkǵaaǵǵ wǵǵǵǵǵǵ ǵkwǵa gé kí dǵwǵǵǵǵ wǵǵǵǵǵǵ ǵkwǵa**
 Nyikango son:PRT Okwa PR.3PL PRP Diwat son:PRT Okwa
bǵa gǵn à á-bǵǵǵǵ
 NOMP PR.3PL MDF PST-disagree
 ‘Nyikango son of Okwa and Diwat son of Okwa were the ones who disagreed.’
 [TheDescendantsOfWaang 8.0-14.4]
- b. **kǵ cǵǵǵǵ ǰǵǵ wǵeer-ǵ á-bǵi kǵ kǵaam ǰíkǵaaǵǵ gé**
 PRP end:PRT ground quarrel-SG PST-come PRP distance:PRT Nyikango PR.3PL
kǵ ǰǵrǵ
 PRP Thuro
 ‘In the end, a quarrel developed between Nyikango and Thuro.’
 [TheDescendantsOfWaang 88.9-94.1]

Other plural pronouns can be used in the same way. Illustration (114) presents a variation on (113a), now with the 1st plural exclusive subject.


- (114) **wǵ kí dǵwǵǵǵǵ bǵa wǵn à á-bǵǵǵǵ**
 PR.1PL.EXC PRP Diwat NOMP PR.1PL.EXC MDF PST-disagree
 ‘Diwat and I are the ones who disagreed.’

With non-human / inanimate referents, **gé kí** cannot be used as a juncture to conjoin noun phrases. In (115a,b), the insertion of **gé** can be inserted resumptively immediately before the adjectival predicate. In contrast,



* $\eta\acute{o}\acute{o}\acute{m}\text{-}\bar{i}$ $g\acute{e}$ $k\acute{i}$ $b\acute{i}\acute{i}\bar{i}\text{-}\bar{i}$ $b\acute{e}\acute{t}$ and * $\eta\acute{e}\bar{r}^{\mu}$ $g\acute{e}$ $k\acute{i}$ $t\bar{\lambda}\lambda\eta$ $j\acute{o}o\acute{t}$ are both ungrammatical.

- (115) a. $\eta\acute{o}\acute{o}\acute{m}\text{-}\bar{i}$ $k\acute{i}$ $b\acute{i}\acute{i}\bar{i}\text{-}\bar{i}$ (g \acute{e}) $b\acute{e}\acute{t}$
 awl-PL PRP fishing.spear-PL PR.3PL sharp
 ‘Awls and fishing spears are sharp.’
- b. $\eta\acute{e}\bar{r}^{\mu}$ $k\acute{i}$ $t\bar{\lambda}\lambda\eta$ (g \acute{e}) $j\acute{o}o\acute{t}$
 white.eared.kob:PL PRP topi:PL PR.3PL fast
 ‘White-eared kobs and topis are fast.’

In fables, animals appear as protagonists with human-like behaviour. Such characters count as human in relation to the distribution of $g\acute{e}$ $k\acute{i}$. For example, a story about Dog and Jackal begins as follows, with the narrator stating the title as in (116).


- (116) $g\acute{w}\acute{o}k$ $g\acute{e}$ $k\acute{i}$ $\acute{u}g\acute{w}\acute{\acute{o}}\acute{w}\acute{k}\bar{5}$
 dog PR.3PL PRP jackal-SG
 ‘Dog and Jackal’
 [DogAndJackal 0.0-1.4]

A final possibility is for the second part of the conjunction to appear to the right of the predicate, and marked with $g\acute{e}$ $k\acute{i}$. This is illustrated by the narrative example in (117a). Here as well, the inclusion of $g\acute{e}$ has the effect of giving the entities that are conjoined equal importance. For the sake of completeness, illustration (117b) shows that this construction is also grammatical when the predicate is headed by a verb. This example can be compared with the one in (112).


- (117) a. $g\acute{w}\acute{o}k$ $b\acute{a}\acute{a}$ $j\acute{i}\acute{n}\text{-}m\acute{e}e\acute{e}k$ $g\acute{e}$ $k\acute{i}$ $\acute{u}g\acute{w}\acute{\acute{o}}\acute{w}\acute{k}\bar{5}$
 dog NOMP offspring-mother.PL PR.3PL PRP jackal-SG
 ‘Dog and Jackal were brothers.’
 [DogAndJackal 2.6-4.5]
- b. $\acute{a}b\acute{a}c$ $\acute{a}\text{-}w\acute{\lambda}\acute{\eta}\acute{\eta}$ $g\acute{e}$ $k\acute{i}$ $k\acute{u}l$
 Abac PST-arrive PR.3PL PRP Kul
 ‘Abac and Kul arrived.’

Other pronouns can also be used in the juncture with $k\acute{i}$. This is shown in (118), where the two entities form a 1st plural exclusive group. Note that the preposition $k\acute{i}$ combines with the 1st plural exclusive pronoun $w\acute{o}$ here. It is equally grammatical to use $j\acute{a}$ instead of $w\acute{o}$ in the preverbal topic slot here, i.e., $j\acute{a}$ $\acute{a}\text{-}w\acute{\lambda}\acute{\eta}\acute{\eta}$ $w\acute{o}$ $k\acute{i}$ $b\acute{\acute{o}}\acute{w}\acute{\acute{o}}\acute{\eta}$ (same translation). Also, as noted above, comitative can be expressed without the pronoun preceding the preposition, e.g., $j\acute{a}$ $\acute{a}\text{-}w\acute{\lambda}\acute{\eta}\acute{\eta}$ $k\acute{i}$ $b\acute{\acute{o}}\acute{w}\acute{\acute{o}}\acute{\eta}$; this conveys an asymmetry in importance of the two parties. A conjunction involving a 2nd person plural set can be expressed in the


hand, it expresses narrow focus on the referent of a clausal constituent. On the other hand, it plays a role in syntactic licensing. We will describe each of these functions in turn. The use of the focus marker to express narrow focus on a constituent is illustrated by the examples in (120-123). In (120), the focus marker precedes the noun phrase **dìwλλλλτ** ‘Diwat’. It lends narrow focus, contrasting Diwat with his brother Nyikango.

- (120)[^] **ókwa**λλ **á-kwàŋ** a **dìwλλλλτ** **áa** **jáaak-5**
 Okwa PST-choose FOC Diwat NOMP.3SG chief-SG
méñ à **jákí** **kí** **báaaŋ-ē**
 IDP.SG:CS MDF rule-AMB:NT PRP after:PRT-3SG
 ‘Okwa chose Diwat to be the chief who would rule after him.’
 [TheDescendantsOfWaang 15.2-18.9]


In (121), the focus marker lends focus to the prepositional phrase **ìr lāj** ‘by an animal’, contrasting this entity with the actual cause of death, which is a spear.


- (121)[^] **dé** **kè** **l3k** **jí** **ú-włłł** **pâac**,
 CONJ SUB turn PR.2SG FUT-reach:FUT village
kóoop **kínì** **já** **á-nłk** à **ìr** **lāj**
 say:ATP:IMP QUOT PR.1SG PST-kill:OV FOC PRP animal
 ‘But when you reach the village, say that I was killed by an animal.’
 [KeepTheSecret 77.5-81]

In (122), **à** lends focus to the instrument that is expressed in a prepositional phrase marked by **kí**. The speaker is contrasting the referent’s preparedness for adversity with the powerlessness of other men, hence the emphasis on ‘his (own) strength’.


- (122)[^] **nūutí** **gèeer-ò** **ìr** **én** **kí** à **téek-è**
 NEG.PST build-DVN PRP PR.3SG PRP FOC strength:PRT-3SG YNQ
 ‘Did he not build it with his (own) strength?’ [AchangVillagePart1 175.6-177.2]

Finally, the examples in (123) illustrate the use of the focus marker associated with the preverbal constituent, which expresses an agent in (123a) and a location in (123b).

- (123) a.[^] **tùrò** **cèŋ** à **gôook-ò** (kì) **gín** **nì** **mén**
 Thuro ADV FOC make:ATP-NEVP PRP something:CS SIM IDP.SG:DXS
 ‘Surely Thuro did something like this!’
 [TheDescendantsOfWaang 115-116.5]


b.ˆ pāaan ání à á-péekì jíkāaaŋɔ̄ kì tʃèl-ì m̄aal
 village:CS DEF FOC PST-settle:XV Nyikango PRP leg-CS first
 ‘That village is where Nyikango settled first.’
 [TheDescendantsOfWaang 173.5-175.5]

The second function of the focus marker is purely syntactic: it licenses the use of verb forms that are not morphologically marked for aspect (cf. Chapter 1, Section 6.1). This usage is illustrated in (124). If the focus marker is omitted here, the sentence is ungrammatical.


(124)ˆ já dwāatí a ŋáac-ì jín kīnì, [...]
 PR.1SG want:NT FOC inform:INF-PRT PR.2SG QUOT
 ‘I want to inform you that [...]’
 [KeepTheSecret 163.6-165.2]

Various arguments support the hypothesis that the focus marker is not part of the noun phrase. First, consider that final constituent in a phrase is the determiner; Note that, in (123b), the focus marker is positioned to the right of the determiner **ání**. Second, the positioning of the focus marker is not fixed in relation to the noun phrase: while it follows preverbal noun phrases (123a,b), it precedes postverbal ones (120, 124). This variability suggests that it does not form part of the template of the noun phrase. And in relation to noun phrases that are themselves the argument of a preposition, it appears to the left if the preposition is **ì** / **ī** (121), and to the right if the preposition is **kí** (122).


As noted above, if the focus marker is associated with the preverbal constituent, it follows the focused noun phrase. In this position, it can at times be confused with the modification marker **à**, to which it is phonologically identical. However, the difference between them is revealed both in the morphology and in the syntax. Starting with the morphological evidence, a noun immediately followed by the modification marker **à** is in the construct state, whereas a noun immediately followed by the focus marker **à** appears in the base form. This difference is illustrated in (125a) vs. (125b), respectively.⁴⁴ In relation to (125b), the fact that **gwôk** ‘dog’ is in the base form precludes the meaning ‘the dog that Twong loves’.

(125) a. gwóooŋ à búut àcàa m̄aar ì twóŋŋ
 dog:CS MDF lie:NT DXS love:OV:NT PRP Twong
 ‘Twong loves that dog that is lying down.’



44 In (122a), the verb {m̄aar} ‘love’ can be used without syntactic licensing, because this verb provides an aspectual setting lexically: it is inherently continuous as opposed to punctual.

- b. gwōk à máar ìi twóŋ
 dog:S FOC love:OV:NT PRP Twong
 ‘Twong loves specifically the dog.’

As for the syntactic evidence for disambiguating between the modification marker and the focus marker, the latter follows after the noun phrase, following all modifiers, including adjectives (126).

- (126) kwālan à mêt à á-càam-á
 porridge:CS MDF tasty FOC PST-drink-1SG
 ‘I ate specifically the tasty porridge.’

Focus marking is independent from the use of determiners. That is, even if a noun is made specific through the use of a determiner, it can still be additionally marked for focus. This was illustrated by the narrative example in (123b) above, and it is further illustrated by the elicited examples in (127a,b).

- (127) a. kwālan ání à cáam ìi ábác
 porridge:CS DEF FOC eat:OV:NT PRP Abac
 ‘Abac is eating specifically the aforementioned porridge.’
- b. kwālan^h à cáam ìi ábác
 porridge:DXS FOC eat:OV:NT PRP Abac
 ‘Abac is eating specifically this porridge.’

11. Discussion and conclusion

Noun phrases in Shilluk have the head in phrase-initial position, followed by a wide range of modifiers, including possessors, adjectives, verbs, non-possessor nouns, quantifiers, and determiners. The only modifier that precedes the head noun is the diminutive marker, which has its diachronic origin in a possessive construction (‘a small one of X’). The generalisation that the nominal head appears at the left edge of the noun phrase would hold consistently if the diminutive marker were to be interpreted as a prefix.⁴⁵ In fact, Martin (2018) postulates a formally related prefix in the analysis of terms for immature cattle. However, it displays separate morphological forms to mark the sex of the animal, indicating that this prefix is a separate phenomenon.


In the following subsections we discuss some salient characteristics of the

⁴⁵ We thank Akil Ismael for pointing this out to us.


morphosyntax of Shilluk noun phrases, based on the descriptive analyses in this chapter.

11.1 Noun phrases with two or more modifiers

Nominal heads are morphologically marked for the presence of possessor modifiers (pertensive) and for the presence of non-possessor modifiers (construct state), but these markings are not additive. That is, a noun can be marked only for one of these inflections; and it is marked for the syntagmatically nearest one. In (128), for example, the head of the noun phrase is **ᵐᵛᵛᵛᵛ** ‘offspring, fruit’. It appears in the pertensive (**ᵐᵛᵛᵛᵛ-í**) because it is immediately followed by **ᵐᵛᵛᵛ** ‘tree’. The relative clause **à á-méek-ì gén** ‘which were given to them’ also modifies **ᵐᵛᵛᵛᵛ**. However, **ᵐᵛᵛᵛᵛ** does not appear in its construct state form (**ᵐᵛᵛᵛᵛ-ì**); instead, it is **ᵐᵛᵛᵛᵛ** that is inflected for construct state. Hence, there is ambiguity here between the interpretation in which the relative clause is headed by ‘tree’ and the one whereby it is headed by ‘fruits’.


- (128) [^] **gé** **ò-ᵐᵛᵛᵛᵛ-ò** **kí** **ᵐᵛᵛᵛᵛ-í** **ᵐᵛᵛᵛᵛ à**
 PR.3PL IMPF-chew:ATP-IMPF PRP offspring.PL-PRT tree:CS MDF
á-méek-ì **gén**
 PST-select:BNF:OV PR.3PL
 ‘They are chewing the tree fruits that had been given to them.’ OR
 ‘They are chewing the fruits of the tree that had been given to them.’
 [PearStory 147.6-149.7]

In some cases, such ambiguities can be avoided through the use of the independent pronoun **ᵐᵛᵛᵛ** (sg.) / **ᵐᵛᵛᵛᵛ** (pl.). This pronoun agrees with the head noun in number, thereby ruling out the interpretation whereby the relative clause modifies **ᵐᵛᵛᵛᵛ** ‘tree’. This is illustrated in (129), which shows a variation on the sentence in (128), disambiguated in this manner.



- (129) **gé** **ò-ᵐᵛᵛᵛᵛ-ò** **kí** **ᵐᵛᵛᵛᵛ-í** **ᵐᵛᵛᵛᵛ ᵐᵛᵛᵛᵛ à**
 PR.3PL IMPF-chew:AT-IMPF PRP offspring.PL-PRT tree IDP.PL MDF
á-méek-ì **gén**
 PST-select:BNF:OV PR.3PL
 ‘They are chewing the tree fruits that had been given to them.’
 *‘They are chewing the fruits of the tree that had been given to them.’

In this way, this independent pronoun can be used resumptively as a placeholder for the head. This is further illustrated by the spontaneously uttered example in (130). Here **ᵐᵛᵛᵛᵛᵛ** ‘status’ is the possessor modifier of **ᵐᵛᵛᵛᵛᵛ** ‘name(s)’, which is grammatically plural. The following constituent, **ᵐᵛᵛᵛᵛᵛ gén**


‘of them’, can only modify **ገባገ-ገ**, because it is grammatically plural.

- (130) [^] **gé** **cwɔl-i** **gáa** **àkɔool** **běeeñ**^a
 PR.3PL call-ITER PR.3PL:NOMP leader:PL all
à **ገባገ** **ገባገ-ገ** **ፈጋለገ** **ጠዕዕ** **ገጅጎ**
 MDF NOMP name.PL-PRT:PL status MDF.PL:PRT PR.3PL
 ‘They were all called leaders, which was their title (lit.: which were their names of status).’
 [TheDescendantsOfWaang 226.8-230.4]

In the same way, ie., through the use of **méñ** / **móḱ**, a wide range of other modifiers can be included in a noun phrase, as in (131a) and in (131b).

- (131) a. **dáa** **àkɔɔr-ገ** **ገገጅጅጅጅ** **ጠó** **ገጅጅጅጅጅ**
 EXSP:FOC problems-PRT money MDF.PL much
 ‘There are many financial problems.’
 b. **dáa** **àkɔɔr-ገ** **ገገጅጅጅጅ** **ጠó** **ገጅጅጅጅጅ**
 EXSP:FOC problems-PR money MDF.PL hard:CTG
 ‘There are difficult financial problems.’




Interestingly, it is ungrammatical to have two or more instances of **mé** / **mó** in sequence. This is illustrated in (132a). Instead, the English sentence in (132) is expressed in Shilluk using a serialisation (132b). It is characteristic in serialisations for the topic of the first constituent predicate to be resumed pronominally in the second constituent. In (130b), this explains the presence of **gé**. In addition, it is worthwhile to note that adjectival predicates do not involve any copula in Shilluk.

- (132) a. ^{*}**dáa** **àkɔɔr-ገ** **ገገጅጅጅጅ** **ጠó** **ገጅጅጅጅጅ** **ጠó** **ገጅጅጅጅጅ**
 EXSP:FOC problems-PRT money MDF.PL much MDF.PL hard:CTG
 ‘There are many difficult financial problems.’
 b. **dáa** **àkɔɔr-ገ** **ገገጅጅጅጅ** **ጠó** **ገጅጅጅጅጅ** **ገጅ** **ገጅጅጅጅጅ**
 EXSP:FOC problems-PRT money MDF.PL much PR.3PL hard:CTG
 ‘There are many difficult financial problems.’

11.2 Quantifiers

Of particular typological interest in relation to the numerals is the ordinal form, which represents the morphological base from which the cardinal form is derived. For example, **dḷk** ‘third’ yields **á-dḷk** ‘three’. This is highly unusual in a cross-linguistic perspective.

A second salient characteristic is that ordinal and cardinal numerals alike are nouns, displaying the morphological paradigm of the latter. The nominal

- (134) a. **máááḡ tēek** b. **jáā máááḡ tēēek** c. **máááḡ tēēk**
 friend:CS strong  IDP friend:CS strong:APL  friend:CS strong:VOC
 'a strong friend' 'the likes of a strong friend' 'Strong friend!'

Similar questions have been raised in relation to the status of the possessive marker 's in English.⁴⁶ Bloomfield (1926:156) discusses the case of the possessor *the man I saw yesterday's daughter*, where the possessive marker appears on an adverb rather than a noun, and highlights that the possessive marker 's is a bound morpheme, even though it does not modify the word it attaches to. However, the possessive marker 's is no different from the plural marking suffix -s on nouns and the 3rd singular marker -s on verb in its allomorphy. Further discussion of this phenomenon can be found in Nida (1949) and Hockett (1958).

Of the associative plural and the vocative, it is the associative plural that is most like an inflection in terms of its morphophonological exponence. Inflections like pertensive and construct state have suffixal and stem-internal allomorphs, and the choice between the latter is lexically conditioned. The allomorphy of the associative plural marker follows the same pattern. For example, a suffixed noun like **ḃḃḃḃḃ-ḃ** 'craftsman' has a suffix in the pertensive with singular possessor, **ḃḃḃḃḃ-ḃ**, and equally in the associative plural, which is **ḃḃḃḃḃ-ḃ**. And similarly, a suffixless noun like **ḡḡḡḡḡ** 'riverbank' is suffixless in the pertensive with singular possessor, which is **ḡḡḡḡḡ^u**, and also in the associative plural: **ḡḡḡḡḡ**. Moreover, the realization of the associative plural is sensitive to class-specific inflectional variation beyond the base form. Whereas **pḡḡḡḡ** 'grindstone' and **kēēēē** 'cheetah' have the same specification for tone in the base form, they belong to different classes, as seen from the fact the pertensive with singular possessor forms are **pḡḡḡḡ^u** and **kēēēē^u**, respectively. We have referred to these classes as Low Fall (High) and Low High (Low High), respectively (cf. Chapter 2, Section 3.4.4). Crucially, the associative plural forms also diverge as a function of these tonal classes: they are **pḡḡḡḡ** and **kēēēē**, respectively. In sum, the associative plural is nothing like a clitic in various ways: a) it can be purely suprasegmental; b) it interacts with the system of noun classes.

As for the vocative, it interacts with the inflectional morphology of nouns to a lesser extent than the associative plural. Different from the latter, the vocative does not involve morphological lengthening of the stem syllable,

46 We are grateful to Bob Ladd for pointing out this parallel, and introducing us to relevant sources.

and, in the case of the Low Fall nouns, its formation is not sensitive to the distinction between the the Low Fall (High) and the Low Fall (Low Fall) sets. In addition, vocative marking results in a specification for tone that is not structure-preserving: when marked on nouns with a High Fall: **àbóon** yields the vocative **àbóón**. This is in line with its characterization as phonologically shallow operation.

The associative plural and the vocative both stand out in the context of morphological marking in Shilluk. That is, whereas inflections on nouns and verbs represent instances of head-marking, these two phenomena both are instead marked on the rightmost word within a syntactic domain (the noun phrase). This is illustrated in (134). In this respect, these instances of morphological marking are complementary to the the head-marking inflections of pertensive and construct-state, both which are marked on the head of the noun phrase, which appears at its left edge. In this way, the dependent-marking nature of associative plural and vocative makes for efficient use of the morphology, as it targets a constituent that is not also targeted by the head-marking morphology.

Just like the inflectional patterns of nouns in general, the fact that the allomorphy of the associative plural and of the vocative varies between a suffixal and a stem-internal marker is indicative of the cline that the Shilluk language is on in a diachronic sense, i.e., from affixal morphology towards stem-internal morphology (cf. Andersen 1990).

Finally, the fact that the allomorphy of the associative plural and of the vocative is sensitive to the presence of floating quantity presents confirmation of the existence of the latter phenomenon, as postulated in earlier work (Chapter 2; Remijsen & Ayoker 2020).

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Abbreviations

The following abbreviations are used in the glosses.

AD	Animate destination	INTERJ	Interjection
ADV	Adverb	ITER	Iterative
AMB	Ambitransitive	LOCP	Locative predicate marker
APL	Associative plural	MDF	Modification marker
ATP	Antipassive	ML	Male descendant nominalizer
AUX	Auxiliary verb	NEG	Negation marker
BNF	Benefactive	NEGP	Negative exist. predicate
CAUS	Causative	NEVP	Non-evidential past
CONJ	Conjunction	NOM	Nominative
CRD	Cardinal	NOMP	Noun predicate
CS	Construct state	NT	No tense
CTG	Contingent	OBL	Oblique
DEF	Definiteness	OV	Object voice
DXS	Deictic marker	OXV	Object / Applicative voice
DEST	Destination	PET	Centripetal deixis
DEICP	Deictic predicate	PL	Plural
EXC	Exclusive	PROH	Prohibition
EXCL	Exclamation	PRP	Preposition
EXSP	Existential predicate	PRT	Pertensive
FOC	Focus	PST	Past
FUT	Future	QUOT	Quotative
HAB	Habitual	RFL	Reflexive marker
HORT	Hortative	SG	Singular
IDP	Independent pronoun	SIM	Similarity
INC	Inclusive	SPAT	Spatial

IMP	Imperative	SUB	Subordination marker
IMPF	Imperfective	VOC	Vocative
INF	Infinitive nominalisation	VS	Verb-Subject
INFA	Agentive inf. nominalisation	XV	Applicative voice
INST	Instrument nominalisation	YNQ	Yes/no question

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