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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 diminuitive. Of all of these modifiers, the diminuitive is the only one that preceeds the head. This fits with the interpretation that the diminuitive 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

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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.<sup>1</sup> 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  $\mathbf{k}\mathbf{i}$ , 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 (Remijsen & 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

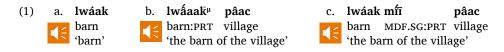
<sup>1</sup> We define the inflectional paradigm as the set of word forms that are productively available for a particular lexical category, expressing grammatical meanings (cf. Haspelmath & Sims 2010). These meanings are marked within the word through affixation and/or stem-internal markers.

illustrations, examples drawn from this corpus are signposted with a ^.

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.<sup>2</sup> 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,  $lwáaak^{\mu}$ , the possessed term, is morphologically marked for pertensive.<sup>3</sup> 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).



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).

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

<sup>3</sup> In the transcription  $lw \hat{a} a \bar{k}^{\mu}$ , the superscript  $\mu$  (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.<sup>4</sup> This is illustrated in (1): whereas the base form of the word meaning barn (for cattle) is **lwáak**, as in (1a), it appears as **lwấaa\mathbf{k}^{\mu}** 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  $-\mathbf{i}$ , as in the case of  $\mathbf{m}\mathbf{\Lambda}\mathbf{n}$  'women', which yields pertensive máan-í. There are only a handful of exceptions to this generalisation.<sup>5</sup> 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 **lwấaak**<sup> $\mu$ </sup> (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  $\frac{1}{2}$  shown in (2b), which shows the pertensive of  $\frac{1}{2}$  shown in (2b), which shows the pertensive of  $\frac{1}{2}$  shown in (2b), which shows the pertensive of  $\frac{1}{2}$  shown in (2b).

(2)a. gîn<sup>µ</sup>

lwấaak<sup>µ</sup> pâac băa thing:DXS NOMP barn:PRT village 'This is the barn of the village.'

b. kùl bǎa jấaŋ-ī pâac Kul NOMP chief-PRT village 'Kul is the chief of the village.'

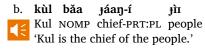
The possessor noun may be morphologically marked as a head within its own domain. 4 See, for example, the discussion of the recursive possessive construction further on in this section.

<sup>5</sup> These include **câak** 'milk', **pîi** 'water' and **fôk** 'men'. The corresponding pertensive forms are căaak, píii, and jɔ̃ɔɔ. 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).<sup>6</sup> 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**<sup>µ</sup> (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.

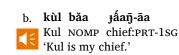
(3) a.  $g\hat{n}^{\mu}$ thing

gîn<sup>µ</sup>bǎalwáaakjìrthing:DXSNOMPbarn:PRT:PLpeople'This is the barn 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-5** '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<sup>μ</sup> băa lwấaak̄-āa
 thing:DXS NOMP barn:PRT-1SG
 'This is my barn.'



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.<sup>7</sup> This is shown in (5). The brackets mark the domains of noun phrases. Starting from the inside out, **àbóun** 'priest' is the possessor of the possessed noun **kâal** 'camp'. Marked for pertensive, **kâal** yields **kấaal**<sup>µ</sup> 'camp:PRT', in a noun phrase that means 'mission post'. The

<sup>6</sup> 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.

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

possessive noun phrase **kấaal<sup>µ</sup> àbốun** is in turn the possessor of the compound noun **ɔ̄ɔt-jāaț** 'hospital' (lit. 'house-medicine'). The latter noun, being a possessed term, appears in the pertensive **ɔ̄ɔt-jāaat**<sup>µ</sup>.

(5)<sup>^</sup> já pí kîţì a [5ot-jāaaţ<sup>µ</sup> [kấaal̄<sup>µ</sup> [àbốon]]]
 PR.1SG HAB carry:OV FOC<sup>8</sup> 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 3<sup>rd</sup> singular pronominal **gb**, in the possessor slot following the head noun, **píŋ-í** 'name'.

(6)<sup>^</sup> màaaj ání píŋ-í gò cwôlì áa dwâʌʌŋ-ò
 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), **bǒol pín-mēn** 'the siblings of Bol' has the possessor term **bǒol** 'Bol' fronted; it is equivalent in referential meaning to **pín-mīi bǒol**. And in (7b), **jéeec̄-ɔ̄ pāaar-ɛ̄** 'the village of Rat' has the possessor **jéeec̄-ɔ̄** 'Rat' fronted. This is equivalent to **pāaar<sup>µ</sup> jéeec̄-ɔ̄**. In both cases, the fronted possessor is center stage in the discourse at that point.

 (7) a. <sup>^</sup> cōul băa wấʌλɨ<sup>μ</sup>-kjèl dé bǒul ŋíŋ-mēn gíiir 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]

<sup>8</sup> 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.^ kấā jếeec-5 pāaar-ē ù-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  $m\hat{i}$ , míi, mók, or móoo, which are inflected forms of the modification marker  $m\dot{\epsilon}$  (singular) /  $m\dot{\sigma}$  (plural). The forms  $m\dot{i}$  and  $m\dot{i}$  are used when the head (possessed term) is singular. Their use is illustrated in (8). In (8a), the possessor is singular, and we find  $m\hat{i}$ . This can be interpreted as the pertensive with singular possessor of  $\mathbf{m}\mathbf{\acute{e}}$ , with the singular pertensive marker  $-\overline{\mathbf{i}}$  /  $-\overline{\mathbf{i}}$  coalesced to it.<sup>9</sup> In (8b), the head is again singular, but here the possessor is plural, and this is why we find **mí**. This form can be analyzed as the combination of the pertensive form of  $\mathbf{m}\mathbf{\acute{e}}$ , coalesced with the plural pertensive marker -i. That is, **m** $\dot{\epsilon}$  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 míī and míi parallel those on High-toned noun like lwáak 'barn', which has pertensive with singular possessor  $\mathbf{lw}\hat{\mathbf{a}}\mathbf{a}\mathbf{k}^{\mu}$  and pertensive with plural possessor lwáaak (1).

(8) a. lwáak míī pâac barn MDF.SG:PRT village 'barn of the village'

b. lwáak mír barn MDF.SG:PRT:PL people 'barn of the people'

The lack of case marking on the head noun when it is followed by  $m\hat{i}i$  /  $m\hat{i}i$ matches the state of affairs when  $\mathbf{m}\hat{\mathbf{\epsilon}}$  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

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The distribution of the allomorphs of singular pertensive marker  $-\bar{\mathbf{i}}$  /  $-\hat{\mathbf{i}}$  is governed by the specification for tone of the stem syllable (cf. Chapter 2, Section 3.1.2).

construct state form: lwấaaŋ. The construct state form is distinct from both the pertensive with singular possessor ( $lw\hat{a}ak^{\mu}$ ) 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).<sup>10</sup>

(9) a. gîn<sup>µ</sup> băa lwấaaŋ à dwốɔŋ thing:DXS NOMP barn:CS MDF big 'This is the big barn.' dwốɔŋ b. gîn<sup>µ</sup> bǎa lwáak mé thing:DXS NOMP barn MDF.SG big 'This is a big barn.'

In summary, we find **míī** and **míi** with singular possessed terms, and the choice between these specifications for tone depends on the number of the possessor: it is mit if the possessor is singular; and mit 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 móoo. This is shown in (10), where all of the examples have as possessed term the noun  $lw\lambda \Lambda k^{\mu}$  'barns', which is the plural of lwáak. Both mók and móoo can be interpreted as derived from the modification marker  $m\delta$ , which is the plural counterpart of  $m\epsilon$ . But whereas the alternation between  $m\hat{i}$  and  $m\hat{i}$  – which go with singular head nouns – is governed by the grammatical number of the possessor, this is not a factor with **mók** and **móoo**. This is shown in (10). Note that, in (10a,b), mɔ́ɔɔ is used both with singular possessor twɔ́ɔŋ 'Twong' and also with plural possessor mánn 'women'. And likewise in (10c,d), mók is used both with singular possessor ájwóm 'monkey' (10c) and with its corresponding plural ájwòm-ì 'monkeys' (10d). These examples show that the alternation between **m**5k and **m**555 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.  $lw\lambda \Lambda k^{\mu} m \delta \sigma$ twóɔn barn:PL MDF.PL:PRT Twong 'barns of Twong'

b.  $lw\lambda \Lambda k^{\mu} m \delta \sigma$ 

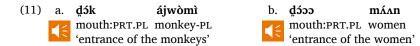
тілп barn:PL MDF.PL:PRT women 'barns of the women'

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

с. lwàллk <sup>µ</sup> mók	ájwŏm	d.	lwλλλk <sup>μ</sup>	mók	ájwòm-ì
barn:PL MDF.PL:PRT	monkey			MDF.PL:PRT	
'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 **twóɔŋ** and **mʎʌn** (which combine with **mɔ́ɔɔ**) are consonant-initial, while the possessors **ájwòm** and **ájwòm-ì** (which combine with **mɔ́k**) are vowel-initial. The same conditioning factor also governs pronominal possessors: we find **mɔ́ɔɔ gɛ́n** 'the ones belonging them', but **mɔ́k-ɛ́** 'the ones belonging to her / him'.

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



Examples of the second possessive construction drawn from narratives are presented in (12–14). In (12a), the possessor that is marked by **mfī** is **jàaap-ɔ**, an infinitive nominalization of the transitive verb {jàp} 'search'. This nominalization **jàaap-ɔ** itself heads a possessive noun phrase. In (12b), the possessor is pronominal, the 2<sup>nd</sup> singular suffix **-ī**I, which coalesces with **mfī**, yielding an overlong vowel.

	PRP be 'This sl	:DXS s <b>ấaaŋ̃</b> <sup>µ</sup> ehind: hows t	show:NT <b>ŋàa</b> PRT pers	FOC n son.Cs d of 1	kóook-īı reward-INST měɛɛk-ó s other-SG looking for foo	MDF.SG:PRT			<b>cám</b> eat:INFA
	quot "O Ara	EXCL b, you		Arab	/ <b>kwòoŋ</b> s-SG / traditio ll remain." 5.8]		T:2SG	<b>ú-bèeet</b> FUT-rem	

As seen from this description, the function word  $m\hat{i}$  /  $m\hat{i}$  /  $m\hat{i}$  /  $m\hat{j}$  /  $m\hat{j}$  has the morphological properties of a noun. If the possessed term is singular, then

the alternation between **míī** 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 **mík** vs. **míɔɔ** is governed by the same phonological condition as in the paradigm of the singular noun **dík** 'mouth': by the initial segment of the following word.

The parallel with nouns extends to the syntactic level, in that mîī / míi / mók / móɔɔ can head a noun phrase, without a preceding possessed term. This is illustrated in (13). The copula bǎa marks nominal predicates only, indicating that míī heads the possessive noun phrase. This means that míī ápwòooțó 'the one of Apwodho' is the noun phrase argument to the head of the predicate. This shows that míī / míɪ / mók / móɔɔ 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)<sup>^</sup> pλΛΛr mến à kwốɔŋ kí nλΛΛk-ò bǎa mấi ápwòootó
 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 pertensive 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 3<sup>rd</sup> plural pronoun gén modifies the head noun **p**í**ŋ** 'name.pl'. The pronominal possessor gén does not immediately follow this head noun; they are separated by **dwàn**, another possessor. Importantly, there is no ambiguity as to which of the two nouns gén modifies: the presence of **mɔ́ɔɔ** signposts that the possessed term modified by **gén** is morphologically plural, which matches up with plural **pı́ŋ** 'name.pl' but not with singular **dwàn**ŋ 'status'. If gén had modified **dwàn**ŋ, we would have found **míu** gén.

(14)<sup>^</sup> gέ cwôl-ì gáa àkŏool běeen<sup>μ</sup>
 PR.3PL call-ITER PR.3PL:NOMP leader:PL all
 à jíŋ píŋ-í dwàʌŋ móɔɔ 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).'<sup>11</sup>
 [TheDescendantsOfWaang 226.8-230.4]

<sup>11</sup> In the recording of this utterance, the nominal predicate marker **jíŋ** 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 headmarked 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 (míi, míi, mók, or móoo) appears between them.

(15) a. **dâaak**<sup>µ</sup> twóoŋ lúuuè pipe:PRT Twong black 'Twong's pipe is black.'

b. dâk mấī

twóoŋ lúuuè pipe MDF.SG:PRT Twong 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 headmarking 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 **wic míī twóɔŋ**. 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.\*dòoor-ò míī lwáak.

	wīc <sup>µ</sup> twóohead:PRTTwon'Twong's head is	5 5	PART-WHOLE RELATION
	dòor-ì lwáał wall-PRT barn 'The wall of the		PART-WHOLE RELATION
		<b>twɔ́ɔŋ bǎa ɟwòooṯ-ɔ̀</b> Twong NOMP be.generous-DVN ather is generous.'	KINSHIP RELATION

mispronounced lín.

d.	bòəl-ì	lwáak	mùt-ò
14	front.side-PRT	barn	flood-NEVP e barn is flooded.'
	'The area in fro	ont of the	e barn is flooded.'

The most abstract relations that are expressed by a possessive noun phrase are attribute and association. These are illustrated in (17a-b) and (17c-d), respectively. In each case, the corresponding construction with **míī** is ungrammatical (e.g. **\*kìʌʌk-ò míī pâac**). The fact that these possessive noun phrases have nothing to do with ownership is most clear from (17d). In terms for dishes, the carbohydrate is expressed as the possessed term, and the protein that accompanies it is the possessor. The expression **àkēel-ī rêeec-ó** 'sorghum noodles with fish' is equivalent to **àkēel-ó kí rêeec-ó**, in which the preposition **kí** expresses conjunction asymmetrically (cf. Section 9). Similarly, porridge with milk is **kwǎʌʌn càak** 'porridge:PRT:PL milk'

<ul> <li>(17) a. kλΛk-ì pâac dóooỳ</li> <li>duration-PRT village old</li> <li>'The village is old.'</li> </ul>	ATTRIBUTE
b. <b>jấaŋ̄-ī twóɔŋ jâa túuuŋ̄ɔ</b> chief-prt Twong LOCP:FOC Tonga 'Twong's chief is in Tonga.'	ATTRIBUTE
c. ^ <b>à-rjéɛɛr-é ìı lɛ̂tू-ì tóŋ</b> SEQP-shout-3SG PRP pain-PRT spear 'and he shouted out because of the pain from the spear.' [KeepTheSecret 86.7-88.4]	ASSOCIATION
d. <b>kùl cấm a àkēɛl-ī rêeec-ó</b> Kul eat:NT FOC sorghum.pasta-PRT fish-SG 'Kul is eating sorghum noodles with fish.'	ASSOCIATION

In addition to the semantic relations discussed above, a possessor can also express semantic roles typically expressed by core arguments of the verb, most notably agent and patient. This is the case when the possessed term is an infinitive nominalization.<sup>12</sup> Consider the example in (18a), which is drawn from a narrative. The syntactic subject of the clause, which follows the verb, is the constituent **jwźok-ì mźʌʌī̯-ɛ** 'the mourning of his friend'. This is a

ORIENTATION

<sup>12</sup> As deverbal nominalisations, these morphological operations involve a change in lexical category, i.e., from verb to noun. This is evident from the fact that the nominalisations present the same paradigm as underived nouns. Nonetheless, we interpret them as part of the inflectional paradigm of the verb (cf. Section 7.6 of Chapter 1). One reason is that they follow the system of verb classes; another is that these nominalisations are available for the base paradigm, and for all of its derivations. Comparable phenomena have been described in detail in relation to Nuer, a closely-related language (Baerman, Monich & Reid 2019).

possessive noun phrase, headed by the pertensive form of jw5obk-5, which is the patient-oriented infinitive nominalisation of  $\{jw5ok\}$  'mourn'. Note that the possessor term  $m\tilde{n}An\bar{q}-\bar{\epsilon}$  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  $jw5obk^{\mu}$  $m\tilde{n}An\bar{q}-\bar{\epsilon}$  'the mourning by his friend'. This is again a possessive noun phrase, this one headed by the pertensive form of jw5ok, which is the agent-oriented infinitive nominalization of  $\{jw5ok\}$  'mourn'.

- (18) a. rùuu wōɔw, kêŋ à á-béeeñ jwɔ́ɔk-ì mʌ́ʌʌī̯-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 wōɔw, kɛ̂ŋ à á-bḗeeā jwōɔɔk<sup>µ</sup> mʎʌʌţ̄-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: \*jw5ok-5 mfī mźʌʌī̯-ē 'mourning of his friend' (cmp. 18a); \*jwook mfī mźʌʌī̯-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.

# Diminutives

In general, noun-phrase modifiers follow the head in Shilluk. There is one apparent exception to this: the diminutives. They are **pāa**, **pǎaa**, and **pwɔɔl-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 jâa  $\eta \bar{\Lambda} \Lambda \Lambda c^{\mu}$ pâac DIM field:PRT-3SG LOCP:FOC behind:PRT village 'His small field is located behind the village.' [AchangVillagePart1 216.6-218.2] b.^ nāa úwếen-ī gûur, é băa ábóoop-> 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 bấaaŋ<sup>µ</sup> pāa kēp mé tínn kấā tóol gé-kí PRP after:PRT DIM time MDF.SG small:CTG CONJ rope PR.3P-PRP ŋếɛw kwàr-ì roofbeam-p buy:OV 'After a very short time, the rope and the roofbeams were bought.' [AchangVillagePart1 439.5-443.2] d. kấa nāa jấaak ání dôook-é (kí) cwòool-ò 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.<sup>^</sup> lámàn níŋ-í à á-cāaak nắaa gîk-tòn-ò ján ĪI INTERJ name.PL MDF PAST-name:XV PR.1S PRP DIM:PL children(thing.PL--14 small-PL) 'So the name which the small children gave to me, [...].' [DownWithIllness 205.6-207.6]

The forms **µāa** and **µǎaa** are related to the pertensive inflections of **µīµr** 'child, daughter, offspring'; **µāaar**<sup>µ</sup> is its pertensive with singular possessor form, and **µǎaar** is its pertensive with plural possessor.<sup>13</sup> Their lexical use is illustrated by **µāaar-āa** 'my daughter', **µāaar**<sup>µ</sup> **djèl** 'female offspring (sg.) of a goat' and **µǎaar djêk** 'offspring (sg.) of goats'. In the examples in (19), however, this meaning does not fit: in (19e), for example, **µǎaa gîk-ţòµò** does not mean 'the offspring of children', but 'small children'. In other words, **µāa** and **µǎaa** 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  $\mathbf{p}\mathbf{\bar{a}a}$  is a phonologically reduced form of the pertensive form  $\mathbf{p}\mathbf{\bar{a}aar}^{\mu}$ . While coda /r/ is often elided in Shilluk, the length of the vowel

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

is saliently different between the diminutive use and the kinship term. This is shown in (20): the length of the vowel is greater in the pertensive (20b) than in the grammaticalised diminutive (20a). In (20b), the coda /r/ can be omitted, with the same meaning of offspring.

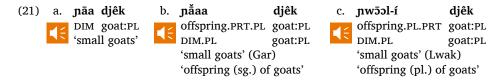
twóoŋ



There are also many female personal names that begin with the segmental sequence /pa/; these conform to the pattern in (20b) – for example **pāaatón** 'Nyatong'. That is, the vowel in the first syllable is longer than when this syllable represents the diminutive.

The diminutive **pāa** can modify singular nouns, as in (19a-c), but also plural nouns, as in (19d-e). Just as its formal reduction, this insensitivity to the grammatical number of the following noun is indicative of grammaticalization: when it is used lexically, in the meaning 'offspring (sg.)', it is inflected for the possessor being plural, i.e. **pāaar**. Aside from **pāa**, two related forms can also be used as diminutives: **nāaa** is derived from the pertensive with plural possessor of **pīur** 'offspring (sg.)', and **pwɔ̃ɔl-í** is the pertensive of **pwɔ̃ɔl**, the plural of **pīur**. Both are used to mark diminutive on plural nouns; **pāaa** in the Gar (northern) dialect, **pw5ol-í** in the Lwak (southern) dialect. The use of **pā́aa** and **pwɔ̃ɔl-í** – both displaying inflectional marking that is characteristic of nouns - as diminutives shows that the process of grammaticalization is ongoing.

All three options to express diminutives are presented in (21). As noted above and illustrated in (21a), **pāa** only means diminutive. In contrast, **nāaa** in (21b) can also express the lexical meaning of '(female) offspring of', on a par with  $p\bar{a}aar$ , because coda /r/ is often elided in Shilluk. The grammaticalized meaning is not available if the coda /r/ is pronounced. Finally, pw5ol-í, as in pw5ol-í djêk, is fully ambiguous between these lexical and diminutive uses (21c). The latter form does not diverge formally from the lexical source at all.



The use of  $p\bar{a}aa$  as in (21b) and  $pw\bar{b}l-i$  as in (21c) with diminutive meaning

is specific to dialect. Of these two, **pằaa** 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 **pw5ol-í** as a diminutive, as in (21c); and hence the use of a construction like (21c) is ambiguous.

In summary, the diminutives **pāa**, **pằaa**, and **pwōɔl-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 **pāa**, 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

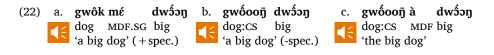
The use of adjectives as modifiers has already been covered in Chapter 4, which is about adjectives in general. Here we merely summarize the key facts, and we refer the reader to Section 3.2 of Chapter 4 for an in-depth descriptive analysis of adjectival modification, supported by evidence from spontaneously 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  $\mathbf{m}\hat{\epsilon}$  (sg.) /  $\mathbf{m}\hat{\sigma}$  (pl.), positioned between the head noun and the adjective.<sup>14</sup> When this modification

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

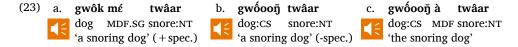
#### The noun phrase

marker is involved, the referent is indefinite but specific. For example, this is the construction that is used when a new entity is introduced in discourse. Second, there is the construction illustrated in (22b), whereby the head noun is immediately followed by the adjective. In this construction, the head noun appears in the construct-state form, an inflection that signposts the presence of a modifier that is not a possessor (cf. Creissels 2009). The pattern of exponence that expresses the construct state form is laid out in detail in Chapter 2. Here the referent is indefinite and semantically non-specific, as when a new entity is introduced in a generic sense, as in After a big meal I usually feel low on energy for a little while, where a big meal does not have a specific referent, in contrast to its use in a sentence like Last night I had a big meal, which is indefinite but semantically specific. Third, there is the construction shown in (22c), in which the modification marker à is positioned between the head noun and the adjective. When this marker is involved, the head noun appears in the construct state form. This construction is used when the referent is definite.



# 4.2 Verbs as modifiers

When the modifier is a verb rather than an adjective, the same three morphosyntactic structures are used. This is shown in (23), using the intransitive verb {twàar} 'snore'.



In support of the analysis that verbs can be used with all three of these modification constructions, we present spontaneously uttered examples. These examples show the difference in function between the three constructions, and they also serve to illustrate the fact that the constructions are used with a variety of morphological verb forms, both derivational and inflectional. Illustrations (24,25) show the construction using **mé** (sg.) / **mó** (pl.). In (24), the constituent [**mé gòook-ò kì ɔ̄ɔt-jāaț**] modifies the noun **jàal**.<sup>15</sup> The

<sup>15</sup> The noun  $j\dot{a}al-\dot{a}$  'man' is exceptional in that it does not have the suffix /-ɔ/ when it is followed by a modifier marked by **mé**. Note that the form  $j\dot{a}al$  at issue is not the construct

modifier is a relative clause headed internally by an intransitive verb form, and the function word **m***é* 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 m***é* **gòook-ò** (**kì**) **5ɔt-jāaț** as both indefinite and semantically specific.

(24)<sup>^</sup> w5 á-pêekì a búut-ī jàal mé gòook-ò (kì) ōɔt-jāaț
 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: **cāaam** is the applicative form of transitive {càm} 'eat'. Second, **ákěɛló** 'sorghum noodles' is the promoted peripheral role (Instrument), licensed to appear in the topic slot by the applicative voice marking on {càm}.<sup>16</sup> And finally, the P argument **mòɔk** 'kind of fish' follows its verb.

(25)<sup>^</sup> kấā ù-tàʌʌt-ò kí ákèɛl-ó mé cāaam mòɔk
 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 **Jàaal**.

<sup>16</sup> 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 **ŋàaan**, 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,<sup>17</sup> which allows for the inclusion of the Destination (mouth) as an additional internal argument.

bōŋ rấm-é (26) a.<sup>^</sup> būŋ ŋàaan mâar cwôl-ò kînì áa ŋàaan NEGP person:CS love:NT call:ITER QUOT NOMP.3SG person.CS NEGP 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 gîn tíŋ dók côn EXSP = FOC something:CS lift:SPAT:OXV mouth ADV **1** '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  $\hat{a}$ . 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  $\hat{a}$  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
                 ὑ-ηλλλm-ὸ
                                     kí
                                         nwɔ̄ɔl-í
                                                          jāaan 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.'
         [PearStory 147.6-149.7]
     b.î țìII
                   à
                         á-júuut
                                           kēn
                                                    aní bǎa
                                                                bôot-ì
         people:CS MDF PAST-find:PET:OXV place:CS DEF NOMP craftsman-PL
     14
         tjéeen
                     àpūn
         people:PRT Funi
          'The people they came to find in that place were craftsmen, Funj people.'
         [TheDescendantsOfWaang 198.9-203]
```

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

#### The noun phrase

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).<sup>18</sup>

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 coreferent 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.<sup>19</sup>

(28) a. gwôk á-twàar / twấaar-ó / ù-twấaar-ó / ú-twâar dog PST-snore / snore-NEVP / IMPF-snore-IMPF / FUT-snore 15 'The dog was snoring / was apparently snoring / is snoring / will snore.'



έ ù-ním-ī b. gwôk twâar 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 modifer at all. As for the other four - Past, Non-evidential

<sup>18</sup> 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).

<sup>19</sup> 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  $\mathbf{m}\acute{e} / \mathbf{m}\acute{o}$  (23a), and also in the modification construction in which they are preceded by  $\mathbf{a}$  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, **\*gwốooŋ á-twàar** and **\*gwốooŋ 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	<b>gwôk mé twâar</b> 'a dog that is snoring'	<b>gwốooīj twâar</b> 'a dog that is snoring'	<b>gwốooīj à twâar</b> 'the dog that is snoring'
NEvP	<b>gwôk mé twấaar-ó</b> 'a dog that was apparently snoring'	<b>gwốooŋ̄ twấaar-ó</b> 'a dog that was apparently snoring'	gwốooŋ à twấaar-ó 'the dog that was apparently snoring'
Past	[máatwàar] gwôk mé á-twàar 'a dog that was snoring'	*gwốooŋ á-twàar	<b>[ǎatwàar]</b> gwốooŋ a á-twàar 'the dog that was snoring'
Fut	<b>[múotwâar]</b> gwôk mé ú-twâar 'a dog that will snore'	*gwốooŋ ú-twâar	<b>[čutwâar]</b> gwốooŋ 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 **kwếj-ẽ** '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)<sup>^</sup> káā pākwăn jàaal [à-á kwếj-ē á-côop ácâŋ] ù-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),  $\mathbf{kw}\mathbf{\hat{e}}\mathbf{j}\cdot\mathbf{\bar{e}}$  '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  $\mathbf{\hat{a}}\cdot\mathbf{c\hat{o}op}$ . In fact, the topic can express a range of semantic roles within the relative clause. This is illustrated in (30), where the topic  $\mathbf{b}\mathbf{\hat{a}}\mathbf{a}\mathbf{n}\mathbf{j}\cdot\mathbf{\bar{e}}$  of the subordinate clause represents a Reason.<sup>20</sup> The promotion of an argument expressing a Reason to the topic slot is licensed by the inflection for applicative voice on {dòon}} 'stay behind', the verb of the subordinate clause. The common argument is represented in the main clause as  $\mathbf{n}\mathbf{j}\mathbf{\bar{e}}\mathbf{p}\mathbf{m}\mathbf{\hat{n}}\mathbf{n}\mathbf{\hat{s}}$  'little money', and in the subordinate clause as the pronominal possessor on  $\mathbf{b}\mathbf{\hat{a}}\mathbf{a}\mathbf{n}\mathbf{\bar{j}}\cdot\mathbf{\bar{e}}$  'due to it'.

(30)<sup>\*</sup> jôut a ŋjēeŋ mó nôk, à bấaaŋ̄-ē dōoŋī gên
 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]

<sup>20</sup> The morpheme **bấaaīj**<sup>µ</sup> 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 **bấaaīj**<sup>µ</sup> **bòɔɔt**-**o**' 'because of the craftsman' from pertensive with plural possessor **bấaaŋ jù** '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 lwấaaŋ à tík
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 lwấaaŋ à dòor-è tík
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  $\mathbf{m}\hat{\epsilon} / \mathbf{m}\hat{\mathbf{5}}$  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 dòor-è tík
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. būŋ lwấaaŋ dòor-è tík
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 lwấaaīŋ à dòor-è báʌnờ 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 néení a lwáak mé dòor-è báʌʌř
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 lwấaaŋ dòor-è báʌʌř
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 kwźj-ɛ**. 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 néení a lwấaaŋ à á-tík
PR.1SG look:NT FOC barn:CS MDF PST-fix:OV
'I am looking at the cattle barn that has been repaired.'
b. já néení a lwấaaŋ à-á dòor-è á-tík

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 néení a lwấaaŋ à dòor-è ú-ţìk->
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 néení a lwấaaŋ à dòor-è ú-ţîk

FR.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.'

#### The noun phrase

We speculate that this additional morphological marking of Past tense can be understood with reference to hiatus resolution<sup>21</sup>, 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 **lwáaaīj à ó-țìkò** yields [**lwáaaījǒoțìkò**]. In contrast, the pronominal possessive suffix -**ɛ** 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-ɛ̀ ó-țìkò** [**dòorɛ̀óțìkò**]. And when the same suffix -**ɛ̀** 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-ɛ̀ á-țîk** is realized as [**dòorɛ̃ețîk**].

(36)	a.	<b>já</b> pr.1sg		a FOC	lwấaaŋ barn:CS	<b>à</b> MDF	<b>ú-ţìk</b> NEVI	κ <b>-ὸ</b> P.OV-fix-NEV	rp een repaired.'
	b.	[já	néenáa		lwáaaŋ̀	à	d	lòor èú	<b>ţìkう]</b> ú-ţìk-う NEVP.OV-fix-NEVP
	14	já	néení	a	lwấaaŋ	à	ć	lòor-è	ú-ţìk-ð
		pr.1sg	look:nt	FOC	barn:CS	MDF-	PST V	wall:prt-3s	NEVP.OV-fix-NEVP
									has been repaired.'
	c.	[já	néenáa		lwáaar	áa		dòor čɛ	ţấk]
	11	já	néení	а	lwấaaŋ	à-á		dòor-è	<b>țík]</b> <b>á-țík</b> 3 PST-fix:OV
	12	PR.1SG	look:nt	FOC	barn:cs	MDF-	PST 1	wall:prt-3so	G PST-fix:OV
								ll has been r	

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  $m\acute{e} / m\acute{o}$ . Like the modification construction with  $\grave{a}$ ,  $m\acute{e} / m\acute{o}$  combines with No Tense, Past, Non-Evidential Past, and Future inflections.

<sup>21</sup> 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  $\dot{a}$  in a juncture with the relativizer, i.e.,  $/m\dot{\epsilon}\cdot\dot{a}/$  realized phonetically as [**máa**].

(37) já á-tík néení lwáak mé-á dòor-è а PR.1SG look:NT FOC barn MDF.SG-PST wall:PRT-3SG PST-fix:OV 48 '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 **bòɔɔt.o**<sup>i</sup> 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. bòɔŋ-ì lwáak bǎa à ŧúr craftsman-CS MDF barn NOMP foreigner 'The craftsman in the cattle barn is a foreigner.' jàal-ò bǎa à b. bòon-ì ŧúr 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 **jấm-ī à nâam** 'the things in the river' and jet-i à naam 'the passages in the river'. Crucially, there is no locative predicate marker, such as the locative copula jîn, 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), **jîk à kàl** illustrates the same phenomenon.

(39) a.<sup>^</sup> én ŧấm-ī à ŋîʌɲì à nâam én à ŋâʌŋì jèt-ì PR.3SG FOC know:NT things:CS MDF river PR.3SG FOC know road.PL-CS nâam à MDF river 'He knows the things that are in the river, he knows the passages in the river.' [TheDescendantsOfWaang 257.8-260.8] b.^ kấā à kàl ù-kôoop-à JĴk kînì CONJ men:CS MDF compound IMPF-say-IMPF QUOT 11 'And then the men in the compound said: [...]' [KeepTheSecret 380.1-381.9]

The other possibility is for a nominal modifier to fulfill a characterizing function, elaborating on the meaning of the head noun. This is illustrated in the narrative example in (40). Here we find mʌ́Āt-ī à cíin-í pùuk 'friends who are like the intestine of a turtle'. Similarly, the gender of the offspring of a king can be specified in this way: Jī-rāʌʌŋ à d̪ấaīj-ɔ̄ 'princess', which is literally 'child of a king who is a woman'.

(40) kînì gé bǎa mốxīt-ī à cíin-í pùuk
 QUOT PR.3PL NOMP friend:PL-CS MDF intestines-PRT turtle
 'That they are friends who are (like) the intestines of a turtle (i.e., inseparable).'
 [KeepTheSecret 10.4-12.3]

Importantly, neither of the two other modification constructions – the one with  $\mathbf{m}\hat{\epsilon} / \mathbf{m}\hat{\mathbf{j}}$  or the one marked solely by the head being in the construct state – can be used with a nominal modifier. This is illustrated by the ungrammaticality of the sentences in (41); these modification constructions are ungrammatical for both a locative function (41a,b) and an equative function (41c,d).

(41)	a.		bòəəț-ò			b.		bòəņ-ì	
		EXSP:FOC	craftsman-SG	MDF.SG	barn		NEGP	craftsman-CS	barn
		'There is a	craftsman in	the cattle	barn.'		'There	is no craftsmai	ı in the
							barn.'		
	c.	*dâa	bòɔɔṯ-ò	mé	<del>j</del> àal-ò	d.	*bōŋ	bòɔn̥-ì	<del>j</del> àal-ò
		EXSP:FOC	craftsman-SG	MDF.SG	man-SG		NEGP	craftsman-CS	man-SG
		'There is a	male craftsm	an.'			'There	is no male craf	tsman.'

# 5. Quantifiers

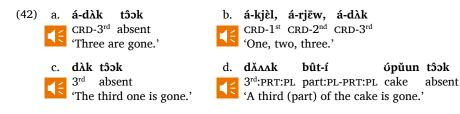
This section is organized in two main subsections: the first one describes numeral quantifiers (Section 5.1), the second one non-numeral quantifiers (Section 5.2).

# 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**-d $\lambda$ **k**. 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 d $\lambda$ k '3<sup>rd</sup>'. 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'.



Of note in this example is the relation of the form of the cardinal in relation to the form of the ordinal:  $\mathbf{\dot{a}}$ - $\mathbf{d\lambda}\mathbf{k}$  '3' is morphologically complex, in the sense that it is derived from the corresponding ordinal  $\mathbf{d\lambda}\mathbf{k}$  '3<sup>rd</sup>' through the addition of a prefix  $\mathbf{\dot{a}}$ -. This relation between cardinals and ordinals is characteristic for Shilluk numerals in general. Table 2 presents the numerals from 1 to 10,

showing both ordinal and cardinal numbers. Note that for the numbers up to 9, the ordinal number represents the base from which the cardinal number is derived by adding the prefix **á**-.

Ordinal	Cardinal	Meaning	Ordinal	Cardinal	Meaning
kjèl <sup>22</sup>	á-kjèl	1	bîikjèl	á-bíikjèl	6
rjēw	á-rjēw	2	bîirjēw	á-bíirjēw	7
dàk	á-dàk	3	bíidàk	á-bíidàk	8
ŋwèɛn	á-ŋwèen	4	bíiŋwèen	á-bíiŋwèɛn	9
bíc	á-bíc	5	рјλллг	рјаллг-э̀	10

Table 2: The ordinal and cardinal numbers from one to ten.

This derivational relation between ordinal and cardinal numerals is highly unusual in a cross-linguistic sense. That is, across the world's languages, ordinal numerals are typically derived from cardinal numerals, and we know of no other language besides Shilluk where the opposite is true (Hurford 2001, Stolz & Veselinova 2013, Bylinina, p.c.). For example, Hurford (2001:10758) writes: "Ordinal numerals (e.g., first, second, third,... twentieth,...), where they exist, are adjectives derived from cardinal numerals."

The data in Table 2 also show that the numbers from 6 to 9 are morphologically complex, with the morpheme **bic** '5' as a first component (with the loss of the coda consonant /c/), and a numeral from 1 to 4 as a second component, respectively. That is, the numbers up to 9 represent a base-5 numeral system.

From 10 onwards, the system works as a base-10 system. This is illustrated by the expression '13' in (43). As seen from this example, if a number greater than 10 includes units, then the units are expressed using the expression **wīc dâa** [1–9]. This is a locative predicate, that can be paraphrased as 'above it there are [1–9]'.<sup>23</sup> The construction in (43) can therefore be paraphrased as '10, above it there are three'. The other numerals between 11–19 are formed in the same way. For example, '19' is **pjàaar-ɔ̂ wīc dâa á-bíiŋwɛɛn**.

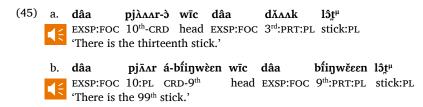
<sup>22</sup> An alternative way of expressing the meaning of 'first' is mɛ́n à mâal 'the one at the front'.
23 The noun wīc 'head' is used as a spatial marker with meaning 'above'; dâa is the combination of an existential predicate marker dî without TAM marking, with the focus marker a, which appears in many environments as a syntactic licenser of verbs that do not have TAM marking (cf. Chapter 1, Section 6).

(43) dâa lột<sup> $\mu$ </sup> pj $\lambda$ nr- $\partial$  wīc dâa á-d $\lambda$ k EXSP:FOC stick:PL 10<sup>th</sup>-CRD head EXSP:FOC CARD-3<sup>rd</sup> 'There are 13 sticks.'

The tens, i.e. the numbers from 20 to 90, are expressed using  $pj\bar{\lambda}Ar$  'ten:pl', the plural of  $pj\lambda_{AAr}$ - $\hat{J}$  '10', plus a unit number from 2 to 9, as in  $pj\bar{\lambda}Ar$   $\hat{a}$ - $rj\bar{\epsilon}\epsilon w$  '20'. This is further illustrated in (44). This example also provides a further illustration of the use of wic dâa to express the units in complex numbers.

(44) dâa lôţ<sup>μ</sup> pj⊼ʌr á-bíiŋwèɛn wīc dâa á-bíiŋwèɛn
 EXSP:FOC stick:PL 10:PL CRD-9<sup>th</sup> head EXSP:FOC CRD-9<sup>th</sup>
 '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 13<sup>th</sup> and 99<sup>th</sup>, 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 **d**ĂAA**k** and not **á**-**d**ĂAA**k** in (45a), and **b**îiŋwěɛɛn and not **á**-bîiŋwěɛɛn in (45b). In contrast, the earlier part of these numbers – **p**jÀAA**r**-ð in (45a) and **p**jĀA**r á**-bîiŋwèɛn 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.



The hundreds and thousands are expressed using **mínj-ò** 'hundred', borrowed from Arabic *mi'a*, and **álîp** 'thousand', borrowed from Arabic *alf*. The word **mínj-ò** 'hundred' has the ordinal form **mínj**, parallel to the situation with '10', where the suffix /-ɔ/ occurs in the cardinal but not in the ordinal. In contrast, **álîp** 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, **mín** 'hundred:PL' and **álǐp** 'thousand:PL', followed by a cardinal numeral. The hundreds and the thousands

#### The noun phrase

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 phsases (cf. Section 9).

(46)<sup>^</sup> bǎa rûun mín pjλλλr-ò wīc dâa á-bîikjèl kí pj⊼λr á-bîiŋwèɛn
 NOMP year.PL 100:PL 10-CRD head EXSP:FOC CRD-6<sup>th</sup> PRP 10:PL CRD-9<sup>th</sup>
 <sup>^</sup> (It was the year 1690.'
 <sup>^</sup> [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**-dǎAAk, the plural of **á**-dÀk '3', refers to several sets of three. In contrast, adjectives and verbs do not mark number steminternally.

(47) léɛmúuuñ<sup>µ</sup> ní cíp gáa á-dǎʌʌk
 lemon:PL HAB put:OV:NT PR.3PL:NOMP CRD-3<sup>rd</sup>: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 '3<sup>rd</sup>', '5<sup>th</sup>', and '10<sup>th</sup>', 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.

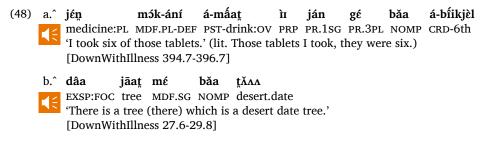
Table 3: The inflectional paradigms of three ordinal numerals, each in singular and in plural.

Base	<b>dàk</b> 'third'	<b>dǎʌʌk</b> 'thirds'	<b>bấc</b> 'fifth'	<b>bíiic</b> 'fifths'	<b>рјλллг</b> 'tenth'	<b>рј⊼лг</b> 'tenths'	
Pertensive, sg. poss.	dλллk	d)k f	bîiiē dλk-í bíc-í bíiic		рјλлг-ì	рј⊼лг-ѓ	
Pertensive, pl. poss.	dлллk	u/K-I			рјλлг-í		
Construct state	dàaaŋ	dàk-ì	bíiiņ	bíc-ī	рјλлг-ì	рј⊼лг-ì	
Proximal deixis	dàaaŋ	dàk-ì	bíiin	bíc-ì	рјλлг-ì	рјāлг-ì	

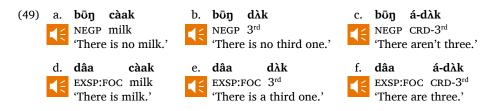
#### The noun phrase

The corresponding cardinal numerals, which have the prefix **á**- throughout the paradigms, differ with respect to the construct state form and the proximal form, which do not nasalize. For example, they are **á**-d $\lambda$ AAK (construct state, proximal deixis) for '3' and **á**-b**íiic** (construct state) and **á**-b**íiic** (proximal deixis) for '5'. This follows from the fact that while the ordinals have singular reference, the corresponding cardinals designate plural entities; and it is only singulars that nasalize in the construct state and the proximal form (cf. Chapter 2). Nonetheless, the proximal inflections forms of cardinals such as **á**-d $\lambda$ AAK and **á**-b**íiic** are anomalous as plurals, in the sense that regularly inflected forms of plural nouns are suffixed. Only a handful of high-frequency plural nouns are suffixless in the inflected forms (see Table 48 in Chapter 2).

As for the syntactic evidence of the nominal nature of numerals, when Shilluk numerals are used as a predicate, they require the same copulas as nouns. This is shown in (48). The use of the numeral **á-bíikjèl** '6' in (48a) as a predicate requires the presence of a noun predicate marker, either **bǎa** or **áa**, both of which mark equation and proper inclusion with nouns. This generalization is supported by (48b); **bǎa** is never found with adjectives or verbs, both of which serve as predicates without the involvement of copulas.

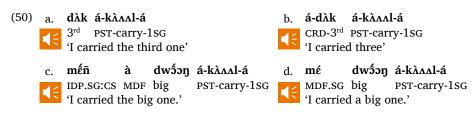


Similarly, the existential predicate markers  $d\hat{i}$  and  $b\bar{o}\eta$  take nouns as their arguments, as in (49a,d), but not verbs or adjectives. Crucially, they can also take a numeral argument, either ordinal, as in (49b,e) or cardinal (49c,f).



Also like nouns, numerals can serve as a syntactic argument to a verb without the support of an independent pronoun. This is illustrated in (50a)

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.



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  $15t^{\mu}$  in (51a) and  $d5\eta$ - $\dot{\sigma}$  'basket' in (51b) both appear in their base forms rather than in their construct state forms, which are  $15t^{-1}$  and  $d5\eta$ - $\dot{\tau}$ , respectively.<sup>24</sup> 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  $\dot{a}$  or  $m\acute{e} / m\acute{o}$  – and the one that does not has the nominal head in the construct state (cf. Sections 4.1, 4.2).

(51)	a.	lôţ₽	á-dàk	á-kwàa	an-á				
	12	stick:	PL CRD-3 <sup>rd</sup> three stick	PST-take	e-1sG				
		ʻI tool	three stick	xs.'					
	b.^	kấā	dôŋ-ờ	á-kjèl	ù-рàллŋ-ò				
	11	CONJ	basket-SG	CRD-1 <sup>st</sup>	IMPF:become.full-IMPF				
		CONJ basket-SG CRD-1 <sup>st</sup> IMPF:become.full-IMP 'And one basket became full.'							
		[TheP	earStory 37	7.5-38.9]					

Ordinal numerals can modify nouns using two different constructions. First, there is the construction in which the marker  $\hat{a}$  follows the head noun in the

<sup>24</sup> 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 **looon** is the construct state form of **loot**. The other two modification structures described in Section 4, the one with  $m\acute{e} / m\acute{o}$ , 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. lòun à dàk á-kwàaan-á stick:CS MDF 3<sup>rd</sup> PST-take-1SG 'I took the third stick.'
b. \*lòut mé dàk á-kwàaan-á stick MDF.SG 3<sup>rd</sup> PST-take-1SG 'I took a third stick.'
c. \*lòun dàk á-kwàaan-á

c. 1000n dAk a-kwaaan-a stick:CS 3<sup>rd</sup> 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)  $d\lambda \Lambda k$   $13t^{\mu}$  á-kwàaan-á  $3^{rd}$ :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)<sup>^</sup> kì ríı dǎʌʌk côʌŋ kấā jì dóɔɔk a bēɛ jwàac-í ríı gén
 PRP RFL 3<sup>rd</sup>: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.

The noun phrase

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 **gwốook**<sup>µ</sup> 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)			dâa					
	₹	AD:1SG 'I own t	EXSP:FOC he dogs tha	dog:PL-CS at are stron	MDF Ig.	stron	g	
			dâa					
	11	AD:1SG	EXSP:FOC he three do	dog:PL	CRD-3	B <sup>rd</sup> :CS	MDF	strong
		'I own t	he three do	ogs that are	e stron	g.'		
			dâa					
	11	AD:1SG	EXSP:FOC	dog:pl	CRD	-3 <sup>rd</sup> N	/IDF.PI	L strong
		'I own t	hree strong	g dogs.'				

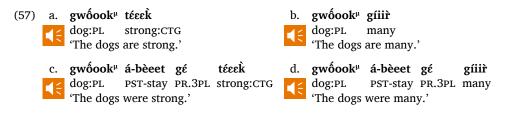
Example (55b) suggest that the numeral heads a noun phrase within a larger noun phrase. The same interpretation is supported by (56): here a noun combines with a numeral, an adjective, and a deictic marker. Again the numeral is inflected for construct state. Cross-linguistically, it is more common for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

(56) **j** $\dot{\lambda}$ **A d** $\hat{a}$ **a gwốook<sup>µ</sup> á**-**d** $\lambda$ **AAk à t** $\hat{c}$ **k k** AD:1SG EXSP:FOC dog:PL CRD-3<sup>rd</sup>:PL.CS MDF strong DXS.PL 'I own these three strong dogs.'

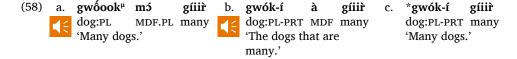
<sup>25</sup> Greenberg's (1963) universal 20: "When any or all of the items (demonstrative, numeral, and descriptive adjective) precede the noun, they are always found in that order. If they follow, the order is either the same or its exact opposite."

#### 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).



Moreover, when **gíiiř** is used as a modifier, it combines with nouns in the same way as adjectives whose contingent inflection<sup>26</sup> follows the steminternally marked form class (cf. Section 3.2.2 of Chapter 4). That is, **gíiiř** can modify a noun using **mé** / **mó**, 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, **gíiiř** 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.



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** / **m5**, as in (59b), or the independent pronoun **m5k**, as in **m5k à gíiir**.

<sup>&</sup>lt;sup>26</sup> 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. **\*gíiir ù-nfinā-ā** many IMPF-sleep-IMPF 'Many are sleeping.' b. **mó gíiir ò-nfinā-ā** MDF.PL many IMPF-sleep-IMPF 'Many are sleeping.'

Two other non-numeral quantifiers that display adjective-like properties are **ŋɛ̀ɛɛɲ-ɔ̂** 'a lot of' and **nôk** 'few, a little'. Both of them are used with countable and uncountable referents, be they singular or plural. This is illustrated for **ŋɛ̀ɛɛɲ-ɔ̂** in (60a,c,e), and for **nôk** 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 **mó**.

	wêeel <sup>µ</sup> móguest:PLMDF.PL'a lot of guests'	<b>ŋѐɛɛɲ-ɔ̀</b> a.lot		wêeel <sup>µ</sup> guest:PL 'few gues	<b>nôk</b> few
	<b>àjéɛc-ó mé</b> sand-SG MDF.SG 'a lot of sand'		d 【€	<b>àjéɛc-ó</b> sand-sG 'a little s	<b>nôk</b> few
	càak mố ŋèɛ milk MDF.PL a.lo 'a lot of milk'			<b>càak m</b> ấ milk MI 'a little n	

An additional adjective-like characteristic of these quantifiers comes from derivational morphology. While none of them has a contingent form, **ŋɛ̃ɛɛɲ-ɔ̀** 'a lot of' and **nɔ̂k** 'few, a little' both present an intransitive derivation, yielding **ŋɛ̂eɲ-ì** 'be more / become more' and **nùŋ-ì** '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 **gíiir**.

The quantifiers **bêen-** $\hat{\epsilon}$  / **běeen**<sup>µ</sup> 'all, every' are different from the abovementioned 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 **běeen**<sup>µ</sup> 'all, every' is used in relation to referents that are grammatically plural (61a). The quantifier **bêen-** $\hat{\epsilon}$  '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. **wêeel<sup>µ</sup> běeeī**<sup>µ</sup> guest:PL all 'all the guests' **dấaan-ð bêen**person-SG all-3SG 'every person'

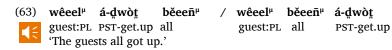
b.

c. **mòk-ò bêen-è** alcohol-SG all-3SG 'all alcohol'

The quantifiers **bêen-è** and **běeen<sup>µ</sup>** are structurally outside the noun phrase, and they can be syntactically separated from the noun they are co-referential with by other constituents.<sup>27</sup> This is illustrated in (62), and also in (109b) below. In (62a), **běeen<sup>µ</sup>** is outside the noun phrase, which is delimited on the right by the determiner **ání**. In (62b), **běeen<sup>µ</sup>** is separated from the pronoun it is associated with by the verb. Finally, (62c) has **běeen<sup>µ</sup>** 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 **bôot-ì** 'craftsmen'.

(62)	men-E 'All th divide	DEF lose ed (a		IDP he cl nem)	Gilo-A an of C .'	APL IDP Gilo, the	Jur-API clan of	 <b>á-рîлŋì</b> PST-divic c.) –the co	le:OV ws were
	PR.3P 'They	L PS all §	<b>-dwòţ</b> ST-get.uj got up.' endants(	p all		30.3-431	-4]		
	milk 'All th	PST ie m		ov el drun	RG:PL k by th	craftsma e crafts	bo an-PL al men.' raftsmer		

Interestingly, it is ungrammatical in relation to (62b) for **běeen<sup>µ</sup>** to follow immediately after the pronoun, i.e., **\*gé běeen<sup>µ</sup> á-dwòţ**. 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 **bêen-è** and **běeen<sup>µ</sup>**. That is, in verb serializations, the topic is obligatorily resumed as a pronoun immediately before the second constituent verb. This can explain why **\*gé běeen<sup>µ</sup> á-dwòt** is ungrammatical. The adjective-like quantifiers (**gíiiř**, **nôk**, **ŋèɛɛŋ-ɔ̂**) cannot be separated from the head noun in this way.



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

At the same time, **bêen-** $\hat{\epsilon}$  and **běeen**<sup> $\mu$ </sup> cannot be used as an argument to a verb by themselves. This is illustrated in (64): the use of **běeen**<sup> $\mu$ </sup> as the subject is ungrammatical (64a); instead, this argument needs to be expressed separately (64b).



A third morphosyntactic pattern found among the non-numeral quantifiers is that of **kwiii** / **kwiii** 'some of', which are akin to nouns. Examples from narratives are presented in (65). The form **kwiii** is used with singular nouns or pronouns, and **kwiii** with plural ones. Hence, even though nouns such as **tèɛɛt-ò** 'community' in (65a) and **jì** 'people' in (65b) are very similar in terms of their semantic reference, **tèɛɛt-ò** 'community' combines with **kwiii**, because it is grammatically singular, and **jì** 'people' combines with **kwiii** because it is grammatically plural. The quantifier **kwìii** / **kwǐii** 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	tèɛɛt-ờ		á-rùm	kîn	ì gé	ύ-dλλλη	ĪI
	12	some.of	community	y-SG	PST-think	QUO	ot pr.3pl	FUT-fall.apart:CAUS	PRP:PL
		máлn-í	gén						
		women-P	PRT PR.3PL						
		'Some in	the comm	unity	thought the	hat th	eir wives	would divide them, [	[]'
		[KeepThe	eSecret 15-	17.7]	l				
	b.^	kwĭii	jìı	á-rê	ep-ì	kí	píkāaaŋō		
	12	some.of:I	PL people	PST-a	add-AMB	PRP 1	Nyikango		
		'Some pe	PL people ople joined	l Nyil	kango.'				
		[TheDeso	endantsOf	Waar	ng 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 gíiir, nôk, and ŋèɛɛɲ-ò present characteristics of adjectives, bêen-è / běeen<sup>µ</sup> patterns in some respects with verbs, and kwìii / kwǐii 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.

Function		Free morpheme	Bound morpheme
Spatial deixis	Near	èn∕èk	cf. Chapter 2
	<b>↑</b>	(àn)àn, ɛ̀ɛ (sg.) / (àg)àk (pl.)	-
	¥	àcàa	_
	Far	àcínếe	_
Definiteness		ání	-

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

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.

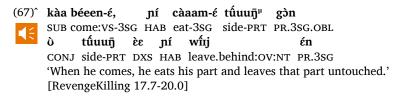
#### 6.1.1 Spatial deixis

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<sup>µ</sup>** is the proximal inflection of **pâac** 'village'.

(66)<sup>^</sup> kôop-ù méj-í wún kînì dληŋ-ù pâaan<sup>μ</sup>
 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, **túuuīj ɛɛ** 'that side', refers to the portion away from the protagonist.



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

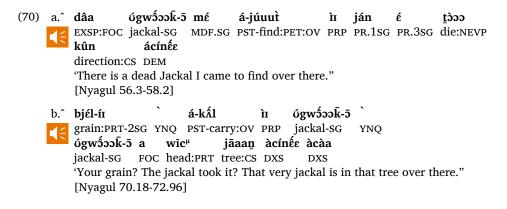
indefinite. Importantly, the village in question is away from both speaker and hearer. This spatial reference is expressed by **àcàa**.

 (68)<sup>^</sup> já á-tòoŋ-ì pâaan àcàa bēɛ mâţ-ò kí pîi
 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) píkāaaŋō ú-ţá jÂʌʌj̄-ē gò kôoop ên
Nyikango ML-back:PRT boat:PRT-3SG PR.3SG.OBL say:ATP:NEVP 3SG:NOM
kînì kàl jâʌj kìţí māan-í jìrw kûn 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]

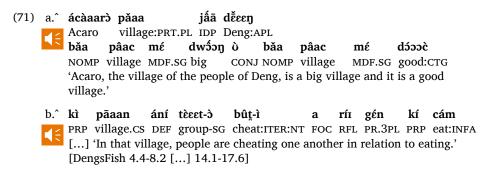
Another deictic marker, **àcínếɛ**, also references a spatial point away from speaker and hearer. Its use is illustrated in (70a,b). They are drawn from an animal fable, at a point where the Rabbit and a girl called Nyagul are in conversation. Both the girl (70a) and the Rabbit (70b) use **àcínếɛ** to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



#### 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, **câŋ** 'sun' cannot yield **\*cjáʌʌŋ ání** 'sun:CS DEF'. In this respect, the functional range of **ání** is different from that of a definiteness marker like English the, whose scope encompasses inherent definiteness.

**Ání** 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 ání** 'village:CS DEF' (71b).



Differently from the deictic markers, the marker **ání** 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 **mến**, which expresses proximal dexis. When the fig tree is referenced again in the following clause, it is marked by **ání**. Here, just as in (71), **ání** 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.

ţá úláam mến (72) pât kí bất-5 kì à băa NEG PRP lie-INF PRP bottom:PRT fig IDP.SG:DXS FOC NOMP gw**ɔ**̄ɔɔk-īı work:INFA:PRT-2SG YNQ 'Lying under this fig tree, is that not your job?' úláaam ání á-pîtì jín côn а 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]

#### 6.1.3 Time

Three of the four points of deixis can also be used with temporal reference. This is shown in (73). This example shows an elicited dialogue, in which the time of a person's arrival is at issue, specifically whether she arrived in the current year or five years earlier. The first speaker uses the proximal deictic marker to make reference to the current year; the second speaker uses the more distant deictic marker **àcàa** to convey that the arrival took place further in the past.

(73)	ábác	á-bìi	kì	rùun-ì	pâț	ábác	á-bìi	à	rùun-ì =	àcàa
11	Abac	PST-come	PRP	year-CS:DXS	NEG	Abac	PST-come	FOC	year:cs	DXS
	"Abac	came this	year	."	"No,	Abac	came that y	year (	further a	way)."

In (73), proximal deixis is expressed through inflection. When there is another modifier so that proximal deixis is expressed as a separate word (cf. Section 6.2.2), then as well proximal deixis can have temporal reference, as in **rùunì à léeeţ èn** 'this hot year'. The other two points of deixis that can have temporal reference are **àcàa** and **àcínếe**. The former is illustrated in (73) and in **rùunì à léeeṯ àcàa** 'that hot year'. The latter is illustrated in **rùunì à léeeṯ àcàa** 'that hot year'. The latter is illustrated in **rùunì à léeeṯ àcáa** 'that hot year'. The latter is illustrated in **rùunì à léeeṯ àcínếe** 'that hot year'. In contrast, the deictic markers at the 'with hearer' level, i.e., **(àn)àn, ɛɛ** (sg.) / **(àg)àk** (pl.) cannot be used with temporal reference. For example, \***rùunì à léeeṯ ànàn** 'that hot year' is ungrammatical.

The definiteness marker **ání** can also be used with temporal reference, as seen from (74). However, it is difficult to determine with certainty whether it is used with a temporal meaning as opposed to expressing definiteness.

(74)<sup>^</sup> kì jìi gế bòəl-ì kēn ání nwôm-í wàaat<sup>µ</sup> PRP AD PR.3PL front-PRT time:CS DEF marry:DVN-PRT:PL relative:PL à dòɔŋ-ò á-bèeet έ ĪI kấʌĪ-ī băa mìiț-ì PRP:PL family-PL MDF big-PL PST-stay PR.3SG NOMP protect:DVN-PRT rêm-ì kàl blood-PRT family 'To them at that time, the marrying of relatives by the royal families, was (about) the preservation of the blood of the family." [TheDescendantsOfWaang 398.6-402.7]

#### 6.1.4 Pragmatically specific indefinite

A final function is the marking of pragmatically specific indefinite noun phrases, that is, noun phrases whose referent is not yet part of the common ground shared between speaker and hearer, but which are signposted by the

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**<sup>µ</sup>, 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**<sup>µ</sup> 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)<sup>^</sup> jàaal<sup>µ</sup> á-càʌţì (kí) gén tjêɛw, 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-ŋòl**, which means 'insult'. Immediately after this, the use of insults as clan names is explained in the narrative.

(76)**` ù** kwàar-í tjéeŋ-ì à ú-cìk-j CONJ descendant:PL-PRT people-PRT MDF NEVP.OV-name-NEVP kí píŋ-í à-ŋòl ÈΠ PRP name.PL-PRT NOM-cut DEM nì mé-í jấā kwàar-í ú-mâaț pžii 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]

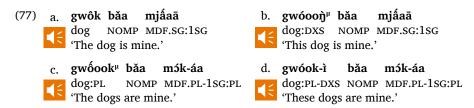
#### 6.2 Formal properties of deictic markers (within the noun phrase)

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).



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 **gwốooŋ**, which carries a High Fall to Mid. The addition of a Low tone and floating quantity yield the proximal inflection **gwóooŋ**<sup>µ</sup>. 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 **bòɔŋ**-ɔ̀ 'craftsman' has the construct-state form **bòɔŋ**-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) gwốook<sup>µ</sup> á-bíiiỳ á-lînţ-à
 dog:PL CRD-5<sup>th</sup>: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:  $\mathbf{\hat{e}n}$  combines with singular nouns and  $\mathbf{\hat{e}k}$  with plural ones.

(79) a. gwốooj à têck èn bǎa mjấaā
dog:CS MDF strong DXS.SG NOMP MDF.SG:1SG
'This strong dog is mine.'
b. gwốk-ī à têck èk bǎa mók-áa
dog:P-CS MDF strong DXS.PL NOMP MDF.PL-1SG.PL
'These strong dogs are mine.'

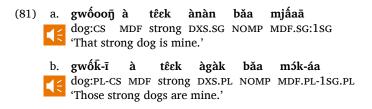
In (79), the head noun and the deictic marker are separated by an adjectival modifier, and this construction is marked using **à**, the structure that conveys definiteness. This is not a coincidence: the construction with **à** is the only one of the three modification structures outlined in Section 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

deictic markers and obviously for the definiteness marker ání.

The fact that the deictic marker appears at the end of the noun phrase is evidenced by the narrative example in (80). Here the deictic marker is modifying the independent pronoun  $\mathbf{m}\hat{\mathbf{e}}\mathbf{n}$ , from which it is separated by a relative clause. The agreement for number indicates that it has a singular referent (the evil).

(80)<sup>^</sup> dέ rλΛΛc-> mến à kóm béeen kòom-ēε
 CONJ evil-SG IDP.SG:CS MDF be.about.to:NT come:DVN<sup>28</sup> back.side-1PL.INC
 èn, kΛΛΛ a ìr mêɛl
 DXS.SG carry:SPAT:OV FOC PRP drought
 'But this evil, which is about to befall us, it is the drought that is bringing it.' [AchangVillagePart1 750.2-753.9]

The second level on the spatial continuum that starts with the speaker can be described semantically as 'with the addressee'. Just as at the proximal level ('with speaker'), the deictic markers at this second level agree for number with the head noun. The full forms are **ànàn** (singular) and **àgàk** (plural). These are the forms used when there is a modifier intervening between the head and the deictic marker, as in (81a) and (81b), respectively.<sup>29</sup>

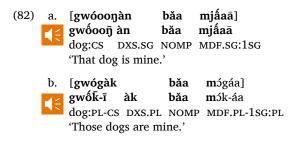


And, just as for the proximal level, deictic marking at the 'with addressee' level involves less phonological material if there are no intervening modifiers: **àn** in the singular, and **àk** in the plural. The forms are shown in (82). Moreover, the singular form **àn** is often reduced to **èe** or **àa**, e.g. **gwốooŋ èe** 'that dog'. These markers cliticize to the head; the phonological integration manifests itself in two ways. First, in hiatus with a vocalic suffix, the deictic marker overrides the suffix. This is shown in the phonetic transcription in (82b). And with respect

<sup>28</sup> The morphosyntactic properties of deverbal nominalizations like **béeen**-**5** straddle the boundary between verbs and nouns. It is a noun in the sense that the auxiliary combines with a nominalization, which presents a complete nominal inflectional paradigm. It is verb-like in the way it takes an argument, and in the way the suffix -**5** is omitted when it is followed by an argument. See Baerman, Monich & Reid (2019) for a description of the combination of noun-like and verb-like properties in gerunds in closely-related Nuer.

<sup>29</sup> The singular deictic marker **ànàn** is homophonous with the adverb meaning 'now'.

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).

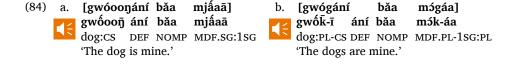


The two further points on the continuum are marked by **àcàa** and **àcínếɛ**. Both refer to locations away from both speaker and hearer, and between themselves, **àcínɛ́ɛ** is further away than **àcàa**. These two deictic markers do not present separate forms for singular vs. plural number. Moreover, 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. gwốooŋ (à têɛk) àcàa bǎa mjấaā
dog:CS MDF strong DXS NOMP MDF.SG:1SG 'That (strong) dog is mine.'
b. gwốooŋ (à têɛk) àcínếɛ bǎa mjấaā
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 ( $C\hat{V}\bar{C}$ ) 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, **gwốooŋ = ání** is realised as [**gwóooŋání**], and **gwốk-ī = ání** as [**gwógání**].



#### 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  $\mathbf{m}\mathbf{\hat{e}}\mathbf{\bar{n}}$  (sg.) /  $\mathbf{m}\mathbf{\hat{5}}\mathbf{\bar{k}}$  (pl.).<sup>30</sup> 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.

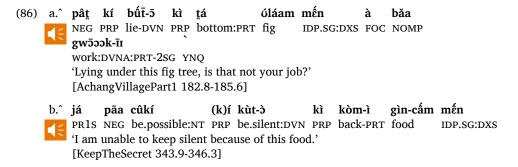
The combination of the definiteness marker with the independent pronoun is illustrated in (85). The second clause has three arguments: the specification for time, which occupies the preverbal topic slot;<sup>31</sup> the prepositional phrase expressing the Agent; and the argument following immediately after the verb:  $\mathbf{m}\mathbf{5}\mathbf{k}$  **ání** ( $\mathbf{m}\mathbf{5}\mathbf{k} = \mathbf{á}\mathbf{n}\mathbf{i}$ ). The independent pronoun  $\mathbf{m}\mathbf{5}\mathbf{k}$  'these things' represents a pronominal head with which the definiteness marker **ání** can combine.

(85)<sup>^</sup> kấā tèɛɛt-ò ò-kùt-ò kînì dìw
 CONJ community-SG IMPF-be.silent-IMPF QUOT silence.IDEOPHONE
 kêŋ à á-kwɔ́ɔɔp̄ mɔ́k̄ ání ìı pāakwăn
 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., **óláaaṁ**<sup> $\mu$ </sup> 'this fig tree' in (86a), and in **gìn-cáaaṁ**<sup> $\mu$ </sup> 'this food' (86b). We speculate that marking the demonstrative on the independent pronoun instead lends emphasis.

<sup>30</sup> The forms  $\mathbf{m}\hat{\mathbf{e}}\mathbf{n}$  (sg.) /  $\mathbf{m}\hat{\mathbf{5}}\mathbf{k}$  (pl.) are the construct state forms; in addition, they present the proximal inflections  $\mathbf{m}\hat{\mathbf{e}}\mathbf{n}$  (sg.) /  $\mathbf{m}\hat{\mathbf{5}}\mathbf{k}$  (pl.), and the pertensive forms  $\mathbf{m}\hat{\mathbf{i}}\mathbf{n}$ ,  $\mathbf{m}\hat{\mathbf{i}}$  (sg.) /  $\mathbf{m}\hat{\mathbf{5}}\mathbf{k}$ ,  $\mathbf{m}\hat{\mathbf{500}}$  (pl.), as outlined in Section 2.1. There are no base forms, i.e., these morphemes as not used without modification.

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



Another function of using deictic markers and the definiteness marker with the independent pronoun has to do with scope. The deictic marker appears at the end of the noun phrase. In line with the same generalisation, a deictic marker cannot appear between a head noun and a possessor modifier: (87a,b) are not grammatical.

(87)	a.	*gwóooŋ̀ <sup>µ</sup>	bòɔəṯ-ò	b.	*gwốooŋ	àn	bòɔɔt̪-ò
		dog:DXS	craftsman-SG		dog:CS	DXS	craftsman-SG
		'this dog of	f the craftsman'		'that dog	of the	craftsman'

In contrast, when a deictic marker appears after the possessor, it is necessarily interpreted as having scope over the possessor noun, and not over the head noun. This is the case both when deixis is expressed inflectionally, as in the case of the proximal deictic marker (88a), and in the case of segmental determiners (88b). Importantly, (88a) cannot mean 'this dog of the craftsman', and (88b) cannot mean 'that dog of the craftsman'.<sup>32</sup>

(88) a. **gwóook<sup>µ</sup> bòɔŋ-ì** dog:PRT craftsman-DXS 'the dog of this craftsman' b. **gwốook<sup>µ</sup> bòɔṇ-ì àn** dog:PRT craftsman-CS DXS 'the dog of that craftsman'

This is where the independent pronoun  $\mathbf{m}\hat{\mathbf{e}}\mathbf{n} / \mathbf{m}\hat{\mathbf{s}}\mathbf{k}$  plays an important role. It can be used as a head to which a deictic marker or the definiteness marker attaches, as in (89). As seen from (89a), the determiner may then have scope either over the head noun or over the possessor. This ambiguity is illustrated in the translation. However, because the pronoun agrees with its head for number, there is no such ambiguity when the head noun and the possessor differ in number, as in (89b) and in (89c): the pattern of agreement reveals

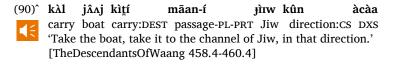
<sup>32</sup> In contrast, when two nouns are used as a compound, the morphological marking of deixis on the second constituent has scope over the compound noun as a whole, e.g. **b**λ**Λ**-dēεeǧ 'this disciple of the cult of Deng'.

which noun the deictic marker relates to. The same is true, *mutatis mutandis*, when the plural independent pronoun is inflected for deixis: there is ambiguity when both of the nouns are plural, but not when the pronoun inflected for spatial deixis shares plural number with just one of them.

(89) a. gwốook<sup>µ</sup> bòɔɔṯ-ò mến dog:PRT craftsman-SG IDP.SG:DXS 'the dog of this craftsman' / 'this dog of the craftsman'
b. gwók-í bòɔɔṯ-ò mến dog:P-PRT craftsman-SG IDP.SG:DXS 'the dogs of this craftsman'
c. gwốook<sup>µ</sup> bôoţ-ì mến dog:PRT craftsman-PL IDP.SG:DXS 'this dog of the craftspeople'

In summary, the morpheme  $\mathbf{m}\hat{\mathbf{e}}\mathbf{n}$  (sg.) /  $\mathbf{m}\hat{\mathbf{5}}\mathbf{k}$  (pl.) is a pronominal head, with which the determiner can combine. The same goes for the nouns  $\mathbf{k}\bar{\mathbf{e}}\mathbf{n}$ 'place, time' and  $\mathbf{k}\mathbf{\hat{u}n}$  'direction': they also serve as noun-phrase heads to the deictic markers and the definiteness marker, resulting in deictic adverbs with meanings such as 'here' – in a static / locative sense with  $\mathbf{k}\bar{\mathbf{e}}\mathbf{\hat{n}}^{\mu}$ , and as a destination with  $\mathbf{k}\mathbf{\hat{u}n}$ . In line with this grammaticalized role, both present defective paradigms:  $\mathbf{k}\bar{\mathbf{e}}\mathbf{p}$  lacks a base form, but does present all of the inflected forms: pertensive with singular posessor  $\mathbf{k}\bar{\mathbf{e}}\mathbf{c}^{\mu}$ , pertensive with plural possessor  $\mathbf{k}\bar{\mathbf{e}}\mathbf{c}$  (pl.), construct state  $\mathbf{k}\bar{\mathbf{e}}\mathbf{p}$ , and proximal deixis form  $\mathbf{k}\bar{\mathbf{e}}\mathbf{\hat{n}}^{\mu}$ ;  $\mathbf{k}\mathbf{\hat{u}n}$ only has construct state and proximal deixis forms, which are  $\mathbf{k}\mathbf{\hat{u}n}$  and  $\mathbf{k}\mathbf{\hat{u}n}^{\mu}$ , respectively.

This is illustrated by the narrative example in (90). The verb **kìtí** signposts that there is a destination argument in this clause. This destination is first expressed as a full noun phrase, **māan-í jìrw** 'the passage of Jiw', and then paraphrased as **kûn àcàa** 'in that direction'. In this clause, **kûn** 'direction' cannot be omitted: the use of the deictic marker **àcàa** heading the noun phrase expressing the Destination is ungrammatical.



Similarly, the deictic markers cannot be used as clause-level adjuncts. This is illustrated in (91a), where the verb 'eat' is in the antipassive derivation, so that the deictic marker necessarily represents an adjunct rather than a core

argument. Crucially, this sentence in ungrammatical. However, the deictic markers can be used as modifiers to the noun  $k\bar{\epsilon}n$  'place, time' within a preposition phrase, as in (91b).<sup>33</sup>

(91) a. \*bōul á-càʌʌm èn / àcàa Bol PAST-eat:ATP DXS.SG / DXS 'Bol ate here / there.'
b. bōul á-càʌʌm kì kēħ<sup>µ</sup> / kì kēŋ 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  $m\hat{\epsilon}\bar{n}$  (sg.) /  $m\hat{\delta}\bar{k}$  (pl.) and the nouns  $k\bar{\epsilon}p$  'place, time' and  $k\hat{u}n$  '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-íi** 'your *awajo* fruits' is the topic, and **èk** is the predicate; in (92b), **kêp à á-wâaŋì ìi ján** 'the place I meant' is the topic, and **ànàn** is the predicate. In both cases, the predicate expresses spatial deixis.

(92) a. <sup>^</sup> wìij-5, áwàc-íı èk, mốk ú-mùuuc-á mếj-āa
 <sup>34</sup> father-SG k.o.fruit:PL-2SG DEICP.PL IDP.PL:DXS FUT-give:SPAT-1SG mother-1SG
 <sup>34</sup> 'Father, your *awajo* fruits are these, these (other) ones I will go give to my mother.'

b. **kēņ à á-wâaŋì ìı ján ànàn** place:CS MDF PST-mean:OV PRP PR.1SG DEICP 'The place I meant is that one.' [TheVillageAchang2 106.9-108.3]

<sup>33</sup> The juncture of  $k\bar{\epsilon}p$  'place:CS' with the 'with-hearer' deictic marker  $\dot{a}n$ , i.e.,  $k\dot{i}k\bar{\epsilon}p = \dot{a}n$  'in that place, there' is often reduced to  $k\dot{i}k\hat{a}a$ .

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

The deictic predicate markers are available at four points on a spatial continuum relative to the speaker. These points are – near speaker:  $\hat{\mathbf{en}}$  (sg.) /  $\hat{\mathbf{ek}}$  (pl.); near hearer:  $\hat{\mathbf{anan}}$  (sg.) /  $\hat{\mathbf{agak}}$  (pl.); away from speaker and hearer  $\hat{\mathbf{aca}}$ ; further from speaker and hearer:  $\hat{\mathbf{acne}}$ . They are identical to the deictic modifiers. Because of this, there is structural ambiguity between deictic predicates vs. noun phrases with deictic modifiers in some contexts. In relation to the proximal (near-speaker) point on the continuum of spatial deixis, there is no ambiguity as to whether spatial deixis is marked within the noun phrase vs. at the predicate level, when the deictic marker is the sole modifier to the nominal head: a proximal modifier that follows immediately after the nominal head is marked as an inflection, as in (93b), whereas the proximal predicate is a separate morpheme, as in (93a).

(93) a. **lòut èn** stick DEICP 'The stick is here.'



In contrast, when the noun phrase that includes a deictic modifier includes another modifier, there is no morphosyntactic difference, and only the context can disambiguate. This is illustrated in (94).

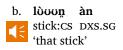
(94) lòuon à bâar èn
stick:CS MDF long DEICP/DXS.SG
'The long stick is here.' OR 'this long stick'

At the 'with hearer' deictic point, the predicate marker is **ànàn** (sg.) / **àgàk** (pl.). The same forms are used as deictic modifiers when the noun has another modifier in addition to the deictic marker. As a result, there is ambiguity between the noun phrase construction and the predicate construction. This is illustrated in (95).

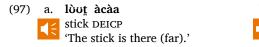
(95) lòun à bânr ànàn
stick:CS MDF long DEICP/DXS.SG
'The long stick is there.' OR 'that long stick'

In contrast, when the deictic modifier follows immediately after the noun, the deictic markers are reduced form, i.e.,  $\hat{an}$  (sg.) /  $\hat{ak}$  (pl.). As a result, there is no ambiguity, as seen from (96a) vs. (96b). The fact that the noun in (96b) is in the construct state further serves to disambiguate the two constructions: it implies that the noun is followed by a modifier.

(96)	a.	lùut ànàn
	11	stick DEICP 'The stick is there.'
		'The stick is there.'



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 àcínếɛ. 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).



b. lòuon = 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 **àcínếɛ** 'that/those (very far away)'.

(98) lòuon à bânr 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 **jấa** 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.<sup>35</sup> The phenomenon is

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

illustrated in (99). In (99a), the associative plural expression is jấā dĚcɛŋ. The base form of the name 'Deng' is dĒcŋ, and jấā dĚcɛŋ refers to Deng and his associates, in this case his kinship group. Similarly in (99b), jâā gīul-īu and jấā júuur refer to groups of people on the basis of a prominent member – the corresponding base forms are gīul-ō 'Gilo' and júur 'Jur'. We gloss jấā as an independent pronoun, because a) it is a function morpheme without referential content other than 3<sup>rd</sup> plural, and b) it is a free morpheme.

	ácàaarò									
14	Acaro 'Acaro, tl	villa	age:PERT	PL II:	OP	Deng:	APL			
				the pe	eopl	le of D	eng,	[]'		
	[DengsFi	sh 4.	.4-6.3]							
	<del>j</del> ôk a									
14	men:cs	DEF	all	IDP	Gil	0-APL	IDP	Jur-APL	COW.PL	PST-divide:OV – cows were
	'All those	e me	n – the g	roup	of (	Gilo, th	ie gr	oup of Ju	ır (etc.)	– cows were
	divided (		0							
	[TheDeso	cenda	antsOfW	aang 4	438	3.4-441	.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 **àkwàrìcòoot-ì** refers to a particular bitter herb, and **jấā àkwàrìcòoot-ī** extends the reference to the wider set of herbs that it belongs to, i.e., to bitter herbs in general.

 (100)<sup>^</sup> jáā àkwàrìcòoot-īi cék káa gûuur-ò ò pí kîţ-ì kēp 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-mâaț pîi** 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.

– involving an ancestor as their clan name. Other examples include **kwàarí jôoot-ò** 'the descendants of speed', **kwàar-í cwλΛk-ò** 'the descendants of hunting with dogs'. The associative plural construction with **jấā** extends the scope of reference to other clans that are named in this way. The word that is morphologically marked for associative plural here is **pǐii**. Its base form is **pîi** 'water'; here it appears with an increase in vowel length and an additional High tone target, which combines with the Low Fall lexical specification to yield a High Rise.

(101)^	ú kwàar-í	tjếeeŋ	à	ú-càk-ð	
<b>∢</b> €	CONJ descendant:PL-PRT	people:CS	MDF	NEVP.OV-name	e-NEVP
	kí níŋ-í à-ŋòl	Èn			
	PRP name.PL-PRT NOM-C				
	nì míi jấā	kwàar-í		ú-mâa <u>t</u>	pŤii
	SIM MDF.SG:PRT:PL IDP	descendant	:PL-PF	RT NOM-drink	water:APL
	'And the descendants of p	eople who	were	named using th	e name of an (lit. this)
	insult, like the one $[= the$	e nickname	] of th	ose (clans) like	e the descendants of the
	water drinker.'				
	[TheDescendantsOfWaang	g 779.4-783	3.3]		

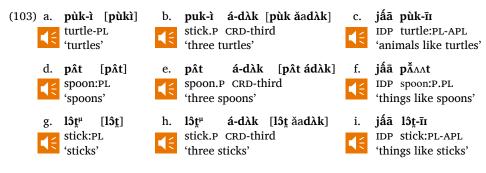
Morphological marking for associative plural can equally be found on other lexical words and function words. This is illustrated systematically in (102), which shows different words without (left) and with (right) morphological marking for associative plural. It is marked on a noun in (102b); on an adjective in (102d); on a verb in (102f); on a deictic marker in (102h); and on the noun that is inflectionally marked for proximal deixis in (102j).

(102) a.	<b>bòɔɔṯ-ò</b> craftsman-SG 'craftsman'		b.	IDP	<b>bòɔɔṯ-īı</b> craftsman-API associates of t		ıftsman'
c 【〔	bòɔn̯-ì à craftsman-CS MD 'the strong crafts	OF strong		IDP	<b>bòɔṇ-ì</b> craftsman-CS associates of t	MDF	
e. 【€	bòɔn̯-ì à craftsman-CS MD 'the sleeping craf	F sleep:NT			<b>bòɔn̯-ì</b> craftsman-CS associates of t		<b>nŤIIN</b> sleep:NT:APL eping craftsman'
g. 【€	bòɔn̯-ì àc craftsman-CS DX 'that craftsman'			•	<b>bòɔn̯-ì</b> craftsman-CS associates of t		
i. 【₹	<b>bòɔn̯-ì</b> craftsman-DXS 'this craftsman'			IDP	bòɔṇ-īı craftsman:DX: associates of t	S-APL his cra	aftsman'

#### 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 steminternally 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).



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  $p\hat{A}t$  'spoons' in (103d) and  $l\hat{5}t^{\mu}$  'sticks' (103g) are both realized as closed monosyllables in utterance-final position. However,  $l\hat{5}t^{\mu}$  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  $l\hat{5}t^{\mu}$  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  $kw\bar{\lambda}n$  'porridge' is overlong in the associative plural, and the same goes for a Long with Grade noun such as gaat 'riverbank'. Only the Fixed Short nouns remain with a short vowel in the associative plural, as seen from tóŋ '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 twóon 'Twong' tón 'spear', and uglik '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 ghat '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'.

Base	+ APL		Base	+ APL	
bâk	bāaak	'garden'	gwôk	gwóook	'dog'
kw⊼n	kwភัллп	'porridge'	kàl	kăaal	'compound'
twóəŋ	twว์ววท	'Twong'	ógĭik	ógĭiik	'buffalo'
дулt	gǎʌʌt	ʻriver bank'	gwǎŋ	gwǎaaŋ	'wildcat'
táŋ	táŋ	'spear'	átāaj	átằaaj	'big clay bowl'
kùl	kŭl	'warthog'	lwáak	lwáaak	'cattle barn'

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

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 (bāaak). 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	gwóooŋ̀ <sup>µ</sup>	gwóook	'dog'	bâk	bâaaŋ <sup>µ</sup>	bāaak	'garden'
pîıl	pínl <sup>µ</sup>	pínl	'grindstone'	kêel	kêeel <sup>µ</sup>	kžeel	'cheetah'
bûp	búm̀ <sup>µ</sup>	búp	'mud'	tôk	tôŋ <sup>μ</sup>	tŠk	'side'
wât	ẃллћ <sup>μ</sup>	wáллt	'son'	wât	wâaan <sup>µ</sup>	wāaat	'relative'

The High Rise as on **bằaak** 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.<sup>36</sup> As noted in Section 4.3

<sup>&</sup>lt;sup>36</sup> The remaining 90 percent are made up rougly 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  $d\delta k$  (cows'), Short with Grade – i.e. short going to overlong (as in the case of  $p\hat{x}t$  'spoons'), and Long with Grade (as in the case of má∧n 'women'). The instances of morphological lengthening are striking here, because plural nouns such as cwôw 'men', door 'walls', cjêt '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, **door** 'walls', **cjɛ̂t** 'excrement (pl)', djêk 'goats', and  $p\hat{\lambda}t$  'spoons' do have a corresponding singular that presents a vowel length gradation. As for cwôw 'men' and mánn 'women', in contrast, these are suppletive plurals, so that there is no other form with morphological lengthening within its paradigm.

Base	+ APL		Base	+ APL	
ríc	ríc	'fish'	cwĵw	cwว์ววพ	'men'
lēk	lĔk	'teeth'	dòk	<b>d</b> ŏk	'cows'
тілп	тіллп	'women'	pît	рភัллt	'spoons'
dōor	dŏoor	'walls'	cjêț	cjžeet	'excrement(pl)'
láлk	láллk	'dreams'	djêk	djěeek	'goats'

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

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 **cwóɔɔw**. 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 -**ɔ**. This is illustrated in Table 8. Note that, in all of these examples, the associative plural is marked by the suffix -II. This suffix carries a Mid tone, i.e., -II, unless the base form ends with a High tone, in which case the suffix is High-toned, i.e., -ír. The latter scenario is illustrated by pânal-5 '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 c51-3 '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-5 'roof'.

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

Base	+ APL		Base	+ APL		Base	+ APL	
յո՞ռո1-ծ	յոîոոl-íւ	'python'	bòəət̪-ò	bòɔɔt̪-īɪ	'craftsman'	<del>j</del> ấaak̄-ɔ̄	Jấaak-īi	'chief'
átût-ó	átût-íı	'duck'	cốl-ờ	cốĪ-īı	'Shilluk'	tāan-5	tāan-īi	'roof'

The other suffix that is found in the base form is -**ī**I, which marks instruments derived from transitive verbs, as in **góooc-ī**I 'machete (hit-inst)', **ŋíc-ī**I 'symbol (recognize-inst)', and **ríʌʌŋ-ī**I '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: jấā góooc-īu 'things like a machete'.

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

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

Base	+ APL		Base	+ APL	
bùl-ì	bùl-īı	'drums'	tùuk-ì	tùuk-īı	'cooking stones'
ţûlì	ţùl-īı	'owls'	bôoț-ì	bôoț-īı	'craftsmen'
ŋíē-ī	ŋíē-īi	'symbols'	kấʌĪ-ī	<b>k</b> ấλĪ-īi	'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 -īr, 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 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	
յում-յ	րո՞ւլ-ու	'python'	dòən-ì	dòən-īı	'iron'	Jáan-ì	jáaŋ-īi	'chief'
átûn-ì	átûn-īı	'duck'	cól-ì	cól-īi	'Shilluk'	tāan-ì	tāan-īı	'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 **-iI**. 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	
та́лп-ì	<b>Μ</b> ΆΛ <b>Π-</b> ĪΙ	'women'	gór-ì	gór-īi	'honey badgers'
dòk-ì	dok-īı	'cows'	bôoț-ì	bôoț-īı	'craftsmen'
káлl-ì	káal-īi	'compounds'	tùuk-ì	tùuk-īı	'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 dok 'cows', which has associative plural dŏk; the corresponding proximal forms are dòk-ì, with the associative plural dòk-īr. 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  $k \hat{\lambda} n \bar{l} - \bar{i}$  'compounds', which has the associative plural kấnl-īr. The proximal is kánl-ì 'compounds', which then becomes  $k \dot{\lambda} n l - \bar{l} l$  in the associative plural. The two forms,  $k \dot{\lambda} n \bar{l} - \bar{l} l$  and káal-īi, 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  $g\hat{\sigma}\bar{r}^{\mu}$  'honey badgers', which has associative  $\mathbf{g}\mathbf{\hat{5}}\mathbf{\bar{r}}$ - $\mathbf{\bar{n}}$ ; the corresponding proximal deixis form gór-ì has the associative gór-ī.

Nouns with a pronominal possessor are not marked for associative plural in any way. For example, the noun mấnnữ-āa 'my friend' and mínnữ gén 'their friend' are unchanged in the juncture jấā mấnnữ-āa 'the associates of my friend' and jấā mínnt 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  $\mu$ , as in **lôt**<sup> $\mu$ </sup> '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 -**i**n. They never present the allomorph -**í**n, 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.

Base Pl.	+ APL		Base Pl.	+ APL	
pèl <sup>µ</sup>	pèl-ī1	'grindstones'	gòɔɔt <sup>µ</sup>	gòɔɔt-īı	'corners'
dòŋµ	dòŋ-īı	'baskets'	dâaak <sup>µ</sup>	dâaak-īi	'pots'
gốr <sup>µ</sup>	gốr-īi	'honey badgers'	ភ្លាំំំំំំំំំំំំំំំំំំំំំំំំំំំំំំំំំំំំ	<b>ព្</b> ល៌ <b>นน</b> [្ថី-īɪ	'cow dung (pl)'
tôŋ⁴	tôŋ-īi	'spears'	jấ́ллҬ҈ <sup>µ</sup>	jᡬʌʌᠯᢩ-īɪ	'boats'
tòk <sup>µ</sup>	tòk-īı	'edges'	wວວŋ <sup>μ</sup>	wòɔŋ-īɪ	'grandmothers (biol.)'

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

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 **-i.** 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.

Prox.	+ APL		Prox.	+ APL	
bâaaŋ <sup>µ</sup>	bâaaŋ-īı	'garden'	gwóooì) <sup>µ</sup>	gwóooŋ-īi	'dog'
kwāлл̀ <sup>µ</sup>	kwāʌʌn-īı	'porridge'	táaa) <sup>µ</sup>	táaaj-īı	'lake'
twɔ́ɔɔŋ̀µ	twว์ววŋ-īɪ	'Twong'	úgìiiŋ <sup>µ</sup>	úgìiiŋ-īı	'buffalo'
дулуп <sup>1</sup>	gʌʌʌn-īɪ	ʻriver bank'	gwàaaŋ <sup>µ</sup>	gwàaaŋ-īi	'wildcat'
tớŋ <sup>µ</sup>	tóŋ-īı	'spear'	átāaa) <sup>µ</sup>	átāaaj-īi	'big clay bowl'
kùl <sup>µ</sup>	kùl-īı	'warthog'	lwáaaỳ <sup>µ</sup>	lwáaaŋ-īı	'cattle barn'

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

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,<sup>37</sup> 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  $-\mathbf{i}\mathbf{I} / -\mathbf{i}\mathbf{I}$ . 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  $-\mathbf{i}\mathbf{I}$  is as expected. The exception is **apwâaak<sup>µ</sup>** 'Anywa', which ends in a Low target, and has the allomorph  $-\mathbf{i}\mathbf{I}$ . This confirms the conditioning of the allomorphy:  $-\mathbf{i}\mathbf{I}$  if the word ends in a High target,  $-\mathbf{i}\mathbf{I}$  otherwise.

<sup>37</sup> Except for the ones that are open syllables, whereby a suffix is in hiatus with the stem vowel, resulting in stem-internal marking:  $j\check{o}o\check{o}^{\mu}$  'road' has pertensive  $j\hat{u}u\check{u}^{\mu}$ .

Base	Associative		Base	Associative	
bĕţ <sup>µ</sup>	bèţ-íı	'fishing spear'	dĭiim <sup>µ</sup>	dìiim-íı	'sieve'
kðc <sup>µ</sup>	kòc-íi	'adze'	ŋằaaw <sup>µ</sup>	nāaaw-íi	'domestic cat'
kĭt <sup>µ</sup>	kìt-íı, kǐt	'mountain, rock'	ŋŏoom <sup>µ</sup>	ŋòoom-íı	'awl'
kĭiil <sup>µ</sup>	kìiil-fi	'crutch'	ánwâaak <sup>µ</sup>	ánwâaak-īi	'Anywa'

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

There is one noun, **kit**<sup>µ</sup>, 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  $kit^{\mu}$  '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 **tòk**<sup>µ</sup> 'edges' vs. **dòk** 'cows' and **bět**<sup>µ</sup> 'fishing spear' vs. **gwǎŋ** 'wildcat' are identical in their phonotactic composition and specification for tone, they diverge in the associative: **tòk-ī**ı vs. **dŏk**, and **bèţ-í**ı vs. **gwǎaaŋ**. 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  $-\mathbf{\bar{n}}$  /  $-\mathbf{\hat{n}}$ . This is not surprising because this suffix marks  $2^{nd}$  singular possessors. In suffixless nouns, this also involves morphological lengthening. Hence, **bâk** 'garden' yields **bâaak-** $\mathbf{\bar{n}}$ '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, **mòk-ò** 'alcohol' yields **mòk-ī**ı '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. **bòɔɔṯ-ò** 'craftsman' yields **bòɔṯ-ī**ı 'your craftsman', with a reduction in vowel length, whereas the associative plural is **bòɔɔṯ-ī**ı.

### 8. Vocative

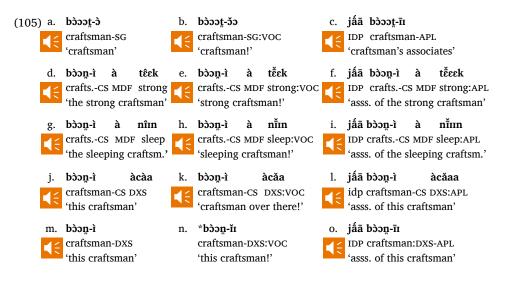
The vocative is used when a noun phrase is used as a term of address. Its use is illustrated by the narrative examples in (104). In (104a), the vocative noun phrase is **jáaak gól** 'Men of this family!' Without vocative marking, it would have been **jáaak gól**<sup> $\mu$ </sup>, with a Late Fall marking proximal deixis on the possessor. In (104b), **m**í**A**t is a vocative form of **m**î**A**t 'friend'. In both instances, the vocative contributes a High end target to the tonal specification.<sup>38</sup>

(104) a. jáaak gʻjl bá kết-āa bēe lîit-í men:PRT family:DXS:VOC HORT go.away-1PL.IN SUB look.at:INF-PRT:PL ŧấm-ì things-PL 'Men of this family, let's go check out the things.' [TheDescendantsOfWaang 428.4-430.4] b.^ cùŋí mλʌţ, tốŋ kóo pù<u>t</u> stand:2SG friend:VOC spear PROH pull.out:2SG 14 '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  $gjl^{\mu}$  '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

<sup>38</sup> In the case of **jáaak gól**, the vocative of **jáaak gól**<sup> $\mu$ </sup>, 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.



#### 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 **kùl** 'Kul'. It is added vacuously to a High target, as in the case of **twóoŋ** 'Twong'. When added to a Mid or a Low Fall, the outcome is a High Rise. The situation with **mîʌt**, where the vocative is High-toned, is a lexical exception.

Base	Base + Voc		Base	Base + Voc	
kùl	kŭl	'Kul'	gwôk	gwŏk	'dog'
ábác	ábác	'Abac'	mл̂лț	тілț	'friend'
twóəŋ	twóɔŋ	'Twong'	àbốun	àbốuń	'priest'
dēeŋ	dĔɛŋ	'Deng'	úrấap	úrấaý	'spider'

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

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.<sup>39</sup> 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 wît 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.

<sup>39</sup> 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.

	Base	Prox.	Base + APL	Base + Voc	
Low Fall (H)	wât	wáллћ <sup>µ</sup>	wл́ллt	wĂt	'son'
	bâлŋ	bѧ́ллу̀ <sup>µ</sup>	báллŋ	Ҍ៱҃ӆ	'servant'
	gwôk	gwóooì) <sup>µ</sup>	gwóook	gwŏk	'dog'
Low Fall (LF)	wât	wâaan <sup>µ</sup>	wāaat	wắt	'relative'
	bâŋ	bλллп <sup>μ</sup>	Ҍ៱҃ӆӆ	bភ្យា	'community leader'
	kêel	kêeel <sup>µ</sup>	kĔeel	kĔel	'cheetah'

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.

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	
тілп	тіллп	тілп	'women'
<u>d</u> òk	<b>d</b> ŏk	<u></u> dŏk	'cows'
djêk	dj <b>ě</b> eek	djěk	'goats'
ríc	ríc	ríc	ʻfish (pl)'
cwôw	cwóɔɔw	cw支w	'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 -**u**, 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 **µî∧∧l-ý** 'python'.

	Table 18: I	Examples	of the	vocative on	suffixed	nouns.
--	-------------	----------	--------	-------------	----------	--------

Noun	Noun + Voc		Noun	Noun + Voc	
յո՞ռո1-ծ	<b>л</b> л́ллl-э́э	'python'	<del>յ</del> ấ́aak̄-วิ	<del>յ</del> ấ́aak̄-วัว	'chief'
átût-ó	átût-óə	'duck'	ţûl-ì	ţûl-ĭı	'owls'
bòəət̪-ò	bòɔɔt̪-ŏɔ	'crafsman'	bôoț-ì	bòoț-ĭı	'craftsmen'
င၁်ါ-၃	င၁်ါ-၁၁	'Shilluk'	<b>m</b> ๎กุ่งก <sub>_</sub> -ี่สุล	mภุ์งงนุ้-ฮุ้ล	'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 pertensive 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.<sup>40</sup> 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 -II 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

<sup>40</sup> As for the other two sets: the pertensive 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.<sup>41</sup> 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	
gốr <sup>µ</sup>	gốr-ĭı	gốr-īi	'honey badgers'
dấuup₽	dấuup-Ťi	dấuup-īi	'mice'
mấллţ <sup>μ</sup>	mᡘᢆ៱៱ᢩt-ĭı	<b>mấ์</b> ภุก <u></u> รา	'friends'
Jấaak <sup>µ</sup>	<del>j</del> ấaak-Ťi	<del>j</del> ấaak-īi	'chiefs'
wວວŋ <sup>µ</sup>	wòɔŋ-ĭɪ	wວ້ວ <b>ŋ-</b> īɪ	'grandmothers'

Most singular nouns with floating quantity also take the suffix -II 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 **ápwâaak**<sup>µ</sup> 'Anywa (ethnic group)', which has a Low Fall. Its vocative is unexpectedly marked stem-internally: instead of \***ápwâaak-ĭ**I, we find **ápwǎaak**, following the same pattern as suffixless nouns that do not have floating quantity.

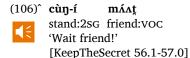
Table 20: Examples of the vocative on suffixless singulars with floating quantity. The associative plural is provided alongside for the sake of comparison.

cěeew <sup>µ</sup> cèeew-íi cèeev	v-íi 'porcupine'
17 11 12 1	
lěeew <sup>µ</sup> lèeew-íi lèeew	r- <b>íı</b> 'house lizard'
pā̃aaw <sup>µ</sup> pāaaw-íi pāaa	w-íı 'domestic cat'
áŋwâaak <sup>µ</sup> áŋwẵaak áŋwâ	aak-īı '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 highfrequency nouns. In the case of **jàal-ò**, we find both the regularly formed **jàal-òo** 'man', and also **jǎal**, which expresses a negative disposition, as in 'Man, watch what you are doing.' In the case of **mîʌt** 'friend', we find **míʌt**, with High tone, rather than **mǐʌt**. This is shown in (106).



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 **ùtŏor**, and **úɲăaaw**<sup>µ</sup> 'Onyaw', which is derived from **ɲăaaw**<sup>µ</sup> 'cat', has the vocative **ùpāaawíi** '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, **ùbwōŋī** is the vocative of **úbwīŋī** 'Arab (man)'. The prefix **a**- that is found on women's names is not affected in this way.

(107)<sup>^</sup> **bǎa** djēer cêṭ òŋáaj NOMP truth exactly Ongay:VOC 'It is completely true Ongay!' [AchangVillagePart1 168.4.8-169.9]

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

(108)<sup>^</sup> **jín jín à mâal 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., jíñ and wúñ, 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.

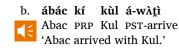
				gé cấả pr.3pl AU a tôk		<b>oéeeñ-5</b> come-D\					
	ùc	òook-ś c	ếk kí=a	a tôk	-ò						
	conj b	one-SG A	UX PRP	=FOC brea	ık.by.h	itting-D	VN				
	'This vil	lage and t	his villa	ge they co	ne (tog	gether)	and th	e boi	ne is bro	ken.'	
	[Reveng	geKilling 9	6.2-98.9	9]							
Ь ^	.61.	ámí à	141.	iâl: dàom		141.		1.4		1.4	
				Jôk-dòəŋ							jìiw T
	men:CS	DEF FOC	NOMP	men-big-P <b>kàl bě</b>	L FOC	NOMP	Jur	PRP	Milo	PRP	Jiw
					eeñ <sup>µ</sup>						
	prp Gil	o pr.3pl	NOMP	family all							
	'Those r	nen were	the lead	ers, they w	ere Jur	r, Milo,	Jiw aı	nd Gi	lo,		
	they we	re all relat	ted.'								
	TheDes	scendants(	OfWaang	g 277.6-280	5.31						
	-			,	-						

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 **ù**, 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 **g**é, immediately before the head of the predicate. The sentences are equally grammatical without **g**é. These two options are illustrated by the elicited examples in (110). There is however a difference in meaning. With **g**é there, the referents of the two noun phrases are presented as equally important. In contrast, without **g**é 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-wàţì Abac PRP Kul PR.3PL PST-arrive 'Abac and Kul arrived.'



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 clauselevel peripheral constituent, just like a prepositional phrase that expresses an instrument (111b), which is expressed using the same preposition.<sup>43</sup> Crucially, **kí kùl** is not part of the subject noun phrase in (111a).

(111) a. ábác á-wàtì kí kùl Abac PST-arrive PRP Kul Abac PSI-anno All 'Abac arrived with Kul.'

b. ábác á-wàtì

kí jânj Abac PST-arrive PRP vehicle '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 3<sup>rd</sup> singular topics may be dropped in Shilluk, \*kí kùl á-wàţì 'S/He arrived with Kul' and \*kí jâʌj á-wমth '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

<sup>43</sup> 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.

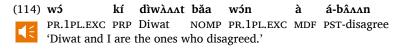
entities that are linked are presented as equally important in a pragmatic sense; we analyse this as an inclusory comitative (cf. Moodie 2019). When gé appears in a juncture with kí, it cannot appear again before the verb. Similarly, in a variation on the sentence in (109b) above, \*júur gé kí míiiló gé kí jìw gé kí gīnlō bǎa kàl běeen<sup>µ</sup> 'Jur, Milo, Jiw and Gilo are family.' is ungrammatical, because gé appears more than once.

(112) **ábác gé kí kùl á-wàţì** 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 **kàaam** 'distance, between' appears in the pertensive with singular possessor, rather than in the pertensive with plural possessor. That is, its possessor argument is **píkāaaŋō**, rather than the **píkāaaŋō gé kí tùrò** as a whole. This fits with the asymmetric interpretation of conjunction using **kí**.

(113) a.  $pikaaan \overline{p} w h n \overline{t}^{\mu} u w h n g e$ kí dìwλλλt wấλλτ<sup>μ</sup> ύkwλλ Nyikango son:PRT Okwa PR.3PL PRP Diwat son:PRT Okwa băa gén à á-bîллп 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. î kì cấллп pín wéeer-ò á-bìi kì kàaam<sup>µ</sup> níkāaaŋō gé PRP end:PRT ground quarrel-SG PST-come PRP distance:PRT Nyikango PR.3PL kí tùrò 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  $1^{st}$  plural exclusive subject.

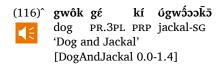


With non-human / inanimate referents,  $g\epsilon$  kí cannot be used as a juncture to conjoin noun phrases. In (115a,b), the insertion of  $g\epsilon$  can be inserted resumptively immediately before the adjectival predicate. In contrast,

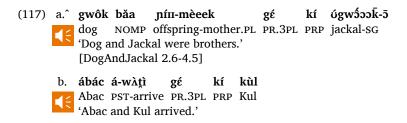
\*ŋốom-ī gé kí bíiţ-ī bếţ and \*ŋếт<sup>µ</sup> gé kí tʌŋ jôot are both ungrammatical.

	ŋốo <b>m-ī</b> kí			·U	- /	bếț	
<b>4</b> {	awl-PL PRP 'Awls and fis	fishing	g.spea	ar-PL PR	a.3pl s	harp	
		inng sp	ears		p.		
	ŋếr <sup>µ</sup>			tānŋ			
14	white.eared.k	COD:PL	PRP	topi:PL	pr.3p	L fast	
	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 **gé kí**. For example, a story about Dog and Jackal begins as follows, with the narrator stating the title as in (116).



A final possibility is for the second part of the conjunction to appear to the right of the predicate, and marked with  $g\epsilon$  kí. This is illustrated by the narrative example in (117a). Here as well, the inclusion of  $g\epsilon$  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).



Other pronouns can also be used be used in the juncture with **kí**. This is shown in (118), where the two entities form a 1<sup>st</sup> plural exclusive group. Note that the preposition **kí** combines with the 1<sup>st</sup> plural exclusive pronoun **wó** here. It is equally grammatical to use **já** instead of **wó** in the preverbal topic slot here, i.e., **já á-wàţì wó kí bòɔɔţò** (same translation). Also, as noted above, comitative can be expressed without the pronoun preceding the preposition, e.g., **já á-wàţì kí bòɔɔţò**; this conveys an asymmetry in importance of the two parties. A conjunction involving a 2<sup>nd</sup> person plural set can be expressed in the

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same way, combining the preposition **kí** with the 2<sup>nd</sup> person plural exclusive pronoun **wú**, e.g. **wú/jí áwλţì wú kí bòɔɔţò** 'You arrived with the craftsman.'

(118) wó á-wàţì wó kí bòɔɔţò
 PR.1PL.EXC PST-arrive PR.1PL.EXC PRP craftsman-SG
 'I arrived with the craftsman.'

However, a 1<sup>st</sup> or 2<sup>nd</sup> person plural pronoun cannot be combined with the preposition if the first constituent noun phrase in the conjunction is 3<sup>rd</sup> person. This is shown in (119); note that with the 3<sup>rd</sup> person noun in the topic slot and the 1<sup>st</sup> person pronoun in the prepositional phrase, the preposition can be preceded by the 3<sup>rd</sup> person plural pronoun  $g\hat{\epsilon}$ , but not by the 1<sup>st</sup> person plural exclusive pronoun w $\hat{\sigma}$ . The generalization that holds across (118,119) is that the pronoun that appears right before the preposition needs to agree in number with the constituent of the conjunction that preceeds it.

(119) bòɔɔt-ò á-wàtì gć /\* wó kí ján
 craftsman-SG PST-arrive PR.3PL / 1PL.EXC PRP PR.1SG
 'The craftsman arrived with me.'

In conclusion, the conjunction of noun phrases makes use of the same morphosyntactic construction as the expression of comitative: through a prepositional phrase. For the syntactic analysis, this means that, when expressing comitative, a prepositional phrase headed by **kí** can modify either the verb predicate or a noun phrase. This macrofunctionality between comitative and noun phrase conjunction is well known cross-linguistically (Stassen 2000, Moravcsik 2003:498, Stolz 2001: 592). Finally, an inclusory interpretation is communicated in Shilluk by combining the preposition with a plural personal pronoun.

## 10. Focus marking in relation to the noun phrase

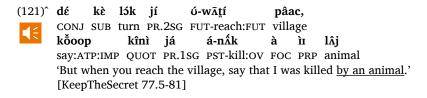
Shilluk has a focus marker, which is realized either as **à** (Low-toned), or as **a** (toneless), depending on its position in the clause. It is toneless when it follows immediately after the finite verb, be it a lexical verb or an auxiliary, in which case it copies the final tone target of the verb for its own tonal specification (see Chapter 3, pages 22-23). In all other contexts, it is Low-toned. In this section we first lay out its functions, and then consider its position in relation to the noun phrase.

The focus marker plays two distinct roles in Shilluk grammar. On the one

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 preceeds the noun phrase diwiant 'Diwat'. It lends narrow focus, contrasting Diwat with his brother Nyikango.

 (120)<sup>^</sup> **ύkwân á-kwàŋ a dìwλnt áa jấaak-ō** Okwa PST-choose FOC Diwat NOMP.3SG chief-SG mến à jákí kì bấaaŋ-ē
 IDP.SG:CS MDF rule-AMB:NT PRP after:PRT-3SG
 <sup>^</sup>Okwa chose <u>Diwat</u> 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  $i l \hat{a} j$  'by an animal', contrasting this entity with the actual cause of death, which is a spear.



In (122),  $\dot{a}$  lends focus to the instrument that is expressed in a prepositional phrase marked by ki. The speaker is contrasting the referent's preparedness for adversity with the powerlessness of other men, hence the emphasis on 'his (own) strength'.

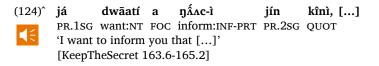
(122)<sup>^</sup> nūutí gèɛɛr-ò ìı én kí à têɛk-è
NEG.PST build-DVN PRP PR.3SG PRP FOC strength:PRT-3SG YNQ
<sup>(Did</sup> he not build it with his (own) strength?' [AchangVillagePart1 175.6-177.2]

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.<sup>^</sup> từrờ cêt à gôook-ờ (kì) gîn nì mến
 Thuro ADV FOC make:ATP-NEVP PRP something:CS SIM IDP.SG:DXS
 <u>'Surely Thuro</u> did something like this!'
 [TheDescendantsOfWaang 115-116.5]

b. **pāaan ání à á-péekì píkāaaŋō kì tjèɛl-ì mâal** village:CS DEF FOC PST-settle:XV Nyikango PRP leg-CS first '<u>That village</u> 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.



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 preceeds 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  $\mathbf{i}_{I} / \mathbf{\bar{n}}$  (121), and to the right if the preposition is  $\mathbf{k}\mathbf{i}$ (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.<sup>44</sup> In relation to (125b), the fact that **gwôk** 'dog' is in the base form precludes the meaning 'the dog that Twong loves'.

(125) a. **gwốooŋ à bûut àcàa mấar ì twóɔŋ** dog:CS MDF lie:NT DXS love:OV:NT PRP Twong 'Twong loves that dog that is lying down.'

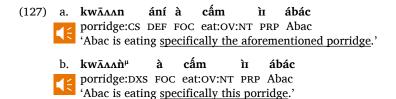
<sup>44</sup> In (122a), the verb {mấar} 'love' can be used without syntactic licensing, because this verb provides an aspectual setting lexically: it is inherently continuous as opposed to punctual.

b. **gwôk à mấar ìi twóɔŋ** dog:S FOC love:OV:NT PRP Twong 'Twong loves specifically <u>the dog</u>.'

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) **kwāʌʌn à mɛ̂t à á-càaam-á** porridge:CS MDF tasty FOC PST-drink-1SG 'I ate specifically <u>the tasty porridge</u>.'

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).



## 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 preceeds 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 diminuitive marker were to be interpreted as a prefix.<sup>45</sup> 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

<sup>45</sup> We thank Akil Ismael for pointing this out to us.

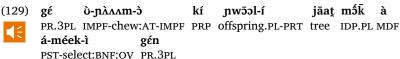
morphosyntax of Shilluk noun phrases, based on the descriptive analyses in this chapter.

#### 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 **pw5ol** 'offspring, fruit'. It appears in the pertensive (**pw5olî**) because it is immediately followed by **jāaţ** 'tree'. The relative clause **à á-méek-ì gén** 'which were given to them' also modifies **pw5ol**. However, **pw5ol** does not appear in its construct state form (**pw5ol-ì**); instead, it is **jāaţ** 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	ù-пллт-	ò	kí	ุทพวิวl-í	jāaaņ	à	
<b>∢</b> €	pr.3pl	IMPF-chew	ATP-IMPF	PRP	offspring.PL-PRT	tree:CS	MDF	
	á-méek	κ-ì	gén					
	PST-sele	ect:BNF:OV	pr.3pl					
	'They are chewing the tree fruits that had been given to them.' OR							
	'They a	re chewing	the fruits of	of the	tree that had bee	n given	to them.'	
	[PearSt	ory 147.6-1	49.7]			-		

In some cases, such ambiguities can be avoided through the use of the independent pronoun  $\mathbf{m}\hat{\mathbf{e}}\mathbf{n}$  (sg.) /  $\mathbf{m}\mathbf{5}\mathbf{k}$  (pl.). This pronoun agrees with the head noun in number, thereby ruling out the interpretation whereby the relative clause modifies  $\mathbf{\bar{j}}\mathbf{aat}$  'tree' This is illustrated in (129), which shows a variation on the sentence in (128), disambiguated in this manner.



'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  $dw\lambda n$  'status' is the possessor modifier of pin 'name(s)', which is grammatically plural. The following constituent, **m555** gén

'of them', can only modify **píŋ-í**, because it is grammatically plural.

(130)^	gέ	cwĵ	1-ì	gáa	àkŏo	ool	běeeāµ	
14	pr.3p	чь call-	ITER	PR.3PL:NOM	1P leade	r:PL	all	
	à	jíŋ	յոíդ-	pr.3pl:nom í	фwллŋ	móa	00	gén
	MDF	NOMP	nam	e.PL-PRT:PL	status	MDF	.PL:PRT	pr.3pl
	'They	were a	all cal	led leaders,	which w	as th	eir title	(lit.: which
	were	their na	ames	of status).'				
	[Thel	Descend	lants	OfWaang 22	6.8-230.	4]		

In the same way, i.e., through the use of  $\mathbf{m}\hat{\mathbf{z}}\mathbf{n} / \mathbf{m}\hat{\mathbf{z}}\mathbf{k}$ , a wide range of other modifiers can be included in a noun phrase, as in (131a) and in (131b).

(131) a. dâa àkòɔr-í ŋjēen mó ŋèɛɛnò
EXSP:FOC problems-PRT money MDF.PL much 'There are many financial problems.'
b. dâa àkòɔr-í ŋjēen mó téɛɛk
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  $m\acute{e} / m\acute{o}$  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  $g\acute{e}$ . In addition, it is worthwhile to note that adjectival predicates do not involve any copula in Shilluk.

(132) a. \*dâa àkòɔr-ì ŋjēen mó ŋèɛɛnò mó téɛɛk EXSP:FOC problems-PRT money MDF.PL much MDF.PL hard:CTG 'There are many difficult financial problems.'
b. dâa àkòɔr-ì ŋjēen mó ŋèɛɛnò gé téɛɛk 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,  $d\lambda k$  'third' yields  $\dot{a}$ - $d\lambda k$  '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 nature of numerals is relevant to understanding their syntactic position within the noun phrase. That is, while cardinal numerals appear to the right of the head, just as almost all modifiers, their position relative to other modifiers is not fixed. This is illustrated in (133), which presents a noun phrase with both an adjectival modifier and a cardinal numeral. Note that the adjective can follow either after the head noun (133a) or after the numeral (133b). The explanation for this variability is that the numeral is itself a noun, so that it can take the adjective as its modifier. In the latter case, the numeral inflects for construct state.

(133) a. gwốk-ī à dòɔŋ-ò á-dàk
 b. gwốook<sup>μ</sup> á-dàʌʌk à dòɔŋ-ò
 dog:PL:CS MDF big-PL CRD-3<sup>rd</sup>
 the three big dogs'
 cRD-3<sup>rd</sup>:CS MDF big-PL
 cRD-3<sup>rd</sup>:CS MDF big-PL
 the three big dogs'

This variability in syntactic order between numeral and adjective makes it difficult to determine whether Shilluk represents an exception to Universal 20 in Greenberg (1963), which states that numerals follow adjectives when both follow the noun phrase. The answer is that numerals do not represent a term separate from nouns; instead, the former are a subset within the latter. Ultimately, then, Universal 20 cannot be evaluated in relation to Shilluk, in the sense that numerals do not represent a constituent distinct from a nominal head.

## 11.3 Associative plural and vocative

An important question in relation to the associative plural and the vocative relates to their status in the morphology of Shilluk. While these instances of morphological marking are mostly found on nouns, they actually occur on whatever word is the right-most element in the noun phrase. This is illustrated in (134) – note that both the associative plural (134b) and the vocative (134c) are marked on the adjective. The fact that these operations are not specific to a particular lexical category challenges the analysis that associative plural and vocative are inflections, because inflections are specific to lexical categories. Instead, this flexibility with respect to the nature of the host makes the associative plural and the vocative akin to clitics. In terms of their formal realization, however, they are like inflections. Note, for example, that both of them can be expressed purely through stem-internal marking, just as inflections can (134b,c).

### (134) a. mźanā têck b. jźā mźanā těcek c. mźanā těck friend:CS strong '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.<sup>46</sup> 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 3<sup>rd</sup> 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 **bòɔɔt-ɔ** 'craftsman' has a suffix in the pertensive with singular possessor, **bòɔt-ì**, and equally in the associative plural, which is bòoot-īr. And similarly, a suffixless noun like gànt 'riverbank' is suffixless in the pertensive with singular possessor, which is  $g\lambda\Lambda\Lambda t^{\mu}$ , and also in the associative plural: gĂAAt. Moreover, the realization of the associative plural is sensitive to class-specific inflectional variation beyond the base form. Whereas **pîıl** 'grindstone' and **kɛɛl** '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  $p\hat{\mathbf{nl}}^{\mu}$  and  $k\hat{\mathbf{\epsilon}}\boldsymbol{\epsilon}\boldsymbol{\epsilon}\mathbf{l}^{\mu}$ , 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 **p***í***I** and **k***ɛ***ɛi**, 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,

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

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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: **àbóun** yields the vocative **àbóuń**. 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 dependentmarking 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 headmarking 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.

			To to dia atiana
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
			=

Imperative	SUB	Subordination marker
Imperfective	VOC	Vocative
Infinitive nominalisation	VS	Verb-Subject
Agentive inf. nominalisation	XV	Applicative voice
Instrument nominalisation	YNQ	Yes/no question
	Imperfective Infinitive nominalisation Agentive inf. nominalisation	ImperfectiveVOCInfinitive nominalisationVSAgentive inf. nominalisationXV

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