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The modified form of Shatt Damam nouns and its Daju cognates

Pascal Boyeldieu (CNRS)

1. Introduction

Shatt (own name **ikkà cánnìp** {mouth ~ language/Shatt.PL} ‘language of the Shatt people’) is spoken in the Nuba mountains to the south of Kadugli (Southern Kordofan State, Republic of the Sudan). Although the speakers do not acknowledge the name Daju, Shatt is a member of the Daju (Dadjo in French) language group, made up of languages (including Liguri, Shatt, Lagowa, Baygo [extinct?], Njalgulgule, Daju of Darfur, Daju of Dar Sila, Daju of Abu Telfan) stretching from the Nuba mountains in the east up to the Guéra massif (Chad) in the west (Tucker and Bryan 1956, Stevenson 1956-57, Jungraithmayr 1981, Thelwall 1981, Gordon 2005). The Daju languages belong to the Eastern Sudanic branch of the Nilo-Saharan phylum (Greenberg 1963)¹.

To be more precise, the Shatt people are settled in three distinct areas, the groups and dialects of which are known as Shatt Damam, Shatt Tebeldia and Shatt Safia or Safaya (Stevenson 1956-57:(40)111). The present study relies on data from Shatt Damam (main town: **dóllè**).

Shatt Damam nouns display two different forms (*simple*, e.g. **gàx** /pl. **gàp**, vs. *modified*, e.g. **gáxsì**⁺ /pl. **gápǵì**⁺ ‘stick’)² according to whether they appear *without* or *with* a modifier (associative noun or pronoun, demonstrative, relative clause, etc.). The modified noun form gives rise to various types of suffixation, which are not fully predictable, either in the choice of suffix or in the formal outcome of suffixation.

The aim of this paper is twofold. In the first part (sections 4-5), which is descriptive and restricted to the Shatt Damam situation, I will consider the syntactic contexts which require the modified noun form, and then examine how it is morphologically derived. I will argue that the modified form should (now) be considered as lexicalized, even though it may have arisen from the amalgamation of the simple noun form with a former independent associative marker.

In the second, comparative part (sections 6-9), I will look at the noun in some related Daju languages and examine the morphological correspondences. Briefly put, these languages have only one noun form corresponding either to the Shatt Damam simple form (cf. Shatt Tebeldia, where the “concord marker” is still separate from the modified noun it follows), or to the modified form (cf. Lagowa, Nyala, Daju-Sila, and Daju-Eref, where the former associative marker has become part of the noun in every case, modified or not). Thus, the noun morphology of Shatt Damam stands midway between that of nearby Shatt Tebeldia and that of the more remote – both geographically and linguistically – “western” Daju languages.

Before going into the details of the modified Shatt Damam noun form, I will need to give a brief account of the phonology (section 2) and noun number marking in the simple form (section 3).

¹ Daju languages as a whole are still little known. No substantial grammar or dictionary is available for any language, if we except the as yet unpublished work by Palayer (in press, forthcoming) on Eref. Thelwall (1981) is a comparative and historical study, dealing chiefly with phonology, lexicon, noun morphology, and lexicostatistics.

² The modified noun form, which by definition never appears alone, is conventionally indicated by a “+” in exponent position.

2. Phonology

The Shatt data were collected during a first unplanned survey³, and several points regarding phonology are not fully resolved. This preliminary presentation must therefore be considered tentative.

2.1. Consonants

Aside from the prenasalized consonants, whose status is marginal and debatable, and the highly restricted glottals **h** and **ʔ**, the consonant system is characterized by a correlation, the nature of which is still unclear; it could be a contrast of *strength* (weak vs. strong) or of *gemination* (simple vs. geminated consonants):

	labial	alveolar	sibilant	palatal	velar	glottal
implosives	ɓ- / ɓɓ- -ɓ- / -ɓɓ- -ɓ	ɗ- / ɗɗ- -ɗ- / -ɗɗ- -ɗ		f- / ff- -f- / -ff- -f		
voiceless obstruents	p- / -p(p)- -p	t- / -t(t)- -t (/ -tt ?)	s- / (-ss-?) -s (/ -ss ?)	c- / -c(c)- -c (/ -cc ?)	k- / -k(k)- -k (/ -kk ?)	(h-) (-ʔ-)
voiced obstruents	/ b- -b- / -bb- -	/ d- -d- / -dd- -	/ z- -z- / -zz- -	/ j- -j- / -jj- -	/ g- -g- / -gg- -	
pre- nasalized	- -mb- -	nd- -nd- -		- -ɲj- -	ŋg- -ŋg- -	
nasals	m- / mm- -m- / -mm- -m (/ -mm ?)	n- / nn- -n- / -nn- -n (/ -nn ?)		ɲ- / ɲɲ- -ɲ- / -ɲɲ- -ɲ (/ -ɲɲ ?)	ŋ- / ŋŋ- -ŋ- / -ŋŋ- -ŋ (/ -ŋŋ ?)	
glides	w- / ʔ -w- / ʔ -w	l- / ll- -l- / -ll- -l		y- / ʔ -y- / ʔ -y		
trills		r- / rr- -r- / -rr- -r			x- / ʔ -x- / ʔ -x (/ -xx ?)	

Consonants (N.B.: **r** / **rr** stand for [r] / [r] respectively)

This contrast is clearest in intervocalic position⁴ where it affects nearly all phonemes except the voiceless obstruents, which may be systematically strong or geminate in this position. (Nevertheless, intervocalic voiceless obstruents are provisionally transcribed as

³ The survey was conducted in Khartoum (January 2008). I hereby express my gratitude to Messrs. Saddam Abu Kalam Saleh Belendiya and Ibrahim 'Alleel Djeyli Kaafi for their valuable collaboration. I am also indebted to Mrs Suzan Alamin Mubarak and the Department of Linguistics of the University of Khartoum for their precious help in organizing and conducting the research.

⁴ Consonants also appear medially in groups (e.g., **ùxkùt** (simple form) 'thirst', **lòydik** (simple form) 'length', **mìgìdèldì** 'he has listened'). The strength/gemination correlation is likely to be neutralized in this context.

-C-, **-CC-** or undecided **-C(C)-**. As will be seen below (5.4-5.5), the uncertainty concerning the voiceless consonants in this position has consequences for the morphological analysis of the modified noun form.)

In initial position, obstruents contrast as voiceless **p-**, **t-**, **s-**, **c-**, **k-**, realized as weak and/or voiced when they follow a preceding vowel-final word without pause; and voiced **b-**, **d-**, **z-**, **j-**, **g-**, which are clearly strong or geminate (but are transcribed with a single letter).

Lastly, final consonants, also transcribed with a single grapheme, are usually strong or geminate when followed by a vowel-initial word. It is not clear, however, whether the apparent contrasts observed in this context for most obstruents and nasals, as well as for the trill **x**, actually involve allophones or true distinctive phonemes. Voiced obstruents never occur in the final position.

2.2. Vowels

Vowels contrast short and long phonemes, the latter being infrequent. Only central **i** has no long correlate:

	front	central	back
high	i / ii	i	u / uu
low	e / ee	a / aa	o / oo

Vowels

The high central vowel is phonetically closer to **[i]** than to **[ə]**. The low front and back vowels **e / ee** and **o / oo** are phonetically realized as lower mid vowels, i.e., as **[ɛ]** / **[ɛː]** and **[ɔ]** / **[ɔː]** respectively.

2.3. Prosodic features

Shatt Damam exhibits two contrastive pitch levels, usually transcribed on vowels as follows: Low **à** vs. High **á**. However, a contrastive level may also appear on the first component of a strong or geminate nasal (e.g., **n̄máǵic** (simple form) ‘gum (of trees)’ or on a nasal preceding another consonant (e.g., **ñǵánà** ‘count! (you pl.)’).

High pitch does not normally appear more than once in a single word. Furthermore, its position is not invariant in all morphosyntactic contexts, cf.:

gàx (gáxsì⁺) ‘stick’	gáx àñ ‘it is a stick’.
bà (bánì⁺) ‘house’	bánì-mà ‘his house’
bùl (bùldì⁺) ‘drum’	bùldì-mà ‘his drum’

Rather, it is assigned according to rules which are not fully understood. Finally, it is not yet clear whether this prosodic system should be analyzed as tonal or as a stress system.

Although tone/stress is affected in the formation of the modified noun form (e.g., **gàx** vs. **gáxsì⁺** ‘stick’), it never acts as a conditioning factor in this process.

3. Number marking in the simple noun form

Noun number marking employs several patterns which operate on three principles: i. replacement of (a) final segment(s), ii. suffixation to either the singular or the plural form,

and iii. suppletion⁵. Tone/stress changes may be involved in the second case; irregular segmental changes may also appear sporadically in the first two cases.

There may be several variant forms of the plural, or even of the singular, for a given noun (see 3.6. below). The existence of a variant is indicated by “~” preceding the variant form (e.g., **kómbà** / ~ **kómbù** ‘axe’ means that there exists another plural form, / ~ **kòmbáddà** in this particular case).

Only number marking of the simple form is considered here, though the modified form is always indicated in brackets for fuller information⁶.

3.1. Replacement of (a) final segment(s)

a) Sg. -V /pl. -u (frequent)

píibì (piibíni⁺ ~ péeni⁺) / **píibù** (piibúggì⁺ ~ péngì⁺) *child*
tándì (tándíni⁺) / **tándù** (tándúggì⁺) *cloth*
kèlégèlè (kèlégèlèni⁺) / **kèlégèlù** (kèlégèlùggì⁺) *monkey*
kómbà (kòmbáni⁺) / ~ **kómbù** (kómbùggì⁺) *axe*
àppójò (àppòjóni⁺) / **àppójù** (àppòjúggì⁺) *rabbit, hare*

b) Sg. -x /pl. -ɲ (frequent)

àsímèx (àsímèxsi⁺) / **àsímèɲ** (àsímèɲgì⁺) *moon*
kùmùx (kùmùxsi⁺) / **kùmùɲ** (kùmùɲgì⁺) *antelope sp.*
tùmòx (tùmòxsi⁺) / **tùmòɲ** (tùmòɲgì⁺) *bee, honey*

c) Sg. -c /pl. -ɲ, or -ic / -iɲ, or -d(d)ic / -d(d)iɲ (frequent)⁷

kùc (kùc(c)i⁺) / **kùɲ** (kùɲgì⁺) *sorghum, ‘dura’*
cánnìc (cánnìci⁺) / **cánniɲ** (cánniɲgì⁺) *Shatt*
gúttànic (gúttànicì⁺) / **gúttàniɲ** (gúttàniɲgì⁺) *cowrie*
búxùc (búxùci⁺) / **búxiɲ** (búxiɲgì⁺) *jujube tree*
zàládiic (zàládiici⁺) / **zàládiɲ** (zàládiɲgì⁺) *type of bead*
ɲìgíddic (ɲìgíddici⁺) / ~ **ɲìgíddiɲ** (ɲìgíddiɲgì⁺) *dew*

d) Sg. -ic /pl. -u (frequent)

bórògic (bórògici⁺) / **bórògù** (bórògùggì⁺) *kind of bean*
~ **kìdàṅdálìc** (kìdàṅdálìci⁺) / **kìdàṅdálù** (MF?) *bird sp. (stork?)*
ṅàic (ṅàic(c)i⁺) / **ṅàɲù** (ṅàɲùggì⁺) *stone*

e) Sg. -(i)c /pl. -ta/-d(d)a

ɲàxic (ɲàxicì⁺) / ~ **ɲáxtà** (ɲáxtàgì⁺) *grass (gen.)*
sòc (sòc(c)i⁺) / **sòyd(d)à** (sòyd(d)àgì⁺) *tree sp.*

f) Sg. -y /pl. -ɲ

ḃicìy (ḃicìzzì⁺) / **ḃicìɲ** (ḃicìɲgì⁺) *gourd with narrow neck*
ùkkùy (ùkkùyzì⁺) / **ùkkùɲ** (ùkkùwìɲgì⁺) *small gourd*

g) Other exceptional patterns

dèɲ (dèni⁺) / **dìk** (dìkì⁺) *cow, bovine animal*
kìk (kìxi⁺) / **kìn** (kìngì⁺) *person, human being*
àbàṅ (àbàṅzì⁺ ~ àbàzzì⁺) / ~ **àbàṅàs** (àbàṅàsì⁺) *man, male*

⁵ This range of patterns can be instructively compared with the one in Liguri (or Laggori) (Alamin Mubarak 2006), with which it shows great similarity.

⁶ Whenever modified form is unknown, this is indicated as follows: (MF?).

⁷ On the identification and complementarity of the variants, see 3.3 below.

wáawà (wàawáni⁺) / **wàawánàk** (wàawánàkkì⁺) *grandfather/grandmother, father/mother-in-law*
mùsìc (mùsìcì⁺) / **mùsùk** (mùsùkkì⁺) *bean (gen.)*
zìt (zítì⁺) / **zìy** (zìyì⁺) *rope*
àwàt (àwádì⁺) / **àwìj** (àwìjngì⁺) *bird*

3.2. Suffixation in the plural

h) Pl. **-ij** (very frequent)

àsèc (àsècì⁺) / ~ **àséjij** (àséjijngì⁺) *tamarind tree*
fiðik (fiðiksì⁺) / ~ **fiðíjij** (fiðíjijngì⁺) *fish spear*
tùmòs (tùmòstì⁺) / **tùmòsij** (tùmòsijngì⁺) *elephant*

i) Pl. **-u** (very frequent)

dòl (dólì⁺) / **dólù** (dólùgì⁺) *snake (gen.)*
kémìs (kémìstì⁺) / ~ **kémúsù** (kémúsùggì⁺) *leopard*
ùx (ùxì⁺) / **ùxù** (ùxùggì⁺) *woman, wife*

j) Pl. **-ta/-d(d)a** (frequent)⁸

àsèc (àsècì⁺) / ~ **àséjdà** (àséjdàgì⁺) *tamarind tree*
còlóngò (còlóngòni⁺) / **còlóngòddà** (còlóngòddàgì⁺) *river*
òxèy (òxèyì⁺) / **òxéydà** (òxéydàgì⁺) *animal*

k) Pl. **-ti/-d(d)i** (frequent)

bùl (bùlì⁺) / **bùldì** (bùldìgì⁺) *double-headed drum*
dàlù (dàlùni⁺) / **dàlùddì** (dàlùddìgì⁺) *container for drawing water*
mùs (mùstì⁺) / **mùstì** (mùstìgì⁺) *mortar*

l) Pl. **-tj**

ìp (ìpì⁺) / **ìptj** (ìptjngì⁺) *tail*
mès (méesì⁺) / **mèstj** (mèstjngì⁺) *penis*

m) Pl. **-dik**

bà (bánì⁺) / **bádik** (bádik(k)ì⁺) *house*
yà (yánì⁺) / **yádik** (yádikkì⁺) *meat*

n) Other exceptional patterns

áy(d)à (áy(d)ánì⁺) / **áy(d)àk** (áy(d)àkkì⁺) *brother-/sister-in-law*
dìn (dínì⁺) / **dínìw** (dínìggì⁺) *scorpion* (variant of **-u**?)
pèn (péndì⁺) / **péndù** (péndùggì⁺) *wound* (variant of **-ti/-d(d)i** and/or **-u**?)
mègè (mègèni⁺) / **mègèddè** (mègèddègì⁺) *cold (n.)* (variant of **-ti/-d(d)i**?)

3.3. Suffixation in the singular

o) Sg. **-ic** (frequent)

àxsic (àxsicì⁺) / **às** (àskì⁺) *fish (gen.)*
jàpémèsic (jàpémèsicì⁺) / **jàpémès** (jàpémèskì⁺) *star*
yùgic (yùgicì⁺) / **yùk** (yùkkì⁺) *seed*

p) Sg. **-tic/-d(d)ic**

àbáxtic (àbáxticì⁺) / **àbàx** (àbàxkì⁺) *hair*
kàyúddic (kàyúddic(c)ì⁺) / **kàyù** (kàyùggì⁺) *litter, rubbish*

⁸ On the complementary nature of suffixes of the **-t/-d(d)**- type, see 3.4 below.

gǎldic (gǎldicì⁺) / **gǎl** (gǎlgì⁺) *egg*

q) Sg. **-c**

bèebèc (bèebècì⁺) / **bèebè** (bèebègì⁺) *gourd (gen.)*

kàbàmbànjuc (kàbàmbànjucì⁺) / **kàbàmbànjù** (kàbàmbànjùgì⁺) *wild yam sp.*

mòxsòc (mòxsòc(c)ì⁺) / **mòxsò** (mòxsògì⁺) *cucumber*

r) Sg. **-sinic/-zinic**

àṅáxsìníc (àṅáxsìnícì⁺) / **àṅàx** (àṅáxkì⁺) *fly*

tṅgíxziníc (tṅgíxzinícì⁺) / **tṅgíx** (tṅgíxkì⁺) *louse*

s) Other exceptional patterns

dágàràsíc (dágàràsícì⁺) / **dágàràk** (dágàràkkì⁺) *tree sp.*

kúujùt (kúujùtì⁺) / **kúujù** (kúujùgì⁺) *thorn*

Suffixes o), p), and r) (and probably also q)) obviously represent variants of a singulative (sl.) marker, referring to a single representative of entities usually thought of as collective. I have no example of explicit three-way contrasts in Shatt Damam, but Stevenson (1964:96) discusses and illustrates such a situation in Shatt Tebeldia:⁹

“Many nouns have three forms, representing mass or collective / unit / units. [...] The suffix is then replaced by another, or a further suffix is added, to denote the plural of the unit. [...] Examples from Shatt:

gilis / *gilis-ic* / *gilis-u* eggs (collectively), egg / (an) egg / eggs (countable)

ox / *ox-uic* / *ox-uj-iny* worms (collectively) / (a) worm / worms (countable)”

Presumably, the singular forms of replacement patterns c) to e) (see 3.1 above) are marked by the same singulative. Indeed, as Stevenson has remarked, the plural form may in some cases result from substitution in a singulative form:

zàládíc (zàládícì⁺) / **zàládij** (zàládijgì⁺) *type of bead*

bórògíc (bórògícì⁺) / **bórògù** (bórògùgì⁺) *kind of bean*

ṅàxíc (ṅàxícì⁺) / ~ **ṅàxtà** (ṅàxtàgì⁺) *grass (gen.)*

or from addition:

dùc (dúcì⁺) / **dújij** (dújijgì⁺) *flour*

kùlic (kùlicì⁺) / **kùlìjij** (kùlìjijgì⁺) *sesame*

with both types of plural coexisting in the following case:

ṅìgíddíc (ṅìgíddícì⁺) / **ṅìgíddù** (ṅìgíddùgì⁺) ~ **ṅìgíddij** (ṅìgíddijgì⁺) ~ **ṅìgíddijij**

(ṅìgíddijijgì⁺) *dew*

3.4. Variants of the -t/-d(d)- type of suffixes

Some of the above suffixes (pl. **-tjij/-d(d)ij**, **-ta/-d(d)a**, **-ti/-d(d)i** in 3.1-3.2, and sg. (singulative) **-tic/-d(d)ic** in 3.3) show consonant variation. In most cases, the variants are complementary and conditioned by the final segment of the nonsuffixed form in the following way: **-t-** appears after a voiceless obstruent (**p**, **s**, **k**) or a trill (**r**, **x**) vs. **-d(d)-** after a vowel, a nasal (**ṅ**), or a glide (**w**, **l**, **y**). However, some exceptional instances do not fit this distribution. Cases are too scarce to be cogently discussed, but they may provide evidence for underlying (historical?) changes in the final consonant of the nonsuffixed form:

⁹ See also the Shatt data in Tucker and Bryan (1966:235). Palayer (in press, section 3.1.5) offers similar examples in Eref.

àsèc (àsécì⁺) / **àséjɪŋ** (àséjɪŋgì⁺) ~ **àséjdà** (àséjdàgì⁺) *tamarind tree*
sòc (sòc(c)ì⁺) / **sòyd(d)à** (sòyd(d)àgì⁺) *tree sp.*
mìt (míddì⁺) / **míddì** (míddìgì⁺) *oil*
yáxtic (yáxticì⁺) / **yàw** (yáwngì⁺) *horn*

3.5. Suppletion

In some rare cases, nouns exhibit two apparently unrelated forms for sg./pl.:

~ **màlàs** (màlástì⁺) / **wùlèk** (wùlékkì⁺) *spear*
è(e)t (ètì⁺) / **èwè** (èwé(e)gì⁺) *tree, wood*
dòk (dògì⁺) / **wèk** (wèkkì⁺) *thing*

3.6. Variation of singular or plural noun forms

Nouns with varying singular forms are few in number. Note, in the case of **màlàs** ‘spear’, the back formation of a singular (singulative) **wùlégic** from the suppletive plural **wùlèk**:

màlàs (màlástì⁺) ~ **wùlégic** (wùlégicì⁺) / **wùlèk** (wùlékkì⁺) *spear*
kìdàŋdálì (kìdàŋdálì⁺) ~ **kìdàŋdálìc** (kìdàŋdálìcì⁺) / **kìdàŋdálù** (MF?) *bird sp.*
(stork?)
mègèn (mègèndì⁺) ~ **mègènic** (mègènicì⁺) / **mègènú** (mègènúg(g)ì⁺) ~ **mègèniŋ**
(mègèniŋgì⁺) *orphan*
táic (táic(c)ì⁺) ~ **tàŋánìc** (MF?) / **tàŋánù** (tàŋánùggì⁺) *bull*

The coexistence of several plural forms is more frequent. The variants usually involve the most common and productive patterns, namely, the **-iŋ**, **-u**, **-ta/-d(d)a**, and **-ti/-d(d)i** plural suffixes (see h) to k) under 3.2 above). Examples:

àbàŋ (àbàŋzì⁺ ~ àbàzzì⁺) / **àbàŋàs** (àbàŋàsì⁺) ~ **àbàŋiŋ** (MF?) *man, male*
dáamì (dàamínì⁺) / **dáamù** (dàamùgì⁺) ~ **dáamíddì** (dàamíddìgì⁺) *tree sp. (Ficus sp.?)*
kèemìs (kèemífstì⁺) / **kèemúsù** (kèemúsùggì⁺) ~ **kèemísiŋ** (kèemísiŋgì⁺) *leopard*
lìàŋ (lìàŋì⁺) / **lìándà** (lìándàgì⁺) ~ **lìàŋiŋ** (lìàŋiŋgì⁺) *basket*
jàxìc (jàxìcì⁺) / **jàxtà** (jàxtàgì⁺) ~ **jàxíjɪŋ** (jàxíjɪŋgì⁺) ~ **jàxíjù** (jàxíjùggì⁺) *grass*
(gen.)
tèrégà (tèrégànì⁺) / **tèrégù** (tèrégùggì⁺) ~ **tèrégàddà** (tèrégàddàgì⁺) *fishing rod/line*

3.7. Plural-only nouns

Several nouns occur in a plural form only. This is not apparent from the simple form, but is indicated by obligatory agreement with a plural form of the modifier or of the verb (if the noun is a subject), and by the use of the modified-form pl. suffix **-Kì** (see below). These nouns, which may be considered inherently plural, include:

– noncountable nouns (referring to masses or liquids):

bùx (bùxkì⁺) *beer*
mmà (mmáagì⁺) *water*
mmèm (mméŋgì⁺) *milk*
zìk (zìkì⁺) *earth, ground*

– abstract nouns derived from adjectival bases (taking a **-tìk/-d(d)ìk** suffix):

lòydìk (lòydfkì⁺) *length* < **lòì** / **lòìŋ** (be) long, tall
tìbéydìk (tìbéydìkkì⁺) *heat* < **tìbéy** / **tìbéyìŋ** (be) warm, hot

pès̀tìk (MF?) raw, unripe quality < **pès** / **pées̀ìp** (be) raw, unripe
 – abstract deverbal nouns (often, but not systematically taking a **-(a)t** suffix):

ḃàgàt (ḃàgákkì ⁺)	to take, taking	cf.	máabàk	he took
ḡèet (ḡéekì ⁺)	to cry, crying	cf.	máaḡèy	he cried
gàn (gángì ⁺)	to count, counting	cf.	míggàn	he counted
xìs (xìskì ⁺)	to die, dying	cf.	mìgìxsì	he died

3.9. Summary remarks

Noun number marking is mainly expressed through various patterns of alternation or suffixation.¹⁰ Singulative suffixes add a third contrasting term, which essentially functions as a singular.¹¹

The multiplicity of patterns is presumably related to the fact that Shatt allows back formations from both singular and plural forms by the application of another marker – or by another application of the same marker – to the other term of the contrast (see 3.3 and 3.6).¹²

3.10. Nouns with no simple form

As will be seen in section 4.2. below, some nouns take an obligatory modifier and hence have no identifiable simple form (the simple form is sometimes attested in the plural only). Independently of the specific markers of the modified form (see below), some of these nouns resort, more or less clearly, to some of the already-mentioned patterns, e.g.,

- (àcì⁺) / àj̀j̀p (àj̀j̀ḡì⁺) *age-mate* (pl. suffix **-ip**)
- (ḡìbírì⁺) / ḡìbír̀t̀ (ḡìbír̀t̀ḡì⁺) *tongue* (pl. suffix **-ti/-d(di)**)
- (wáarì⁺) / (wàrtáḡì⁺) *space between, interval* (cf. pl. suffix **-ta/-d(d)a**)
- (tèḡérì⁺) / (tèḡértèḡì⁺) *occiput* (cf. pl. suffix **-ti/-d(di)i?**)
- (wàḡì⁺) / (wàdìkkì⁺) *body* (cf. suffix **-dik**)
- (ḡàḡì⁺) / (ḡàḡák̀k̀ì⁺) *elder sibling* (cf. isolated pl. suffix **-ak?**)

Suppletion is also attested:

- (ándì⁺) / (àsìḡì⁺) *arm, hand*
- (àwúnì⁺) / (áḡḡì⁺) *eye, face*
- (ḃòx̀t̀ì⁺) / (ḡj̀ókk̀ì⁺) *person, man*
- (pìx̀ì⁺) / (éḡḡì⁺) *child, youngster (mother speaking), small element of*

In some cases, number is expressed by suffixes typical of the modified form only (sg. **-Tì** or **-ì** / pl. **-Kì**, see below):

- (ḡìx̀t̀ì⁺) / ḡìx̀ (ḡìx̀k̀ì⁺) *tooth, nail, claw*
- (p̀x̀t̀ì⁺) / (p̀x̀k̀ì⁺) *upper arm*
- (wúḡd̀ì⁺) / (wúḡḡì⁺) *ear, leaf*
- (èx̀éḡì⁺) / (èx̀éḡḡì⁺) *foot, leg*

¹⁰ In one case only, number contrast is absent in the simple form, though expressed in the modified form: à̀s (à̀íz̀z̀ì⁺) / à̀s (à̀ísk̀ì⁺) ‘goat’.

¹¹ The few cases of singular variants illustrated in 3.6 above may include three-way contrasts which have not been recognized as such.

¹² As will be seen in the comparative part of this paper (8.2), the possibility of back formation in noun morphology is actually a common feature of the Daju languages which requires that great caution be exercised in noun reconstruction.

The remainder of such nouns usually display a pl. suffix **-ŋ-**, sometimes replacing or combined with another unidentified element, e.g.,

- (**bo**⁺, **boo**⁺) / (**bóŋgì**⁺) *mother*
 (**bàci**⁺) / (**bàajíŋgì**⁺) *shoulder*
 (**zi**⁺) / (**zínŋì**⁺) *head, top*
 (**kòlóstì**⁺) / (**kòlósìŋgì**⁺) *elbow* (sg. **-t-**?)
 (**ŋàasì**⁺) / (**ŋàstíŋgì**⁺) *neck* (pl. **-tì-ŋ-**?)
 (**ó(o)ŋì**⁺) / (**òndíŋgì**⁺) *back, shell (tortoise)* (pl. **-dì-ŋ-**?)

4. The syntactic contexts of the simple vs. modified form

4.1. The simple form

As a general rule, the simple form is the one that appears when the noun is *not modified*, i.e., when it does not take any second-level (lexical or grammatical) modifier with the exception of a cardinal numeral. Let us again take the example of **gàx** (**gáxsì**⁺) / pl. **gàŋ** (**gáŋgì**⁺) ‘stick’.

The simple form **gàx** / pl. **gàŋ** necessarily appears in syntactic contexts of the following types:

– as the unmodified subject of a verbal predicate:

- (1) a. **gàx kàdíŋwà**
 stick PFV.SN.break.MDV
A~the stick broke~has been broken.
 b. **gàŋ kàdíŋnò**
 stick.PL PFV.PN.break.MDV
(The) sticks broke~have been broken.

– as the unmodified object of a verbal predicate:

- (2) (**mà**) **máadíŋ gàx / gàŋ**
 (he) PFV.S3m.break stick / stick.PL
He broke a~the stick / (the) sticks.
 (3) (**mà**) **mìggáwà gàx / gàŋ t’ àxì-dòk**
 (he) PFV.S3m.throw stick / stick.PL in hole
He threw a~the stick / (the) sticks into a~the hole.
 (4) (**mà**) **mìggáwà gàx / gàŋ tìbòx**
 (he) PFV.S3m.throw stick / stick.PL far_away
He threw a~the stick / (the) sticks far away.

– as the unmodified subject of an adjectival predicate:¹³

- (5) a. **gàx tìŋŋ** b. **gàŋ tìŋŋŋ**
 stick (be)_short stick.PL (be)_short.PL
The stick is short. The sticks are short.

– as the unmodified subject of the identifying (6a/b), existential (7a/b), or locative (8a/b) predicates:

¹³ Shatt Damam adjectives constitute a specific category, distinct from both nouns and verbs. Like nouns, their plural form suffixes **-iŋ**; they may function as modifiers but not (?) as the head of a noun phrase. Like verbs, they are marked by prefixed personal indices (but not for tense/aspect), and they may function as predicates.

- (6) a. **gáx àŋ**
stick IDENT
It is a stick.
- b. **gáp àk**
stick.PL IDENT.PL
It is~they are sticks.
- (7) a. **gáx àndìŋ tì nàxìc**
stick EXIST in grass
There is a stick in the grass.
- b. **gáp àttìŋ tì nàxìc**
stick.PL EXIST.PL in grass
There are sticks in the grass.
- (8) a. **gáx àndì nàxìc**
stick LOC grass
There is a stick in the grass ~ the stick is in the grass.
- b. **gáp àttì nàxìc**
stick.PL LOC.PL grass
There are sticks in the grass ~ the sticks are in the grass.

– in the presence exclusively of a cardinal numeral as modifier:¹⁴

- (9) **(mà) máadìŋ gàx núuxù**
(he) PFV.S3m.break stick one
He broke one stick (only).
- (10) **(mà) máadìŋ gáp pìdàx**
(he) PFV.S3m.break stick.PL two
He broke two sticks.

4.2. The modified form

Conversely, the modified form (here **gáxsì⁺** /pl. **gápŋì⁺**) necessarily appears – when modified by a noun which follows it directly with no linking marker in an associative construction. Note that in such cases the final **i** vowel of the modified form is systematically dropped before a vowel-initial following word, this elision being conventionally indicated by [?]:¹⁵

- (11) a. **gáxsì b̀ùgúnìŋ**
stick chief
the stick of the chief ~ the chief's stick
- b. **gápŋì b̀ùgúnìŋ**
sticks.PL chief
the sticks of the chief ~ the chief's sticks
- (12) a. **gáxs' àbàŋ**
stick man
the stick of the man ~ the man's stick
- b. **gápŋ' àbàŋ**
sticks.PL man
the sticks of the man ~ the man's sticks
- (13) **gáxsì còxàt**
stick dancing[Nv]
dancing stick ~ stick for the dance

– when modified by an associative (“possessive”) pronoun:¹⁶

¹⁴ On the syntactic role of the cardinal modifier, see 4.3 below.

¹⁵ This behavior is not specific to the modified noun form; see for instance (3) above, where it affects the preposition **tì** ‘in, at’.

¹⁶ In the case of this and the other grammatical modifiers or markers mentioned below (demonstratives, qualifying connective, and relative), the modifier is conventionally hyphenated to the head noun, whether the

- (14) a. **gáxs-àŋ**
stick-my
my stick
- b. **gáŋg-àŋ**
sticks.PL-my
my sticks
- (15) a. **gáxsì-mà**
stick-his
his stick
- b. **gáŋgì-mà**
sticks.PL-his
his sticks
- (16) a. **gáxs-òk**
stick-our.EXCL
our (excl.) stick
- b. **gáŋg-òk**
sticks.PL- our.EXCL
our (excl.) sticks

– when modified by the demonstratives **-òŋ** ‘this/these’ and **-ìŋì** ‘that/those’, or by the anaphoric **-ì** ‘the (mentioned or known)’ (actually a short form of the ‘remote’ demonstrative **-ìŋì**):

- (17) a. **gáxs-òŋ**
stick-this
this stick
- b. **gáŋg-òŋ**
stick.PL-this
these sticks
- (18) a. **gáxs-ìŋì**
stick-that
that stick
- b. **gáŋg-ìŋì**
stick.PL-that
those sticks
- (19) a. **gáxs-ì**
stick-the
the stick (mentioned)
- b. **gáŋg-ì**
stick.PL-the
the sticks (mentioned)

– when modified by a qualifier (adjective or conjugated verb) which follows the head and requires the qualifying connective (QCON) **-à**:

- (20) a. **gáxs-à tìŋŋ**
stick-QCON (be)_short
a~the short stick
- b. **gáŋg-à tìŋŋŋ**
stick.PL-QCON (be)_short.PL
(the) short sticks
- (21) a. **gáxs-à kàdíŋwà**
stick-QCON PFV.SN.break.MDV
a~the broken stick
- b. **gáŋg-à kàdíŋnò**
stick.PL-QCON PFV.PN.break.MDV
(the) broken sticks

– when modified by a relative clause. The head is marked by the relative marker (REL) **-ì**, and the clause is closed by the definite (DEF) **-(à)ŋ**. The predicate of the relative clause may be a conjugated verb (22a/b-23a/b), an adjective (24a/b) or a cardinal numeral (25a/b):

- (22) a. **gáxs-ì kàdíŋwà-ŋ**
stick-REL PFV.SN.break.MDV-DEF
the stick which is ~ has been broken
- b. **gáŋg-ì kàdíŋnò-ŋ**
stick.PL-REL PFV.PN.break.MDV-DEF
the sticks which are ~ have been broken
- (23) a. **gáxs-ì kàdíŋ-àŋ**
stick-REL PFV.S1.break-DEF
the stick that I broke
- b. **gáŋg-ì kàdíŋ-àŋ**
stick.PL-REL PFV.S1.break-DEF
the sticks that I broke
- (24) a. **gáxs-ì tìŋŋ-àŋ**
stick-REL (be)_short-DEF
the stick which is short
- b. **gáŋg-ì tìŋŋŋ-àŋ**
stick.PL-REL (be)_short.PL-DEF
the sticks which are short
- (25) a. **gáxs-ì núuxù-ŋ**
stick-REL one-DEF
the stick which is one (sole)
- b. **gáŋg-ì pìdàx-àŋ**
stick.PL-REL two-DEF
the sticks which are two

final **i** vowel of the modified noun is elided or not.

The same types of associative construction (modifier = noun or “possessive” pronoun) are found with “relational” nouns, which are necessarily modified and therefore usually appear in the modified form only, e.g., **wúndì**⁺ /pl. **wúngì**⁺ ‘ear, leaf’ and **yòxì**⁺ /pl. **yúggì**⁺ ‘husband’:

- (26) a. **wúndì wàn**
ear body
ear b. **wúngì wàn**
ear.PL body
*ears*¹⁷
- (27) a. **wúndì kík**
ear person
ear of somebody b. **wúngì kík**
ear.PL person
ears of somebody
- (28) a. **wúnd’ èt**
leaf tree
tree leaf b. **wúng’ èt / èwè**
leaf.PL tree / tree.PL
tree leaves (leaves of a tree/of trees)
- (29) a. **wúndì-mà**
ear-his
his ear b. **wúngì-mà**
ears.PL-his
his ears
- (30) **àbàṅ kàdédèy wúnd-è t-àgì**
man PFV.SN.listen ear-one’s_own to-me
The man listened (lit. his own ear) to me.
- (31) a. **yòx’ ùx**
husband woman
(the) woman’s husband b. **yúgg’ ùxù**
husband.PL woman.PL
(the) women’s husbands
- (32) **yòxì péen-àṅ**
husband child-my
my son-in-law (lit. my child’s husband)
- (33) **yòx-àṅ**
husband-my
my husband
- (34) **yúggì-sà**
husband.PL-their
their husbands

Lastly, let us remark that the associative (“possessive”) substitutes – e.g., **nánggì (nànggínì⁺) / kánggì (kànggígì⁺)** ‘mine (sg./pl.)’ – show the same contrast of a simple (35) vs. modified (36a/b) form:¹⁸

- (35) **máabàk nánggì / kánggì**
PFV.S3m.take mine / mine.PL
He took mine (sg.) / mine (pl.).
- (36) a. **nànggín-à càkkà ṅ**
mine-QCON (be)_other IDENT
It is my other one.
- b. **kànggíg-à càkkwîṅ àk**
mine.PL-QCON (be)_other.PL IDENT.PL
They are my other ones.

¹⁷ Naming a “body part” without referring to a precise animate possessor (expressed by a noun or pronoun) requires the modifying noun **wàn** ‘body’, used here as a “default” modifier. The simple form **wàn** only appears as a modifier, even of itself: **wànì wàn** ‘body’.

¹⁸ The associative substitutes clearly involve a **n-** /pl. **k-** (**nì**⁺ /pl. **kì**⁺ ?) substitute, whose isolated form (e.g., before a consonant-initial noun) has not been ascertained.

4.3. Syntactic role of the simple vs. modified noun form contrast

The syntactic distribution of the two noun forms clearly depends on – and at the same time expresses – the type of syntactic relationship of the noun to the following word(s), if any. The simple form occurs when the latter cannot be functionally analysed as a modifier of the noun, which therefore does not have the role of a head. Inversely, the presence of a term which is subordinate to the head noun requires this noun to appear in the modified form.

Let us illustrate these relationships (and roles) by contrasting two morphosyntactic (and semantic) behaviors of **dɛ̀p** (**dɛ̀pɪ̀⁺**) ‘cow’ in the presence of a following adjective **ɲóndɛ̀y** ‘(be) big’:

- (37) a. **(mà) máaɲàp dɛ̀p-à ɲóndɛ̀y**
 (he) PFV.S3m.buy cow-QCON (be)_big
He bought a ~ the big cow.
 [he bought [cow big]]
- b. **(mà) máaɲàp dɛ̀p ɲóndɛ̀y**
 (he) PFV.S3m.buy cow (be)_big
He bought a ~ the cow big (i.e. he bought a ~ the cow and he bought it big).
 [he bought [cow] [big]]

In (37a), the adjective modifies the noun, which appears in the modified form and is marked by the qualifying connective **-à**. The sequence **dɛ̀p-à ɲóndɛ̀y** represents a complex nominal phrase, which constitutes, as a whole, the object of the verbal predicate **máaɲàp** ‘he bought’. In (37b), however, there is no mark of dependency (simple noun form *and* no connective) between the noun and the following adjective, which is semantically secondary and syntactically not subordinate to the noun but to the verbal predicate. The adjective in (37b) serves either as an adverb or as a “depictive secondary predication” which Schultze-Berndt and Himmelmann (2004) characterize as having at the same time a *syntactic* relationship with the main predicate (here the verb) and a *semantic* relationship with one of its arguments (here the object noun).¹⁹

A parallel example (involving the noun **tándì** (**tándìɪ̀⁺**) ‘cloth’ and the adjective **túddì** ‘(be) wet’) may shed some light on the specific structure and semantics of the preceding case:

- (38) a. **(cè) cìgìmási tándì-à túddì**
 (she) PFV.S3f.dry[trans.] cloth-QCONN (be)_wet
She dried a ~ the wet cloth.
 [she dried [cloth wet]]
- b. *? **(cè) cìgìmási tándì túddì**
 (she) PFV.S3f.dry[trans.] cloth (be)_wet
 *? *She dried a ~ the cloth wet.*
 [she dried [cloth] [wet]]

(38a) means that the process of drying is applied to a wet cloth, and is fully acceptable and correct. (38b), however, which means that the process of drying is applied to a cloth in a wet way or with a wet result, is considered as odd and contradictory, if not strictly ill-formed.

¹⁹ A similar contrast between two constructions of the adjective may be observed in Yulu, a Central Sudanic language (Boyeldieu 2008b). Note that (37b) can also be understood as a case of syntactic collision between two clauses sharing a same argument (*phrase-valise*): [[he bought [a/the cow] is big]] ‘he bought a cow and the cow was big’ (R. Boyd, p.c.).

Now there may be a restriction on the validity of the above distributional principle, namely, the behavior of the noun followed – and seemingly modified – by a cardinal numeral (see (9-10) above). One can in fact contrast the direct sequence in (39a) with the relative construction in (39b):

- (39) a. (mà) máádɪŋ gàŋ pìdàx
 (he) PFV.S3m.break stick.PL two
He broke two sticks.
- b. (mà) máádɪŋ gáŋg-ì pìdàx-àŋ
 (he) PFV.S3m.break stick.PL-REL two-DEF
He broke the two sticks (the sticks which are two).

The main semantic distinction between these two sentences seems to lie in the necessarily definite character of the object noun phrase in (39b). Yet the construction in (39a) can also be understood in a similar way to those in (37b-38b) above, and be paraphrased as ‘he broke sticks, and he broke two items of them ~ and these sticks were two’. Presumably, the cardinal numeral in (39a) is again not directly dependent on the noun, but syntactically subordinate to the verbal predicate, a situation not uncommon in African languages,²⁰ which brings out the specific nature of the cardinal numeral “modifier”.²¹

To sum up, Shatt Damam shows a strict correlation between the choice of a simple vs. modified noun form and the absence vs. presence of a (following) directly subordinate modifier of the head noun.

5. The morphology of the modified noun form

The modified form clearly results from the addition of one of a set of suffixes to the simple form. The members of this set may be symbolized as **-ni**, **-i**, **-Si**, and **-Ti** for the singular, and **-Ki** for the plural. However, the choice of the proper suffix in the singular and the phonological outcome of suffixation in each case are not fully predictable. It is therefore necessary to present the behavior of each suffix in detail.

The following tables show the final segments of the simple form and how they interact with the suffix, together with possible variants. Each pattern is illustrated by a few examples which are roughly indicative of its frequency: one example signifies a unique case, while two (or more) examples illustrate patterns which occur twice *at least*.

5.1. Singular suffix *-ni*

The marker is suffixed to circa 25% of the simple singular noun forms:

-V > -Vni	ndì (ndínì ⁺)	tree sp. (<i>Ficus?</i>)
	ŋéepì (ŋèepínì ⁺)	grass sp.
	nángì (nàngínì ⁺)	mine (sg.) (Substitute)
	bàlàsù (bàlàsúnì ⁺)	tree sp. (<i>Ficus?</i>)
	ŋóolè (ŋòolénì ⁺)	maternal uncle
	àbíyà (àbíyànì ⁺)	plant sp. (<i>toxic</i>)
	àbús(s)òlò (àbús(s)òlónì ⁺)	sweet sorghum

²⁰ See the case of two Central Sudanic languages, Gula (Nougayrol 1999:94) and Bagiro (Boyeldieu 2000:106-109).

²¹ Unfortunately, I have no data concerning the form and behavior of the ordinal numerals. Interestingly, Liguri (or Laggori), which has specific terms – different from the cardinals – for ‘first’ and ‘second’, adds a “prefix **na-**” to the cardinal forms for ‘three’ and upwards (Alamin Mubarak 2006), a marker which could be compared to the **-ni** formative of some of the modified-noun forms in Shatt Damam (see below).

Though well attested, the suffix **-ni** is strictly restricted to nouns whose simple form ends with a vowel (-V).

5.2. Singular suffix -i

The marker **-i** is suffixed to circa 50% of the simple singular noun forms:

1.	-u > -uwi	llù (llúwì⁺)	<i>traditional ball game</i>
2.	-ii? > -iiyi	mmii (mmiiy ?) (mmíiyì⁺)	<i>skin, hide</i>
3.	-p > -bi	ìp (ìbì⁺) òp (óobì⁺)	<i>tail</i> <i>mature man</i>
4.	-t > -di	àwàt (àwádì⁺) pògùt (pògúdì⁺)	<i>bird</i> <i>fight, fighting, war (Nv)</i>
5.	-s > -s(s)i	ìs (íisì⁺) màs (màs(s)ì⁺)	<i>dog</i> <i>fire</i>
6.	-s > -si (~ -sti)	kàfis (kàfìsì⁺ ~ kàfìstì⁺)	<i>pestle</i>
7.	-c > -c(c)i	àbáxtic (àbáxticì⁺) sòc (sòc(c)ì⁺)	<i>hair, feather</i> <i>tree sp.</i>
8.	-k > -gi	sòk (sògì⁺) kàfik (kàlìgì⁺)	<i>way, road</i> <i>God</i>
9.	-k > -gi (~ -ksi)	yòk (yógì⁺ ~ yóksì⁺)	<i>fish trap</i>
10.	-k > -xi	kìk (kìxì⁺)	<i>person, human being</i>
11.	-ɲ > -ɲi	dèɲ (dèɲì⁺)	<i>cow, bovine</i>
12.	-ŋ > -ŋi	llàŋ (lláŋì⁺) xòŋ (xòŋì⁺)	<i>basket sp.</i> <i>sun</i>
13.	-l > -li	dòl (dólì⁺) sàgàl (sàgálì⁺)	<i>snake</i> <i>girl</i>
14.	-y > -yi	ɲìxìy (ɲìxìyì⁺) òxèy (òxèyì⁺)	<i>cotton, cotton plant</i> <i>animal</i>
15.	-r > -ri	càbir (càbirì⁺) llèr (llèrì⁺)	<i>hill, mountain</i> <i>collective ground</i>
16.	-r > -ri (~ -rsi)	míddàɲìr (míddàɲìrì⁺) ~ míddàɲìrsì⁺)	<i>fat (n.)</i>
17.	-x > -xi	dòx (dóxì⁺) ùx (ùxì⁺)	<i>mud</i> <i>woman, wife</i>

In two cases only, the suffix **-i** is applied to vowel-final simple noun forms (a high vowel in both cases: 1-2). In most instances, it appears with consonant-final simple forms. The suffixation usually has a voicing effect on a voiceless final obstruent (3, 4, 8-9), except for **-s** (5-6) and **-c** (7). The velar **-k** may also exceptionally shift to **-xi** (10).

Some nouns have freely varying modified forms in which **-i** optionally alternates with either **-Ti** (6) or **-Si** (9, 16).

5.3. Singular suffix -Si

The marker **-Si** is suffixed to circa 15% of the simple singular noun forms:

1.	-b > -bsi	máktàb (màktábsì⁺) (Ar.)	<i>office</i>
2.	-s > -zzi	àis (àízzì⁺)	<i>goat</i>
3.	-k > -ksi	ḃàṛṛàk (ḃàṛṛàksì⁺) kùxùk (kùxùksì⁺)	<i>warthog</i> <i>hen, chicken</i>
4.	-k > -ksi ~ -ssi	ḃàarùk (ḃàarúksì⁺ ~ ḃàarússì⁺)	<i>cattle fence</i>
5.	-k > -ksi (~ -gi)	yòk (yóksì⁺ ~ yógi⁺)	<i>fish trap</i>
6.	-m > -mzi	gáddùm (gáddùmzì⁺) dèm (démzì⁺)	<i>adze</i> <i>spleen (?)</i>
7.	-ɲ > -ɲzi (~ -ɲdi)	àsèɲ (àséɲzì⁺ ~ àséɲdi⁺)	<i>sweet sorghum</i>
8.	-ŋ > -ŋzi	mòdólòŋ (mòdólòŋzì⁺) pám̀bàŋ (pám̀bàŋzì⁺)	<i>cock, rooster</i> <i>flute sp.</i>
9.	-ŋ > -ŋzi ~ -zzi	àbàŋ (àbàŋzì⁺ ~ àbàzzì⁺)	<i>man, male</i>
10.	-w > -wzi	kàkkàw (kàkkàwzì⁺) ɲòxólòw (ɲòxólòwz(z)ì⁺)	<i>animal sp.</i> <i>hyena</i>
11.	-l > -lzi (~ -ldi)	áلكòلòل (áلكòلòلzì⁺ ~ áلكòلòلدì⁺) (Ar.?)	<i>small pot for soup</i>
12.	-y > -yzi	dùkkwìy (dùkkwìyzì⁺) ùkkùy (ùkkùyzì⁺)	<i>hunting stick</i> <i>small gourd</i>
13.	-y > -zzi	ḃìcìy (ḃìcìzzì⁺) sìc(c)ìy (sìc(c)ìzzì⁺)	<i>gourd with neck</i> <i>straight hoe</i>
14.	-r > -rsi	hággàtîwèr (hággàtîwèrsì⁺)	<i>type of bead</i>
15.	-r > -rsi (~ -ri)	míddàṛìr (míddàṛìrsì⁺ ~ míddàṛìrí⁺)	<i>fat (n.)</i>
16.	-x > -xsi	àsímèx (àsímèxsi⁺) gàx (gàxsi⁺)	<i>moon, month</i> <i>stick</i>

The suffix **-Si** is applied only to consonant-final simple noun forms (it appears frequently after final **-k**, **-ŋ**, and **-x**). It is usually realized as **-si** when suffixed to an implosive (1), a voiceless obstruent (3-5) (with a free variant **-ksi** ~ **-ssi** in 4), or a trill (14-16). The voicing of **-s** as **-zzi** (2) is exceptional in this case. It is, however, normally voiced after nasals (6-9) (with a free variant **-ɲzi** ~ **-zzi** in 9) and glides (10-13) (with two possible realizations after **-y**: either **-yzi** (12) or **-zzi** (13)).

Some nouns show optional variants of their modified forms with **-i** (5, 15) or **-Ti** (7, 11) suffixes.

5.4. Singular suffix **-Ti**

The marker **-Ti** is suffixed to circa 10% of the simple singular noun forms:

1.	-t > -tti	sàt (sàttì⁺) zìt (zìttì⁺)	<i>gourd (half round)</i> <i>rope</i>
2.	-t > -ddi	mìt (míddì⁺)	<i>oil</i>
3.	-s > -sti	àfis (àfistì⁺) màlàs (màlástì⁺)	<i>bile</i> <i>spear</i>
4.	-s > -sti (~ -si)	kàfis (kàfistì⁺ ~ kàfisi⁺)	<i>pestle</i>
5.	-m > -mdi	áلكùلùm (áلكùلùmđì⁺) (Ar.?)	<i>sorghum sp. (red grains)</i>

6.	-n > -ndi	d̄n (d̄ndi⁺) mègèn (mègèndi⁺)	<i>scorpion</i> <i>orphan</i>
7.	-ɲ > -ɲdi	màràɲ (màràɲdi⁺)	<i>scar</i>
8.	-ɲ > -ɲdi (~ -ɲzi)	àsɛ̀ɲ (àsɛ̀ɲdi⁺ ~ àsɛ̀ɲzi⁺)	<i>sweet sorghum</i>
9.	-w > -di	òw (óodi⁺)	<i>place</i>
10.	-l > -ldi	mìl (míldi⁺) mòxkòl (mòxkòldi⁺)	<i>song</i> <i>kitchen (building)</i>
11.	-l > -ldi (~ -lzi)	álkòlòl (álkòlòldi⁺ ~ álkòlòlzi⁺) (Ar.?)	<i>small pot for soup</i>
12.	-r > -rti	àsùkàr (àsùkàrti⁺) (Ar.)	<i>sugar</i>

The suffix **-Ti** is applied only to consonant-final simple noun forms (it appears frequently after final **-s** and **-l**). The suffix consonant is realized voiceless (as **-t(t)i**) after a voiceless obstruent ((1, 3-4) but note the exceptional voicing in (2)) or a trill (12), and as voiced (**-di**) after a nasal (5-8)²² or a glide (10-11).

Because of the still unclear status of voiceless obstruents in intervocalic position (see 2.1 above), it is uncertain whether patterns (1-2) should be considered as resulting from suffixation of **-Ti** or **-i** (cf. (4) under 5.2 above, where **-t + -i** is realized as **-di**); see, however, the evidence from **-Ki** (5.5), which argues for a parallel **-Ti** in the present case.

Varying modified-noun forms result from optional suffixation of **-i** (4) or **-Si** (8, 11).

5.5. Plural suffix **-Ki**

The marker **-Ki** alone is suffixed to all plural simple noun forms:

1.	-V > -Vg(g)i	ḃúldi (ḃúldigi⁺) kángi (kángigi⁺) ḃàlàsúddi (ḃàlàsúddigi⁺) tándù (tándúggi⁺) ḃèèḃè (ḃèèḃègi⁺) mòxsò (mòxsógi⁺) sòktà (sòktági⁺)	<i>two-skinned drums</i> <i>mine (pl.) (Substitute)</i> <i>trees sp. (Ficus?)</i> <i>cloths</i> <i>gourds</i> <i>plants sp.</i> <i>ways, roads</i>
2.	-u > -uɲgi	bálàlù (bálàlúɲgi⁺)	<i>pigeons or doves (?)</i>
3.	-Vi > -Vygi	ɲgáí (ɲgáygi⁺)	<i>bones</i>
4.	-ḃ > -ḃki	gàḃ (gáḃki⁺) zàḃ (záḃki⁺)	<i>covering with earth, burying [pl.] (Nv)</i> <i>sowing in holes [pl.] (Nv)</i>
5.	-ḃ > -ḃki	bùḃ (búḃki⁺) bòḃ (bóḃki⁺)	<i>barking [pl.] (Nv)</i> <i>pinching (cheek) [pl.] (Nv)</i>
6.	-f > -fki	zàf (záfki⁺)	<i>pushing [pl.] (Nv)</i>
7.	-t > -tki	bùt (bútki⁺) ḃḃàt (ḃḃátki⁺)	<i>boiling [pl.] (Nv)</i> <i>hitting, striking [pl.] (Nv)</i>
8.	-t > -kki	ḃùɲàt (ḃùɲákkki⁺) kúugit (kùugíkkki⁺)	<i>swelling [pl.] (Nv)</i> <i>laughing [pl.] (Nv)</i>

²² I will not debate here whether the sequence **-nd-** (like **-ɲg-** below) has to be analyzed as one pre-nasalized phoneme or as a succession of two distinct phonemes.

9.	-s > -ski	nèpémès (nèpémèskì ⁺) mmòs (mmòskì ⁺)	stars rotting [pl.] (Nv)
10.	-k > -k(k)i	zìk (zìkì ⁺) bádìk (bádìk(k)ì ⁺) wèk (wèkkì ⁺) tìbéydìk (tìbéydìkkì ⁺) bàk (bàkkì ⁺)	earth, ground [pl.] houses things heat [pl.] (Na) sitting at the fire [pl.] (Nv)
11.	-m > -mgi	dìm (dímgi ⁺) ɲɲàm (ɲɲámgi ⁺)	spending time [pl.] (Nv) looking for [pl.] (Nv)
12.	-m > -ɲgi	mmèm (mméɲgi ⁺)	milk [pl.]
13.	-n > -ngi	gàn (gángi ⁺)	counting [pl.] (Nv)
14.	-n > -ɲgi	kìn (kínɲi ⁺)	people, human beings
15.	-ɲ > -ɲgi	cánnɲɲ (cánnɲɲgi ⁺) kòxòɲ (kòxòɲgi ⁺)	Shatt people scratching o.s. [pl.] (Nv)
16.	-ɲ > -ɲgi	kùdòɲ (kùdòɲgi ⁺) sɲ (sɲgi ⁺)	sweet canes sleeping, sleep, night [pl.] (Nv)
17.	-w > -wg(g)i	èlèw (èléwgi ⁺) cìdɲw (cìdɲwg(g)ì ⁺) gàw (gáwgi ⁺)	trees sp. wild yams sp. throwing [pl.] (Nv)
18.	-w > -ggi	dínɲw (dínɲggi ⁺)	scorpions
19.	-l > -lgi	gìl (gìlgi ⁺) dók(k)òl (dók(k)òlgi ⁺)	eggs standing [pl.] (Nv)
20.	-y > -ygi	púuxiy (púuxiygi ⁺) béréfey (béréfeygi ⁺)	traditional ceremonies pressing [pl.] (Nv)
21.	-iy > -iigi	kídíy (kídíygi ⁺) zìy (zìygi ⁺)	udders, breasts ropes
22.	-iy > -iggi	púuɲiy (púuɲiygi ⁺)	desiring [pl.] (Nv)
23.	-iy > -ikki	pùrúsiy (pùrúsiykkì ⁺)	blowing (with mouth) [pl.] (Nv)
24.	-ey > -eggi	ɲóorèy (ɲóorèygi ⁺)	pounding into flour [pl.] (Nv)
25.	-ey > -iggi	àwágèy (àwágèygi ⁺)	being painful [pl.] (Nv)
26.	-r > -rki	bìr (bírki ⁺)	touching [pl.] (Nv)
27.	-x > -xki	àɲàx (àɲàxkì ⁺) yìx (yíxkì ⁺)	flies knowing [pl.] (Nv)

The suffix consonant is realized voiceless after an implosive (4-6), a voiceless obstruent (7-10), or a trill (26-27). It is realized as voiced after a vowel (1), a nasal (11-16),²³ or a glide (17-22, 24-25).

Some particular cases require a short comment: (2) is irregular; (3) may suggest reanalyzing **ɲɲáì** ‘bone’ as **ɲɲáy**; in (7-8), the final **-t** is either preserved or assimilated to the following **-k-**; in (11-12), **-m + -Kì** may result either in **-mgi** or in **-ɲgi**; in (13-14), **-n + -Kì** may similarly result either in **-ngi** (?) or in **-ɲgi**; 18 is irregular (cf. 17); (21-22) show two different results of **-iy + -Kì**, namely **-iigi** or **-iggi**; (23) shows an unexpected voiceless consonant (cf. 22); (24) is irregular (cf. 23) or erroneous.

²³ See note 22 above.

As for **-Ti** (see 5.4), one might wonder whether pattern (10) (**-k + -Ki** > **-k(k)i**) really supports suffixation of **-Ki** rather than **-i**. If the latter, however, simple noun forms ending in **-k** would become the only ones to take a plural suffix **-i** instead of **-Ki**. Selecting **-Ki** is thus much more plausible, and this reinforces the analysis of **-t(t)i** as **-t + -Ti** rather than **-t + -i** (see 5.4 above).

Lastly, there remain three patterns in which the suffix **-Ki** may be substituted for (?), rather than suffixed to, the final consonant:

28.	-t > -ki	úudít (ùudúkì⁺) (*ùudúkì⁺) wàsàt (wàsákì⁺) (*wàsákì⁺)	<i>planting</i> [pl.] (Nv) <i>sowing by broadcasting</i> [pl.] (Nv)
29.	-t > -ggi	déldèt (déldegì⁺)	<i>hearing, listening (+ear)</i> [pl.] (Nv)
30.	-c > -k(k)i	dèc (dék(k)i⁺)	<i>going, leaving</i> [pl.] (Nv)

Pattern (28) is illustrated by modified noun forms (deverbal nouns or infinitives) in which the intervocalic **-k-** is explicitly *not* strong or geminated, thus suggesting a **-k-** / **-kk-** contrast in this position (see 2.1 above); (29) is irregular in voicing the suffix consonant; (30) may constitute a case of assimilation similar to (8) above, rather than substitution.

5.6. Summary comments

The preceding detailed discussion is intended to show that the modified form of any given simple noun is, in two respects, unpredictable:

1. While **-ni** co-occurs – notwithstanding two debatable instances – with a vowel-final simple noun form, the three remaining singular suffixes, **-i**, **-Si**, and **-Ti**, may all appear in comparable contexts (see the table below) and are therefore independent of the phonological features of the simple noun form and associated rather with its lexical identity. The unpredictable nature of the choice is confirmed by cases of free variation between two of the three suffixes, viz., **-i** ~ **-Si**, **-i** ~ **-Ti**, and **-Si** ~ **-Ti**.

	-ni	-i	-Si		-Ti		-Ki	
			-si	-zi	-ti	-di	-ki	-gi
-V	+	(+)						+
-b			+				+	
-d							+	
-f							+	
-p		+						
-t		+			+	+	+	
-s		+		+	+		+	
-c		+						
-k		+	+				+	
-m				+		+		+
-n						+		+
-ɲ		+		+		+		+
-ŋ		+		+				+
-w				+		+		+
-l		+		+		+		+
-y		+		+				+
-r		+	+		+		+	
-x		+	+				+	

Distribution of suffixes according to the final segment in the simple noun form

2. While the phonological outcomes of suffixation respect the general principle of consonant voicing in the context of a phonetically voiced final segment in the simple form, there are too many irregularities for specific morphological rules to be postulated. Here again, the result of suffixation is unpredictable as a whole and must be treated as lexicalized.

To sum up, even if the five suffixes **-ni**, **-i**, **-Si**, **-Ti**, and **-Ki** are still transparent and doubtless reflect an earlier state of the language in which they were even more clearly identifiable, I consider them to be no longer suffixes in the strictly synchronic sense of the word, but rather view them as fossilized elements in specific modified-noun forms which must be learned and associated with their simple counterparts. Note, however, that these modified forms usually involve two strata of number markers (marker of the simple form + marker of the modified form, see section 9).

Shatt Damam nouns thus appear in two complementary, irreducible forms. As will be seen in the next sections, this situation differs from the ones observed in closely related languages.

6. The noun in the “eastern” languages

The distinction between “eastern” (Shatt and Liguri) and “western” Daju (other languages from Lagowa to Darfur, Wadai, and further west) dates back to Stevenson (1956-57:(40)112, 1964:95-96), who relied essentially on differences in noun morphology, the topic of the present paper.

6.1. Shatt Tebeldia

Stevenson published data on Shatt in two places: Stevenson (1964:95-98) and Tucker and Bryan (1966:231-242). From a comment in another article (Stevenson 1956-57:(40)111),²⁴ we may assume his data are primarily from Shatt Tebeldia, though this is never made explicit:

“Mr. and Mrs. MacDiarmid recorded a short vocabulary and some sentences in ‘Shat’ [footnote not cited], which I find to be the dialect of Shatt Damam. I have since compiled a grammar of SHATT, with texts (unpublished M[anu]S[cript]), based on the dialect of Shatt Tebeldi[a].”

Shatt Tebeldia nouns are similar to the simple-noun forms of Shatt Damam. Let us consider some of the examples given by Stevenson (1964:98) to illustrate the sg./pl. contrast:

Shatt Tebeldia	Shatt Damam	
<i>is</i> /pl. <i>is-u</i>	<i>ìs</i> (íisì ⁺) / <i>ìisù</i> (ìisúggì ⁺)	<i>dog</i>
<i>eek</i> /pl. <i>eeg-iny</i>	<i>ḏeek</i> (ḏéeksì ⁺) / <i>ḏéegìṅ</i> (ḏéegìṅgì ⁺)	<i>giraffe</i>
<i>mas</i> /pl. <i>mas-ta</i>	<i>màs</i> (màs(s)ì ⁺) / <i>màstà</i> (màstàgì ⁺)	<i>fire</i>
<i>mil</i> /pl. <i>mil-dì</i>	<i>mìl</i> (mìldì ⁺) / <i>mìldì</i> (mìldìgì ⁺)	<i>song</i>
<i>ip</i> /pl. <i>ib-tìny</i>	<i>ìp</i> (ìibì ⁺) / <i>ìptìṅ</i> (ìptìṅgì ⁺)	<i>tail</i>
<i>ba</i> /pl. <i>ba-dòk</i>	<i>bà</i> (bànì ⁺) / <i>bàḏìk</i> (bàḏìk(k)ì ⁺)	<i>house</i>
<i>zi-t</i> /pl. <i>zi</i>	<i>zìt</i> (zítì ⁺) / <i>zìy</i> (zìyìgì ⁺)	<i>rope</i>
<i>ḡai-c</i> /pl. <i>ḡai</i>	<i>ḡhàc</i> (ḡhàc(c)ì ⁺) / <i>ḡhàì</i> (ḡhàyìgì ⁺)	<i>bone</i>

²⁴ In the same article (1956-57:(40)112), Stevenson refers to “Characteristics of DAJU” to be presented in a following section (Chap. IV), but the Daju group turns out not to appear in the descriptive part (1956-57:(41) 171).

<i>aw-at</i> /pl. <i>aw-iny</i>	àwàt (àwáđì ⁺) / àwìṅ (àwíṅgì ⁺)	<i>bird</i>
<i>Cann-ic</i> /pl. <i>Cann-iny</i>	cànnìc (cànnìcì ⁺) / cánnìṅ (cànnìṅgì ⁺)	<i>Shatt</i>

The case of probable “relational” nouns, which are not given special treatment by Stevenson in respect to number marking,²⁵ is less clear. They seem to be similar to the Shatt Damam modified form unless a (plural) simple form occurs in the latter; in that case, Shatt Tebeldia may have an equivalent of the modified form (e.g., ‘tooth’) or the simple form (e.g., ‘tongue’) in Shatt Damam:

Shatt Tebeldia	Shatt Damam	
<i>au-ne</i> /pl. <i>a-ge</i>	(àwúnì⁺) / (ággì⁺)	<i>eye</i>
<i>nyix-te</i> /pl. <i>nyix-ke</i>	(ṅìxṅì⁺) / ṅìx (ṅìxkì⁺)	<i>tooth</i>
<i>nyibur-e</i> /pl. <i>nyibur-ti</i>	(ṅìbírì⁺) / ṅìbírù (ṅìbírùgì⁺)	<i>tongue</i>

However, Shatt Tebeldia nouns require a “concord marker” if modified. Let us here quote Stevenson (1964:97) in full:

“Daju has no noun classes, but Liguri and Shatt (not W[estern] Daju) have a type of concord system in which nouns in the singular control various prefixes; with plural and mass nouns there is a uniform prefix *k-*. The prefixes are used with adjectives, possessive and demonstrative pronouns, and with the genitive particle, but not with verbs. Examples from Shatt:

Zero prefix:	<i>sat əṅ</i>	this gourd	plur. <i>satu k-əṅ</i>
	<i>sat aṅwonte</i> *	big gourd	<i>satu k-aṅwəṅiny</i>
Prefix <i>n-</i> :	<i>ba n-əṅ</i>	this house	<i>badök k-əṅ</i>
	<i>ba n-aṅwonte</i>	big house	<i>badök k-aṅwəṅiny</i>
Prefix <i>t-</i> :	<i>malas t-əṅ</i>	this spear	<i>wilek k-əṅ</i>
	<i>malas t-aṅwonte</i>	big spear	<i>wilek k-aṅwəṅiny</i>
Prefix <i>s-</i> :	<i>gax s-əṅ</i>	this stick	<i>gany k-əṅ</i>
	<i>gax s-aṅwonte</i>	big stick	<i>gany k-aṅwəṅiny</i>

[footnote:] * The *a-* of *aṅwonte* is itself a prefix, but has not been hyphenated here as we are concerned only with the concord.

This use of these prefixes depends to a large extent upon phonetic criteria, though one or two notional factors are involved. Thus in Shatt (Liguri is very similar) with many nouns having a final vowel the concord prefix is *n-*; some in *-s* have concord *t-*; nouns in *-n* and *-l* have *d-*; those in *-k* and *-x* have *s-*; nouns ending in other consonants and parts of the body ending in a vowel have zero concord.”

Like examples in Shatt Damam would be analyzed and transcribed in the following way: **sàtt-òṅ** /pl. **sàttúg-òṅ** ‘this gourd’, **sàtt-à ṅòndèy** /pl. **sàttúg-à ṅòṅṅ** ‘big gourd’, **bán-òṅ** /pl. **bádìk(k)-òṅ** ‘this house’, **bán-à ṅòndèy** /pl. **bádìk(k)-à ṅòṅṅ** ‘big house’, etc.

Stevenson (in Tucker and Bryan 1966:238-239) is still more explicit concerning the separability of the “concord marker” – or “determinative” – from the noun:

“In the eastern languages, there is a Particle which would appear to be a Determinative. It stands between a Noun and a following Qualifier (Adjective, Numeral, Possessive, Demonstrative, the Interrogative ‘which’, and Noun Possessor). [...] It cannot properly be

²⁵ Stevenson obviously does not analyze the *-ne/-ge* of *au-ne/a-ge* ‘eye’ or the *-te/-ke* of *nyix-te/nyix-ke* ‘tooth’ as “concord markers”, but rather as number markers of “body-part” nouns ending in a vowel which require a “zero concord” (see quote below).

described as a Prefix to the Qualifier, since in the western languages a final element in the Noun corresponds to this particle; neither, however, is it here a Suffix, since it is separable and repeatable (for convenience, it is here hyphenated to the following word). Compare

SHATT **malas t-əŋ t-əŋ** lit. spear this my DAJU of Darfur **malafsti** spear²⁶

Unfortunately I have no similar example for Shatt Damam and am unable to say whether such a construction is possible or not. The sole available instance of a complex modification is illustrated in (40) (cf. **sikkínè (sikkínèni⁺)** (Ar.) ‘knife’ and **sikkínèn-àŋ** ‘my knife’):

- (40) **máalù zít nà sikkínèn-àŋ-g-ì wiyéy-àŋ**
 PFV.S3m.cut rope with knife-my-REL (be)_sharp-DEF
He cut the rope with my knife which is sharp.

where the modified noun form **sikkínèni⁺** directly receives both the “possessive” (**-àŋ > -àŋg-?**) and the relative **-ì** with no repetition of a **-ni⁺** “suffix”.

Thus, what Stevenson considers to be a concord marker or a determinative separate from the noun (though prefixed to the modifier) in Shatt Tebeldia corresponds to – and most likely has become – a fixed suffix, now part of the modified noun form, in Shatt Damam. As will be seen in section 7, the latter represents in this respect a transitional stage towards the situation in the “western” Daju languages.

6.2. Liguri

Liguri nouns, too, are usually similar to the simple form in Shatt Damam. Let us take some illustrations from Thelwall (1981:51-60, 68-70, 132-161) and Alamin Mubarak (2006)²⁷ (note that the plural and even the singular markers may diverge between Liguri and Shatt D):

Liguri (Thelwall)	Liguri (‘Laggori’) (Alamin Mubarak)	Shatt Damam	
oso-x /pl. oso-ɲ	ozo-x / ozo-ɲ	òsòx (òsòxsì ⁺) / òsòɲ (òsòɲgì ⁺)	<i>lion</i>
emsex /pl. emsep	emze-x / emze-ɲ	àsímèx (àsímèxsì ⁺) / àsímèɲ (àsímèɲgì ⁺)	<i>moon</i>
as /pl. as	as / as	àis (àízzì ⁺) / àis (àískì ⁺)	<i>goat</i>
eewes /pl. ewe	ewe-s / ewe	è(e)t (èttì ⁺) / èwè (èwé(e)gì ⁺)	<i>tree/stick²⁸</i>
dol /pl. door-u	doll	dòl (dólì ⁺) / dólù (dólùg(g)gì ⁺)	<i>snake</i>
iis /pl. iiz-ə	is	ìs (íisì ⁺) / ìisù (ìisùggì ⁺)	<i>dog</i>
fosok / fosokta	bozzok	sòk (sògì ⁺) / sòktà (sòktágì ⁺)	<i>road, way</i>
iya	iya / iyatta	yà (yánì ⁺) / yádìk (yádìkkì ⁺)	<i>meat</i>
moxt-a /pl. moxt-u		mòxtà (mòxtánì ⁺) / mòxtù (mòxtùggì ⁺)	<i>horse</i>

²⁶ In the following paragraph, Stevenson seems to be less sure about the conditioning of the singular “concord marker” or “determinative”: “The nature of the alveolar consonant [i.e., **n-**, **s-**, **z-**, **t-**, or **d-**, if not zero] in the singular varies according to principles not at present understood.”

²⁷ Stevenson (1964:111) distinguishes three “very closely related” dialects in the Liguri “cluster”: Liguri (**lǝgǝrik**), Sabúri (**cábburi**) and Tallau (**fillou**). Stevensons’s, Thelwall’s, and Alamin Mubarak’s data could be from Liguri, although this is not explicit (the latter says in fact “The language under consideration is called ‘Laggori’ [...]”).

²⁸ The singular forms of Liguri are obviously back formations from the plural obtained by adding a singulative **-s**.

oxoi /pl. oxoi-da		òxèy (òxéyì ⁺) / òxéydà (òxéydàgì ⁺)	<i>animal (gen.)</i>
kuubin /pl. kuubinidi		kìbìn (kìbìndì ⁺) / kìbìnú (kìbìnúggì ⁺)	<i>wild cat</i>
	ba / ba-tta	bà (bànì ⁺) / bàdìk (bàdìk(k)ì ⁺)	<i>house</i>
	kadoxo-s / kadoxo	kàdàxwìc (kàdàxwìcì ⁺) / kàdàxù (kàdàxùggì ⁺)	<i>ant/locust</i>
meem	mem / mem	mmèm (mméngì ⁺) [pl.]	<i>milk</i>
ma		mmà (mmáagì ⁺) [pl.]	<i>water</i>
buux	buux / buɯ	~ buux (bùxkì ⁺) [pl.]	<i>beer</i>
sia	səyat	sìyàt (sìyákkì ⁺) [pl.]	<i>eating, food</i> (Nv)
	bagat	bàgàt (bàgàkkì ⁺)	<i>taking,</i> <i>marrying,</i> <i>marriage</i> (Nv)

However, the presumably “relational” nouns usually correspond to the modified form in Shatt Damam, even ‘breast, udder’ (not a “relational” noun in Shatt D); an exception is ‘male, husband’ (apparently not a “relational” noun in Liguri):

Liguri (Thelwall)	Liguri (‘Laggori’) (Alamin Mubarak)	Shatt Damam	
aune /pl. age	awən / agg	(àwúnì⁺) / (ággì⁺)	<i>eye</i>
une-te /pl. uge	unet / uggə	(wúndì⁺) / (wúngì⁺)	<i>ear</i>
ix, exne /pl. exge		(èxéni⁺) / (èxéngì⁺)	<i>leg, foot</i>
ɲase /pl. ɲastige		(ɲáasi⁺) / (ɲástíngì⁺)	<i>neck</i>
muun- /pl. mutku-		(múuni⁺) / (mùdúkkì⁺)	<i>nose</i>
wane /pl. watkana		(wànì⁺) / (wàdìkkì⁺)	<i>body</i>
səmd- /pl. səmdig-		(sìndì⁺) / (sìndíngì⁺)	<i>knee</i>
yox /pl. yu		(yòxì⁺) / (yúggì⁺)	<i>male, husband</i>
kidice /pl. kidfiige		kídic (kàdíc(c)ì⁺) / kídìy (kàdífìgì⁺)	<i>breast, udder</i>

Now the information about the morphosyntactic behavior of Liguri nouns is somewhat contradictory. On one hand, according to Stevenson (1964:97 and in Tucker and Bryan 1966:238-239), Liguri requires “concord markers” or “determinatives” like Shatt Tebeldia (but Stevenson's examples are from Shatt only). On the other hand, Alamin Mubarak (2006: 21-23) says nothing of such associative markers. She simply states: “The noun is placed in the initial position, and the modifiers come after it [...]”, and, in fact, all her examples show what looks like a “simple” noun as the head, without any linking morpheme following or even suffixed:

- (41) **bozzok kəlləb** (adjective)
street narrow
narrow street
- (42) **kik maaro** (demonstrative)
man this
this man

- (43) **ba maria pappar** (demonstrative + adj.)
house that wide
that wide house
- (44) **batta makia papparəŋ** (demonstrative + adj.)
house.PL those wide.PL
those wide houses
- (45) **lak as** (noun)
room goat
goat's room
- (46) **ax ŋiŋəs** (noun)
hole rat
rat's hole
- (47) **ba - aggə bikke baball** (possessive + adj. + adj.)
house - my big white
my big white house
etc.

Unless Stevenson's and Alamin Mubarak's data are not from the same dialect, and their sources actually differ that greatly, the two positions are irreconcilable and obviously require further investigation.

7. The noun in the “western” languages

In short words, “western” Daju languages are characterized by the fact that they show only one noun form, which usually incorporates the former associative marker, i.e., this noun form is in most cases similar to the modified form of Shatt Damam, whether it be syntactically modified or not. Let us quote Stevenson (1964:97)²⁹ again, who is very clear on this point, although his diachronic interpretation of the facts is questionable:

“These concords [i.e., the concords of Shatt and Liguri] must, I think, have arisen in part from the transference of suffixes, still to be found in W[estern] Daju, from nouns to the following qualifiers. (Cf. the type of change which has given English “a newt” instead of “an ewt”.) This may be illustrated by a few examples of nouns and concords in Shatt compared with their equivalents in Darfur Daju:

	Shatt	Concord	Darfur Daju
spear	<i>malas</i>	<i>t-</i>	<i>malaŋte</i>
tree	<i>et</i>	<i>t-</i>	<i>ette</i>
place	<i>ou</i>	<i>d-</i>	<i>ode</i>
sheep	<i>sagön</i>	<i>d-</i>	<i>ŋaginde</i>
donkey	<i>kacö</i>	<i>n-</i>	<i>kacine</i>
horse	<i>moxta</i>	<i>n-</i>	<i>mörtane</i> ”

Thelwall (1981: 61-62, 130) rightly objected to Stevenson's assumption of “western” suffixes becoming “eastern” autonomous markers (we will come back to this point in section 9). The important thing here is that Stevenson perceptively observed the similarity between the “western” nouns and the “eastern” nouns + concord. Nevertheless, this general principle deserves a more detailed study that will now be conducted by consideration of four representative languages.³⁰

²⁹ The text directly follows the one cited under 6.1 above.

³⁰ These languages have been chosen on account of both their geographical location in the Daju area and the quality of the available documentation.

7.1. Lagowa

Lagowa (sometimes spelled Lagawa) is spoken in the Nuba hills of the Sudan (west of Kadugli) and is geographically close to Shatt and Liguri, although it belongs linguistically to the “western” Daju languages.

Abbaker Ismail (2000) discusses the phonology and noun number morphology of Lagowa. In chapter 5 (entitled “Word-formation processes”, p. 92-106), he gives a few examples of noun modification which show that the noun form undergoes no change outside dropping final *-e* in case of suffixation when modified by a “possessive” pronoun or a demonstrative, e.g.:

langakke <i>singing</i>	langakkang <i>my singing</i>
kunce <i>dura</i>	kuncang <i>my dura</i>
	kuncinka <i>your (sg.) dura</i>
	kunceena <i>his/her dura</i>
	etc.
kantane <i>hen</i>	kantanang <i>my hen</i>
	kantane ma <i>this hen</i>
kantuke <i>hens</i>	kantukang <i>my hens</i>
	kantuke sa <i>these hens</i>

The lexical data presented below are cited from Abbaker Ismail (2000),³¹ sometimes completed by Thelwall (1981).

7.2. Nyala

Since various Daju-speaking groups are settled in Darfur (Sudan), the label Nyala is preferred (Jungraihtmayr 1978, Thelwall 1981) for the language spoken in the “Daju hills” northeast of Nyala.

Although there is no precise information about the noun phrase in Nyala, the language constitutes an important bridging reference with the westernmost languages, Sila and Eref. It is lexically relatively well documented thanks to Jungraihtmayr (1978) and Thelwall (1981), the sources of the data presented below.

7.3. Sila

Daju of Dar Sila is spoken in southern Wadai (region of Goz Beida, Chad), and extends over into the Sudan. The Sila data are based on personal documentation, collected in Abéché (1995).

As a general rule, Sila nouns are segmentally invariant (except for possible loss of final *-e* in case of suffixation) when they are syntactically modified.

Noun

The modifier may be a noun according to three different patterns:

a) the head comes first and is separated from the modifier by the associative marker (also relative, see below) **nì** /pl. **kì** (number agreement is not strict: the sg. form **nì** often stands with a head in the plural). This construction essentially refers to associations of a *specific* nature, e.g.:

àgìcé <i>house</i>	àgìcé nì fégǹè <i>house of the chief</i>
àgìcǹgé <i>houses</i>	àgìcǹgé kǹ (~ nì) fégǹè <i>houses of the chief</i>

³¹ Note that Abbaker Ismail uses his own transcription which is sometimes misleading: **b**, **d**, and **j** stand for /b/, /d/, and /ʃ/, respectively; **ng** and **nk** for /ŋ/ and /ŋk/ = [ŋg]; internal **p**, **t**, and **k** for [b], [d], and [g].

èréεngè <i>feet, legs</i>	èréεngè kì (~ nì) múusè <i>footprints of gazelle</i>
cáácè <i>child</i>	cáácè nì ñáapjè <i>upper grindstone (lit. child of grindstone)</i>
ìisè <i>dog</i>	ìisè nì kórrè <i>insect sp. (lit. dog of sky)</i>

Note that this associative marker is in fact an associative *substitute* ('the one(s) of'), which may function by itself as a head, e.g.:

- (48) **máa nì / kì yóogénà kàbàgín**
 he the_one_of / the_ones_of man.DEF PFV.S3.take
He took the one / the ones of the man.

b) the head is immediately followed by the modifier. The association is essentially of a *generic* nature:

àgìcé <i>house</i>	àgìcé àwàadè <i>nest (lit. house bird)</i>
ñiccè <i>excrement</i>	ñiccè kùláanè <i>scoria (lit. excrement iron)</i>
cáácè <i>child</i>	cáácè wúrè <i>girl (lit. child woman)</i>
cóokè <i>children</i>	cóokè wúrgè <i>girls (lit. children women)</i>
àsiccè <i>fish</i>	àsiccè ñáaré <i>fish sp. (Labeo sp.) (lit. fish hyena)</i>

c) the modifier precedes the head (the difference with respect to b) is unclear):³²

èrré <i>foot, leg</i>	èrré bàaté <i>sole of foot (lit. foot sole)</i>
àandé <i>hand</i>	àandé cáácè <i>finger (lit. hand child)</i>
àsíngè <i>hands</i>	àsíngè cóokè <i>fingers (lit. hands children)</i>

Modifying adjective

The modifier may be a modifying adjective³³ which follows the head noun and agrees with it in number:

àaré <i>hole</i>	àaré tàwàlòynò <i>deep hole</i>
àrtíngè <i>holes</i>	àrtíngè tàwàlòykò <i>deep holes</i>
ùngé [pl.] <i>water</i>	ùngé kìrkírkò <i>cold water</i>

Cardinal numeral

It follows the (head?) noun:

àsiccè <i>fish</i>	àsiccè úngùn <i>one fish</i>
àsìckè <i>fish (pl.)</i>	àsìckè bídàk <i>two fish</i>
ìisígè <i>dogs</i>	ìisígè kòdòs <i>three dogs</i>

Relative clause

The relative clause follows the head noun and is marked by **nì** /pl. **kì** (similar to the associative marker or substitute, see above):

- (49) **(ànàñ) nàdúpàs ìléwgé kì kámàsà**
 (me) FUT.S1.burn leaf.PL REL.PL PFV.P3.dry
I will burn the leaves that dried out.

Demonstratives

They directly follow the head noun (with a regressive tone-raising effect):

sittè <i>rope</i>	sitté án <i>this rope</i>
sùigè <i>ropes</i>	sùigé áñ <i>these ropes</i>

³² Note that Sila shows a SOV order as an apparently free variant of SVO.

³³ Sila shows two parallel categories of *modifying* and *predicative* adjectives (e.g. **kìrkírrò** /pl. **kìrkírkò** 'cold' vs. **kìrkírá** /pl. **kìrkíriñ** 'be cold'), which are distinct from both nouns and verbs (Boyeldieu 2008a).

tàbbé	<i>field</i>	tàbbé àdí	<i>that field</i>
tàbbàngè	<i>fields</i>	tàbbàngé àggí	<i>those fields</i>
ùngé [pl.]	<i>water</i>	ùngé àggí	<i>that water</i>
àgìcé	<i>house</i>	àgìcé àd'éera	<i>that house over there</i>
àgìcìngé	<i>houses</i>	àgìcìngé àgg'éera	<i>those houses over there</i>

Associative pronouns

They are suffixed to the head noun. The noun's final **e** (the most common final segment in Sila) is dropped with vowel-initial pronouns (e.g., **-àŋ** 'my') or possibly harmonized in other cases (e.g., > **i** before **-ce** 'her' or **-ya** 'their', > **u** before **-ma** 'his'):

tàatè	<i>gourd</i>	tàat-àŋ	<i>my gourd</i>
		tàatì-cé	<i>her gourd</i>
		tàatì-yá	<i>their gourd</i>
tàatìgé	<i>gourds</i>	tàatìg-àŋ	<i>my gourds</i>
		tàatùgì-cé	<i>her gourds</i>
		tàatìgì-yá	<i>their gourds</i>
èrré	<i>foot, leg</i>	èrr-àŋ	<i>my leg</i>
		èrrú-mà	<i>his leg</i>
èréengè	<i>feet, legs</i>	èréeng-àŋ	<i>my legs</i>
		èréengù-má	<i>his legs</i>
		èréengì-yá	<i>their legs</i>

Definite

The definite **-nà** (which has an anaphoric value: 'the mentioned or known n') is suffixed to nouns ending in **e**:

tàatè	<i>gourd</i>	tàaté-nà	<i>the gourd</i>
tàatìgé	<i>gourds</i>	tàatìgé-nà	<i>the gourds</i>

Special cases

There are, however, exceptions in the two last cases to the general principle of noun invariance over the different syntactic contexts. These exceptions involve a fair number of *singular* nouns ending in **-e**, as well as nouns ending in another vowel (i.e., **-a**, **-i**, **-o**, or **-u**) or in a consonant (we refer here exclusively to singular forms whose plural counterparts are "regular" nouns ending in **-e**).

With an associative pronoun, these special singular nouns must use a secondary form, characterized by a suffix **-ne**:

tàbbé (tàbbèné-)	<i>field</i>	tàbbèn-àŋ	<i>my field</i>
		tàbbùnù-mà	<i>his field</i>
		tàbbìnì-yà	<i>their field</i>
cíicì (cíicìné-) [sg. only]	<i>spear sp.</i>	cíicìn-àŋ	<i>my spear</i>
		cíicìnù-má	<i>his spear</i>
kùrùŋdúŋ (kùrùŋdúŋnè-)	<i>harp</i>	kùrùŋdúŋn-àŋ	<i>my harp</i>
		kùrùŋdúŋnù-mà	<i>his harp</i>
		kùrùŋdúŋnì-yà	<i>their harp</i>

Compare the behavior of the corresponding "regular" plural forms:

tàbbàngè	<i>fields</i>	tàbbàng-àŋ	<i>my fields</i>
		tàbbàngù-má	<i>his fields</i>
		tàbbàngì-yá	<i>their fields</i>

kùrùḡdùḡkè <i>harps</i>	kùrùḡdùḡk-àḡ <i>my harps</i>
	kùrùḡdùḡkù-má <i>his harps</i>
	kùrùḡdùḡkì-yá <i>their harps</i>

With the definite, the same nouns show divergent behaviors: singular nouns ending in **-e** have their final vowel lengthened before the suffixed **-nà** form of the definite, while nouns ending in another vowel or in a consonant are followed by a variant **nánà**:

tàbbé (tàbbée-) <i>field</i>	tàbbée-nà <i>the field</i>
cíicì [sg. only] <i>spear sp.</i>	cíicì nánà <i>the spear</i>
kùrùḡdùḡ <i>harp</i>	kùrùḡdùḡ nánà <i>the harp</i>

Compare again the “regular” plural counterparts:

tàbbàngè <i>fields</i>	tàbbàngé-nà <i>the fields</i>
kùrùḡdùḡkè <i>harps</i>	kùrùḡdùḡké-nà <i>the harps</i>

The more than one hundred nouns ending in a vowel other than **-e** or in a consonant refer primarily to specific plants or animals. They clearly represent a cultural vocabulary that is probably not common to the Daju languages and has been acquired in more recent times. On the other hand, the more than two hundred nouns ending in **-e** and requiring a variant in **-ne/-ee** in this context include items that have clear cognates in the related languages, as will be seen below (8.3).

7.4. Eref

Daju of Eref constitutes, together with its close variant, Daju of Mongo, what Palayer (in press) calls Daju of Abu Telfan. Both dialects are spoken in the north of the Guéra range and make up the westernmost representative of the Daju languages. Eref data are taken from the detailed in-depth work of Palayer (in press, forthcoming).³⁴

As a rule, Eref nouns do not change form when they are modified, except for possible loss of final **-e**.

Noun

Associative constructions with a noun modifier show two patterns:

a) The modifier directly follows the head, whose final **-e** may drop in certain segmental sequences:

úḡgè <i>water</i>	úḡgè mòrré <i>well's water</i>
	úḡgè ùrké <i>drinking water</i>
mèḡgè <i>milk</i>	mèḡgè tèḡḡé <i>cow's milk</i>
ándè <i>arm</i>	ándè dúdì <i>Dudi's arm</i>
úḡgé <i>women</i>	úḡgé dúdì <i>Dudi's women</i>
símé <i>belly, inside</i>	símé bàné ~ sím bàné <i>inside of the compound</i>
áré <i>hole</i>	áré nḡsìgè ~ ár nḡsìgè <i>rats' hole</i>

b) The modifier appears after the “possessive pronoun” **ná** /pl. **ká** ‘the one(s) of’, used here as a connective:

sàḡàndé <i>sheep</i>	sàḡàndé ná déwèyḡé <i>sheep for sale</i>
míldìḡé <i>songs</i>	míldík ká kùkìḡgónà <i>song of our ancestors</i>
ḡské [pl.] <i>war</i>	ḡské ká èmsírḡgé bìsténdà <i>war of nine months</i>

³⁴ I am especially grateful to Pierre Palayer for allowing me to quote his as yet unpublished volumes. Examples illustrating noun phrases are chiefly drawn from sections 3.5-3.7 of the *Grammar*, and lexical data from the *Dictionary*. Both works will represent a major contribution to the knowledge of the Daju languages.

Adjective

The adjective immediately follows the head noun and agrees with it in number:

sàgàndé	<i>sheep</i>	sàgàndé yíllò	<i>black sheep</i>
sàgàndígè	<i>sheep (pl.)</i>	sàgàndígè yíllíkò	<i>black sheep (pl.)</i>
úngè [pl.]	<i>water</i>	úngè kíríkírkò	<i>cold water</i>

Cardinal numeral

Modifying cardinal numerals immediately follow the head:

sìtté	<i>rope</i>	sìtté rágì	<i>one (sole) rope</i>
cókké	<i>children</i>	cókké mùdùk	<i>five children</i>

Relative clause

The relative clause is marked by the “specificative” pronoun **mé** /pl. **méŋ** ‘the one having the quality of, being characterized by’:³⁵

- (50) **kùlké** **méŋ** **ɖílkínè** **íís** **kì** **kòo** **sà**
sesame[pl.] the_ones_who have_been_pounded dog he took_away them
The sesame that had been pounded, the dog took it away.

Demonstratives

They follow the head noun, with possible elision of final **-e**:

ùré	<i>woman</i>	ùré ánnì ~ úr ánnì	<i>this woman</i>
òdé	<i>place</i>	òd ánnì	<i>this place</i>
		òd áanì	<i>that place</i>
ŋáké [pl.]	<i>word, matter</i>	ŋáké ággì ~ ŋák ággì	<i>this matter</i>

“Possessive Pronouns”

They are usually directly suffixed (cf. **-a** ~ **-aŋga** ‘my’, **-uma** ‘his’, **-isa** ‘their’) to the noun form, which loses its final vowel:

kéynè	<i>house</i>	kéynà ~ kéynàngá	<i>my house</i>
		kéynùmà	<i>his house</i>
		kéynìsà	<i>their house</i>
òdé	<i>place</i>	òdùmà	<i>his place</i>
kùkúrgé	<i>hen</i>	kùkúrgùmà	<i>his hen</i>
álà	<i>tree sp. (Celtis sp.)</i>	álùmà	<i>his Celtis</i>
dàabínò	<i>red millet</i>	dàabínà	<i>my red millet</i>
		dàabínùmà	<i>his red millet</i>

Nevertheless, some loanwords ending in a vowel, as well as consonant-final nouns (often also loanwords), require – sometimes as free variants – specific possessive forms involving an initial **n-**. According to Palayer, these forms result from a combination of the regular possessive suffixes with the “Possessive Pronoun” **ná** /pl. **ká** ‘the one(s) of’ (see above).³⁶

gáyìlè (Ar.)	<i>end of morning, midday</i>	gáyìlè ná	<i>my midday</i>
		gáyìlè nùmà	<i>his midday</i>

³⁵ See for instance **mé dàngáyìnè** ‘prisoner’ (lit. the one of prison), **mé àrké bònnìggè** ‘tailor’ (lit. the one sewing cloths), **méŋ tùkkè** ‘people of the cows (cowherds, owners)’, **méŋ cákìné** ‘people from Tchakiné (village)’.

³⁶ Since these nouns are all apparently singular (cf. the “normal” behavior of some plural counterparts in the table), the specific forms of the possessive actually only prefix **n-** (forms in brackets followed by ‘?’ are not cited as such but are deduced from the morphological comments made by the author).

mòsdòṅó (or?)	<i>groundnut</i>	mòsdòṅó ná	<i>my groundnut</i>
		mòsdòṅó númà	<i>his groundnut</i>
màsàṅíṅgè	<i>groundnuts</i>	(màsàṅíṅgà ?)	<i>my groundnuts</i>
		(màsàṅíṅgùmà ?)	<i>his groundnuts</i>
gúggù	<i>pigeon, dove</i>	gúggù númà ~ gúggùmà	<i>his pigeon</i>
tàmátìṃ (Ar.?)	<i>tomato</i>	tàmátìṃ númà	<i>his tomato</i>
bál (Fr.)	<i>ball</i>	bál númà	<i>his ball</i>
bàlnígè	<i>balls</i>	bàlnígùmà	<i>his balls</i>
gàzzás (Ar.)	<i>bottle</i>	gàzzás númà	<i>his bottle</i>
gàzàýísgè	<i>bottles</i>	gàzàýísgùmà	<i>his bottles</i>

Lastly, possessive forms combined with the “Possessive Pronoun” **ná** /pl. **ká** may also be used with “regular” nouns (cf. modification by a noun above), although Palayer does not comment on any meaning contrast:

yùgé	<i>thing</i>	yùgé náṅgà	<i>my thing</i>
		cf. yùgáṅgà (?)	<i>idem?</i>
wàkké	<i>things</i>	wàkké káṅgà	<i>my things</i>
		cf. wàkkáṅgà (?)	<i>idem?</i>

8. Morphological correspondences

As we have already seen, “western” (i.e., Lagowa, Nyala, Sila, and Eref) noun forms correspond, in principle, to the modified noun form of Shatt Damam (Liguri is not considered here). However, before looking at the evidence for these correspondences, we need to make some introductory remarks on the comparative series of lexical items (henceforth LS) illustrated in the Appendix (see below).

8.1. On segmental correspondences

There is no space here to go into the detail of the segmental correspondences which would be necessary to justify fully the validity of the comparative series. As has been pointed out by Stevenson (1964:96) and Thelwall (1981:119-120) in a first attempt at comparison and reconstruction of the Daju languages, a striking feature is the [velar fricative] **x** of the “eastern” languages, which may correspond to **r**, **k**, **g**, or **h** in the “western” languages.³⁷

I will nevertheless comment briefly on the final vowel of Shatt Damam simple noun forms, which becomes nonfinal in the modified forms suffixing **-ní** (sg.) or **-Kí** (pl.). This vowel usually varies over the different languages. Let us consider the following lexical series:

Shatt Damam	Liguri	Lagowa	Nyala	Sila	Eref
LS/3. ‘horse’					
mòxtà (mòxtánì ⁺)	moxta	mortane	murtane	múrtè (/ -ne)	múrtiné
/ mòxtù (mòxtúggì ⁺)	/ moxtu	/ mortuke	/ murtuge	/ mùrtigé	/ mòrtigé
				~ mùrtíṅgé	

In the singular, Shatt D **-a(nì⁺)** corresponds to **-a** in Liguri (**-a**), Lagowa and Nyala

³⁷ Thelwall reconstructs two contrastive historical phonemes, ***x** and ***y**.

(-ane), but to a final **e** (-e#) in Sila and to **i** (-ine) in Eref. Similarly, Shatt D plural -u(ggi⁺) corresponds to Liguri -u, Lagowa and Nyala -uk/ge, Sila and Eref -ige.

Examples of this type are illustrated in the following lexical series (see Appendix):

Shatt Damam	i :	LS/23, 66, 81
	i :	LS/1, 6
	u :	LS/1, 3, 6, 10, 25, 63, 69
	e :	LS/2, 5, 68
	o :	LS/4, 83
	a :	LS/3, 7, 8, 10, 26, 33, 37, 64, 85

With Shatt Damam as a reference, the following (approximate) correspondences can be identified:³⁸

Shatt Damam	Liguri	Lagowa	Nyala	Sila	Eref
i	?	a	∅, a , u	i	i
i	?	i/ə	a/i , ə	e#	i
u	u, ə	u, (i, a)	u, (u/aa, ə/i)	i	i
e	e	e	e	e#, ee	∅, i
o	?	a	o	e#	i
a	a	a, (i)	a, ə	e#, i	i, (CaCe)

Correspondences for Shatt Damam vowels preceding “suffixes” -ni and -Ki

The maximal contrasts are shown in Shatt Damam, which is therefore considered as the best representative of an earlier common language in this respect (the Liguri evidence is incomplete and not considered here). These contrasts are partially reduced in Lagowa (**i**, **o**, **a = a**) and Nyala (which has no proper equivalent of **i**), and nearly eliminated in Sila (which has mostly complementary **e#** and **i**) and Eref (which has **i** everywhere except in disyllabic **bàné** = Shatt D **bà** (**báni**⁺), Liguri **ba** ‘house’ (LS/8)).

8.2. Morphological variation and back formation

Examination of the comparative series reveals the same kind of marker variation between languages as has been observed within Shatt Damam alone (see 3.6). It has also been mentioned (see note 12) that Daju languages as a whole readily resort to morphological back formations for both singular and plural. Both kinds of change³⁹ may restrict the number of true cognates in a given series. Let us first consider some instances involving singular forms:

Shatt Damam	Liguri	Lagowa	Nyala	Sila	Eref
a. ‘tree, wood/stick’ (LS/68=84)					
è(e)t (èttî ⁺)	eewes	ette	ette	éttè	étté
/ èwè (èwé(e)gî ⁺)	/ ewe	/ eweke	/ ewege	/ èwéegè ~ èwéygè	/ éwégé

³⁸ Similar correspondences are sometimes observed for the second, nonfinal vowel of Shatt D simple forms of the CVCVC type, e.g., LS/30=83, 39 (singular forms).

³⁹ Cases of variation and back formation are distinct by nature, but may be hard to distinguish in particular instances (see f. and g. below), since a full and detailed comparative study of the number-marking procedures in all languages has still to be carried out.

b. 'bird' (gen.) (LS/22)					
àwàt (àwàdì⁺) / àwìp (àwìngì ⁺)	aupiiis / aup	awate / awattake	awade / awaduge	àwàadé / àwàadìngé (~ àwàadigè ?)	àwdíncè / àwdíngè
c. 'fly' (n.) (LS/107)					
àḡáxsìnìc (àḡáxsìnìcì⁺) / àḡàx (àḡáxkì⁺)	amxoz, amxos	ongoricce / ongorke	oḡorce / oḡorke	òḡórcè / òḡòrkè	òḡórkìcè / òḡòrké

Series a. ('tree/stick') has consistent cognates in the plural (suppletive forms), but the Liguri singular **eewes** is obviously a back formation obtained by suffixing a singulative -s (corresponding to -c in other languages) to the plural form **ewe**.

The same holds in series b. ('bird') for Liguri **aupiiis** (< **aup**), while Eref has substituted a singulative (?) for a former singular (***awade** > **àwdíncè**) (the different plural forms also show variation and/or probable back formation).

In series c. ('fly'), Shatt D has a specific singulative form (**-sìnìc**, see 3.3 above) differing from the one in Liguri, Lagowa, Nyala, and Sila (**-s/-c-**), whose cognates are consistent; there is probably no back formation but rather variation in that case; on the other hand, Eref again has singular back formation created by suffixing a singulative to the plural form (**òḡòrké** > **òḡórkìcè**).

Variation or back formation in plural forms is more common. Let us look at the following examples:

Shatt Damam	Liguri	Lagowa	Nyala	Sila	Eref
d. 'rope' (LS/70=104)					
zìt (zítì⁺) / zìy (zúigì⁺)	sət / səttu	sitte / siige (RT)	sitte / sittuge sitte / siige (HJ)	sittè / siigè	sitté / siigé
e. 'giraffe' (LS/54)					
ḡeek (ḡéeksì⁺) / ḡéegìp (ḡéegìngì⁺)		eegè / egìnje (RT)	eegè / eegəḡge (HJ)	éygè / èygàtkè	èegé / égtigé
f. 'way, path, road' (LS/33)					
sòk (sògì⁺) / sòktà (sòktàgì⁺)	ḡosok / ḡosokta	sokè / 'soktake	soogè / sooktəḡge (HJ)	sòogé / sòktìngè	sógè / sògtìngé
g. 'inner space/house/hole'					
àx (àxì⁺) / àxìp (àxìngì⁺) ~ àxtà (àxtàgì⁺)	aaxe ax (SA)	are / 'artake	aare / aruge	àaré / àrtìngè	árè / àrtìngè

Series d. ('rope') shows variation in the plural marker: Liguri and the first Nyala source have a plural in **-u(ge)** (rather than **-tu(ge)?**), while Shatt D, Lagowa, the second Nyala source, Sila, and Eref have a different plural in **-y/i(ge)**.

In series e. ('giraffe'), Shatt D, Liguri and Lagowa plurals are most probably true cognates (despite some segmental variations), while Sila and Eref plurals could result from analogical back formation from other plural markers found in each language.

In series f. (‘way, road’), Shatt D, Liguri, and Lagowa have a common plural form vs. another common form for Nyala, Sila, and Eref; the latter could result either from back formation from a former ***sokta(ge)**, as suggested by the persistence of a medial **-t-**, or constitute true variants (see the instances of a Shatt D plural suffix **-tip(gi⁺)** in 3.2).

Finally, series g. (‘house/hole’) displays two variants in Shatt D, the second of which has a cognate in Lagowa (**-ta(ke)**); Nyala shows a third variant (plural in **-u(ge)**); Sila and Eref plurals might result either from back formation or variation as in the preceding case.

The possibility of variation and back formation thus makes comparison somewhat problematic since nouns with different markers may not be true cognates, especially from a morphological point of view where number marking plays a major role. This fact has to be borne in mind when looking at the evidence from the lexical comparative series.

8.3. Correspondences for the Shatt Damam sg. suffix **-ni**

The lexical series grouped under the heading “suffix **-ni**” (see Appendix) represent more or less the full set of series identified in this respect.

LS/1-10 show the correspondence between Shatt D modified forms ending in **-ni** and Lagowa, Nyala, and Eref nouns ending in **-ne**.

Sila does not fit this pattern, but all Sila cognates are nouns characterized by a secondary form suffixing **-ne** when modified by an associative pronoun, or by a lengthened final vowel (**-ee**) when modified by the definite **-nà** (see 7.3 above). In the latter case, noun patterns of the **CVCee-nà** type might result from the reduction of an earlier ***CVCene-nà** involving the same suffix **-ne**.⁴⁰ In any case, Sila variants in **-ne** and **-ee** show a syntactic behavior which is similar to that of the modified form in Shatt D, though these secondary forms are limited to the specific contexts of modification by an associative pronoun or the definite.

LS/11-13, which are not illustrated for Shatt D, are further proof of the correspondence between Sila nouns in (**/-ne**) and other “western” nouns in **-ne**.

LS/14-16 call for some comments. In LS/14, the Shatt D **-ni** suffix in **kòxáni⁺** corresponds to **-ne** in Lagowa (**korne**), but not in Nyala (**kore**) nor in Sila and Eref (**kórrè** and **kórré**). Presumably, the suffix **-ne** has been assimilated to the preceding **r** in the latter languages (note that Sila **kórrè** is *not* a noun of the (**/-ne**) type). A similar interpretation applies to LS/15 (assimilation to **I**). As for LS/16, the Shatt D modified forms **èxéni⁺** /pl. **èxéngi⁺** (with no simple counterparts) taken alone would suggest suffixation of **-i** /pl. **-Ki**. However, the “western” cognates, which are similar to the two preceding cases, seem to indicate that Shatt D sg. **èxéni⁺** actually suffixes **-ni**, while the pl. **èxéngi⁺** involves an medial **-ŋ-**, characteristic of many “relational” nouns (see 3.10 above).

LS/17-19 further exemplify Shatt D “relational” nouns with no simple form, in which the presence of a suffix **-ni** is not established, though highly probable. All “western” languages show a corresponding suffix **-ne**, including Sila whose cognates (LS/17-18) are unsurprisingly not of the (**/-ne**) type (in LS/19, Sila **òŋóŋjè** probably results from a back formation adding **-je** (singulative **-ce**?) to the original singular form).

Lastly, LS/20 illustrates the only series in which Shatt D **-ni** has no correspondence in the “western” languages (Sila **íiyè** is not a noun of the (**/-ne**) type). The monosyllabic

⁴⁰ Note also that some – not all – Sila nouns with **-ne/-ee** variants show plural suffixes of the form **-ange** (e.g. **mùusé** /pl. **mùusángè** ‘red sorrel’, LS/7 **áydè** /pl. **àydángè** ‘in-law’), which are specific to them only. Sila nouns ending in a non-**e** vowel or a consonant (see 7.3) are not mentioned here since they do not appear in the available comparative series.

character of Shatt D **yà (yáñì⁺)** ‘meat’ cannot be invoked since LS/8 **bà (báñì⁺)** ‘house’ has a “regular” cognate in Eref, **bàné** (note also that “western” reflexes of LS/20 are in fact disyllabic).

8.4. Correspondences for the Shatt Damam sg. suffix -i

Shatt Damam modified noun forms suffixing **-i** are very common (see 5.2 above). The lexical series falling under this heading therefore represent approximately one third of the series available for illustrating this particular case.

LS/21-42 illustrate numerous consistent correspondences of Shatt D **-i** to “western” **-e** (the series exemplify various final consonants in the Shatt D simple form). Note that defective cognates occur in some cases: LS/22 Eref **àwdíncè** probably represents a back formation by suffixing a singulative (?) **-ince**; LS/28 Lagowa **apahicce** and Nyala **apace** show a singulative suffix **-(i)ce**, which differs from that of the other languages, **-tic(i⁺)/-tas/-tice**; LS/31 Eref **múskicé** results from a back formation (singulative **-ce**) on the plural form; LS/35 Sila **lùkîcé** shows a singulative (or collective?)⁴¹ **-tice**; LS/35 Eref **lùgé** is a regular cognate but is (has become?) grammatically plural.

LS/43-46 illustrate the same correspondence for Shatt D “relational” nouns with no simple form (LS/46 Shatt D **péenì⁺** represents a variant of **pìibìñì⁺**, which alone has a simple counterpart **píibì**).

8.5. Correspondences for the Shatt Damam sg. suffix -si

LS/47 represents the sole series presenting a clear correspondence between Shatt D **-si** and Lagowa **-se**, alone among “western” languages in this case. Note that, judging from Shatt D, Lagowa plural forms, which are similar in both sources (**-sike/-søge**), presumably result from back formations on the singular.

The case of LS/48 is somewhat problematic. The identification of a **-si** suffix in the modified form of **àis (áizzì⁺)** ‘goat’, which would correspond to “western” **-se** or **-je**, is rather tentative. The persistence of the same consonant **s** or **ʃ** in the plural forms of all languages suggests that this consonant does not belong to the suffix, but to the stem. Yet Shatt D (like Liguri) shows no number contrast in the simple form (a unique case), and the plural forms of “western” languages could result from back formations as in the preceding case (LS/47).

LS/49-51, for which no cognates have been found in Shatt D, constitute good candidates for possible instances of a **-se** suffix in the “western” languages (consider their “long” canonical form, CVCV**se** or CVC**se**, which suggests an added final syllable). However, all plural forms (including Liguri in LS/49) again involve the same consonant **s**. Unless we consider that these plurals all result from back formations like the one in LS/47 Lagowa, the morphological analysis of LS/49-51 remains rather doubtful.

LS/52-59 in turn represent numerous cases in which the Shatt D suffix **-si** corresponds to *no* **-se** suffix in the “western” languages, but to a bare **-e**, a situation which noticeably restricts the validity of the general correspondence between the Shatt D modified form and the “western” noun forms. We will come back to this point later on (8.7).

8.5. Correspondences for the Shatt Damam sg. suffix -Ti

Instances of Shatt Damam suffix **-Ti** are few in number (see 5.4); all available series are presented in this section.

⁴¹ There is some uncertainty concerning the meaning of the suffix **-tice** in Sila: in many cases it represents a singulative, as in other languages, but it may apparently also refer to a collective, as in the present case.

LS/60-67 illustrate consistent correspondences between Shatt D **-Ti** and final **-te/-de** in the “western” languages.

The same probably holds for LS/68-71, although there may be some doubt concerning the exact identity of the suffix (**-Ti** or **-i**?) in these cases (see 5.4)

LS/72-75 show the same correspondence for Shatt D “relational” nouns with modified forms only.

On the other hand LS/76-80 illustrate several cases in which Shatt D **-Ti** does *not* correspond to **-te/-de** in the “western” languages.

8.6. Correspondences for the Shatt Damam pl. suffix **-Ki**

Since all Shatt Damam plural modified forms suffix **-Ki**, the examples collected under this last heading represent but a part of the available series. The selected items illustrate different final segments (vowel or consonant) in the Shatt Damam simple form. Series showing variation or back formation – a frequent situation for plurals (see 8.2) – have been avoided as far as possible.

LS/81-107 show that Shatt D plural modified forms suffixing **-Ki** regularly correspond to nouns with final **-ke/-ge** in the “western” languages (defective cognates appear in LS/82 Nyala (**bonje**, suppletive), and in LS/98 Lagowa (**ipitake**, variant) and Nyala (**iibuge**, variant). Note that these series contain items that usually have no singular counterpart, i.e., nouns referring to uncountable liquids or masses (LS/93-94, 97), deverbal nouns (LS/86-90, 92, 99-100, 105), and deadjectival nouns (LS/96).

LS/108-112 illustrate the same correspondence in the case of Shatt D nouns with no simple form.

Lastly, LS/113 ‘salt’ is the only series which does not show the regular correspondence: Lagowa and Eref **-kke/-ke** belong to the stem and reflect the final syllable **-ke** of the simple, not the modified, Shatt D form (the two Nyala sources as well as the singular form in Eref constitute likely back formations on the (inherent?) plural by addition of a singulative **-ce**).

8.7. Defective morphological correspondences

If the correspondence between Shatt Damam modified forms and “western” nouns is sure in most cases, it is nevertheless faulty in some instances which remain sporadic for suffixes **-ni** (LS/20) and **-Ki** (LS/113), but are more numerous in the case of **-Si** (LS/52-59) and **-Ti** (LS/76-80) (it must be stressed that all the exemplified “western” languages show a remarkable degree of coherence with respect to Shatt D in this respect). In all singulars, however, the “western” nouns show final **-e**, which must be considered equivalent to the Shatt D suffix **-i**.⁴²

These defective instances may be tentatively justified in different ways. One might start by assuming they result from variations like those observed within Shatt D alone (see 5.6). In the present case, the variants would then extend over the Daju languages as a whole and be characterized as **-ni** ~ **-i**, **-Si** ~ **-i**, **-Ti** ~ **-i**, and **-Ki** ~ **-i** (in all cases, the variation is then between a “consonant” suffix and the **-i** suffix).

A striking correlation may be observed in the defective series illustrating Shatt D **-Si** and **-Ti**, where most nouns refer to animal species: ‘bee, honey’, ‘giraffe’, ‘lion’, ‘warthog’, ‘hen, chicken’, ‘duiker’ (**-Si**), and ‘ostrich’, ‘leopard’, ‘elephant’, ‘wild cat’ (**-Ti**). I doubt, however, that this specific feature is *directly* relevant for justifying the

⁴² The plural forms in LS/113 ‘salt’ end in **-e** in every case: Shatt D simple form **éngùlékè**, Lagowa **ngkolokke**, and Eref **ngólké**.

irregular behavior of “western” languages in these cases. It is significant, on the other hand, that defective series as a whole usually show “long” or “heavy” canonical forms (CVCVC, VCVCVC, and even VCVCVCV) in the Shatt D simple form. This characteristic represents, in my opinion, the most likely factor conditioning “western” nouns not to retain the equivalent of the Shatt D “consonant” suffix **-Si** or **-Ti** in many cases⁴³ (note however that the equivalent of the plural suffix **-Ki** is usually retained for such nouns). This explanation does not account for LS/20 ‘meat’ (Shatt D **yà (yáni⁺)**) nor for LS/54 ‘giraffe’ (Shatt D **ḏèek (ḏéeksì⁺)**), which show no “long” form and remain unexplained, but it does extend to the only case of a defective plural series in LS/113 ‘salt’ (Shatt D **éḡgùlékè (éḡgùlékkéḡì⁺)**).

The general behavior of Daju languages in defective series thus suggests that Shatt D **-i**, together with its “western” **-e** cognates, in some way represents a “weak” or “default” suffix, which is necessarily applied in “western” languages whenever they do not conserve the cognate of one of the “consonant” suffixes **-Si**, **-Ti**, or even **-ni** and **-Ki**.⁴⁴

As for the strong correlation observed between “long” canonical forms and animal names, which, I believe, has its own relevance, it points to the special status (and origin?) of these nouns within the common Daju vocabulary.

9. Historical perspective

One of the most interesting points to emerge from the preceding correspondences is that, as suggested by Thelwall (1981:61-62, 71, 130-131), the Shatt D modified form, like “western” nouns, may reflect two layers of numbers marking⁴⁵ which correspond to the number marker+concord of Shatt Tebeldia (and Liguri?). Let us consider the following examples:⁴⁶

Shatt Tebeldia	Liguri	Shatt Damam	Lagowa	Eref
= LS/3. ‘horse’				
moxta (+ n-) / moxtu (+ k- ?)	moxta (+ ?) / moxtu (+ ?)	mòxtà (mòxtáni⁺) / mòxtù (mòxtúḡḡì⁺)	mortane / mortuke	múrtiné / mòrtígè
= LS/26. ‘fire’				
mas (+ ?) / mas-ta (+ k- ?)	maas (+ ?) / maastij (+ ?)	màs (màs(s)ì⁺) / màstà (màstáḡì⁺)	maase / maastage, maastige (RT)	màasé / mástígé

These may be analyzed in the following way:⁴⁷

⁴³ Yet there are counterexamples, e.g., LS/15, 60, 62, 64, 67.

⁴⁴ The equivalent of Shatt D **-i** is in fact considered by Stevenson (1964: 97) to be ‘Zero prefix/concord’ in Shatt Tebeldia (see the quotation in 6.1).

⁴⁵ This fact makes the noun morphology rather intricate; see general comments by Thelwall (1981:61, 130-131) and specific languages like Lagowa (Abbaker Ismail 2000) or Eref (Palayer in press).

⁴⁶ It is hard to constitute full series of this type since illustrations of agreement (Shatt Tebeldia only) are scarce in Stevenson (1964 and in Tucker and Bryan 1966) and absent from Thelwall (1981).

⁴⁷ The stem-vowel alternation in Eref, **múrtiné/mòrtígè**, is unusual.

	Shatt T	Liguri	Shatt D	Lagowa	Eref	
stem	moxt-	moxt-	moxt-	mort-	murt-	
marker 1	-a	-a	-a-	-a-	-i-	<i>horse</i>
concord/marker 2	+ n-	(+ ?)	-ni	-ne	-ne	
stem	moxt-	moxt-	moxt-	mort-	mort-	
marker 1	-u	-u	-u-	-u-	-i-	<i>horses</i>
concord/marker 2	(+ k- ?)	(+ ?)	-ggi	-ke	-ge	
stem	mas-	maas-	mas(s)-	mas-	mas-	
marker 1	∅	∅	∅	∅	∅	<i>fire</i>
concord/marker 2	(+ ?)	(+ ?)	-i	-e	-e	
stem	mas-	maas-	mas-	maas-	mas-	
marker 1	-ta	-tɨp	-ta-	-ta-, -ti-	-ti-	<i>fire (pl.)</i>
concord/marker 2	(+ k- ?)	(+ ?)	-gi	-ge	-ge	

As already mentioned (see beginning of section 7), Stevenson (1964:97) interpreted these morphological correspondences in the following way:

“These concords [i.e. of Shatt and Liguri] must, I think, have arisen in part from the transference of suffixes, still to be found in W[estern] Daju, from nouns to the following qualifiers. (Cf. the type of change which has given English “a newt” instead of “an ewt”.)”

but this diachronic interpretation has been questioned by Thelwall (1981:130):

“Stevenson [...] has proposed that this [i.e., correspondences of the type above] supports the derivation of Eastern concord from Western suffixes by transfer. It seems more likely however that the converse is the case, since the above identification, at least partially, of elements in Western Daju plural suffixes does not show that they are free, or mobile elements, whereas the concord elements in the East still are.”

Although Thelwall’s argumentation is not fully clear to me, I quite agree with his view: it seems extremely unlikely that “eastern” languages *disconnected* the “eastern” suffixes of level 2 to interpret them as separate concord markers. There are, I think, two arguments which, if not fully decisive, are nevertheless strongly indicative of the opposite scenario:

1. As stressed in section 8.7 above, several comparative series show that “western” languages as a whole lack a “consonant” suffix, whereas the Shatt D modified form suffixes **-ni**, **-Si**, **-Ti**, or **-Ki**. Yet this fact is not necessarily decisive since “western” languages could have replaced **-ne**, **-se**, **-te**, **-de**, etc. with a “default” **-e** in these series *after* splitting from the “consonant” languages.

2. As has been shown in 8.1 above for (pseudo-)final vowels, the contrast among level 1 markers is partially reduced in their “western” forms, with the westernmost languages (Sila and Eref) unsurprisingly showing the highest degree of simplification. This situation could easily result from a “crushing” of the former level 1 markers under the pressure of the newly incorporated level 2 suffixes. It is much more difficult to imagine that, on the contrary, “eastern” languages developed a full level 1 marker system from the more or less limited subset attested in the “western” languages. Here again, we have no exact idea of how the language prior to both “eastern” and “western” descendants actually looked. But I am rather of the opinion that Shatt Damam, and even more Shatt Tebeldia, give the best reflection of the common system in this respect.

Abbreviations

adj	adjective	Nv	deverbal noun
Ar.	Arabic	or?	origin unknown
col	collective	P3	third person plural index
DEF	definite	PFV	perfective
EXCL	exclusive	pl, PL	plural
EXIST	existential	PN	plural nominal index
Fr	French	QCON	qualifying connective
FUT	future	REL	relative
IDENT	identifier	S1	first person singular index
LOC	locative	S3m	third person singular masculine index
MDV	middle voice	sg	singular
MF	modified (noun) form	sl.	singulative
n	noun	SN	singular nominal index
Na	deadjectival noun		

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Appendix: Lexical series (see following pages)

Sources:

Shatt Damam	Boyeldieu (pers. data)	unmarked
Liguri	Thelwall 1981 + Alamin Mubarak 2006	unmarked (SA)
Lagowa	Abbaker Ismail 2000 + Thelwall 1981	unmarked (RT)
Nyala	Thelwall 1981 + Jungraithmayr 1978	unmarked (HJ)
Sila	Boyeldieu (pers. data)	unmarked
Eref	Palayer (in press, forthcoming)	unmarked

N.B.: Lexical series are grouped according to the Shatt Damam “suffix” (sg. **-ni**, **-i**, **-Si**, **-Ti**, or pl. **-Ki**) they exemplify. Some series are therefore cited twice to illustrate singular and plural, respectively.

Although Liguri is not considered in the comparison, Liguri forms are also mentioned for fuller information.

Shatt Damam suffix **-ni**

Shatt Damam	Liguri	Lagowa	Nyala	Sila	Eref
1. kàcì (kàcìní⁺) / kàcù (kàcùggì ⁺)	kajʔul	kaccine / kaccuke	kacane / kacuge kacine / kacaage (HJ)	kàcè (/ -ne) / kàcìgè	kàccíné / kàccìgè <i>donkey</i>
2. mègè (mègèní⁺) / mègèddè (mègèddègì ⁺) / megete	mege / megete	mekene / -	megede	mègè (/ -ne) / mègéngè	mègíné / - <i>cold (n.) / wind</i>
3. mòxtà (mòxtàní⁺) / mòxtù (mòxtùggì ⁺)	moxta / moxtu	mortane / mortuke	murtane / murtuge	múrtè (/ -ne) / mùrtìgè ~ mùrtìngè	múrtíné / mòrtìgè <i>horse</i>
4. òsò (òsòní⁺) / -		ofoje		óosè (/ -ne) / -	ósiné / òsòngè <i>rainy season</i>
5. téenè (tèenèní⁺) / -	/edejene/ / ?	teenene (HJ)		déenè (/ -ne) / -	tèenné / tèennéngè <i>dry/harvesting season</i>
6. tàndì (tàndìní⁺) / tàndù (tàndùggì ⁺)		tandane / tanduge		tàndìné / tàndìgè	tàndìné <i>cloth</i>
7. áy(d)à (áy(d)àní⁺) / áyd(d)àk (áy(d)àkkì ⁺)				áyè (/ -ne) / àydàngè	áyðiné / àydákè <i>in-law</i>
8. bà (bàní⁺) / bàðik (bàðik(k)ì ⁺) / batta (SA)	ba / batta (SA)			bàné / bàcingè	bàné <i>house</i>
9. dàlù (dàlùní⁺) / dàlúddì (dàlúddìgì ⁺)				dàlúné / dàlúgè (Ar.)	dàlúné <i>drawing container, bucket</i>
10. kòmbà (kòmbàní⁺) / kòmbù (kòmbùg(g)ì ⁺) ~ kòmbáddà (kòmbáddàgì ⁺)	kamponé / kampuke				<i>axe</i>

11.		tikine / tikinuke	tigine / tiguje tiigine / tiigiwuge (HJ)	dikè (-ne) / dikigé	ùgìné / ùgínjé	<i>axe</i>
12.		cangane / canguke	cangane, cangane / canguge	jàangé (-ne) / jàangigé	càngìné / càngínjé	<i>scorpion</i>
13.		kohkane / kohkuge (RT)	kokane / kokuge	kòokè (-ne) / kòokigé	kòkìné / kòkínjé	<i>snake (gen.)</i>
14.	kòxà (kòxàní⁺) / -	koxa	kore	kórré (*/-ne) / -	kórré / -	<i>rain/sky/God</i>
15.	kèlégèlè (kèlégèlèní⁺) / kèlégèlè (kèlégèlègùgù ⁺)	kelegele	kelkelne / kekeluke	gèrgéerè (*/-ne) / gèlgèlkè	gèlgèllé / gèlgèlúgè	<i>monkey/baboon</i>
16.	(èxèní⁺) / (èxènjá ⁺)	exne / exge	erne / erinje (RT)	èrré (*/-ne) / èréngè	érré / éréngé	<i>foot, leg</i>
17.	(múunì⁺) / (mùdúkùkà ⁺)	muun- / mutku-	mune / muncike mune / mucage (RT)	móonè (*/-ne) / mòcìngè	móoné / mòcòngé	<i>nose</i>
18.	(wàní⁺) / (wàdíkùkà ⁺)	wane / watkana	wane / wanak (RT)	wanè (*/-ne) / wàndigè wanajje	wané / wàdigé	<i>body</i>
19.	(àwúnì⁺) / (ággà ⁺)	aune / age awon / agg (SA)	onone / ononje (RT)	ònjònjè (*/-ne) / ònjònjigè	ónné / óyòngé	<i>eye</i>
20.	yà (yáaní⁺) / yádík (yádíkùkà ⁺)	iya	iye (RT)	íyè (*/-ne) / -	íyé / -	<i>meat</i>

Shatt Damam suffix **-i**

Shatt Damam	Liguri	Lagowa	Nyala	Sila	Eref
21. ip (iipbì ⁺) / ipɬɪŋ (ipɪŋgɪ ⁺)	iibe / ibɪgige	ipe / ipitake	iibe / iibuge	iibè / iibicingé	ibè / ibcingé <i>tail</i>
22. àwàt (àwàdì ⁺) / àwɪŋ (àwɪŋgɪ ⁺)	aupɪis / aupɪ	awate / awattake	awade / awaduge awade / awaddage (HJ)	àwàadé / àwàadingé (~ àwàadingé ?)	àwàdincè / àwdingé <i>bird (gen.)</i>
23. ligit (ligidì ⁺) / ligítì (ligítìgɪ ⁺)		likite / likit'take	ligide / litike	likidè / likítìgè	ligdé / ligítìgè <i>shadow, silhouette</i>
24. pògùt (pògùdì ⁺) [sg.]				fùgùdè ~ fùkùdè / fùgùtìgè	pùgdé ~ fùgdé / pùgùtìgè ~ fùgùtìgè <i>fight, war</i> (Nv)/ <i>knife</i>
25. is (iisì ⁺) / isù (iisùgɪ ⁺)	iis / iisa, iizə	ise / isike	iise / isəge iise / iisinge (HJ)	iisè / iisígè (~ iisingè ?)	iisé / isígè <i>dog</i>
26. màs (màs(s)ɪ ⁺) / màstà (màstáɟɪ ⁺)	maas / maastɪŋ	maase / maastage, maastige (RT)	maase	maasè / màstígè	màasé / màstígè <i>fire</i>
27. xàs (xàs(s)ɪ ⁺) / –	kəxas	kəraase (RT)	karase	kùràasè / kùràastígè	kùràasé / kùràastígè <i>hunger</i>
28. àbáxíc (àbáxícì ⁺) / àbáx (àbáxkì ⁺)	abaxtas / abax	apahicce / apahke	apace / apake	àbákíicé / àbáké	àbákíicé / àbáké <i>hair, feather</i>
29. kàdàxwíc (kàdàxwícì ⁺) / kàdàxù (kàdàxùgɪ ⁺)	kadoxos / kadoxo (SA)	katerwacce / katerwake	katarwoce / katarwaage	kàdàràcè / kàdàràagè	<i>locust/ant</i>

30.	mòxsòc (mòxsòc(c)ᵀ) / mòxsò (mòxsògᵀ)	mokshacce / mokshakke	mokface / mokfoke	mòksicé / mòksigè	<i>cucumber</i>
31.	mùsic (mùsicᵀ) / mùsùk (mùsùkkᵀ)	mushucce / mushukke	mujuce / mujuke	mùsicé / mùsiké	<i>bean</i>
32.	ᵇàxic (ᵇàxicᵀ) / ᵇàxtà (ᵇàxtàgᵀ) ~ ᵇàxfijᵇ (ᵇàxfijᵇgᵀ) ~ ᵇàxfjᵇ (ᵇàxfjᵇgᵀ)	nyaricce / nyarke	ᵇaricce	ᵇàricé / ᵇàriké	<i>grass (gen.)</i>
33.	sòk (sògᵀ) / sòktà (sòktàgᵀ)	sòke / 'soktake	sooge / sooktəŋge (HJ)	sògè / sògtᵇgè	<i>way, road, path</i>
34.	dòk (dògᵀ) / wèk (wèkkᵀ)	dowe / wahke		dᵇgè / dᵇgàtkè	<i>thing</i>
35.	lᵇik (lᵇigᵀ) [sg.] / –	lᵇiki / –	lᵇgge lakke (HJ)	lᵇukticé [sl. or col.? / –	<i>smoke</i>
36.	dèᵇ (dèᵇᵀ) / dᵇk (dᵇkkᵀ)	/tenye/ / /tak'ke/	teᵇe / təkə teenye / takke (HJ)	tèᵇᵇè / tèᵇᵇdᵇgè	<i>cow, bovine</i>
37.	lᵇàᵇ (lᵇàᵇᵀ) / lᵇàᵇdà (lᵇàᵇdàgᵀ) ~ lᵇàᵇᵇ (lᵇàᵇᵇgᵀ)	lᵇaᵇe / lᵇaᵇdige (RT)		lᵇaᵇᵇè / lᵇaᵇᵇdᵇgè	<i>basket sp.</i>
38.	xòᵇ (xòᵇᵀ) / –	ronge / –	orᵇᵇe	ròᵇᵇè / –	<i>sun</i>
39.	sàgàl (sàgàlᵀ) / sàalᵇᵇ (sàalᵇᵇgᵀ)	/salle/ / ?	ᵇagale / ᵇaaləŋge	sàgàlᵇ / sàgàlᵇgè	<i>girl</i>
40.	lᵇèr (lᵇèrᵀ) / –	lᵇere / lᵇer'take			<i>collective ground</i>

41.	ùx (ùxì⁺) / ùxù (ùxùgì ⁺)	ux, wux / uxi, uxu	wure, worre / wuruke	wəre / boŋje	wùrè / wúrgè	ùré / úrgé	<i>woman, wife</i>
42.	zìx (zìxì⁺) / zìxù (zìxùgì ⁺)	(kəŋaxtas)	sere / ser'take	sere / sertage (HJ)	sèrè / sèrtigè	sèré / sèréftigé ~ sèrtigé	<i>porridge, 'asida'</i>
43.	(ŋáasi⁺) / (ŋástfngì ⁺)	ŋase / ŋastige	ŋas (RT)	ŋásé / ŋástngè	ŋásé / ŋástngé	ŋásè / ŋástngé	<i>neck/throat</i>
44.	(pìxì⁺) / (éngì ⁺)	pəx-	pir- / en-, eng-	pər- / eŋ-	pírè / èmgé	pírè / èmgé	<i>child, brother</i> / <i>sister, young, small</i> <i>element of,</i> <i>Diminutive</i> ⁴⁸
45.	(màjì⁺) / màjùddi (màjùddìgì ⁺)			màjè / màjtigè	màyé / maccigè	màyé / maccigè	<i>co-wife</i>
46.	píibi (pìbìní ⁺ ~ péení ⁺) / píibù (pìbùgì ⁺ ~ péngì ⁺)				pééné / péngé	pééné / péngé	<i>child</i>

Shatt Damam suffix **-Si**

Shatt Damam	Liguri	Lagowa	Nyala	Sila	Eref
ngùx (ngùxì⁺) / ngùŋ (ngùŋgì ⁺)	ugux	ngukse / nguksike	ngukse / nguksike		<i>tortoise</i>
		ngukse / nguksəge (RT)			

⁴⁸ In Liguri, Lagowa, and Nyala, the noun appears as the first term of compounds under the entries 'brother', 'finger', 'child', 'kidney', 'pestle', and 'heel' of the different sources. For Nyala, see also Theilwall's comment (1981:79).

48.	àis (àizzà ⁺) / àis (àiskà ⁺)	as / as	ayse / ashke	aise / ajske	àyjé ~ àjfé / àskè	àysé / àské	<i>goat</i>
49.	kəpaxs- / kəpaxsig-	kəpaxs- / kəpaxsig-	kəpaxs- / kəpaxsig-	kəpaxs- / kəpaxsig-	kəpaxs- / kəpaxsig-	kəpaxs- / kəpaxsig-	<i>heart</i>
50.	yijəs ijijəs (SA)	nyengse / nyengsike	nyengse / nyengsike	nyəse / nyəsəge	nyisè / nyisikè	nyisè / nyisigé	<i>rat, mouse</i>
51.		pukse / püksike	pukse / püksike	pokse / poksəge	fugusè / fuguskè	püksé / püksigé	<i>rabbit, hare</i>
52.	àsímèx (àsímèxsi ⁺) / àsímèj (àsímèjngt ⁺)	ishmere / ishmerke	ishmere / ishmerke	emfere	èrhémè / èrhèmgè	émèrré / èmsirngé	<i>moon, month</i>
53.	tùmòx (tùmòxsi ⁺) / tùmòj (tùmòjngt ⁺)	tomohe / tomohke	tomohe / tomohke	tomohe / tomoke (HJ)	tòmógè / tòmòongè	tómýé / tòmídígé	<i>bee, honey</i>
54.	déek (déeksi ⁺) / déegj (déegjngt ⁺)	eeg / egjje (RT)	eeg / egjje (RT)	eeg / eegənge (HJ)	éygè / éygakè	èégé / égfígé	<i>giraffe</i>
55.	òsòx (òsòxsi ⁺) / òsòj (òsòjngt ⁺)	osohe / osohke (RT)	osohe / osohke (RT)	osohe / osooke			<i>lion</i>
56.	bàpàk (bàpàksi ⁺) ~ bàpàgic (MF?) / bəpəgij (bəpəgijngt ⁺)	banyake / banyakince	banyake / banyakince		bàpàngè / bəpənəngè	bàné / bənigè	<i>warthog/wild animal (sp.?)</i>
57.	kùxùk (kùxùksi ⁺) / kùxùj (kùxùjngt ⁺)	kukuruk / kukurugi	kukuruk / kukurugi		ùkùrgè / ùkùrngé	kùkùrgé / kùkùrngé	<i>hen, chicken</i>
58.	kùmùx (kùmùxsi ⁺) / kùmùj (kùmùjngt ⁺)				kùmùgè / kùmùungè	kùmýé / kùmígé	<i>duiker</i>
59.	bìdík (bìdíkisi ⁺) / bìdígù (bìdígù(g)si ⁺) ~ bìdígij (bìdígijngt ⁺)					bìdígé / bìdígé	<i>fish spear/spear</i>

Shatt Damam suffix **-Ti**

Shatt Damam	Liguri	Lagowa	Nyala	Sila	Eref
60. màlās (màlástì ⁺) / wùlèk (wùlèkkì ⁺)	maalasə	malashte / mashke malaafte / maaʃke (RT)	malaʃte		màlástè / malsigé ~ málástigé <i>spear</i>
61. òw (óodì ⁺) / òttà (òttàgì ⁺)	au	ote / 'ottake	ode	òdè / òttigè	òdé / óttigé <i>place</i>
62. sàgàn (sàgíndì ⁺) / sàgúnù (sàgúnùggì ⁺)	ʃajde / ʃatte (RT)	ʃajde / ʃakke	ʃajde / ʃakke		sàgàndé / sàgàndigé <i>sheep</i>
63. pèn (péndì ⁺) / péndù (péndùggì ⁺)	pen / pentuke	pen / pentuke		feendé / feendigé	péndè ~ féndè / pèndigé <i>wound/scar</i>
64. màràp (màràpndì ⁺) / màràpndà (màràpndàgì ⁺)				mùrùpndè / mùrùpndigé	<i>scar</i>
65. mùs (mùstì ⁺) / mùstà (mùstìgì ⁺)			pər-muʃte		<i>mortar</i> ⁴⁹
66. mìl (mìldì ⁺) / mìldì (mìldìgì ⁺)					mìldé / mìldigé <i>song</i>
67. mègèn (mègèndì ⁺) / mègènú (mègènúg(g)ì ⁺) ~ mègènjɪn (mègènjɪngì ⁺)					mègèndé / mègèndigé ~ mègèngé <i>orphan</i>
68. è(e)t (èttì ⁺) / èwè (èwé(e)gì ⁺)	eewes / ewe	ette / eweke	ette / ewege	éttè / èwéegè ~ èwéyggè	étté / éwégé <i>tree, wood/stick</i>
69. sàt (sàttì ⁺) / sàt(t)ù (sàttùgì ⁺)		satte / 'sattake	satte / saatage		hàtté / háttigé <i>gourd, plate, dish</i>

⁴⁹ Nyala **pər-muʃte** 'pestle', i.e., [young of-mortar]?' (see note 48).

70.	zít (zítá ⁺) / zít (zítá ⁺)	sət / sət	sitte / sitte (RT)	sitte / sittige sitte / sitje (HJ)	sittè / sètè	sittè / sètè	sitté / sètè	rope
71.	mít (míddá ⁺) / míddá (míddá ⁺)	muc ~ muuj	moyte / –	mide	mùydè / mùydlè	mùydè / –	mùydé / –	oil/fat (n.)
72.	(ándá) / (ásáŋgá ⁺)	add- / apax	ante / assince	ande / anduge	àandé / àsàngè	àandé / àsàngè	ándé / ásàngé	hand, arm
73.	(pixá) / pix (pixká ⁺)	pixt- / pix-gumho	nyirte / nyirke	parte / parke	jírte / jírke	jírte / jírke	jírte / jírke	tooth
74.	(pùxá) / (pùxká ⁺)				fùrtè / fùrtèngé	fùrtè / fùrtèngé	fùrtè / fùrtèngé	arm/upper arm
75.	(wúndá) / (wúŋgá ⁺)	unete / uge	unute / unuge (RT)	unde / unge	úndè / úngè	úndè / úngè	úndé / úngé	ear
76.	tùmùn (tùmúndá ⁺) / tùmúndá (tùmúndá ⁺) ~ tùmúndá (tùmúndá ⁺)		tumune / tumunuke	tumune / tumunge	tùmè (-ne) / tùmèngé	tùmè / tùmèngé	tùmé / tùméngé ~ tùméngé	ostrich
77.	kémis (kémístá ⁺) / kémístá (kémístá ⁺) ~ kémístá (kémístá ⁺)				kémésè / kémésè	kémésè / kémésè	kémé / kéméngé ~ kéméngé	leopard
78.	tùmòs (tùmósfá ⁺) / tùmósfá (tùmósfá ⁺)	tamos	timoshe / timoshe	tomoshe / tomoke (HJ)	tòmósè / tòmósè	tòmósè / tòmósè	tòmésè / tòmésè	elephant
79.	pògòl (pògòldá ⁺) / –	pogol	pogole (RT)	pogole	pògòl / –	pògòl / –	pògòl / pògòlè	left/left handed
80.	kìbìn (kìbìndá ⁺) / kìbìndá (kìbìndá ⁺)	kuubin / kuubimidi	kupine / kupinke	kubaine / kubaike	kùbúynè (*/-ne) / kùbúyngè	kùbúynè / kùbúyngè	kùbúynè / kùbúyngè	wild cat

Shatt Damam suffix -Ki

Shatt Damam	Liguri	Lagowa	Nyala	Sila	Eref
81. zàx (zàxà ⁺) / zàxṭi (zàxṭiḡi ⁺)		sere / ser'take	sere / sertage (HJ)	sèrè / sèrtigè	sèré / séréftigé ~ sérftigé
82. ùx (ùxà ⁺) / ùxù (ùxùḡi ⁺)	ux, wuxe / uxi, uxu	wurè, worre / wuruke	wàrè / boṅje	wùrè / wùrgè	ùré / úrgé
83. mòxsòc (mòxsòc(e)ḡi ⁺) / mòxsò (mòxsòḡi ⁺)		mokshacce / mokshakke	mokface / mokfoke		mòksicè / mòksigè
84. è(e)t (ètṭà ⁺) / èwè (èwé(e)ḡi ⁺)	eewes / ewe	ette / eweke	ette / ewege ette / eweige (HJ)	étè / èwégè ~ èwéyḡè	été / éwégé
85. òw (òodṭà ⁺) / òftà (òftàḡi ⁺)	au	ote / 'ottake	ode	òdè / òftigè	òdé / òftigé
86. zàb (zàfbkà ⁺) [pl.]	səbece	fəbke (RT)	fəbeke	sìbàkè [pl.]	sìpké [pl.]
87. làṅàt (làṅàkkà ⁺) [pl.]		langakke		làṅàkè [pl.]	làṅké [pl.]
88. sàyàt (sàyàkkà ⁺) [pl.]	sia səyat (SA)	siyakke	siake	sìikè [pl.]	sìyàké [pl.]
89. úudùt (úudùkà ⁺) [pl.]				úudúyḡè [pl.]	úúáyḡé [pl.]
90. mmòt (mmòtkà ⁺) [pl.]				mòodàkè [pl.]	mòdké [pl.]
91. túsic (túsicè ⁺) / tús (túskà ⁺)				túsicé / túskè	túskicé / túské
92. xàs (xàskà ⁺) [pl.]				ìrìskè [pl.]	ìrìské [pl.]
					to sow (in holes) (Nv)/sowing
					to sing, singing (Nv)
					to eat, food (Nv)
					to plant (Nv)
					to sweat (Nv)
					testicle
					to die (Nv)

93.	zák (zákà ⁺) [pl.]	sæk	sække (RT)	sæke asæke (HJ)	ùsùkùcè [sl. or col.? / ùsùkè	úské [pl.]	<i>earth, ground</i>
94.	sùk (sùkà ⁺) [pl.]	suk	shukke [pl.]	coke	sùkùcè [sl. or col.? / sùkkè	sùkké [pl.]	<i>urine</i>
95.	kàjálbùgic (kàjálbùgic(c)ì ⁺) / kàjálbùk (kàjálbùk(k)ì ⁺)	kajalboe / kajalboek	kajalbogice / kajalboke (RT)	kocolboce / kocolboke	kajilbìcè / kajilbàkè	kàcbùlkicé / kàcbùlké	<i>intestines</i>
96.	ùbèyédìk (ùbèyédìkà ⁺) [pl.]				kibèyétigè	ùbìdìgè [pl.]	<i>heat (Na)</i>
97.	mèmmè (mméngì ⁺) [pl.]	meem	menge [pl.]	menge	mèngè [pl.]	mèngé [pl.]	<i>milk</i>
98.	ìp (ìbì ⁺) / ìpùp (ìpùpì ⁺)	iibe / ibtigge	ipe / ipitake	iibe / iibuge	ìbè / iibèngé	ìbè / ìbèngé	<i>tail</i>
99.	kòxòp (kòxòpì ⁺) [pl.]				gòròngè [pl.]	kòròngé [pl.]	<i>to scratch (o.s.) (Nv)</i>
100.	sàŋ (sàŋgì ⁺) [pl.]		səŋge (RT)	səŋge	səŋgè [pl.]	sùŋké [pl.]	<i>to sleep, spend the night, sleep, night, day (Nv)</i>
101.	kùdòŋic (kùdòŋicì ⁺) / kùdòŋ (kùdòŋgì ⁺)				dòŋdìcè / dòŋgè	dòŋgicé / dòŋgé	<i>(sugar) cane</i>
102.	càfwd(d)ic (càfwd(d)icì ⁺) – / càfww (càfwwgì ⁺)	– / cilw	culuce / culuke	fuluce / fuluke	sùlucè / sùlùgè	cùlucè / cùlùgé	<i>charcoal</i>
103.	èlèwdic (èlèwdicì ⁺) / èlèw (èlèwngì ⁺)				ìlèwdicé / ìlèwngè ~ ìlèwngè	èlèwkcìcè / èlèwngé	<i>tree sp./grass, leaf</i>
104.	zìt (zìtì ⁺) / zìy (zìyngì ⁺)	sət / səttu	sitte / siige (RT)	sitte / sittuge sitte / siige (HJ)	sittè / sìgè	sitté / sìgè	<i>rope</i>

	nàxày (nàxáyǵì⁺) [pl.]	mùràyǵè [pl.]	nàráyǵé [pl.]	<i>to beg (Nv)</i>
105.	(nìxí ⁺) / nìx (nìxkì⁺)	nìrte / nìrke	nìrte / nìrke	<i>tooth</i> ⁵⁰
106.	nìxí ⁺ / nìx (nìxkì⁺)	nìrte / nìrke	nìrte / nìrke	<i>tooth</i> ⁵⁰
107.	ànjáxsìnìc (ànjáxsìnìc ⁺) / ànjàx (ànjáxkì⁺)	onjorce / onjorke	ònjòrcè / ònjòrke	<i>fly (n.)</i>
108.	ɲàsè / (ɲàstǵì⁺)	ɲàsè / ɲàstǵè	ònjòrcè / ònjòrke	<i>neck/throat</i>
109.	(zà ⁺) / (zǵì⁺)	zè / zǵè	ìsè / ìsǵè	<i>head, top</i>
		sə- / sǵ- (RT)		
110.	(wúndì ⁺) / (wúǵì⁺)	unde / unǵe (RT)	unde / unǵè	<i>ear</i>
111.	(pìxì ⁺) / (éǵì⁺)	pìr- / en-, eng- pər- / ej- (RT)	pìrè / èǵè	<i>child, brother/sister, young, small element of, Diminutive</i> ⁵¹
112.	píibì (pìibì ⁺ ~ péenì ⁺) / píibù (pìibùǵì ⁺ ~ péǵì ⁺)		péénè / pèǵè	<i>child</i>
113.	éǵùlèkè (éǵùlèkèǵì⁺) [pl.]	ngkolokke [pl.] kologoce kologice (HJ)	ngólkicé [sl.] / ngólkè	<i>salt</i>

⁵⁰ Liguri **nìx-gumho** should perhaps be understood as **nìxgu mho** ‘tooth of people’ (cf. **kik** /pl. **məro** ~ **məho** (SA) ‘person, people’).

⁵¹ See note 48.