Changes to Talodi nouns in Lafofa

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1 Introduction

Lafofa shares many basic nouns with the Talodi languages, although they are generally shorter in Lafofa, and it is difficult to decide whether they were borrowed into Lafofoid or whether they are a shared inheritance from a common ancestor of the two families. In this study, the processes affecting these nouns are described: consonant and vowel fronting, final consonant loss, final V_2 changes (loss, metathesis, and lowering), strong consonant loss and second syllable truncation. I also consider whether there is evidence as to whether these changes happened during internal evolution or loanword adaptation, finding that the latter two processes are adaptive.

A contact scenario will also be supported by bilingual compound nouns, a trilled plural class prefix *r-* and final velar nasal *ŋ*, secondary Lafofoid glosses in the Talodi language Daloka and the *Wanderwort* 'knife'. The borrowing analysis is surprising because most of the nouns affected are animal body parts, which are usually very stable historically, but there appear to be social considerations here that override the usual constraint against the borrowing of body parts.

We begin with an overview of the two language families as currently understood, and the problems of describing their connection to each other.[1]

1.1 Lafofoid languages

There are two Lafofoid languages spoken in the far south-east Nuba Mountains. First, the Lafofa language (also called Tegem in the literature; see below for discussion of the latter term) is spoken in Lafofa village on Jebel El Liri and in eight more villages around Jebel El Liri (Manger 1994: 35-36), with another dialect spoken at Jebel Tekeim further east (Stevenson 1956:

[1] List of abbreviations used: AGR agreement marker, CL class marker, DERI derivational marker, FEM feminine, NEUT neuter, PL plural, SG singular.

102). Sosal (2018: 28) finds that the phoneme /n/, pronounced [n]~[ŋ] in the Jebel Tekeim dialect, has a newer pronunciation [l] in the El Liri dialect. There are 1,500 speakers in the Lafofa-speaking area, with the same number living elsewhere in urban centres, although as with other Nuba Mountain languages, many of the diasporan urban youth do not speak the language proficiently.[2] The existing linguistic data on Lafofa consists of a number of wordlists (Seligman 1911, McDiarmid & McDiarmid 1931, Stevenson mss., Schadeberg 1981, Thelwall in Schadeberg 1981, Sosal as described in Sosal 2018: 15) and descriptive notes (Stevenson 1956-1957, 1962-1964, Tucker & Bryan 1966, Schadeberg 1981), plus a more recent M.A. thesis on the phonology (Sosal 2018).

The second Lafofoid language, Amira, is spoken at Jebel El Amira to the south of the Lafofa-speaking villages, by a smaller community of not more than 500 people.[3] It is worth highlighting that the linguistic data available for this language is extremely limited so far, consisting only of what was collected by the MacDiarmids in their survey of the Nuba Mountains in 1930-1931. There is a sample 20-word list published in MacDiarmid & MacDiarmid (1931: 155), a 70-word list found in Stevenson's notes and circulated by Blench (2013b), and some pronominal paradigms and a few phrases shown in Stevenson (1957: 44-45). Authors familiar with the Lafofa and Amira data have asserted that Amira is a distinct language (Stevenson 1962-64, Greenberg 1963, Blench 2013a), and I concur after finding 65% lexical similarity to Lafofa in the available word lists (13/20 and 47/70). The Amira lexicon is also distinguished by the suppletive singular/plural pairs *kejo/ela* 'man/men' and *pinembo/ninoŋ* 'woman/women', where curiously, none of these four roots are reported in Lafofa (*k-/amɛ́ɛ* 'man/men', *pʊ-máá-bʊ/a-máá-d̪ʊ* 'woman/women'; Schadeberg 1981). The paucity of Amira data means it plays only a minimal role in the analysis in this paper ('belly' in SECTION 2.3).

Another term, Tekem (Tekeim, Tegem), needs to be distinguished from the names of the Lafofa and Amira languages, as it is an ethnonym that covers speakers of both languages. 'Tekem' is the basic form, with an Arabicised variant 'Tekeim' employing an iambic CVCVVC word shape, and an indigenous variant 'Tegem' due to variable intervocalic voicing. Lafofa speakers use Tekem (Tekeim, Tegem) as their autonym,[4] and identify Jebel

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[2] Source: Omar Ali Kunja, Khartoum State Deputy Mek of Tekeim.
[3] Source: Omar Ali Kunja, Khartoum State Deputy Mek of Tekeim. This also matches the estimate of 300 (Norton & Alaki 2015: 63) implied by the 60 taxpayers earlier reported by Stevenson (1956: 102).
[4] Source: Omar Ali Kunja, Khartoum State Deputy Mek of Tekeim. Schadeberg (1981: 15) likewise has *t̪ɛgêm* as an "ethnic name", which also occurs as a modifier in a

Tekeim as their former home before many moved to Jebel El Liri in the 1880s,[5] but Amira speakers are counted among the Tekem people as well.[6]

The extension of the ethnonym Tekem (Tekeim, Tegem) to Amira speakers means that it does not have exclusive reference to the first of the two language communities in this cluster, as it has sometimes been used. The name Lafofa, on the other hand, is the name of the central village of the first language community and thus properly distinguishes it from the Amira language community. We can then employ the term Lafofoid for the language cluster consisting of Lafofa and Amira, derived from the more populous of the two languages (Norton 2018b).

1.2 Talodi languages

I have compared the available Lafofoid data with my own work on the Talodi languages (Norton & Alaki 2015, Norton 2018a), which builds on Schadeberg (1981). Talodi languages are spoken by nine communities living near the road from Kadugli through Talodi and Tunguru in the south-east Nuba Mountains (Stevenson 1956: 101-102). Lumun-Torona is found to be a separate branch from the Narrow Talodi branch known from Schadeberg (1981), but closely related to it, distinguished by lists of lexical and grammatical isoglosses. The seven languages of the Narrow Talodi branch itself display a chain pattern of overlapping forms consistent with a former dialect cluster that has dispersed to new sites in the area. The Nding language, in particular, is spoken in Dayo [t̪ayuŋ] village on Jebel El Liri, where it has been in contact with the Lafofa language for over a century (Seligman 1911).

The Talodi languages with their ISO 639-3 identifier codes are as follows:

- Lumun-Torona branch
    1. Lumun [lmd]
    2. Torona [tqr]
- Narrow Talodi branch
    3. Tocho [taz]
    4. Acheron [acz]
    5. Dagik [dec]

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phrase referring to the language, *ri-ḍegém rwaŋ* (AGR-Tekem word), which therefore means ‘language of Tekem people’. The latter, however, is imprecise because there are actually two Tekemic languages indigenous to Tekem peoples, Lafofa and Amira.

[5] Seligman (1911: 168), Manger (1994: 47).

[6] Source: Omar Ali Kunja, Khartoum State Deputy Mek of Tekeim.

6. Tuwal [jle][7]
7. Daloka-Aheimar [jle]
8. Tasomi-Tata [tlo]
9. Nding [eli]

1.3 Lafofoid's relationship to Talodi

Certain sources place Lafofa and Amira within Talodi (Greenberg 1950, 1963, Schadeberg 1981, 1989), while others treat Lafofa and Amira as a distinct group (McDiarmid & McDiarmid 1931, Stevenson 1956-57, 1962-64, Tucker & Bryan 1966, Hammarström 2013, Blench 2013a, 2013b, Norton & Alaki 2015, Norton 2018a, 2018b). General observations that all authors contend with when classifying the Lafofoid languages are that the Lafofoid noun class prefix inventory is closer to that of Talodi than to any other group, that Lafofoid is lexically remote from the cohesive cluster of nine uncontroversial Talodi varieties, and that Talodi cognates are shorter in Lafofoid, as this chapter will investigate in detail.

It is increasingly clear that Lafofoid has considerable differences from Talodi lexically, phonologically and grammatically, as listed below. Lafofoid lacks multiple grammatical features that unite Talodi with three other Nubaic families, Heiban, Rashad and Katloid, and some of Lafofoid's differences resemble the Ijoid languages of the Niger Delta in southern Nigeria instead. Ijoid resemblances, taken from Jenewari (1989) and Williamson (2004) unless otherwise stated, are indicated in square brackets [ ] below. One can also notice particular matches with Mande (the article *ɲ́*) and Nilo-Saharan (the genitive postposition *nì*).

DIFFERENCES FROM TALODI IN LEXICON

- Different hunting vocabulary (Blench 2013a), e.g., *bɛbuí/ɛruí* 'dog/s' [Ijoid: **ebirí*]
- Few Talodi verbs, e.g., *ɲa* 'hear' [Ijoid: *naa*]
- Few Talodi numerals, e.g., *-daad-* 'three' [Ijoid: *taato*]
- No Talodi polysemy (Norton & Alaki 2015: 69) [Ijoid: 'leaf' = 'ear']
- No Talodi suppletive plurals or suppletive imperatives (Norton & Alaki 2015: 69)
- No Talodi 'bone' etymology for familial and tribal kinship terms (see Norton & Alaki 2015: 115)

[7] Tuwal shares a 3-letter language identifier code with Daloka-Aheimar, but there is phonological and morphological evidence that they are independent Narrow Talodi varieties that have lexically converged (Norton & Alaki 2015).

- No Talodi *ɛ/u* ablaut in antonyms or general nouns (see Norton & Alaki 2015: 140)
- Lexical similarities skew lower than Talodi with the other Nubaic families, Katloid, Rashad, and Heiban (Norton 2018b) [Ijoid: no skewing, 30% similarity to both Defaka and Ijọ, Norton (2016)]

DIFFERENCES FROM TALODI IN PHONOLOGY

- Implosives (Schadeberg 1981: 77), e.g., *ɗɔi* 'breast' [Ijoid: *ĩdõũ*]
- Extensive *Cw* sequences (Sosal 2018) vs. Talodi *kw* only (Norton & Alaki 2015)
- Extensive free variation in consonants (Schadeberg 1981) [Ijoid: fewer consonants, see SECTION 2.1 below]
- Vowel length contrast (Sosal 2018: 48) [Ijoid: vowel length contrast]
- Morphophonemic vowel lengthening before a second stem (Schadeberg 1981: 83)
- HLH tone melody (Schadeberg 1981: 79) [Ijoid: HLH is tone class "3"]
- Consonant skeleton restriction against strong consonants after weak consonants (see below) [Ijoid: same, Williamson 1978]

DIFFERENCES FROM TALODI IN GRAMMAR

- No Nubaic *t/*n inclusive/exclusive pronoun distinction (Norton 2018b)
- No Nubaic inclusive-dual/inclusive-plural distinction (Norton 2018b)
- No Nubaic glossonym (language) or toponym (homeland) noun class prefixes (Schadeberg 1981: 15; on Talodi see Norton 2018a)
- No Nubaic plural enclitic for kinship terms (Tucker & Bryan 1966: 276-277)
- No Nubaic noun class agreement on postnominal modifiers (Tucker & Bryan 1966: 288; Schadeberg 1981: 83)
- OV word orders (Tucker & Bryan 1966) vs. Talodi strictly VO (Norton 2018a) [Ijoid: OV]
- Sex gender (Stevenson 1964: 84), e.g., 3SG.FEM/NEUT *a-ci/lɪ* 'she/it' [Ijoid: *a-rɪ/anɪ*] 3SG.FEM/NEUT *a-/Ø-* [Ijoid: *a-/Ø-*] (see Norton 2018b)
- Article *-í* (Schadeberg 1981: 83) [Mande: *í*, Ijoid: *ɓí*]
- Partial person-number agglutination in pronouns (Schadeberg 1981: 155)
- Adjective morphology: antonym *li-*/non-antonym(?) *ti-*, quantifier class *-iŋ*, predicative(?) *-lli* (Schadeberg 1981)
- Other grammatical items: negative *mla*, prohibitive *ye*, subject-indexed auxiliary *ḍe*, feminiser *-o-*, genitive postposition *ni* [Nilo-Saharan: *nɨ*] (Tucker & Bryan 1966)

On the other hand, there is also a shorter but substantial list of features that do resemble Talodi. In addition, Lafofoid has innovations that extend Talodi-like noun class consonant alternation in new ways, different from but not independent of Talodi. So these similarities also call for explanation, whether in terms of inheritance or contact.

SIMILARITIES WITH TALODI[8]

- Many nouns in basic vocabulary
- Some pronouns (Schadeberg 1981: 155)
- Noun class consonant prefixes, including labials unique to Talodi: SG *b-*, PL *m-* (Schadeberg 1981: 158; Hammarström 2013: 552)
- Some noun class agreement on adjectives, in prenominal and predicative positions (Tucker & Bryan 1966: 278)
- Reduplication in plural size adjectives (Schadeberg 1981: 83; on Talodi see Norton 2018a: 13)
- Imperative verb morphology: *N-*, *-i, -k, -ṯaŋ* (see Schadeberg 1981)
- Nubaic velar nasals in 'tongue' (*liaŋ*), liquid noun class (*ŋ-*), singular pronouns (*ŋ-*)
- Nubaic liquid consonant infix (see Norton 2018b: 437) in *k-ár-aŋ/0-* 'nose', *r-r-ɔŋ/mɔ-r-ɔŋ* 'day'

EXTENDED CONSONANT ALTERNATION FOR NUMBER

- Consonant alternation for number applied in plural pronouns (Schadeberg 1981: 156) and plural verbs (Tucker & Bryan 1966: 285)
- Multiple consonant alternation for number applied in third person pronouns, size adjectives, and certain nouns (Schadeberg 1981: 82-83)

1.4 Lafofoid's relationship to Ijoid

Lafofoid's resemblances with Ijoid of the Niger Delta in southern Nigeria are not only lexical, phonological and grammatical, as shown above in SECTION 1.3, but also include recurrent sound correspondences that support a real historical connection, as in TABLE 1.

Ijoid cognates are shown here from either of its two divergent branches, Ịjọ or Defaka. This is because many lexical items are different in the two branches, or are only known in one of the branches, or one of the two is more directly comparable with Lafofa (Defaka *úɔ* vs. Ịjọ *ír↓-úwa* 'sun'). The bulk of the

[8] Excluded from this list is a possible shared medial *a* ~ final *ɛ* phonological alternation (Norton & Alaki 2015: 106), reviewed favourably in Sosal (2018: 12), but see SECTION 2.3 below for an argument against it as a shared property.

correspondences shown here are with Defaka, a nearly extinct divergent Ijoid language showing its value for comparative study with Lafofa. On the other hand, certain reductive changes in Lafofa find part of their support from two striking VCVV cognates from Ịjọ, 'people' and 'tie'. Each Lafofa cognate is underlined, as the Lafofa data is characterised by synthetic morphology absent from the Ijoid terms.[9] The data is from Williamson (2004) with updates from Blench (p.c.) for Ijoid, and from Schadeberg (1981) for Lafofa.

GLOSS	IJOID	LAFOFA	CORRESPONDENCES
'people'[10]	Ịjọ *amée*	*k-/amée*	e:ɛ
'sand'	Defaka *w̃ãã*	*k-wáá-ɽa*	w̃:w, aa:aa
'sun'	Defaka *úɔ*	*p-úuw-í*	uɔ:u, HL:HL(-H)
'arm'	Defaka *káa*	*ṭ-ɔ́-wáaá-y /r-*	k:w, aa:aa, HL:HL(-H)
'three'[11]	Defaka *táátó*	*pa-daa(d)-iŋ*	aa:aa
'sew'	Defaka *k͡píí*	*m-bí-ḍaŋ*	V́V́:V́/-*ṭaŋ*
'tie'	Ịjọ *ʊw̃ãĩ*	*n-d-ɔ́waay*	w̃:w
'smell'	Defaka *ɔ́rúɔ*	*n-ḍ-úlu*	uɔ:u
'cut'	Defaka *kéé*	*n-ḍâ-wé-ṭaŋ*	k:w, e:ɛ, V́V́:V́/-*ṭaŋ*

TABLE 1: Ijoid-Lafofa cognates with sound correspondences

Lafofa has sound correspondences with Talodi as well (Norton & Alaki 2015: 70), so these additional sound correspondences with Ijoid imply that Lafofoid had historical connections with both Ijoid and Talodi. This amplifies previous concerns that the Talodi material may be more recently borrowed (Stevenson 1957: 45, Hammarström 2013: 553, Blench 2013a: 580, Norton 2018b: 426).

2 Processes affecting Talodi nouns in Lafofa

We now proceed to consider the sound changes that have altered Talodi nouns in Lafofoid. Sounds undergoing change will be tracked by the numbered indices $C_0V_1C_1V_2C_2$ where C_0- is a noun class prefix. The following subsections describe fronting (SECTION 2.1), final consonant loss (SECTION

[9] The Lafofa nouns have consonantal noun class prefixes, and article modifiers *-ɨ́~-ɨ́y* or (locative) *-ɽa*. The numeral has an agreement prefix *p(a)-* and a quantifier suffix *-iŋ*. The verbs have an imperative *N-* prefix, a verbal prefix *ḍ(á)-* and a locative applicative suffix *-ṭaŋ*.

[10] Kalabari Ịjọ *amée* 'associative plural, group' (Jenewari 1977: 196); Lafofa *amée* 'persons' accepts a singulative noun class prefix *k-amée* 'person'.

[11] The second plosive in Lafofa *pa-daa(d)-iŋ* is elided in Schadeberg's word list, but was elicited by Thelwall: *peda:dɪn* (Schadeberg 1981: 174), by Stevenson: *paṭaaṭɪn, paṭaaɪn* and by the MacDiarmids: *pathandhin* (Stevenson mss.).

2.2), final V_2 changes (SECTION 2.3), strong consonant loss (SECTION 2.4) and second syllable truncation (SECTION 2.5).

Unless otherwise stated, the Talodi forms are from Norton & Alaki (2015) and the Lafofa forms are from Schadeberg (1981).

2.1 Fronting

Fronting effects are visible in Lafofa in both consonants and vowels. Among consonants, the Talodi singular noun class prefix **c-* becomes *t-* in Lafofoid, as shown in TABLE 2.

TALODI	GLOSS	CLASSES	FRONTING	LAFOFA
*c-ɔḏɔṯ/m-	'star'	c/m	t/m	*t-ɽɔ́ɔ́/m-*
*c-əndək/k-	'neck'	c/k	t/k	*t-éɛl-í/k-*

TABLE 2: Palatal plosive consonant fronting in Lafofa

TABLE 2 incidentally shows altered root consonants in the Lafofa cognates: [ɽ] in 'star' reflects intervocalic [d], which lacks contrast in Lafofa with dental *ḏ, while [l] in 'neck' is an El Liri dialect pronunciation of /n/ (Sosal 2018: 28).

As to the fronting of vowels, the central vowel **ə* and sometimes **a* become *ɛ* in Lafofa. This is attested in 'neck' in TABLE 2, and also in further examples in TABLES 4, 5, 8 and 10.

Consonant and vowel fronting would make sense if Talodi nouns were borrowed into a language with no non-low central vowel phoneme /i ɪ ɛ a ɔ ʊ u/, and with fewer consonant place contrasts /p t k/, both reminiscent of Ijoid (Jenewari 1989: 183). Fewer place contrasts also produce wider phonetic variability in each phoneme, with /t/ realised between the forward palate and the teeth, giving rise to Lafofa transcriptions of both [t] and [t̪], and /k/ realised in the back palate region, giving rise to Lafofa transcriptions of both [k] and [c], as discussed in Schadeberg (1981: 82).

However, this is inconclusive, because the place shifts from palatal to alveolar and from mid-central to mid-front vowels could also have occurred by sound mergers during internal evolution.

2.2 Final consonant loss

Most word-final consonants on Talodi nouns are lost in Lafofa, as shown in TABLE 3. The exception is a final nasal consonant in 'word', indicating that a word-final nasal is retained if it is the only root consonant C_1, but not if it is a second root consonant C_2 as in 'egg' and 'wing'.

GLOSS	SHAPE	TALODI	LAFOFA
‘eye’	CVC	*c-it/k-	*ṭ-íi-í/c-*
‘fire’	CVC	*ṭ-ɪk/l̩-	*ṭ-íi-í*
‘guts’	CVC	*t-uk/n-	*ṭ-u/r-*
‘egg’	CVCVC	*c-u-ɪn/m-	*ṭ-úúwɛ-y/m-*
‘road’	CVCVC	*k-aṭṭɪl̩/0-	*t-íâṭɛ/m-*
‘star’	CVCVC	*c-ɔḍɔṭ/m-	*t-ɽɔ́ɔ́/m-*
‘wing’	CVCVC	*ʊ-gʷɪn/ɲə- ‘arm’	*k-ʊgʷéé-ga/b-*
‘word’[12]	CVN	*l̩-ɔm (> *r-ɔŋ)	*r-ʷaŋ*

TABLE 3: Final consonant loss in Talodi nouns in Lafofa

It remains ambiguous whether final consonant loss occurred as a borrowing adaptation or an internal sound change. Word-final erosion is common in internal sound change, but it could also be a borrowing adaptation if final consonants are inadmissible in the recipient language. While there are word-final consonants in Lafofa today, for example *ṭɛɛr-um* ‘ten’ (two-hands) and a non-Talodi suffix *-ṭ* as in *kíií* ‘dark’, *kíií-ṭ* ‘night’ (Sosal 2018: 48), nevertheless root-final consonants are restricted by the possible root shapes V, CV, VCV, or VC_{voiced}, and final consonant loss conforms Talodi nouns to these root shapes. It still cannot be resolved, however, whether nouns were adapted during borrowing by final consonant loss to pre-existing root shapes, or whether the root shapes emerged as a result of final consonant loss as an internal sound change.

Final consonants are also lost in some Talodi languages themselves (Norton & Alaki 2015: 80), raising a different query as to whether the consonants could have already been absent in the donor language before being borrowed into Lafofoid. In fact, however, the final nasal in Lafofa ‘word’ tells us that the donor language would still have had some final nasal consonants at the time of borrowing (if indeed the Talodi nouns were borrowed).

2.3 Final V_2 changes

In items with two vowels, there are several changes to the second vowel V_2. First, V_2 may be lost after a trill or a nasal, which then becomes the word-final consonant, as in TABLE 4. In all the examples in TABLE 4, V_2 loss happens together with regular final C_2 loss. The V_2 losses then fall into two types:

[12] Norton & Alaki (2015) have *l̩-ɔn̪, but I have since argued (Norton 2018b: 431) that *m is a more plausible proto-Talodi reconstruction than *n̪, supported by external evidence from other languages for some items: ~~*ɪn̪~~ *ɪm ‘I’ and ~~*kʷ-an̪~~ *kʷ-am ‘hair’.

either the lost V_2 is a schwa, or the lost V_2 comes after an alveolar nasal *n, which regularly becomes [l] in the Lafofa data.

GLOSS	SHAPE	TALODI	LAFOFA	NOTES
'belly'	CVC~~VC~~	*ca-r̲ək/kə-	*ṯ-úʊr̲-i/k-*	Amira *tu*
'worm'	CVC~~VC~~	*t-əŋ̲ək/n-	*kʊ-d-ʊŋ̲-í/a-*	*kʊ-/a-, t→d ə→ʊ*
'moon'	CVC~~VC~~	*k^{w}-anɔ̲k/0-	*kw-ɛ́ɛ́l̲-i*	*a→ɛ n→l*
'snake'	CVC~~VC~~	*p-ənn̲ɪl̲/a-	*w-ɛ́ɛ́l̲-i/k-*	*ə→ɛ n→l (p/a→w/k)*
'wind'	CVC~~VC~~	*k-ann̲aŋ	*kʊ́w-ɛ́l̲-i*	*ə→ɛ n→l (k→kw)*

TABLE 4: Final V_2 loss (either V_2 = *ə or V_2/*n_)

The cognacy of the Lafofa forms in TABLE 4 is complex, but demonstrable. In the first two examples with the loss of schwa, *ṯ-úʊr-i* 'belly' combines a back vowel root (Amira *tu* 'belly') with the Talodi root ~~*rək*~~ with V_2C_2 removed, while *kʊ-dʊŋ-í* 'worm' adds new prefixes *kʊ-/a-* in front of the existing alveolar prefix of ~~*t-əŋək*~~, which is then susceptible to intervocalic voicing to *d*. Also, the *ə in V_1 position has fully assimilated to the preceding vowel in *kʊ-*, hence *kʊ-d-ʊŋ* with V_2C_2 removed.

In the last three examples in TABLE 4 with V_2 loss after *n, all show vowel fronting *ə,a→ɛ*, lengthened to *ɛɛ* in two of them: *kw-ɛ́ɛ́l-i* 'moon' and *w-ɛ́ɛ́l-i* 'snake' before the following article *-i*. There is also lateralisation of *n to [l], being the El Liri dialect pronunciation of /n/ (Sosal 2018: 28). The article *-i* has high tone elsewhere, which is absent here in the environment of a high tone on the root vowel. The last item, 'wind', has been reclassified to the prefix *kw-*, whose vocalisation *kwɛl→kʊwɛl* seems to have replaced the expected vowel lengthening *kwɛl→kwɛɛl* before *-i* that occurs in other examples.

Some other final V_2 vowels are affected by metathesis with a preceding nasal, as in TABLE 5. This change affects unrounded vowels other than schwa *ə and after nasals other than alveolar *n. So the vowels affected by metathesis are in an elsewhere relationship with those subject to V_2 loss in TABLE 4: V_2 loss happened first, then NV_2 metathesis affected the remaining unrounded vowels after the remaining non-alveolar nasals. Both processes of final V_2 loss and final V_2 metathesis expose new final nasals that are not themselves subject to final consonant loss: these C_1 consonants are immune to final consonant loss if they are nasals, as shown in SECTION 2.2 above, and apparently if they are trills as well. Final nasal consonants in C_1 position are retained even if they come after the infixed consonant *-l̤- > -r- ('tongue', 'name' and added in Lafofa 'nose').

GLOSS	SHAPE	TALODI	LAFOFA	NOTES
'bone'	CVNV	*c-ə-mɛ/m-	*t-úám-i/m-*	Cɛ > aC
'tongue'	CVNV	*ʈʊ-ḷəŋɛ/ḷə-	*líáŋ-i*	Cɛ > aC
'tooth'	CVNVC	*c-ə-ɲit/k-	*t-ayɲ/k-,t-ɛɛŋ-í/k-*	[ɲ~ŋ]
'name'	CVCVNVC	*k-ə-ḷəŋan/0-	*gu-r^{w}aŋ*	(C^{w}/u_)
'nose'[13]	CVNCV	*k-ə-ɲɬɛ/0-	*k-ár-aŋ-í/0-*	Cɛ > aC

TABLE 5: Final NV_2 metathesis (unrounded $V_2 \neq$ ə after a nasal N ≠ n)

Metathesis of preceding nasals with a final *ɛ* in particular regularly leaves medial *a*, although the origin of this regularity is difficult to interpret. In Talodi, there is a productive medial *a* ~ final *ɛ* alternation (Norton & Alaki 2015: 105-107), which here might be either a common genetic inheritance in Talodi and Lafofoid, or a phonological borrowing into Lafofoid from Talodi.[14] A different explanation is available, however, which is that the lowered vowels are the result of a final V_2 lowering process, described immediately below, which could have produced these forms if it preceded NV_2 metathesis.

A third process affecting final V_2 vowels is lowering, which affects unrounded non-ATR vowels in a chain shift *ɪ > ɛ > a*. This is shown in TABLE 6 after plosive or approximant medial consonants, but also appears to have affected the vowels after nasals that moved inwards under final NV_2 metathesis in TABLE 5.

GLOSS	SHAPE	TALODI	LAFOFA	SHIFT
'egg'	CVCV~~C~~	*c-u-ɪn/m-	*ʈ-úúwɛ-y/m-*	*ɪ > ɛ*
'road'	CVCV~~C~~	*k-aʈʈɪḷ/0-	*t-íâʈɛ/m-*	*ɪ > ɛ*
'wing'	CVCV~~C~~	*ʊ-g^{w}ɪn/ɲə- 'arm'[15]	*k-ʊg^{w}éé-ga/b-*	*ɪ > ɛ*
'who?'	CVCV	*ɔŋ-b-ʈɪ	*á-mb-uté/á-ll-uté*	*ɪ > ɛ*
'river'	CVCV	*t-ʊwɛ/n-	*ʈ-ʊwaa-yʈ/r-*	*ɛ > a*
'fly (vb.)'	CVCV	Torona[16] *piʈe-t*	*bʈía-ŋ*	*ɛ > a*

TABLE 6: Final V_2 lowering (V_2 = unrounded, non-ATR)

[13] The changes in this Lafofa noun are complex, but analysable as final V_2 lowering *ɛ > a* (see immediately below), internal strong consonant loss *ɟ > Ø* (see TABLE 10, SECTION 2.4), NV_2 metathesis, velar allophone of the remaining nasal in a non-palatal environment, and irregular *r*-infixation.

[14] The medial *a* ~ final *ɛ* alternation is also evident between Rashad *araw, aryaw* 'red' (Schadeberg 2013) and Talodi *ɔḍɛ 'red' before a *-w* extension present in Rashad but not in Talodi.

[15] Or *k-ʊbɪ/0- 'wing'.

[16] Proto-Talodi *pir(u), where the Torona form *piʈe* with completive *-t* shows *r > ʈ* and *ɛ~u* ablaut.

Final V_2 lowering can be positively identified as an internal sound change rather than as an adaptation during borrowing. It is visible not only in non-nouns, as shown in TABLE 6 ('who?', 'fly (vb.)'), but also even in Ijoid cognates: *ɪ-kɛ* POSS-3SG.M 'his' [Ịjọ *kɪ* in *kɪ-mɪ* 'man'/*kí-ní* 'people'] and *ṭɪɲá-y* 'people' [Ịjọ *iyé* 'thing' with human plural *t-* as in *kɪ-mɪ* 'man'/*to-mi* 'people']. Moreover, the affected vowels undergo a chain shift, which is another diagnostic of internal sound change. In addition, if final V_2 metathesis occurred in Lafofoid after final V_2 lowering as proposed, it follows that it too is an internal sound change and not a borrowing adaptation. Indeed, another piece of evidence that NV_2 metathesis is internal and not adaptive is that it produces new VVN# sequences in the Lafofoid lexicon.

GLOSS	SHAPE	TALODI	LAFOFA	NOTES
'claw'	C~~V~~CV	Dagik *g-a-wɪ/w-*	*k-wíí-ga/0-*	V_1 lost (affix)
'star'	C~~V~~CV~~C~~	*c-ɔḍɔṭ/m-	*t-ɽɔ́ɔ́/mɔ́-*	V_1 lost (identical)
'bird'	CVC~~V~~C~~V~~	*pu-ḍəbɛ/a-	*p-ɽííyɛ-y/a-*	blend with *iyé* 'thing'[17]

TABLE 7: Preserved V_2 vowels

A few V_2 vowels occur unchanged, as given in TABLE 7. This happens, for example, when V_1 is lost instead, making former V_2 the sole root vowel. A different situation arises in 'bird', where the failure of final V_2 lowering is explicable if its final *ɛ* is not a second root vowel but the vowel of an additional blended root. Defaka *yɛɛ* 'bird' at first sight seems to fit here. However, its long vowel is problematic, because final long vowels are not eliminated in Lafofa, for example *ṭílɔɔ* 'gazelle'. A closer fit is Defaka *iyé* 'thing' replacing Talodi *bɛ 'thing' in the original structure *pu-ḍə-bɛ > *pə-ɽ-iyɛ* (SG-DERI-thing) 'bird'. Looking for V_2 loss is part of a heuristic that tracks the shortening of roots starting from the right, but we find that loss is far from the only outcome for V_2. Compare the fates of high front vowels in the roots in TABLE 8.

GLOSS	SHAPE	TALODI	LAFOFA	FATE
'snake'	CVN~~V~~C~~V~~C	*pə-nɪl/a-	*w-éél-i/k-*	loss
'road'	CVCV~~C~~	*k-aṯṯɪl/0-	*t-íâṭɛ/m-*	lowering (internal)
'tooth'	CVNV~~C~~	*c-ə-ɲit/k-	*t-ayɲ/k-,-ɛɛŋ-í*	metathesis (internal)
'claw'	C~~V~~CV	g-a-wɪ/w-	*k-wíí-ga/0-*	unchanged
'horn'	CV~~C~~V~~C~~	*ṭu-biḍ/ḷə-	*ṭ-û-í/r-*	syllable truncation (2.5)

TABLE 8: Five fates of V_2

[17] *l* in Schadeberg's Tegem (Lafofa) word list is edited here to *ɽ* in the Lafofa form, following Stevenson's word list.

2.4 Strong consonant loss

As well as final consonant loss and final V_2 loss, we have loss of internal plosive consonants. Root plosives are lost after nasal or trill prefixes, or after root nasals or trills. This produces extreme truncation, leaving roots with a V or VN shape as shown in TABLES 9 and 10 respectively.

GLOSS	SHAPE	TALODI	LAFOFA
'root'	C~~VCV~~C	*t̪ʊ-gac/l̪ə	*t̪-aa-ga/r-*
'tail'	C~~VCV~~C	*t̪u-d̪ik/l̪ə-	*t̪w-íi/r-*
'skin'	CV~~CV~~	*k-ɛd̪u /0-	*tw-ê/r-*
'horn'	CV~~CVC~~	*t̪u-bid̪/l̪ə-	*t̪-û-í/r-*
'blood'	CV~~CVC~~	*ŋ-ɪdʊk	*ɲ-íi-í*

TABLE 9: Loss of root plosives after prefix nasals or trills

GLOSS	SHAPE	TALODI	LAFOFA	NOTES
'neck'	CVN~~CVC~~	*c-ə-ndək/k-	*t-éɛl-í/k- [l~ŋ]*	
'knee'	CVN~~CVC~~	*k-ə-ŋgʊc/0-	*c-íí-d-ɛɛŋ-í/íí-g-ɛŋ*	compound (3.1)[18]
'nose'	C~~V~~N~~C~~V	*k-ə-ɲɟɛ/0-	*k-ár-aŋ-í/0-*	*Cɛ > aC*, *r*-infixation

TABLE 10: Loss of root plosives after root nasals

Once again, *p-ɽííyɛ/a-* 'bird' is an atypical case outside the above pattern, because a plosive *b* has been lost from **pu-d̪əbɛ/a-* after *ɽ* (which varies with *d* intervocalically in Lafofa) rather than after a trill or a nasal. Again, the blend analysis of 'bird' given in SECTION 2.3 explains the irregular loss of *b* in 'bird', as it is replaced by *y* through blending with the Defaka root *iyé*. This special explanation for internal consonant change in 'bird' preserves the present phonological generalisation met by other nouns, that plosives are lost after trills or nasals.

GLOSS	SHAPE	LAFOFA	TALODI
'thing'	CV	*í-bɛŋ-i/lé-*	*bɛ/al̪ə-
'road'	VCV~~C~~	*t-íât̪ɛ/m-*	*k-at̪̪tɪl/0-
'star'	VCV~~C~~	*t-ɽɔ́ɔ́/mɔ́-*	*c-ɔd̪ɔt̪/m-
'wing'	VCV~~C~~	*k-ʊg^{w}éé-ga/b-*	*ʊ-g^{w}ɪn/ɲə- 'arm'
'gazelle'	VC	*t̪-ɔb/m-*	(Nding *t-ɔbɔk/n-*)

TABLE 11: Surviving root plosives after prefix plosives or *l-* or *m-*

[18] Schadeberg (1981: 31) has *c-íleeŋ-í*, the correction of *l* to *d* is from my own data.

Surviving internal plosives are those that come after prefix plosives or *l-* or *m-*, in contrast to the trills (*r-*) or lingual nasals (*n-, ɲ-, ŋ-*) that condition the loss of internal plosives. These surviving internal consonants are shown in TABLE 11.

An apparent exception to the survival of plosives after a prefix *m-* is the putative loss of *ɟ* in Lafofa *m-úú-í* 'ashes', from Talodi **mə-ɟúk*. Perhaps this exception arose because the palatal is an irregular infixed class marker (Norton & Alaki 2015: 130) accompanied by an epenthetic schwa as in ***m-úk > *mə-ɟ-úk*. Then the proposed ***m-úk* would have the virtue that it directly accounts for the Lafofa stem *m-ú* (becoming lengthened before a following article in *m-úú-ǐ*) by simple final consonant loss. In fact, however, the originality of the palatal plosive in Talodi **mə-ɟúk* 'ashes' finds support from the related **u-ɟuk* 'smoke'. So if the palatal is original, the preservation of root plosives after *m-* could still be maintained if this palatal plosive had been re-interpreted as an infix in Lafofoid, leading to the back-formation *m-ú* as an infixless form. An example of a palatal infix in Lafofa is in *w-aɟi/k-*, Talodi **w-aɪ/k-ie* 'cow'.

Remarkably, a similar consonant skeleton restriction is documented in Kolukuma Ịjọ (Williamson 1978), where it is described as a restriction against strong consonants later in the word after weak consonants. Many languages use a consonant strength hierarchy to limit consonant sequences in syllable onset or coda constituents, but Ịjọ and Lafofa use a consonant strength hierarchy to limit the consonant skeletons of words as a whole. Languages in general vary slightly as to exactly which consonants are counted as stronger or weaker, but a basic difference is that obstruents (such as plosives) are stronger than sonorants (such as nasals and trills). In some languages, labials are stronger than lingual consonants, for example in Bura onset sequences (Maddieson 1983); similarly, in Lafofa the labial nasal *m* is stronger than the lingual nasals *n, ɲ, ŋ* in consonant skeleta. In some languages, laterals pattern with stops rather than with continuants (Mielke 2005), and this is the case in Lafofa, where the lateral patterns with the plosives as another strong consonant.

The application of the strength hierarchy over the consonant skeleton thus constitutes a phonotactic property of Lafofa, implying that Talodi nouns were adapted to the Lafofoid strength hierarchy during borrowing.

2.5 Second syllable truncation

Some lexemes show losses of internal consonants that are unexpected based on the loss of strong consonants after weak ones. Loss of **n* in *t̪-íɛ/m-* 'ear' from Talodi **k-ɛ[:]nu/0-* is unexpected as **n* is resilient in other roots, and the

consonant skeleton in the plural *m-n* (labial-lingual) complies with the Lafofa consonant strength hierarchy. Nor is it attributable to final consonant loss, because final consonant loss only applies to nasals when they are in C_2 position, whereas the nasal in 'ear' is C_1.

I therefore propose a further process at work here: truncation of the second syllable after a lengthened vowel as shown in TABLE 12. Lafofa has a morphophonemic process in which a stem vowel lengthens before a second stem. Lengthening before a second stem occurs in stem compounds such as *béɛ-bú/ɛ́ɛ-rú* 'dog' (Schadeberg 1981: 82), where the Lafofa lexeme 'dog' employs two prefixed stems (see SECTION 3.1 below), and also with the article *í* as in *kɔ́ɔ, kɔ́ɔ́-í* 'meat' (Schadeberg 1981: 83), where the article is a second stem which can take a *-t* suffix as in *kíi-í* 'dark', *kíi-íṭ* 'night' (Sosal 2018: 48). Although vowel length is not contrastive in Talodi languages (Norton & Alaki 2015: 107), they do have vowel lengthening in non-final root open syllables, producing /CV:CVC/ word shapes. If borrowed into Lafofoid, these could be re-interpreted as two stems /CV:-CVC/ in Lafofoid morphology, marked by morphophonemic vowel lengthening in the first 'stem'. And if the second 'stem' is then dropped, leaving only the first syllable, then the vowel is also no longer lengthened as there is no following second stem (unless the article *í* is employed, as in 'blood').

GLOSS	SHAPE	TALODI	LAFOFA
'blood'	CV~~CVC~~	*ŋ-ɪ[:]dʊk	*ɲ-íi-í*
'ear'	CV~~CV~~	*k-ɛ[:]nu /0-	*ṯ-íɛ-y/m-*
'finger'	CV~~CVC~~	*c-a[:]-gək/ɲ-	*k-a-i/0-*
'horn'	CV~~CVC~~	*ṯu[:]-biḍ/lə-	*ṯ-û-í/r-*
'skin'	CV~~CV~~	*k-ɛ[:]ḏu /0-	*tw-ê/r-*

TABLE 12: Second syllable truncation preserving the first vowel

Since this truncation process is morphological rather than phonological, two things follow. One, the second syllable $C_1V_2C_2$ can be truncated even if there is no consonant strength violation ('ear', 'finger'), as long as there is a lengthened V_1 in the first syllable. Two, the occurrence of truncation is not necessarily regular. Thus, some roots with a consonant strength violation have also undergone second syllable truncation leaving only the first V_1 vowel ('blood', 'horn', 'skin'), but others have not. Those that have not are still subject to the phonologically regular strong consonant loss, which removes the C_1 and C_2 plosive consonants but (unlike truncation) still preserves the V_2 vowel ('root', 'tail'), as shown in TABLE 13 for comparison. This provides us with a successful explanation of how some Talodi nouns have preserved V_1

and others have preserved V_2 in Lafofa, which is a curious feature of these drastically shortened nouns.

GLOSS	SHAPE	TALODI	LAFOFA
'root'	C~~V~~C~~V~~C	*ʈʊ[ː]-gac/ḷə	*ʈ-aa-ga/r-*
'tail'	CV~~C~~V~~C~~	*ʈu[ː]-ɖik/ḷə-	*ʈw-íi/r-*

TABLE 13: Strong consonant loss preserving the second vowel

We have now identified two processes in Talodi nouns that imply contact with a Lafofoid language with a different phonological and morphological system. We have strong consonant loss after a weak consonant, which adapts Talodi nouns to a Lafofoid consonant strength hierarchy applied across the consonant skeleton, and we have second syllable truncation after lengthened vowels, which interprets Talodi nouns through Lafofoid morphophonology where a lengthened vowel signals a distinct stem in the following syllable. Both processes are rather destructive, accounting for the drastic reduction in Talodi nouns that we see in Lafofoid.

3 Other evidence of borrowing from Talodi

3.1 Bilingual compound nouns

TABLE 14 shows 'dog', 'head' and 'knee', in which the Talodi root undergoes the expected final consonant loss, or even (in 'knee') second syllable truncation, but this is also blended with another preceding element. In all three words, the preceding element matches an initial portion of an Ijoid root with the same meaning. Both the clipped Ijoid root and the Talodi root take noun class prefixes, thus bringing together two inflected stems into a compound. The vowel of the clipped Ijoid root is lengthened, signalling a second stem in the next syllable. The Talodi roots are borrowed, because there were Ijoid roots already present with the same meanings, which were retained in clipped form when the Talodi roots were added.

GLOSS	LAFOFA	IJOID	TALODI
'dog'	*pɛ́ɛ-pú/ɛ́ɛ-rú*	Defaka *ebere*	**ʈʊk/ḷʊk*
'head'	*drɔ́ɔ́-ta/mɔ́rɔ́-ma*	Defaka *tóbo*	**cac/kac*
'knee'	*cíí-dɛɛŋ/íí-gɛɛŋ*	Ịzọn Ịjọ *ígbélé*	*kəŋgʊc/0-

TABLE 14: Bilingual compound nouns

Pre-augmentation with an existing root offers an interesting strategy for differentiating very short roots in the Lafofa lexicon. It supplements the phonological differentiation of very short roots achieved in Lafofa through

embedded prosodic contrasts in tone, length and ATR. The relative functional loads of different lexical strategies in Lafofa await further study.

3.2 Trill prefix and final velar nasal

Talodi has a noun class plural prefix *ḷ- which becomes a trill *r-* in several languages of the Narrow Talodi branch. Two Narrow Talodi languages, Tocho and Daloka, still retain a lateral *l-* along with Lumun of the Lumun-Torona branch. This is shown in three examples in TABLE 15.

		'dogs'	'livers'	'ropes'
Proto-Talodi	*ḷ-	*ḷ-ʊk	*ḷə-ŋgɛ	*ḷ-ɔḷək
LUMUN-TORONA				
Lumun	*l-*	*l-ʊk*	*l-ʊŋg^{w}ɛ*	*l-ɔɽək*
Torona	*ɽ-*	*ɽ-uk*		
NARROW TALODI				
Tocho	*l-*	*l-aʊk*	*lə-ŋgɛ*	*l-ɔrək*
Acheron	*r-*	*r-awʊk*	*rə-ŋgɛ*	*r-ɔrək*
Dagik	*r-*	*(n̈-aʊ)*	*rə-ŋgɛ*	*r-ɔrək*
Tuwal	*r-*	*r-akɛd̈ʊ*	*ri-ŋki*	*r-ɔr*
Daloka	*l-*	*l-ɛkɛːlu*	*l-ʊŋgi*	*l-ɔɽɔ*
Tasomi	*r-*	*r-ʊk*	*ri-ŋgɛ*	*r-ɔrɔk*
Nding	*t-*	*(a-bʊk)*	*t-ʊŋgi*	*t-ɔrʊk*

TABLE 15: Plural noun class prefix *ḷ- in Talodi

The corresponding plural prefix in Lafofa is the trill rather than the lateral, implying borrowing from the Narrow Talodi cluster after the development of the trill form of the suffix, as presented in TABLE 16.

	PROTO-TALODI		NARROW TALODI		LAFOFA
'word'	*ḷ-ɔm	>	*r-ɔŋ	→	*r^{w}aŋ*
'root'	*ẗʊ-gac/ḷə-	>	*ẗʊ-gac/rə-	→	*ẗ-a/r-a*
'tail'	*CL-d̈ik/CL-	>	*ẗu-d̈ik/rə-	→	*ẗw-íi/r-íi*

TABLE 16: Borrowing of *r-* from the Narrow Talodi branch

Additional supporting evidence for a Narrow Talodi borrowing source comes in the particular item 'word' in TABLE 16, whose original final *m is not used in Lafofa 'word' despite ample other Lafofa roots with a final *m* (*tɛgêm* 'autonym', *ʊm* 'hands', *ɔm* 'mountains', *kɔ́m* 'ropes', *kilíɛkúm* 'five', *ẗɛɛrum* 'ten', *d̈ɛ́ɛ́ẗélêm* 'short'). Instead, the Narrow Talodi branch is characterised by the restriction of word-final nasals (and plosives) to velars (Norton & Alaki

2015: 80), and hence the final *ŋ* in 'word' again supports the conclusion that it was borrowed from the Narrow Talodi branch, not jointly inherited, which would have produced *m*.

3.3 Secondary glosses in Talodi that match Lafofoid

To identify secondary glosses that may have entered Talodi from Lafofoid (or vice versa) during contact, wordlist items with two or more cognate classes among the Talodi languages were searched for Lafofa matches, producing the totals given in TABLE 17. The nine Talodi languages are abbreviated in TABLE 17 as: TOR = Torona, LUM = Lumun, TOC = Tocho, ACH = Acheron, DAG = Dagik, TUW = Tuwal, DAL = Daloka, TAS = Tasomi, NDI = Nding.

	TOR	LUM	TOC	ACH	DAG	TUW	DAL	TAS	NDI
total	8	8	10	10	9	7	15	9	14
exclusive	1	0	1	0	1	1	1	1	6

TABLE 17: Number of Lafofa matches in items with ≥ 2 cognate classes

The first thing to note in TABLE 17 is that Lafofa matches with items containing two or more cognate classes are more numerous in the latter seven Narrow Talodi languages than in Lumun-Torona, in agreement with the finding in SECTION 3.2 above that Talodi nouns in Lafofoid have the trill prefixes and final velar nasals of the Narrow Talodi branch. Secondly, the two stand-out totals are in Nding (14, of which 6 are exclusive to Nding), which is in contact with Lafofa today in the El Liri region, and in Daloka (15), which was therefore in contact with Lafofoid in the past.

Of the 15 matches with Daloka, there are seven matches with a primary gloss that is reconstructed to Proto-Talodi in Norton & Alaki (2015) ('bark', 'breathe', 'clean', 'foot', 'wet', 'wing', 'word') and therefore part of the lexis shared by both families, which could either have been jointly inherited or, as suspected here, borrowed into Lafofoid from Daloka. Another eight matches are secondary glosses not reconstructable to Proto-Talodi for the meaning given. Of these eight secondary glosses, five are adjectives with Talodi etymologies, and therefore were borrowed from Daloka into Lafofoid ('big', 'many', 'dirty', 'smooth', 'warm'), as given in TABLE 18.

The remaining three secondary glosses in Daloka are verbs, given in TABLE 19. These lack evidence of Talodi etymology, but rather are plausible loans the other way into Daloka from Lafofoid, either due to having Ijoid cognates ('dig', 'wash'), or due to evidence of blending with the existing form ('suck').

GLOSS	LAFOFA	TALODI		PROTO-TALODI
'big'	*bíá-mb-aŋ*	Daloka Nding	*há-bénɛ́mbɛ* *m-app-ik*	*uttik 'big' *appa 'wide'
'many'	*b-ûmm-íŋ* 'all'	Daloka Tuwal	*-úmmu* *-ummo*	PNT[19] *ummə 'big, old, many'
'dirt(y)'	*ŋaʈéŋ*	Daloka Tuwal Nding	*ŋəʈɪcca* *ŋɛ̰ɾɛʈɛ* *ŋiri*	PNT *ŋ-əlɪc 'dirt'
'smooth'	*pímíɟʊ líŋ*	Daloka Dagik	*-ɔlɪːlɪ* *yɔ-n̪ʊlɪ*	*ɲəla 'smooth' *lɪ 'clean'
'warm'	*b-úʊ-li*	Daloka Tocho Acheron Nding	*ŋ-óːú* *p-uɟu* *b-uðu* *ŋ-úccû*	*ɪppa 'warm' *u-ɟuk 'smoke'

TABLE 18: Daloka secondary glosses loaned into Lafofoid (adjectives)

GLOSS	LAFOFA	TALODI		PROTO-TALODI	NOTES
'dig'	*n-ɟúù-n̪áŋ!*	Tasomi Daloka	*ɟikku* *-sikku*	*(ɪ-)bɔ	Ijoid: Ijọ *soku*, Defaka *sókí* (*k* > *w*/*V*_ in Lafofa)
'wash'	*n-gúɟʷí-n̪áŋ!*	Tasomi Daloka	*gɔ́cci* *kɔ́zgɛrɔ́*	*ɪm(ɛ)	Ijoid: Defaka *suku*
'suck'	*mu*	Daloka	*múkkʊ*	*ʊ-a-gɔ	blended with Talodi form

TABLE 19: Daloka secondary glosses borrowed from Lafofoid (verbs)

The borrowing of Lafofoid verbs by Talodi languages is surprising insofar as verbs are generally less borrowable than nouns (Tadmor et al. 2010: 231). However, a possible rationale for verb borrowing in Talodi is that Talodi verbs are relatively open in form, as some Talodi verbs use "stems apparently constructed by selecting from a large number of smaller morphs" (Norton &

[19] Proto-Narrow-Talodi, the last common ancestor of the seven Narrow Talodi languages. These forms are not documented in the Lumun-Torona branch.

Alaki 2015: 143). Thus in 'suck', a complex Talodi stem *ʊ-a-gɔ has been pre-augmented in Daloka by a further morph *mu* taken from Lafofoid.[20]

In TABLE 20, exclusive matches between Lafofa and particular Talodi languages other than Nding are shown (Nding matches are excluded because they are likely to reflect contact with Lafofa today, not the earlier occurrence of contact of Lafofoid with Talodi that we are concerned with in this study). Again, at least two verbs seem plausible loans into Talodi varieties, whereas at least two nouns are plausible loans the other way into Lafofoid because they have Talodi etymologies.

GLOSS	LAFOFA	TALODI		ANALYSIS
'suck'	*mu*	Daloka	*múkkʊ*	**Lafofoid→Talodi:** blend with Talodi *ʊ-a-gɔ
'smell'	*ḍúlu*	Tuwal	*ðullo*	**Lafofoid→Talodi:** Defaka *ɔruɔ*
'split'	*rídíɛn-ḍaŋ*	Tasomi	*gíttí-ḍɛ*	root-suffix resemblance
'mountain'	*k-ówɛm-í/ ɔ́ɔm-í*	Tocho	*ṭ-ɔmɔ/l-*	NV_2 metathesis
'claw'	*k-wíí-ga/0-*	Dagik	*g-a-wɪ/w-*	**Talodi→Lafofoid:** Talodi *c-a-wɪn 'finger'
'thing'	*í-/lé-bɛŋ*	Torona	*/aʈɛ-bɛ*	**Talodi→Lafofoid:** Talodi *-bɛ 'thing'

TABLE 20: Exclusive matches with individual Talodi languages

This section has again provided evidence of Lafofoid contact with the Narrow Talodi branch, this time identifying contact with the specific Narrow Talodi variety Daloka.[21]

[20] Norton & Alaki (2015: 146) offer a maximalist Proto-Talodi reconstruction **m-ʊ-a-gɔ*; however, the *m* element occurs only in Daloka, so it is in fact not reconstructable and is better interpreted as a later addition in Daloka, with Lafofoid as the donor language.

[21] Alignment of Lafofoid with Daloka on the evidence of secondary glosses is somewhat at odds with the fact that Daloka has the lateral plural prefix *l-* where Lafofoid has *r-* (see TABLE 15, SECTION 3.2). This discrepancy might be accounted for as a social differentiation effect, in which the founder Daloka speakers distinguished themselves from Lafofoid interlopers by reverting to the more conservative lateral allophone.

3.4 Knives and objects cut with knives

Talodi *#k-iḷdaŋ* 'knife' is a local *Wanderwort* sourced from Nubian that reached Talodi through Lafofoid, as shown in TABLE 21. Kordofan Nubian *#kənd-il* 'knives' (Jakobi ms.) is borrowed into Lafofoid *#kildən* with fossilised Nubian plural suffix *-il*, and with the two syllable rhymes *ən/il* exchanged. This exchange moves the weak consonant *n* to after the strong consonants *k, l, d* in conformity to the consonant strength pattern in Lafofoid. This Lafofoid syllable sequence, rather than the original Nubian one, is then borrowed into Narrow Talodi, where borrowing is detected by phonological adaptation to the Narrow Talodi requirement that word-final nasals are velar (Norton & Alaki 2015: 80). The version with final velar *ŋ* and lowered central vowel *a* then spread onwards to the four Talodi languages at Saraf Al-Jamous, which innovated a metathesis *iḷ→ḷi*. Two of the Saraf Al-Jamous languages, Lumun and Torona, are unlike the languages of the Narrow Talodi branch in permitting final alveolar *n* in their lexicons, yet 'knife' was acquired with final *ŋ*, implying that it reached Lumun and Torona via a Narrow Talodi language, not directly from Lafofoid or Nubian.

Kordofan Nubian →	Lafofoid →	Narrow Talodi →	Saraf Al-Jamous
#kənd-il 'knives'	#kildən 'knife'	#k-iḷdaŋ 'knife'	#k-ḷidaŋ 'knife'
Karko *kə́nḍ-ə́l* Kujuria *kə̀nḍ-ílí*	Lafofa *ɟildɛn*	Daloka *ŋ-íɽdə̃́/ɲ-* Tuwal *ŋ-ərta/n̪-* Dagik *k-ɛra/w-*	Lumun *k-ɪɽttaŋ/0-* Acheron *g-ərissaŋ/n-* Torona *k-iɽiaŋ/n-* Tocho *k-əllɪaŋ/n-*

TABLE 21: Borrowing pathway for 'knife'

We also see evolution in the initial consonant in TABLE 21, as the initial *k* became fronted and voiced to *ɟ* in Lafofa (both changes known from other data; Schadeberg 1981: 76, 81) but was maintained in Talodi. In Talodi, initial *k-* is reified as a noun class prefix, substitutable by plural prefixes or by the diminutive prefix *ŋ-*, which in Daloka distinguishes *ŋ-íɽdə̃́/ɲ-* 'knife' from *h-íɽdə̃́/w-* 'sword' (Schadeberg 1981: 68).

This borrowing pathway traces the bringing of knives to the south-east Nuba Mountains by Lafofoid speakers, who brought them to the Talodi peoples. In line with previous evidence in SECTION 3, it once again confirms Lafofoid contact with the Narrow Talodi branch, as the final velar *ŋ* shows that 'knife' entered the Narrow Talodi branch first.

The borrowing of ‘knife’ from Lafofoid into Talodi also points to a kind of symbiotic exchange in vocabulary. As shown in TABLE 22, most of the Talodi nouns found in Lafofa are animal or plant parts. Body part terms are generally understood to be historically very stable, which is potentially a serious objection to the borrowing diagnosis for these nouns in Lafofoid, but for the evidence of loanword adaptation by strong consonant loss and second syllable truncation that explains the drastic shortening of Talodi nouns in Lafofa. Is there any reason, then, why body part terms would be borrowed into Lafofoid, contrary to the usual pattern that languages retain their body part terms? The significance of borrowing animal and plant part terms into Lafofoid, I propose, is that they are the items that knives are used for cutting, or at least are present during cutting (such as animal blood). The result is a symbiotic lexical exchange between ‘knife’ borrowed one way from Lafofoid into Talodi, and terms for objects cut with knives, or present during cutting, borrowed the other way from Talodi into Lafofoid.

This exchange of vocabulary implies that at the time when their languages were in contact, there was cross-cultural co-operation between Talodis and Lafofoids on the practice and technology of cutting up animals and plants. This is in line with Pattillo (2021), who argues that body part terms can occasionally be borrowed when there are social factors that override the usual linguistic constraint that languages already have such terms and do not need to borrow them.

SEMANTIC DOMAIN	GLOSSES OF TALODI NOUNS IN LAFOFA
Animal parts	belly, blood, bone, claw, ear, egg, eye, fat, finger, guts, hair, head, horn, knee, leg, meat, milk, neck, nose, skin, tail, tooth, tongue, wing
Plant parts	root
Animals	bird, cow, dog, goat, snake, worm
Elements	fire, water, wind
Night sky	moon, star
Landforms	mountain, river, road
Reference	name, thing, word, who?

TABLE 22: Semantic domains of Talodi nouns in Lafofa

4 Conclusion

Eight changes to Talodi nouns in Lafofa are identified. Some of these reflect internal evolution or are inconclusive between internal evolution and borrowing adaptation, but strong consonant loss and second syllable truncation reflect adaptation to Lafofa structures. These two processes imply that the Talodi nouns are borrowed, and show how adaptation is responsible for

shortening Talodi nouns so drastically in Lafofa, with some roots reduced to just V_1 and others to V_2.

Additional facts support past contact between Lafofoid and a Narrow Talodi variety, Daloka, during which the Talodi nouns would have been borrowed. There is a symbiotic lexical exchange between the word for 'knife' and words for things that are cut with knives, implying social co-operation on cutting up animals and plants, that allowed the borrowing of body part terms.

In closing, let us note that Lafofoid languages are still poorly documented, but the little that is known about them already shows they are very interesting typologically. We can also note that the Ijoid family of the Niger Delta in Nigeria plays a useful role at various points in the analysis, hence Ijoid continues to be our primary clue to Lafofoid's earlier history before it arrived in the Nuba Mountains.

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