

“ish” REDUPLICATION IN GUDI NGAMO*

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Ngamo has a productive process, referred to as “*ish*” reduplication in this paper, which reduplicates the initial CV of a noun to form a word that means “NOUN-like”. Though the closely related Bole language has a comparable process, Ngamo is unique in applying the principle of SYLLABLE WEIGHT POLARITY to the reduplicated syllable, i.e. if the first syllable of the base is light, the reduplicated syllable has a long vowel, but if the first syllable of the base is heavy, the reduplicated syllable has a short vowel. Tones of these reduplicants are systematically related to the tones of the base, but the explanation of the tonal relationship requires knowing the historically prior tone patterns and the effects of the GREAT NGAMO TONE SHIFT (GNTS). Though “ish” reduplication applies primarily to disyllabic nouns, it can also apply to mono- and polysyllabic nouns. In addition to productive use of this reduplication process, the Gudi dialect of Ngamo, in particular, has lexicalized many words with the reduplicated form and no longer uses the unreduplicated base.

1. The Productivity of “ish” Reduplication in Gudi Ngamo

Ngamo is a Chadic language spoken in Yobe State, Nigeria. The Gudi dialect of Ngamo has a productive nominal reduplication process that expresses the concept “like a NOUN”, “NOUN-like”, “NOUN-ish”.¹ This process and its great productivity came to my attention in a folktale in which a hyena is asking a lion to describe the attributes of a visitor putatively being sent to him to collect tributes of meat from the lion’s hunts.

(1) Passage from “Dintir Ki Gam Ki Ada” [Story of the Ram and the Dog]

Zonge ta, “‘Ya ye yo a sarshesi ye, subani lolo?”	The hyena said, “The thing that one is sending, what’s his appearance like?”
Turum ta, “‘Ya ye de mama’i ka’a, idani a moishe ngo <u>reendi</u> .”	The lion said, “The thing, well, he’s little like this, and his eyes look at a person <u>spear-like</u> .”
Zonge ta, “Ap! Sorkono, ’ya ye tishinno bu! Ada bu anya?!” Ta, “Ta andi subani!”	The hyena said, “Whoa! My in-law, isn’t that thing my food? Isn’t it a dog indeed?!” He said, “Say some more about his appearance!”
Turum ta, “Inta jeninni <u>nianjakda</u> .”	The lion said, “Well, his back is <u>stool-like</u> .”
Zonge ta, “Ap! Sorkono, tishinno!” Ta, “Ta andi ba!”	The hyena said, “Whoa! My in-law, it’s my food!” He said, “Tell some more!”
Ta, “Kumani <u>lulugde</u> .”	He said, “His ears are <u>ladle-like</u> .”
Zonge ta, “Si!” Ta, “Ta sorkono, ta andi!”	The hyena said, “It’s him!” He said, “Go on my in-law, tell some more!”
Turum ta, “Hatronni <u>dadahu</u> .”	The lion said, “His ribs are <u>cornstalk door-like</u> .”

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¹ The same process exists in the Yaya dialect of Ngamo as the following examples from Gashinge (1993:73) show: *sāsāra* ‘like a hand’ < *sāra* ‘hand’, *ō’ōyu* ‘like money’ < *ōyu* ‘money’. Yaya Ngamo, however, does not seem to use the process as extensively as Gudi, and there are certain differences in its application. This paper concentrates on the Gudi dialect. Thanks go to Isa Adamu Gashinge who provided additional data on Yaya Ngamo.

Zonge ta, “Si!” The hyena said, “It’s him!”
 “Shekeni dudufu.” “His legs are peanut-pulp-like.”
 Zonge ta, “Ada dai!” Zonge ta, “Hatanni jo?!” The hyena said, “It’s a dog for sure!” The hyena said,
 “How about his tail?”
 Turum ta, “Hatanni memeri ai.” The lion said, “Well, his tail is thatching needle-like.”
 Ta, “Kai! Si! Boni jo?” He said, “Hey! It’s him! How about his mouth?”
 ““Boni teteple.” “His mouth is tuwo scoop-like.”
 Zonge ta, “Ap! Ada!” The hyena said, “Whoa! It’s a dog!”

The narrator was clearly creating these reduplicated nouns on the fly. It is unlikely that any of the underlined forms would be common enough in everyday speech to be learned as individual words.

2. “ish” Reduplication in Disyllabic Nouns

The list in (2) gives nouns, including those from the dialog above, grouped according to tones of the base form and syllable weight of the first syllable of the base word. The significance of the heavy lines separating sets of items with LL tone will be explained in §3. The tone patterns here are exhaustive for disyllabic common nouns in the Gudi dialect-there are no common nouns with the patterns LH or HH.²

(2) Disyllabic nouns and “ish” reduplicants

Tones/syl. wt.	Base form	“ish” form	
LL, light	bìdò	bìbidò	‘monkey’
	tùrùm	tùturùm	‘lion’
	shòhò	shòshohò	‘wood’
	ùdò	ù’udò	‘tooth’
	dàhù	dàdahù	‘cornstalk door panel’
	mèrì	mèmerì	‘thatching needle’
	sàwà	sàsawà	(base) ‘millet’, (“ish”) ‘millet-colored chicken’
	ìdò	ì’idò	‘eye’
LL, heavy	bàdì	bàbàdì³	‘morning’
	sāwà	sàsāwà	‘large cooking pot’
	dùdù	dùdùdù	‘peanut pulp w. oil extracted’
	kēmè	kèkēmè	‘oribi’
	njàkǎ	njànjakǎ	‘stool’
	kùm’è	kùkum’è	‘hedgehog’
	dìndì	dìdindì	‘toad’
	gòshò	gògòshò	‘stone’
	rèndì	rèrendì	‘spear’
	kùmshì	kùkumshì	‘grey monitor’
	gùngù	gùgungù	‘leopard’
	zòngè	zòzongè	‘hyena’
jànjà	jàjanjà	‘star’	

² Macron = long vowel (ā), grave accent = low tone (à), circumflex accent = falling tone (â), no accent mark = high tone (a).

³ The expected tones of the reduplicant would be LHL. We turn to tone in §3.

	kòrò	kòkòrò	(base) ‘donkey’, (“ish”) ‘kneeling with buttocks upward’
	kèrwò	kèkerwò	‘fish’
	màndà	màmàndà	‘block salt’
LF, light	kādām	kākādām	‘crocodile’
	shìdâ	shīshidâ	‘seed, kind’
	kìzî	kīkizî	(base) ‘hunger’, (“ish”) ‘eating gluttonously’
	èdê	ē’edê	(base) ‘beans’, (“ish”) ‘kidney’
LF, heavy	gājâ	gagājâ	‘rooster’
	dīrî	didīrî	‘weeding hoe’
	lùgdê	lulugdê	‘ladle’
	kèrbî	kekerbî	‘deleb palm’
	ànkô	a’ankô	‘pestle’
HL, light	badè	bābadè	‘bustard’
HL, heavy	gōrò	gogōrò	‘kola nut’
	shulì	shushulì	‘hawk’
	hiplà	hihiplà	‘wind’

The most striking feature of “ish” reduplicants is the consistent application of SYLLABLE WEIGHT POLARITY: if the first syllable of the base is light (CṼ), the reduplicated syllable copies the first CV and lengthens the vowel; if the first syllable of the base is heavy (either CVC or CṼ), the reduplicated syllable copies the first CV with the short counterpart of the vowel. Words beginning orthographically with a vowel have a predictable initial glottal stop, which is treated as the C of the CV reduplicated syllable.

Word internally, a sequence NASAL+STOP is syllabified between the consonants. This is evident in “ish” reduplicants of words like **dìndì/dìdindì** ‘toad’, **gùngù/gùgungù** ‘leopard’, and others in table (2), where the syllabification of the base word must be **dìn.dì**, **gùn.gù**, etc., with a heavy first syllable conditioning a light reduplicated syllable.⁴

Words with initial prenasalized consonants retain the prenasal in both the reduplicated and the root syllable, as in **njànjakdâ** ‘stool-like’ < **njàkdâ**. Ngamo, like most other Chadic languages, does not permit extra-heavy syllables, i.e. closed syllables with long vowels. A reduplicated form like **njànjakdâ** ‘stool-like’ presumably has a short vowel in the initial syllable since the initial syllable of the base, **njak-**, is heavy. Because a syllable boundary separates word internal -NC- sequences, we might predict that the reduplicated syllable of any word with an initial prenasalized consonant would be shortened because the nasal component of the original root initial NC- would form a coda to the reduplicated syllable. This is not the case, however, as the examples in (3) show.

(3) Words with initial light syllable and prenasal onset

ndàkâm	ndāndakâm	‘duck’
ngàdà	ngāngadà	‘gutta percha tree’
ngàrù	ngāngarù	‘servant’

When the initial root syllable is light in a word with a word-initial prenasalized consonant, the reduplicated syllable overtly exhibits the principle of SYLLABLE WEIGHT POLARITY with a phonetically long vowel. That is, morphological segmentation in RED+ROOT overrides the phonetically based restriction that long vowels may not appear in closed syllables.

⁴ In the Yaya dialect, syllabification seems to treat root internal NASAL+homorganic voiced stop as an onset-cf. **zènge/zèzengè** ‘hyena’, **jànja/jàjanjà** ‘star’, with heavy reduplicated syllables. Not enough forms were collected to verify this as an across-the-board generalization for Yaya, however.

3. The GREAT NGAMO TONE SHIFT and Tones of “ish” Reduplicants

The Gudi dialect of Ngamo has undergone a systematic tonal change, which I refer to as the GREAT NGAMO TONE SHIFT (GNTS).⁵ Consider the tone patterns of the following nouns in Bole (a close linguistic cousin of Ngamo), the Yaya dialect of Ngamo, and the Gudi dialect of Ngamo.

(4) Tones of Disyllabic Words in Bole and Two Ngamo Dialects

Original tones	Bole	Yaya Ngamo	Gudi Ngamo	
LL	bìdò	bìdò	bìdò	‘monkey’
	sàwà	sàwà	sàwà	type of large pot
	kùmbè	kùmbè	kùm’è	‘hedgehog’
LH	ìdo	ìdo	ìdò	‘eye’
	gùsho	gòsho	gòshò	‘stone’
	ròndi	ràndi	rèndi	‘spear’
HH	-----	badì	bàdì	‘morning’
	gorzo	gorzo	gòrzò	‘man, husband’
	kerwo	kerho	kèrwò	‘fish’
HL (1)	kadàm	kadàm	kàdàm	‘crocodile’
	gājà	gājà	gājâ	‘rooster’
	lekidè	lugdè	lùgdé	‘gourd ladle’
HL (2)	badè	badè	badè	‘bustard’
	gōrò	gōrò	gōrò	‘kola nut’
	pempeli	hìbla	hiplà	‘wind’
	pōrdo	horhido	hōrdò	‘eight’

Bole and Yaya Ngamo tones match in nearly all cases and therefore must reflect the original tone patterns. Gudi, on the other hand, has undergone a shift that can, for the most part, be described as follows:

GNTS: Shift a tone from its original tonal domain to the domain of the next tone to the right and supply the initial domain with low tone.

For original LL words, the tone shift is vacuous, i.e. the words remain LL. In table (2), the words above the first heavy line for the heavy and light syllable reduplicants respectively derive from original LL words.

For original LH words (the words in table (2) between the first and second heavy lines for the heavy and light syllable reduplicants respectively), the final H shifts to the right, leaving LL as the citation tone pattern, corresponding to LH in Bole and Yaya Ngamo. The original final H remains as a floating H, however. This is evident, for example, when the negative marker **bu** follows. In Yaya, **bù** bears L in all contexts. When **bu** follows an original LL word, it bears L tone in both Gudi and Yaya (**bìdò bù** ‘not a monkey’ in both Gudi and Yaya), but when it follows an original LH word, the word bears all L in Gudi but **bu** has a Falling tone, the result of docking the floating H to the underlying L of **bù** (Yaya **ìdo bù** ‘not an eye’ vs. Gudi **ìdò bù**).

Original HH words also become LL in Gudi (listed in table (2) under the second heavy line for the heavy and light syllable reduplicants respectively). This is a result of the GNTS working together with the OBLIGATORY CONTOUR PRINCIPLE (OCP), which requires that neighboring syllables with the same tone be associated with a single tonal

⁵ A complete description of the GNTS can be found in an unpublished paper, posted at <http://www.humnet.ucla.edu/humnet/aflang/ngamo/ngamo.html>

autosegment. Original HH words, such as ‘fish’, thus have both syllables associated with a single H. When the GNTS applies to such words, the H shifts to the right to become a floating H, and the original domain of the H (in this case the whole word) is associated with default L. As with original LH words, the floating H shows up when docked to the underlyingly L negative marker, e.g. Yaya **kerho bù** vs. Gudi **kèrwò bù** ‘not a fish’.

For original HL words, by far the most common pattern is that given as “HL (1)” in (4). That is, the initial H shifts to the right. However, the original final L does not disappear in citation form. Rather, the shifted H plus the original L come out as a final Falling tone, as in Bole/Yaya **kadàm** ‘crocodile’ but Gudi **kàdàm**. This Falling tone is quite audible in citation forms, even when the syllable bearing it is light, as in **gàjà** ‘rooster’.

The fact that three of the original disyllabic tone pattern—LL, LH, HH—all come out as LL means that a disproportionately large number of disyllabic words in Gudi Ngamo bear LL tones in citation form, and most other disyllabic words bear LF. There are no LH or HH common nouns in Gudi Ngamo.⁶ There are, however, a few HL nouns. Most of these are recent borrowings, such as **gòrò** ‘kola’ (from Hausa) and **badè** ‘bustard’ (of uncertain origin, but identical in form in all the Yobe languages), though there is a tendency in Gudi to pronounce even obvious borrowed words with the GNTS tone pattern, e.g. ‘car’ < English via Hausa, which can be pronounced either **mòtâ** or **mòtâ**. Another source of HL words is words with original HLH tones contracted to two syllables, such as ‘wind’ and ‘eight’ in table (4). These can be accounted for as follows: (1) original HLH contracted to \widehat{HLH} , i.e. a disyllable with a Falling tone on the first syllable, but phonologically a HLH pattern with each of the first two tones having a single *mora* as its domain; (2) the GNTS applied to give $L\widehat{HL(H)}$, i.e. each tone shifted one tonal domain to the right, creating a floating H and associating a default L with just the first mora: (3) simplification of the resultant L+H = Rising tone to H, a fairly common phenomenon in Chadic languages (Leben 1971). The outcome is thus a HL citation pattern. Taking the word for ‘eight’, pronounced **horhìdò** in Yaya Ngamo, as an example, the derivation would proceed as follows: ***horhìdò** > **hòrdò** > **hòrdò(ˊ)** > **hordò(ˊ)**.

The GNTS has applied to longer words. In (5) are trisyllabic nouns in the Yaya and Gudi dialects showing the same GNTS effects described for disyllables.⁷

(5) Effects of the GNTS on trisyllabic words

Original tones	Yaya Ngamo	Gudi Ngamo	
LLL	kànkàrshà	kànkàrshà	‘puff adder’
LLH	gàlàfi	gàlàhì	type of small axe
LHH	(Bole) kàgìlmo	kàgìlmò	‘garlic’
HHH	mandira	màndirà	‘sesame’
LHL	kètèmbì	kètèmbî	‘stirring stick’
HHL	kurmasò	kùrùmsô	‘biting ant’
HLH	hankàli	hànkali	‘common sense’

With this background on the GNTS, we are in a position to discuss the relationship between the tones of base words and associated “ish” reduplicants in Gudi Ngamo. The data in table (2) show three types of tone patterns:

⁶ Proper names have not been affected by the GNTS. Disyllabic proper names with all the possible tone patterns, including LH and HH, are common, e.g. the male names **Màcà**, **Zàku**, **Kùlè**, **Tida**.

⁷ For original HLL the predicted tone pattern would be LHF. In available data, the only HLL word in Bole or Yaya Ngamo with a cognate in Gudi is Bole/Yaya **mongòrò**, Gudi **mongiròŋ** ‘mango’, a recent borrowing that has resisted the GNTS. As we will see below, however, an original HLL pattern in “ish” reduplicants has a tone pattern that jibes with that predicted by the GNTS.

- LL base, LHL reduplicant, e.g. **bìdò**, **bìbidò** ‘monkey’
- LF base, HHF reduplicant, e.g. **kàdâm**, **kākadâm** ‘crocodile’
- HL base, HHL reduplicant, e.g. **badè**, **bābadè** ‘bustard’

Comparative evidence from Bole indicates that the original tone of the reduplicated syllable must have always been H, regardless of the tone pattern of the noun. In Bole, the reduplicated syllable is always light. SYLLABLE WEIGHT POLARITY seems to be a development restricted to Ngamo.⁸

(6) Tone patterns of “ish” reduplicants in Bole and Gudi Ngamo

Original base tones	Bole	Gudi Ngamo	
LL	bìdò ~ bìbidò	bìdò ~ bìbidò	‘monkey’
LH	gùsho ~ gugùsho	gòshò ~ gògoshò	‘stone’
HH	kerwo ~ kekerwo	kèrwò ~ kèkerwò	‘fish’
HL (1)	gājà ~ gagājà	gājâ ~ gagājâ	‘rooster’
HL (2)	gòrò ~ gogòrò	gòrò ~ gogòrò	‘kola’

For bases with original LL and LH tones, at first glance, it appears that we can explain the Gudi LHL “ish” reduplicant tone pattern simply by applying the GNTS, i.e. shift the tones of the base to the right and associate L with the initial (reduplicated) syllable. In the case of LH bases, presumably the original final H of the base becomes a floating H, e.g. ***gogòsho** > **gògòshò**(^h), but I have not verified this prediction using the diagnostic with **bù**.

There is a problem with this account, however. The data in (1) indicate that Ngamo speakers coin “ish” reduplicants on the fly. It therefore cannot be the case that every LHL “ish” form that is heard in modern Gudi Ngamo started life with a H reduplicated syllable that then shifted to the second syllable.⁹ Nonetheless, it is likely that the LHL “ish” tone pattern does have its historical origin in the GNTS pretty much as described. This reduplicative pattern must have been productive and popular since well before the GNTS took place, such that many “ish” reduplicants have become lexicalized as independent words. Table (2) has a number of examples, e.g. **sàsawà** ‘a chicken with certain markings’ < **sàwà** ‘a type of millet’. We will see more examples, including a number where the base is no longer used, in §5. Lexicalized reduplicants, being independent words, would have undergone the GNTS, even in cases where a connection to an existing non-reduplicated form would have been evident to Ngamo speakers. This would have resulted in a substantial number of LHL words that were still recognizable as reduplicants. This state of affairs, reinforced by the fact that words beginning on a H tone would have sounded “un-Ngamo” after the GNTS, created what is probably now simply a templatic tone pattern used for “ish” reduplicants with LL bases, not a tone pattern derived in a direct way from lexical tones.

This account also takes care of a problem raised by “ish” reduplicants deriving from erstwhile HH nouns, such as **kèkerwò** ‘fish-like’, whose base is LL in Ngamo but which was originally HH. There is no scenario using known Ngamo tone processes or universal principles such as the OCP that can account for the LHL reduplicant pattern from an

⁸ Yaya Ngamo presents a complicated tonal picture. In some cases the reduplicated syllable is H, as in Bole, e.g. **kùshi** ~ **kūkùshi** ‘baobab’, **kerbì** ~ **kekerbì** ‘deleb palm’, sometimes it is L with no change in tone on the base, e.g. **tùrùm** ~ **tùtùrùm** ‘lion’ (note absence of weight polarity), and sometimes it is L with a H on the first syllable of the base, as in Gudi, e.g. **shòhò** ~ **shòshohò** ‘wood’. It is not clear whether there is a regular pattern that is not evident just from the data available or whether Yaya is mixing in patterns from Bole (which many Ngamos speak) and/or the Gudi dialect.

⁹ This account would be possible in a theory of phonology that allowed highly abstract forms. In such a theory, the lexical tones of Gudi Ngamo words would be the historically original tones and the GNTS would be an active phonological rule. Such theories of phonology have been largely discounted, and data from Gudi Ngamo itself show this proposal to not be viable.

original HH word, but there is no need for such a scenario if reduplicant tone in Gudi Ngamo is assigned by a templatic algorithm, “assign LHL to reduplicants with a LL base”.

Words of HL (1) origin have LF tones in Gudi Ngamo, and their “ish” reduplicants regularly have a HHF tone pattern, e.g. **gājâ** ~ **gagājâ** ‘rooster’. This is true both for those coined on the fly and for lexicalized cases—cf. Yaya **jelè**, Gudi **jējelè** ‘potsherd’, where Gudi no longer uses the non-reduplicated form. Assuming that “ish” reduplicants for such words come from a H-HL pattern, the expected outcome after the GNTS would be L-LF. Accounting for the (H)HF pattern is problematic not only for “ish” reduplicants but for Gudi Ngamo in general. In current data for Gudi Ngamo, there are 1100-1200 nouns, excluding compounds and proper names. There are 13 disyllabic nouns with a HF pattern and 30 trisyllabic nouns with a HHF pattern. Most of the disyllabic HF nouns are cognate with or borrowed from HH sources (**teplè** ‘tuwo scoop’—cf. Bole **tebile**, **dubû** ‘1000’—cf. Kanuri **dəbu**). There are only six monomorphemic HHF words, and at least three of those are loanwords with HHH in the source language (**jakuwâ** ‘cap’—cf. Ngizim **jakuwa**). The remaining 24 HHF words are all reduplicants, 19 of them “ish” reduplicants. The fact that nearly all the monomorphemic (H)HF words have (H)HH sources suggests that the GNTS treated words with all H tones in two ways: either the H shifted, resulting in all L citation tones (see ‘morning’, ‘man’, ‘fish’ in table (4), ‘sesame’ in table (5)) or (H)HH was replaced with (H)HF (see examples earlier in this paragraph). These observations do not fully explain why “ish” reduplicants deriving from erstwhile HL words should have HHF tones in Gudi Ngamo, but this does seem to be related to the fact that, when reduplicated, these words would have begun in a HH sequence. In some sense, maybe it was “easier” simply to spread this H tone into the third syllable to give a F rather than to displace the whole pattern!

This leaves the tones of “ish” reduplicants that derive from the HL (2) pattern seen in tables (4) and (6), i.e. words with a HL(L) pattern in Gudi Ngamo. “Ish” reduplicants for these words have a consistent H-HL pattern for those items that I have checked, e.g. **gōrò** ‘kola’, reduplicant **gogōrò**. As in the case of (H)HF words, there is a lexical skewing involving HL(L) words—they are comparatively few in number, and a disproportionately large number are loanwords. In current data, there are only seven HLL monomorphemic words, five of which are known loanwords, e.g. **mongiròŋ** ‘mango’ mentioned above, **hēsìdè** ‘cheap’—cf. Bole **pēsìdè**. There are only 45 HL words. A few can be accounted for in the context of the GNTS (see the account of **hordò** ‘eight’ above), but probably more than half are loanwords. Rather than trying to devise a historical or rule-based synchronic account, I simply observe that this “minority” base tone pattern forms “ish” reduplicants by reduplicating the initial syllable of the base, including its tone.

4. “ish” Reduplication of Monosyllabic and Polysyllabic Words

An understanding of “ish” reduplication with disyllabic nouns provides a framework for understanding its properties with nouns of other syllabic configurations. Consider first monosyllabic nouns. Because of the GNTS, nearly all monosyllabic nouns in Gudi bear L.¹⁰

¹⁰ There are no words in Gudi Ngamo with R tones, monosyllables or otherwise. There are H and F monosyllables. Grammatical operators (conjunctions, topicalizers) and phonaesthetic words (ideophones, exclamations) did not undergo the GNTS. All H and nearly all F monosyllables belong to these categories. There are three or four F nouns, e.g. **ból** ‘ball’ (from English), **ɸè** ‘copulation by animals’, **zâu** ‘life’. I have not checked “ish” reduplicants for any of these words.

(7) Monosyllabic nouns: CVC

Yaya form	Gudi base	Gudi “ish”	
mòr	mòr	mòmòr	‘oil’
dòm	dòm	dòdòm	(base) ‘ahead’, (“ish”) ‘in the forefront’
hàm	hàm	hàhàm	(base) ‘water’, (“ish”) ‘guzzling’
bei	bèi	bèbèi	(base) ‘back’, (“ish”) ‘backwards’

CVC nouns (taking **bei** ‘back’ to be /bèy/) fit the pattern of disyllabic nouns in SYLLABLE WEIGHT POLARITY, but the tones are hard to explain. The noun **mòr** ‘oil’ was originally L and the original “ish” reduplicant would have been ***momòr**. With the GNTS, this HL pattern becomes LHL, the observed pattern (considering the F on **mòmòr** = H+L). The same tone pattern would be expected for **dòdòm** and **hàhàm**, but these have LL tones. The word **bèi** ‘back’ had original H tone, from which we might expect either LF or possibly HF, based on what we have seen for diasyllabic nouns, but this word, too, has LL tones. In short, it is not clear why the tones of the bases of the words in (7) are as they are, but the L on the reduplicative prefix is consistent with that of reduplicatives from CV monosyllables.

(8) Monosyllabic nouns: CV

Yaya form	Gudi base	Gudi “ish”	
bò	bò	bòbò	(base) ‘mouth’, (“ish”) ‘a turn’ (in an activity)
kâ	kâ	kâkâ	‘head’
lu	lù	lùlù	‘meat’
‘ya	‘yâ	‘yâ’yâ	‘thing’

Length of the vowel of the base noun of CV monosyllables is morphologically conditioned. It is short in N+N genitive constructions (**bò temshì** ‘mouth of a sheep’) but long in some (all?) other environments, such as before the negative **bù** (**bò bù** ‘not a mouth’). CV monosyllabic nouns have a short vowel in the reduplicated syllable. Inasmuch as SYLLABLE WEIGHT POLARITY is a consistent principle for “ish” reduplication elsewhere, I assume that the vowel of the base noun is phonologically long and is shortened where it appears as short rather than being phonologically short.

The reduplicated forms based on monosyllables seen in (7-8) suggest that the reduplicated syllable is simply the first CV of the base, either with a default L or a copy of the L of the base. Reduplicants based on CV roots show a consistent tonal correspondence to the historical tone: reduplicants derived from historically L words have all L tone, but reduplicants derived from historically H words have LF tone. It is as if the original H noun tone, being shifted to the right by the GNTS, has been left stranded, waiting for a syllable to associate with. When reduplication provides this syllable, the floated H can now be realized, but because Ngamo has no common nouns with final H, the syllable is pronounced with F.

For “ish” reduplicants of nouns longer than two syllables, the principle of SYLLABLE WEIGHT POLARITY applies regularly. However, “ish” reduplication of nouns longer than two syllables does not seem to be as natural as with disyllables and monosyllables. Of the several dozen lexicalized “ish” reduplicants in currently available data there are only five with a base of more than two syllables (see §5 for examples). Speakers seem to prefer to express the concept “like a...” using the preposition **kit** ‘like’, e.g. **kit indìrì** ‘like a scorpion’ rather than reduplicated **?i’indìrì** ‘scorpion-like’. And where “ish” reduplicants of longer words are produced, the tones do not always follow predictable patterns. Thus, in the coined examples in (9), the first has LHL tones for a LLL base, following the pattern established with disyllabic LL nouns, but the other two seem idiosyncratic.

(9) Polysyllabic nouns

Tones	Base form	“ish” form	
LLL	dògòjì	dòdogòjì	‘granary’
LLF	kùrùmsô	kùkùrùmsò	‘biting ant’
LHL	kùlētì	kùkulētì	‘hare’

5. Lexicalized “ish” Reduplicants

The “ish” reduplication process is quite regular and can be applied to essentially any noun of one or two syllables. As I have mentioned at several points, the Gudi dialect has lexicalized many reduplicants of this type, while the original has gone out of use in this dialect or, if it exists, no longer has a direct connection in meaning to the reduplicated form. Because of the regularity of the “ish” reduplication pattern, we can, however, state with some certainty what the original form of the noun was. Following are some examples. In some cases, the Yaya dialect retains the unreduplicated base form (indicated by “Y.” in the “Base form” column), and in some cases Gudi retains the base, but its meaning is divergent from that of the reduplicant to the point where the relationship would probably not be obvious to all speakers. The starred forms in the “Base form” column would be the predicted base forms but do not appear in currently available data in either dialect.

(10) Lexicalized “ish” reduplicants from disyllabic bases

Tones/syl. wt.	Base form	“ish” form	
LL, light	Y. bađi	bàbađi	‘morning’
	* mèlì	mèmeli	‘communal farming group’
	cf. tèrè ‘moon’	tèterè	‘white grub’
LL, heavy	* bùtyò	bùbutyò	‘spider’
	* d’ènkèr	d’èdenkèr	‘groin’
	* kòlwò	kòkolwò	‘small gourd cup’
	Y. kùpđi	kùkupđi	‘small ants’ (H. <i>kiyashi</i>)
	* yāshì	yàyāshì	‘calf (of leg)’
	Y. yèndi	yèyèndi	‘black ants’ (H. <i>tururuwa</i>)
	* zùgà	zùzùgà	‘musk shrew’
	cf. lànjà ‘yellow clay’	làlanjà	‘yellow’
	cf. ndèrà ‘Jerusalem cricket’ ¹¹	ndèndèrà	‘house cricket’
LF, light	* jèlè	jējèlè	‘potsherd’
	* òbò	ò’òbò	‘boil in the armpit’
	Y. tarà	tātarà	‘small termites’ (H. <i>gara</i>)
	* wùnò	wūwunò	‘whirlwind’
	cf. gùlò a type of drum	gūgulò	‘mushroom w. conical top’
	* dìkò	dīdikò	‘jute’
LF, heavy	* kùndô	kukundô	an unidentified plant
	cf. tīnâ ‘right side’ ¹²	tītīnâ	‘clockwise’

Among lexicalized reduplicants, a fair number have LL(L) tones, a pattern that is never used with freely coined reduplicants. Some of these were already seen in (7) in the discussion of reduplicants with monosyllabic bases. Further examples from monosyllabic bases and several with disyllabic bases are seen in (11). With the exception of the first

¹¹ We would expect a LHL tone pattern on the lexicalized reduplicant, **ndèndèrà**. This lexicalized form contrasts with the productively formed **ndèndèrà** ‘Jerusalem cricket-like’.

¹² This is actually the verbal noun of **tù-kò** ‘eat’, related to the fact that one must eat with the right hand.

example, all these where the bases are known have LL tones in Gudi and/or other languages.

(11) Lexicalized “ish” reduplicants with all L tones

Base form where known	“ish” form	
cf. Karekare bā ‘tree’	ḃāḃā	‘above’
Y. rèi	rèrèi	‘a lie’
àdà ‘dog’	à’adà	‘sparks; jackal’
dìdikè ‘grandparents/gandchildren’	dìdikè	‘joking relationship between groups’
màndù ‘woman’	màmàndù	‘round’
nzìmà ‘greed’	nzìnzìmà	‘rather gluttonous’
* dange	dàdàngè	‘stink ants’
* d’egem	d’èd’ègèm	‘sort of bitter’
* tuḏu	tùtùḏù	‘darkness’

Finally, (12) presents all the lexicalized reduplicants with trisyllabic bases available in current data.

(12) Lexicalized “ish” reduplicants from trisyllabic bases

Base form	“ish” form	
* nzàmàyà	nzānzàmàyà	‘centipede’
gàdàyà ‘pied crow’	gāgādàyà	‘black and white’
dùwārò ‘Bambara groundnuts’	dūdùwārò	a type of plant with yellow edible fruits
gàlàhì (Y. gālāhi)	gāgàlàhì	(base = “ish”) ‘axe with a narrow blade’

6. Conclusion

The Gudi dialect of Ngamo has a productive nominal derivational process, “*ish*” reduplication, which reduplicates the initial CV of a noun to produce a word meaning “NOUN-like”, “NOUN-ish”. Speakers of this variety of Ngamo not only apply the process “on the fly”, as illustrated in (1), but also have innovated in the lexicon by replacing original base forms with their reduplicated counterparts. Although the canonical target for “ish” reduplication is disyllabic nouns, it can be applied to monosyllabic and polysyllabic words following basically the same patterns as for disyllables.

The most striking feature of “ish” reduplication is the consistent application of the principle of SYLLABLE WEIGHT POLARITY to the reduplicated syllable, a principle that demonstrates speakers’ sensitivity to the metrical properties of words. The treatment of prenasalized consonants in reduplicants also reveals the sensitivity of speakers to the presence of morpheme boundaries in determining syllable boundaries, i.e. root internal NC sequences are syllabified between the consonants but root initial NC remains syllabified before the NC sequence even when reduplication places the sequence in word internal position.

An explanation of the apparently idiosyncratic relationship of base noun tone patterns to the tone patterns of reduplicants (esp. LL nouns with LHL reduplicants) requires comparative linguistic evidence and awareness of the GREAT NGAMO TONE SHIFT (GNTS), in which original tones have shifted one tonal domain rightward and default L has been associated with the initial domain. It appears, however, that tone patterns of reduplicants that must have originally come about through regular tonal processes, have now become tonal templates that are imposed on reduplicants rather than being tone patterns that come about by applying regular rules to underlying tones.

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