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Modeling a new Guro orthography

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1. ACTUAL SITUATION¹

The Guro language has been studied since the 1960s. The earliest and most important works one should mention include a Guro grammar and a dictionary by Benoist (1969, 1977) written at a high scientific level for the time and also some later works by other linguists (Grégoire 1975, le Saout 1979, Dion 1980, Trabi 1982). Despite these studies, many phonological problems of this language still remained unsolved. Benoist does not make a distinction between +ATR and –ATR vowels, nor between explosive and implosive consonants. The dictionary by Grégoire is generally not very accurate in the notation of the words. A brilliant work by le Saout has given answers to many of the questions in Guro phonology, like ±ATR opposition (though it's not referred to in these terms), and the importance of the phonological foot (called 'le syllabème' by le Saout) in the phonological system of the language. The consonant system is also treated accurately: all the important phonological contrasts are highlighted (among them, the phonological status of nasality) and the tonal system is studied in detail.

At the end of 1990s, SIL created new Guro orthography, based on le Saout's analysis, with the following important features: (i) Implosives and explosives are distinguished (*bh* and *b*; the implosive initial allophone of the phoneme /l/ is written as *l*; the nasal and oral variants of the implosive /b/ and the sonorants /l, y, w/ are depicted by different graphemes: *m* and *bh*; *n* and *l*; *ny* and *y*; *nw* and *w*. In the intervocalic position inside the foot, oral and lateral allophones of /l/ are distinguished, but the nasal allophone of the same phoneme is written in this position always as *n*; (ii) ATR vowels are written as *ɪ*, *ɛ*, *ɔ*, *ʊ*. The vowel nasality is depicted by a letter *-n* following the corresponding vowel: *in*, *ɛn*, *an*, *ɔn*, *un*. If the initial consonant is represented by a 'nasal' letter (*m*, *n*, *ny*, *nw*), nasality is no longer marked after the vowel to avoid redundancy; (iii) Following the tonal analysis by le Saout, who has interpreted the Guro system in terms of two level tones (high and low) and two contour tones (rising and falling), only the high tone is marked. Every tone has two realizations depending on the initial consonants of the 'syllabème': after the explosive voiced stops and voiced fricatives it is realized in a lower register than after the voiceless stops, implosives and sonorants.

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Table 1
Interpretation of the contour tones by le Saout (1979)

Phonetic tone	Phonological interpretation	
	in a ‘syllabème’ with a tone-depressing consonant	in a ‘syllabème’ with a tone-raising consonant
[High]	–	/High/
[Middle]	/High/	/Low/
[Low]	/Low/	–

In the orthography by SIL, it is ‘phonological tone’ (as analysed by le Saout) that is marked. The mark of the high tone is an apostrophe preceding the word (the same principle is used in many orthographies of the South-Mande languages). The low tone is not marked.

At present, this new orthography coexists with the orthography of the Bible translation. The latter doesn’t distinguish between \pm ATR vowels and explosive/implosive consonants, and the tones are only occasionally marked (this orthography is actually more frequently used now).

2. PROBLEMS WITH THE PRESENT ORTHOGRAPHIES

The view that the Bible orthography is not optimal is shared by all the literate Guros with whom we have discussed this problem. However, we have noticed that the SIL orthography creates even more problems, especially in the notation of tone. A study by Vydrine (2003) gives an explanation for this: it proves that the system of modern Guro contains three phonological level tones rather than two. In other words, the analysis of le Saout is probably correct from a diachronic point of view (i.e. how 3 tones evolved out of 2), but it doesn’t correspond to the synchronic situation. Our own research shows that there are two additional phonological contour tones, rising and falling, that cannot be reduced to a combination of level tones.

Another problem of this orthography is insufficient elaboration of nasality marking. Nasality is marked by *n* after the vowel without further specification. Thus, the orthography of the word /daa/ ‘to sell’ (imperfective) can be either *danan* or *daan*; but the latter variant can also correspond to the pronunciation /daa/ ‘come’ (imperfective), while the former can be equally interpreted as /dana/.

3. SOME ADDITIONAL NOTES CONCERNING GURO PHONOLOGY

3.1. *The phoneme inventory of Guro*

First, it is necessary to mention certain peculiarities of the Guro phonological system that have not been taken into account by previous researchers. Tables 2

and 3 set out the inventory of the phonemes of Guro. Note that the phoneme /a/ belongs to both ATR series:

Table 2
Guro consonants

<i>p</i>	<i>t</i>	<i>c</i>	<i>k</i>	<i>kp</i>
<i>b</i>	<i>d</i>	<i>j</i>	<i>g</i>	<i>gb</i>
<i>f</i>	<i>s</i>			
<i>v</i>	<i>z</i>			
<i>β</i> [β ~ m]	<i>l</i> [l~ɫ~n~r]	<i>y</i> [y ~ ɲ]	<i>w</i> [w ~ ɥ ^w]	

Table 3
Guro vowels

+ ATR series		–ATR series		Nasal series	
<i>i</i>	<i>u</i>	<i>ɪ</i>	<i>ʊ</i>	<i>ĩ</i>	<i>ũ</i>
<i>e</i>	<i>o</i>	<i>ɛ</i>	<i>ɔ</i>	<i>ẽ</i>	<i>õ</i>
<i>a</i>		<i>a</i>		<i>ã</i>	

3.2. *The phonological foot*

From a phonotactic point of view, the basic unit in Guro is a phonological foot (labeled as a ‘syllabème’ by le Saout, and a ‘monème’ by Dion/Trabi) having a structure CV, CVV or CVLV, more rarely V (in personal pronouns, some suffixes and auxiliaries).² The foot is characterized by the high level of cohesion: (i) vowel harmony is normally observed inside the foot (only the vowels of the same series can co-occur: +ATR, –ATR or the nasal ones); (ii) in the majority of cases the intervocalic consonant is /l/, and its realization depends on the surrounding vowels and the initial consonant: after the labial or velar consonant is realized as [l], after the alveolar or palatal – as [r]; in the nasal foot – as [n] or [ɲ]. Actually, the rules of its realization can have even more nuances (Vydrine 2003), and it seems that they vary among dialects and speakers; (iii) the nasalization spreads within the foot: all the vowels and consonants are either oral or nasal (phonemically or phonetically); and (iv) the combinations of tones within the foot are limited.

² We prefer to use the term ‘foot’ rather than ‘monème’, as the latter implies a sign (a unit with two parts the form and the meaning), while the unit in question in our opinion does not necessarily have a semantic side. The term ‘syllabème’ is also not very convenient because there already exists a tradition of its usage in a different sense (especially in South-Asian studies). The term ‘foot’ leads us also to the languages with similar phenomena of segment interdependence in the framework of a prosodic unit.

3.3. The tones

Vydrine (2003) gives some arguments in favour of three phonological tones rather than two: all three levels can be found on some personal pronouns with a V structure and in words with initial tone-raising consonants that have low tones following these consonants, e.g. /pēpè/ ‘impatient’, and variants of /lû/ ‘how many’ and /lâ/ ‘place’: /lù/, /là/.

There is also a problem with contour tones in Guro. After le Saout, on the feet of the type CV, there are falling tones following initial tone-raising consonants (e.g. /sâ/ ‘trap’) and rising tones after initial tone-depressing consonant (e.g. /dǐ/ ‘flesh’). If we compare this distribution with that of the level tones (Table 1), it becomes clear that these two types fill the gap in the system of the level tones. So, there would be no obstacles to interpret these contour tones as level tones: /dǐ/ and /sâ/, even more so as rising realizations are phonetically close to the high ones and falling realizations – to the low ones (cf. le Saout 1979: 15).

To prove the existence of the rising tone, let’s consider some examples of the type CV₁V₂ with a rising tone on the second vowel: /bĩ/ ‘green pigeon’, a loan from Manding, (cf. Bamana *birin-túga*, with dialectal variants *birintúga*, *bèrentúga*, *bírintùbá*, *bèrendúga*), /yǎ/ ‘success’ (a former compound), /bó/ ‘crocodile’ (probably from proto-Mande **banba* ‘crocodile’ as reconstructed by Vydrine), /sé/ ‘shrimp’. In the same vein, the phonological status of the falling tone can be proven using loanwords: /gbâ/ ‘kitchen’ (with variants /gbâgbû/, /gbâbû/ from Dioula *gbâ-búgu*, with a tonal article – *gbâ-búgù*), /kpâ/ ‘grain of a coco’ (with a variant /kpâkô/) from Cru. There can also be two falling tones in a row: /kô/ ‘hemorrhoid’ (the variant /kôkô/ is attested in Benoist (1977), but is no longer found synchronically); /pô/ (with the variant /pôà/) ‘loincloth of leaves’. There is also an auxiliary /â/ ‘that, who’ (which is a relativization marker in the non-focalized context) which has a falling tone in isolation. All this makes us consider contour tones to be separate units in the tonal paradigm.

In the dissyllabic feet numerous tonal combinations are actually found, many more than were attested by le Saout. Some of them are frequent, others are very rare. The following patterns were found:

LL: /gòlò/ ‘Guro’;	MM: /6ēlē/ ‘snake’
LM: /zâlā/ ‘husband’	MH: /lóló/ ‘hunger’
LH: /bùlú/ ‘true cobra’	ML: /yōō/ ‘rent’, /wōlà/ ‘enter’
LF: /gbâû/ ‘kitchen’	MR: /sāā/ ‘mat’, /tōō/ ‘manioc’
	MF: /pōlô/ ‘roll’ (also /pōlò/)
HH: /súlú/ ‘pig’	FH: /lélé/ ‘dance’
HM: /síā/ ‘rubber’, /pālū/ ‘monkey’	FF: /kôô/ ‘hemorrhoid’
HL: /lî/ ‘bed’, /lû/ ‘scarf, kerchief’	
HF: /sétî/ ‘plate’	
HR: /séé/ ‘shrimp’	

3.4. Reduction in a foot

In the framework of a foot CVLV with identical vowels, where L is the consonant /l/, a strong tendency towards the reduction of the first vowel exists, e.g. /būlū/ ‘hernia, rupture’ reduces to [b^ulū ~ ɓlū]. This reduction can reach different levels in different words and also varies among speakers and among dialects.

4. OUR PROPOSALS

We do not see the need to introduce new orthographic solution the old ones can be used. New proposals are given only in cases where the previous orthographies failed to differentiate important phonological contrasts.

4.1. The orthography of the consonants

For the consonants, SIL orthography principles can be generally maintained. There are still some points to discuss. First, we consider the notation of the consonant /l/. We propose not to distinguish separately any of its oral allophones, [r] or [d]], as: (i) neither of these distinctions is phonological, so it’s redundant; (ii) the reality of the language doesn’t always correspond to the principles of distribution elaborated by le Saout and allophones vary among the speakers, individual pronunciations and dialects. So, we propose always to write *l*: *bhulu* [ɓlū] ‘hernia’, *yílí* [yírlí] ‘tree’, *lí* [dílí] ‘woman’. Thus, the following graphemes are proposed for the consonants: *p, b, f, v, bh, t, d, s, z, l, c, j, y, k, g, w, kp, gb* (cf. the discussion about *gw, kw* in 4.2.2).

4.2. The orthography of the oral vowels

The notation of the SIL orthography can be maintained: *i, e, a, o, u* for +ATR vowels, *ɪ, ɛ, ɔ, ʊ* for –ATR vowels. The only inconvenience is produced by the grapheme *ɪ*: in Times New Roman based fonts the italic version for *i* combined with a tonal mark can’t be distinguished from *ɪ*. So, for the italicized texts in Guro only the fonts that maintain this distinction should be used (cf. the characters in Doulos SIL: *fííí* ‘dew’ vs. *fíííí* ‘whistle’).

4.2.1. The orthography of ‘sue’ type words

There is a structure in Guro that has been a subject of much controversy among the scholars, namely a CV₁V₂(V) structure where V₁ is a labial vowel. Where we have the vowel *o*, there are no problems for speakers and scholars. The case of *u* is more delicate. Previous researchers have notated the vowel that appears after a dental or palatal consonant (*t, d, s, l, z, y, c*) and before *ɛ* as [ü], [ɪ], [ɨ] ou [ɥ]. It seems that the opposition of /u/ et /ɪ/ does not exist in this context. Le Saout has described the vowel in question as non-labialized, which explains why he has chosen to interpret it as /ɪ/. Apparently, le Saout worked on the southern dialect of Sinfra (le Saout & Grégoire 1973), where the realization of this vowel differs from the northern dialect of Zuénoula (the more commonly studied dialect).

Benoist has represented this vowel as a labialized one ([ü]); we also have registered only labialized pronunciations in our data.

That's why we prefer to treat this vowel as /u/ (as our informants also do). If one accepts this interpretation, vowel harmony in the words containing this vowel is violated. However, as we will show, vowel harmony is not a strict rule, but rather a morphophonological tendency. Therefore these words are not the only ones to constitute an exception.

Table 4
Interpretation of 'sue' type words

Translation	Benoist 1977	le Saout 1979	Trabi 1982	Grégoire 1975	Our proposal
'stomach'	<i>süē</i>	<i>sìè</i>	<i>sìè</i>	<i>sɥɛ</i>	<i>sue</i>
'tooth'	<i>süé</i>	<i>síé</i>	<i>síé</i>	<i>sɥɛ</i>	<i>súé</i>
'eye'	<i>yüé</i>	<i>yìé</i>	<i>yíé</i>	<i>yɥɛ</i>	<i>yué</i>
'last wife'	<i>lüe-ne</i>	–	<i>hé</i>	<i>lɥĩné</i>	<i>luè-né</i>
'African river hog'	<i>süɛ</i>	<i>sìé</i>	<i>sɔ́é ~ síé</i>	–	<i>suén</i>
'round calabaza'	<i>tüé</i>	<i>tíé, tìè</i>	<i>tíè</i>	<i>tɥɛ</i>	<i>tué</i>

4.2.2. The problem of *kw* and *gw*

All the previous researchers of Guro has distinguished labialized consonants /k^w/ and /g^w/. Le Saout has put them both into his table of consonants. He has mentioned the following examples: [k^wíí] 'snail *Helix aspersa maxima*', [k^wā] 'old', [g^wɛ̀ɛ̀] 'kapok tree', [g^wɛ̀] 'royal antelope' (le Saout 1979: 5). Meanwhile, he has also written in the same paper that the letter *w* in the sequence CwV(V) does not represent the sound [w], but the vowel *v* pronounced very short (in his transcription, ω): [b ω ɛ̀] 'friendship', [g ω í] 'madness', [b ω ā] 'no; refusal' (le Saout 1979: 41). It's difficult to understand which criteria le Saout has used to distinguish between these two sounds, especially when the initial consonant is *g* or *k*. According to our data, in both cases a glide [w] appears in the rapid pronunciation and a vowel [v] or [ɔ] is preferred in the careful pronunciation; our informants also chose those vowels in the notation of such words. Usually they admitted variants with both vowels, but acknowledged that there were some preferences. All three phonemes, /g/, /k/ and /b/, manifest the same features in this case. So if we postulate the consonants /k^w/ and /g^w/, why not also postulate /b^w/? Moreover, apart for these three sounds, other consonants /b, p, v, c/ are also possible in the same context, though pretty rare: /b δ à/ ~ /b δ à/ 'mushroom growing on the fallen palm trees', /v δ ā ~ v δ ā/ 'sow, seed' (imperfective), /p δ è ~ p δ è/ 'explosion, crack', /c δ ɛ̀lé ~ c δ ɛ̀lé (~ c δ ɛ̀lé)/ 'little'.

Our data show that the glide in question interpreted by our informants as /v/, /ɔ/ (or /ɥ/, /ɔ/ in the nasal context), generally appears in the sequences of the type C δ V(V) / C δ V(V) ~ CwV(V) after the consonants /g, k, b/ and before the vowels /ɛ, ɪ, a, ɛ, ɪ, ɔ/. Such structures are less frequent with nasal vowels than with oral

ones. There seems to be a tendency to maintain the openness harmony: informants more often prefer /v, ʋ/ before /ɪ, ɨ/, and /ɔ/ before /ɛ, a, ɛ, ɶ/. Before /ɛ, a, ɛ, ɶ/, the variants with /v, ʋ/ are also normally accepted (though with some hesitation): /gɔ̀è ~ gùè/ ‘royal antelope’, /gɔ̀éé ~ gùéé/ ‘cobra, sp.’, /gɔ̀èè ~ gùèè/ ‘kapok tree’, /bɔ̀è ~ bùè/ ‘friendship among women’, /bɔ̀è ~ bùè/ ‘abcess’, /kɔ̀ā ~ kùā/ ‘old’, /kɔ̀āā ~ kùāā/ ‘catch hold’ etc. The speakers seem always to prefer /v, ʋ/ before the /ɪ, ɨ/: /gɔ̀í/ ‘madness’; /gùí/ ‘civet’, /bɔ̀í/ (~ /bùí/ ~ /búí/) ‘mother’s brother’.

Before /i/, an /ɔ/ is rarely found: /gɔ̀í/ (var. of /gɔ̀lí/, but also /gɔ̀i ~ gɔ̀lí/) ‘money, price, salary’, /bɔ̀í/ ‘cut’. Before /u/, we have also registered an /ɔ/ in the word /bɔ̀ù ~ bùù/ ‘soft; tasteless; timid’. But before /e/, our informants have treated the reduced vowel as /v/: /kɔ̀èè/ ‘grow thin’, /bɔ̀èè/ ‘goatling’ (< /bɔ̀lí-lí/ ‘goat-child’). But the –ATR vowels are very rare before /i, e, o, u/, and normally /u, o/ are observed here: /kòi/ ‘tree, sp.’, /kùí/ ‘resolve’, /kùí/ (~ /kúí/) ‘snail *Helix aspersa maxima*’.

Thus, there are no strict criteria to distinguish [k^w] and [g^w] in Guro from all other similar cases, and their phonological status in other Mande languages can not serve a good argument here. On the other hand, we don’t want to treat this glide as a consonant /w/. The most important reason is that this sound carries a tone. Very often, this tone is the same as the one on the following vowel, but it’s not always the case, cf. /gùí/ ‘1) madness; 2) civet’, /bùí/ ‘mother’s brother’, /kɔ̀à/ ‘tree, sp.’ etc. Second, many words in Guro have a tonal morphology. For example, the following nouns change their tone in the non-referential meaning when they appear as a head of NP with a ‘genitive’ attribute (the tone of the first syllable assimilates with the last level tone of the preceding subordinate noun): /kɔ̀èè/ ‘itch, scab’ – M /kɔ̀èè/, L /kɔ̀èè/, H /kɔ̀èè/; /kɔ̀ā {télé}/ ‘grey clay’ – M /kɔ̀ā/, L /kɔ̀ā/, H /kɔ̀ā/; /kɔ̀à/ ‘navel’ – M /kɔ̀à/, L /kɔ̀à/, H /kɔ̀à/.

So, we propose not to postulate the consonants /k^w/ and /g^w/ in Guro, and to write the words of type CɔV(V) / CvV(V) ~ CwV(V) (where V(V) are usually –ATR vowels) the following way: *v* before *ɪ*; *ɔ* before *ɛ* and *a*. In the context of nasals we propose *u(n)* before *i(n)*, and *ɔ(n)* before *ɛ(n)* and *a(n)*.

Table 5
Interpretation of CɔV(V) / CvV(V) ~ CwV(V) structures

Translation	Benoist 1977	le Saout 1979	Grégoire 1975	Our proposal
‘royal antelope’	<i>gwè</i>	<i>g^wè</i>	<i>gwè</i>	<i>gɔ̀è</i>
‘old’	<i>kwa</i>	<i>k^wā</i>	<i>kwā</i>	<i>kɔ̀a</i>
‘no’	<i>bwá</i>	<i>bɔ̀ā</i>	<i>bwā</i>	<i>bhɔ̀a</i>
‘madness’; ‘civet’	<i>gwèè</i> ; <i>gwe</i>	<i>gɔ̀í</i>	<i>gwèí</i> ; <i>gwéí</i>	<i>gùí</i>
‘kapok tree’	<i>gwè</i>	<i>g^wèè</i>	<i>gwèè</i>	<i>gɔ̀èèn</i>
‘raw’	<i>mwéne</i>	–	<i>mèèné</i>	<i>mɔ̀éné</i>
‘navel’	<i>kwáne</i>	–	<i>kwáne</i>	<i>kɔ̀ané</i>

Words of the same structure where V would be a +ATR vowel are very rare and each word should be considered separately for the quality of this vowel. The principle of maintaining the openness harmony in the orthography is also provisional and is to be further checked. In fact, the confusion between vowels and their transformation into the glide [w] is provoked by the overall powerful process of reduction and ‘footization’ in Guro. This reduction tendency eventually tends to turn all the polysyllables into monosyllables (see (Kuznetsova 2007)). It is especially strong in the dialect of Zuénoula. Perhaps in other dialects the vowels /ɔ/ et /v/ are more clearly distinguished in similar structures.

4.3. *The tonal marks*

As it was shown before, the tonal notation by Benoist (three level tones) proved to be more adequate to the synchronic state of the language as the one in the SIL orthography based on le Saout’s analysis. It was also shown that disyllables can carry more than one tone. That is why one single tonal mark per foot is neither sufficient for distinguishing between different tonal models (especially in the feet carrying the combination of more than two contour tones, like /l̄l̄l̄/ ‘dance’), nor for marking tones in non-initial and non-final syllables (e.g. in words like /bánàná/ ‘banana’). Besides, usage of orthographic signs like the hyphen, etc, to indicate tone will affect their usage in punctuation functions, common to other orthographies and cause some technical problems in word-processing programs like MS Word. This would be a big disadvantage if the script is used as pan-dialectal standard and would create potential technical problems.

That’s why we propose to mark tones with accents over the vowels according to the current IPA practice: acute accent for the high tone, grave accent for the low tone, absence of any mark for the middle tone. For the rising tone, a haček could be used (*sěě* ‘shrimp’), but we rather prefer the diaeresis (*sëë*) as a more practical sign (*ï* et *ü* exist in all UNICODE fonts, which is not the case for *ĩ* ou *ŷ*), and the existing literate speakers are familiar with the diaeresis symbol from the French orthography. For the falling tone, we propose the use of a circumflex, also existing in French orthography: *kôô* ‘hemorrhoid’. Every vowel carries a separate tonal mark, apart for the mid tone, where no mark is used.

4.4. *The orthography of vowel reduction in CVLV feet*

In the texts written in current SIL orthography, some CVLV feet are written with both vowels, others without the first vowel. We propose to always write the two vowels in full. Thus, one should write *gulu* ‘hole’, *yílí* ‘tree’, *gòlò* ‘Guro’ and not *glu*, *yÍ*, *glò*. This allows for a transparent representation of the foot structure and the possibility to mark tone on words with contrastive tone, e.g. *bólù* [ólù] HL ‘bread’, *têlê* [trê] ML ‘tomorrow’, *lóló* [drǒ] ‘hunger’, *nênê* [nǣ] ‘dance’, *tônô* [trǒ] ‘benefice’, etc.

4.5. *The orthography of the nasality*

The SIL orthography principle can be maintained: vowel nasality is marked by a - *n* following the corresponding vowel: *sán* for /sá/ ‘side’, *saan* for /sā̄/ ‘be

mistaken' (imperfective). If the initial consonant is represented by a 'nasal' consonant (*m, n, ny, nw*), the nasality is no more marked on the following vowel to avoid redundancy: *nya* for /yā/ 'with', *nâ* for /lâ/ 'place', *ma* for /bā/ 'me', *nwi* for /wī/ 'hair', *maâ* for /bāâ/ 'jealousy', *nôé* for /lôé/ 'tree, sp.'

For the middle vowels, SIL orthography signs *en, on* can be maintained. From the phonetic point of view, nasal vowels are neither –ATR, nor +ATR, the position of the tongue root is intermediate, so theoretically two variants are possible: (*en, on, in, un* and *en, on, in, un*). The notation *en, on* would be probably technically easier and more logical in the view of the notation of other nasal vowels as *in, un*. But here we took into account the wishes of the literate Guro speakers for whom the SIL notation is more habitual and decided to keep the old version, thus *són* for /sô/ 'totem', *vèèn* for /vèè/ 'papaya'.

For the structures of types CV(V)IV(V), CV(V)6V(V), CV(V)yV(V), CV(V)wV(V), the intervocalic consonant is represented as *-n-, -m, -ny-, -nw-* respectively. In this case, no other indication of nasality is used (except for the words with initial *m, n, ny, nw*), e.g.: *dùnù* /dùlù/ 'coldness', *fíńí* /fíńí/ 'breath', *zímá* /zìbá/ 'beautiful, good', *manyà* /bāyà/ 'wrestling', *kɔnàú* /kɔlàyú/ 'well, shaft', *bányiá* /báyíá/ 'dried gombo', *zúnùú* /zúlùú/ 'wasp', *mɔɔnó* /bɔɔlóló/ 'wound', *naani* /lāālì/ 'mold'.

In cases where there are nasal and oral vowels in a word and where an ambiguity is possible, one should separate the corresponding vowels, showing the nasality boundary. For this, a hyphen or an apostrophe can be used. We propose the apostrophe which is aesthetically better. Besides, a hyphen can thus be reserved for the notation of the morphological boundaries, if a necessity arises. Thus, we propose the following:

- (i) CVCV: *tinbhɔ* /tɪbɔ/ 'musical instrument, sp.', *gunbhê* /gũbê/ 'rabbit', *bùsán* /bùsá/ 'contract for work', but *sán'wí* /sáwí/ 'poison, sp.';
- (ii) CVV: *sân'o* /sâò/ 'sea pike', *só'un* /sóú/ 'fasting', *zē'in* /zēi/ 'barn', *bì'àn* /bìà/ 'bachelor', *bí'ɔn* /bíɔ/ 'green pigeon', *bɔ'un* /bɔũ/ 'plantain banana', *do'un* /dōũ/ 'termitary mushroom', *gbà'in* /gbài/ 'rifle', *gbò'in* ~ *gbè'in* /gbòì ~ gbèì/ 'big road';
- (iii) CVVCV: *maàló* /bāālóló/ 'mango', *tɔɔjan* /tɔɔjā/ 'boubou', but *só'ínyâ* /sóíyâ/ 'soldier';
- (iv) CVCVV: *beci'an* /bēcīā/ 'hives, blotch', *dàn'wéé* /dàwéé/ 'indecently';
- (v) CVVV: *gbo'un'o* /gbōũò/, 'tin', *co'un'ò* /cōũò/ 'machete';
- (vi) CVCVCV: *sétanâ* /sêtlâ/ 'misfortune', *jɔnbóló* /jɔ̀bɔ́lóló/ 'balafon', *tɔnbálo* /tɔ̀báɓlò/ 'tamtam, sp.', but *tɔ'màsí* /tɔ̀bàsí/ 'sign';
- (vii) Other: *jè'inbáá* /jè̀ìbáá/ 'tamtam, sp.', *munu'ɔɔ* /mnũ̀dò/ 'sombre, obscure'.

Here is the list of the main types of nasality notation (*l* – a sonorant, *t* – an obstruent; in some cases structures containing *nw* et *ny* are given separately). All the dissyllabic combinations and some trisyllabic ones are given:

Table 6
The nasality orthography

phon.	orth.	phon.	orth.	phon.	orth.	phon.	orth.
/la/	<i>na</i>	/laḷa/	<i>nana</i>	/lata/	<i>latan</i>	/tataḷa/	<i>tatana</i>
/ta/	<i>tan</i>	/taḷa/	<i>tana</i>	/talā/	<i>ta'na</i>	/talḷa/	<i>ta'nala</i>
/laa/	<i>naa</i>	/tata/	<i>tantan</i>	/tata/	<i>tatan</i>	/tatata/	<i>tatanta</i>
/taa/	<i>taan</i>	/lata/	<i>nata</i>	/talḷa/	<i>tanana</i>	/taḷa/	<i>taana</i>
/laa/	<i>na'a</i>	/laḷa/	<i>nala</i>	/talḷa/	<i>tanala</i>	/taḷa/	<i>taanla</i>
/taa/	<i>tan'a</i>	/tata/	<i>tanta</i>	/tataḷa/	<i>tantanla</i>	/taḷa/	<i>ta'ana</i>
/laa/	<i>la'an</i>	/taḷa/,	<i>tanla,</i>	/talata/	<i>ta'natan</i>	/taḷa/	<i>taa'na</i>
		/tawā, taya/	<i>tan'wa/tan'ya</i>				
/taa/	<i>ta'an</i>	/laḷa/	<i>la'na</i>	/talḷa/	<i>ta'nana</i>		

We do not pretend to have solved all the orthography problems in such a complex language as Guro here, and our paper is open to discussion. One big domain left untouched is, for example, the orthography of the compounds. At this stage of our study, any conclusions would be premature. At present, we tend to avoid compounds and write all the lexical morphemes separately. Evidently, this domain needs more investigation. We hope that this short paper will be favorably accepted by the Guro community and will contribute to the progress of the written form of Guro.

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