A TONAL SYSTEM ANALYSIS OF THE NAISH SUBGROUP OF SINO-TIBETAN LANGUAGES: LITERATURE REVIEW AND CASE STUDY OF QIANSUO NA[1]

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Summary: The level tone systems, widely spread in the Naish subgroup of Sino-Tibetan languages, are contrastive in comparison with the register tone systems as spotted in Sinitic languages. This paper reviews published evidences about the tonal systems in languages of the Naish subgroup of Sino-Tibetan languages and presents the results of a preliminary analysis on Qiansuo Na, a new field of documentation in the Na language studies. After a brief introduction on the background of Na, the second section aims at displaying the level tone systems revealed in several Naish subgroup languages and at summarizing the approaches applied so far by scholars to the tonal systems analysis. The case study section has its origin in the fact that the level tone systems are widespread in Naish languages. It reports the initial reconstruction of the tone systems in Qiansuo Na, highlighting in them a level tone system, categories of surface phonological tones, and complex underlying/ lexical tones. The collected data about Qiansuo Na could contribute to a better understanding of Naish tone systems.

1. Introduction

Na (ISO639-3: nru) is a language spoken by a relatively small number of speakers (estimated at 47,000) in a boundary area between the provinces of Yunnan and Sichuan, South-Western China. The speakers of this language on the Yunnan side have gained official recognition at the provincial level as a distinct group under the name of *Mosuo* and the language is, therefore, called by that name in many Chinese publications. On the Sichuan side, the exonym *Mongolian* has been assigned to the speakers, as one of the 55 officially admitted minority groups in People's Republic of China (PRC). However, the endonym is /nɑʌ/. Na People located in various dialectal plains share a similar endonym, /nɑ/, followed by the word for 'people'. During my fieldwork trips, I have encountered this endonym as /nɑʌ/ (Qiansuo Village), /nɑɹzɨɬ/ (Lijiazui Village), /nɑɹhĩɬ/ (Wujiao Village), and /nɑɹʐɣɬ/ (Youmi Village). A Romanized equivalent of this syllable, *Na*, has been used as the name of the language by the author of a PhD dissertation about this language, L.Lidz [2010]. The designation she uses (name of location + *Na*, e.g., *Yongning Na* for the dialect spoken in and around the plain of Yongning) has been taken up in other English-language publications on this topic [Lidz 2006, 2007, Michaud 2008, Jacques, Michaud 2011]. Some people in China use 纳 as an equivalent of *Na* in *Naish*, i.e. the common denominator of *Naxi* + *Na*. One can mention, for example, the use of

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the term «Na Culture纳文化» by Yang Shangkong and Bai Lang [2006] in *Studies on Na(xi) culture in Sichuan*[2].

This paper reviews published evidence about the tonal systems in Sino-Tibetan languages of the Naish subgroup and presents the result of research on Qiansuo Na, a Na village that has not been included into any local dialectal region. The best-described varieties are Lijiang Naxi and Yongning Na. These two languages, despite great similarities in lexicon, syntax, and phonology, show important differences in terms of the tonal systems. In Naxi, tones are associated with individual syllables, without extension across word boundaries. Some cases of tonal re-association have been found by researchers, but they are relatively few in number. At the phonological surface, therefore, most syllables with their lexical tones are unchanged. In Na, on the other side, high tone could float and be re-associated with neighbor tones. These two types are generalized as lexical tone and tone group respectively, as described by A.Michaud [2013a].

2. Literature Review

2.1. Naxi

Traditionally, five-point scale was used for marking tones in studies of Sino-Tibetan languages, including Naxi, by, e.g., Fu Maoji傅懋勣 [1981], He and Jiang [1985], Fang Guoyu方国瑜 and He Zhiwu和志武 [1995], Li Lincan李霖灿, Zhang Kun张琨, and He Cai 和才 [1953]. However, since this notation is applied uniformly to all the types of tone systems coming under academic scrutiny in the PRC, it is not by itself revealing of the type of tone system under analysis.

A.Michaud [2006] reported some new perspectives in this tonal system. The material used by the scholar was collected from two three-month field trips in three villages in Naxi area: AS, FK, and NL.[3] The default cited utterances came from AS. NL had some non-standard tone patterns, while FK is at the border of Naxi and Na. In addition, sometimes the three dialects behave distinctly with DYZ. The main ideas in reconstruction can be summarized this way: **1)** there are three levels in Naxi: H(igh), M(id), L(ow), the latter realized phonetically as falling, plus the fourth tone: a rising one, in addition to the three level tones; **2)** the fourth tone appears to have originated from a combination of two levels: L (or M) plus H, through processes of tonal re-association in derivation (evidence of this phenomenon are the possessive pronouns ŋɑ˨˧, nɑ˨˧, and tʰɑ˨˧ for the 1st to 3rd person, corresponding to simple pronouns with L or M tone); the rising tone category has been expanded greatly due to its lexical use on numerous Chinese borrowings. The phonological rising contours have four origins: **1)** drop of grammatical words carrying H tone; **2)** lexicalized coalescent words; **3)** borrowings; **4)** a process of emphasis.

Michaud applied a three-level tone system to Naxi in order to explain sandhi, the change of tones of syllables in tone groups. This procedure was also at

[2] Book's title in Chinese characters: 四川纳西族与纳文化研究

[3] AS is used for the Lengbuluo Village in the Old Town District, in Chinese characters: 古城区冷不罗村; FK indicates the Shanmei Village in Fengke Township, in Chinese characters: 奉科乡善美村; NL defines the Dalai Village in the Old Town District, in Chinese characters: 古城区大来村.

the origin of the hypothesis postulating that a floating tone existed in Naish languages. An instance from sandhi analysis of He Jiren and Jiang Zhuyi [1985: 15] collected from DYZ [4] is considered as an introduction to the level tone system theory: /duɯ^{33} **ɲi**^{13}/ 'one day only' = /duɯ^{33}/ 'one'+ /**ɲi**^{33}/ 'day' + /**tɑ**^{55}/ 'only'. Such a phenomenon is analyzed as re-association of a floating H tone. More examples were spotted in other dialects. In AS, /kʰɑʌ/ 'moment only' is equivalent to /kʰɑɻ/ 'moment' + /tɑl/ 'only', and the reduction of the grammatical word /pul/ results in a change of /ʂuɻ/ 'fetch' into /ʂuʌ/. Some other grammatical morphemes mentioned in that paper are: /nɯl/ 'or' in AS and NL, /nɣl/ 'or' in FK; /ul/ 'to scoop' in DYZ [He, Jiang 1985: 103]; /ʂɤl/ «focus marker» in NL; /sel/ «conditional-topicalizer» in DYZ.

Some further evidence for the floating tone has been studied, for example, in monosyllables carrying a floating tone in former disyllables and in the conditional-topicalizer morpheme /sel/ (in fact, /lsel/) in AS, NL, and FK, in the restrictive adverb /sɯl/ (in fact, /lsɯl/) 'only' in AS. They are supposed to come from disyllabic words, i.e. /lsel/ from /ɭɯlsel/ and /lsɯl/ from /seʌsɯl/. The same phenomenon is highlighted in some other dialects.

The rising tone of Naxi was usually mentioned as the tone mostly present in loanwords [Bradley 1975: 95, Fang, He 1995: 86], while He Jiren and Jiang Zhuyi [1985: 41] suggest the possibility of its originally grammatical role. Moreover, it is the rising tone, in Naxi, the one mostly present in plausible Chinese loanwords, if we follow the hypothesis postulating that it is due to Chinese influence. However, the rising tone is also present for morphosyntactic reasons completely alien to South-Western Mandarin (the dialect that influences Naxi). For example, some grammatical words carrying H tone are elided and result in a rising tone, indicating that the creation of the rising tone is a syntactic process, native, in a way. Moreover, there are lexical items with a rising tone that are not Chinese. A plausible scenario can hypothsize that «native» rising tones paved the way for borrowings and not the other way round. At the present, it is impossible to be sure about how these phenomena took place, and we do not have detailed reconstructions about the tonogenesis in Naish languages.

Michaud and He [2007] used experimental phonetic methods to demonstrate two rising contours in AS that are not distinguished in previous descriptions of Naxi. According to the results of experiments with a carrier sentence, LM and MH have been distinct from each other, while LM and LH seem not to produce significant differences in phonological perspective. L and M tone syllables can be reduced to *schwa* with original tones. The authors have given specific examples: The speaker could still dictate whole syllables though they are actually pronounced as reduced forms. As far as the reduction of the H tone syllables is concerned, it merges into previous syllables by associating tone to them.

Another dialect of Naxi reported in Michaud and Xu Jirong [2012], characterizing the Ci'en'ding Village, was also analyzed as belonging to the set of the three tone categories: L, M, H. Here, H tone is phonetically high rising.

[4] DYZ indicates the Dayanzhen Center in the Old Town District, in Chinese characters: 古城区大研镇

2.2. Na

A level tone model was also applied to the tonal system analysis in Na areas, which similarly have three levels in pitch, but much more complex underlying tone systems.

According to Michaud [2009], Laze, spoken in Xiangjiao Township项脚乡, Muli County, shows three level tones for monosyllabic nouns, four for monosyllabic verbs, and, additionally, an MH combination. Contour tones spread to neighbor locations, but L tone cannot spread leftwards. LL sequence is allowed.

More complex tone patterns are spotted in Yongning plain.

Michaud [2008, 2013b] has demonstrated the tone patterns of PJ Na[5]. There are 4 underlying tonemes for verbs [Michaud 2008: 23], 6 for monosyllabic nouns, 11 for disyllabic nouns [Michaud 2013b: 14] , and 9 for classifiers [Michaud 2013b: 23]. Besides LM, LH, M, L, the floating H tone greatly contributes to the category of lexical tonemes. There are three types of H tone: #H, H#, H$. The two non-standard symbols, # and $, indicate the boundaries of a lexical word and a morphological nucleus respectively.

These underlying tonemes neutralize to M, LM, and MH in isolation and behave differently in various contexts, such as Noun + Copula/ Possessive, Verb in prohibition form, Number + Classifier, etc.

Some excerpts about a number of other key phonological facts are: **1)** within a tone group, contours are only realized in a group-final position and the second level associates with the following syllable in a non-tone-group-final position; **2)** all L sequences are forbidden; **3)** H and M are neutralized to M in a tone-group-initial position.

According to Dobbs [2013], Latadi Na (LTD Narua) only has two levels and four tonal categories of lexical tonemes: /H/, /HL/, /L/, /LH/. The default surface tones are falling or rising. The phonological category only emerges in a tone group. For example, /i˥/ ‘cow’ and /jo˧˥/ ‘sheep’ both appear as a falling tone in a citation form, but they behave differently when the possessive particle [bu] is added: [i˥bu˥] ‘cow’s’ and [jo˧˥bu˩] ‘sheep’s’. On the other side, the monosyllabic /L/ tone words appear as rising: /ʐɯ˧˥/ ‘alcohol’ + /qʰwɤˊ/ ‘bowl’ → /ʐɯ˩ qʰwɤ˧˥/ ‘alcohol bowl’. In respect to the verbs, it is not certain whether such two level analyses could be applicable in this context. Dobbs has detected the tonal categories of adjectives with the structure «Adj + /li/», in which /li/ literally means ‘very’.

The tonal category of the first morpheme of a word determines the tonal category of the entire word and of the tone group. This principle is applicable to a large number of noun compounds, adjectives, and verb phrases (as shown by the Tables 7, 9, 12 in the Dobbs’ paper). However, there are some variants in which the tones of both components are retained or they result in a third tone [Dobbs 2013: 14].

Such a two-level system seems to be isolated, if compared to others. This consideration, in any case, could not be exact if we analyze its neighbor languages, as, for instance, Shixing, included into the Naic branch, but separated from «Naish» in the «Na-Qiangic» languages. That language also shows two

[5] Pingjing Village in Yongning Township, in Chinese characters: 永宁乡平静村

levels in the tonal system: H, L, plus HL (as highlighted by Chirkova [2009] as well as Chirkova and Michaud [2009]).

3. Practice on Qiansuo Na

The fieldwork for the practice of this level tone model in a tonal analysis has been conducted in Qiansuo Middle Village (Qiansuo Village for shortage hereafter), Qiansuo Township, Yanyuan County, Sichuan Province, South-Western China. The Na language in Sichuan Province has not yet been comprehensively documented. Being a remote village, Qiansuo Village has largely preserved the traditional Na culture among the elder generation. Moreover, that language is in need to be documented, because the Han culture has accelerated changes in the living conditions in recent decades.

He Jiren and Jiang Zhuyi [1985: 107] stated that there are three local dialects of the eastern main dialect of Naxi: Yongning, Beiquba, and Guabie. In this classification, the Qiansuo Township has not been mentioned.

The studies in the closely-related languages reviewed above have provided new perspectives in order to analyze the tonal system of the Naish subgroup languages. Aiming at providing an in-depth description of the target language, I have conducted reconstruction and documentation experiments and samplings on the tonal system of Qiansuo Na with reference to the methodologies previously applied. The result indicates a similar nature, in the field of the level tone system, for the Qiansuo Na in relationship with the other Naish subgroup languages. This result could be useful for further comparative studies.

3.1. Tone Categories

There are three types of realization for the monosyllabic nouns in isolation. **1)** The first one is definable as low-rising. It could be written as [13]. **2)** The second one is the mid, generally transcribed as [33] in pitch, with allotonic variation of falling realization as [43]. **3)** The third one is the mid-rising that could be written as [35]. In the tone sequences there is also the fourth tone that could be written as [31].

Analyzed through the lens of the morpho-phonological alternations, these four tones are phonologically defined as three level tones: L(ow), M(id), and H(igh).

- L shows two surface-phonological variants: **1)** the low-rising one ([13]), appearing in isolation, and **2)** the simply low one (phonetically: [31], [21]...). The contexts of appearance of these two categorically distinct variants will be set out below. Phonetically, the low-rising allotone occupies a tone space that can be described in tone-letter terms as covering the range from [12] to [15]. The relevant aspect, in this context, is that it could be considered as rising from a low starting point. The low allotone occupies a tone space that can be described in the tone-letter terms as covering the range from [11] to [31]. Its phonetically most important characteristic seems to be the presence of a clear final low target.
- M is phonetically realized in isolation as [33]. It can be also considered, in any case, as a free variant of falling as [43]. The realizations of the M tone cover a relatively large part of the mid and upper range. The pho-

netically important characteristic of M is that it could be considered as non-rising, while both of the others (L and H) are described as rising. To be recognized, it is enough that an M tone is simply flat or falling.

- H is realized in isolation as mid-rising or high-rising, [35] or [45], sometimes also as high [55], and, exceptionally, as slightly falling [54], a case in which the initial high pitch is especially high, in order to ensure that the tone is not confused with M.

In the transcription, symbols have been chosen in order to distinguish, instead of the numbers, phonetic variants. For instance, ꞉, ˥ are used for M, H, respectively, ˨ indicates the L tone when it is phonetically low-rising, and ˩ defines the L in tone group when it is phonetically low. Some examples: 'pig' [bo˨] for [bo^{13}], 'beat' [lɑ˨] for [lɑ^{13}], 'to sweep' [bæ˨] for [bæ^{13}]; 'pig's skin' [bo˩ʁɯ꞉], 'to beat' [lɛ˩lɑ˨], 'to see' [lɛ꞉do˩]. Syllables in H category are generally phonetically realized as rising tones. For example: 'to run' [bæ˥] for [bæ^{35}], 'to spit' [p^{h}i˥] for [p^{h}i^{35}], 'brain' [꞉v˥] for [꞉v^{35}]. My direct listening experience during the elicitation sessions suggests that the probability of M tone monosyllabic words realized as [33] or [43] is more or less the same. For example, [ʔæ̃꞉] 'copper', [lɑ꞉] 'tiger', and [bo꞉] 'bright' have all been pronounced as a middle level tone and a high falling tone by speakers.

In Table 1, minimal sets for noun and verb can be found: [mo˨] 'soldier', [mo꞉] 'corpse', [mo˥] 'mushroom'[6]; [ʑɯ˨] 'to take', [ʑɯ꞉] 'to leak', [ʑɯ˥] 'to sleep'. The following chart illustrates the symbols applied to surface and underlying phonological tone levels. In Table 1, 'soldier' has a surface-phonological L tone, 'corpse' has a surface-phonological M tone, and 'mushroom' has a surface-phonological H tone.

Table 1. Minimal Set of Na

Glossary	'soldier'	'corpse'	'mushroom'
Phonetic transcription	[mo^{13}]	[mo$^{33/43}$]	[mo^{35}]
Phonological transcription	[mo˨]	[mo꞉]	[mo˥]
	Low	Mid	High

In the phonetic aspect, despite the free variation of acoustic value of M and H tone syllables, the sequences with L tone syllables show certain phonetic patterns. I will introduce in the next part of this paper the tone patterns as revealed by three experiments. This will be a methodological outline according to which it is possible to affirm that in monosyllabic nouns with copula, compound nouns, and compound nouns with copula, when a sequence consists only of L tone syllables, the last syllable realizes itself as a low rising pitch, while the previous ones show a low falling pitch. In other words, no L tone sequences are composed of all the syllables with a low falling pitch, and they are either [31 + 13] or [31.31 + 13]. I have discovered this phonetic law during my fieldwork on the L tone sequences. It can be defined in the following way: When all the syllables in a tone group carry the L tone, the last syllable is realized with a rising

[6] 'Mushroom' is a Chinese loanword, but it has been adapted to the tonal system of Na a long time ago.

pitch. This syllable is analyzed as a post-lexical addition of the final H tone that, in association with the L tone of the last syllable, creates a rising contour. Phonetically, this contour, indicated as 13, does not rise as high as the rising that is transcribed as 35.

At this stage, the linguistic formulation of this observation is that L (phonetic realization: low-falling) is not an acceptable definition for the L tone in isolation. Therefore, no monosyllabic word with a low-falling pitch (31) has been observed in Qiansuo Na. This context is similar to the situation we can find in Yongning Na.

3.2. Neutralization of Underlying/ Lexical Tones

Some phenomena in recording and listening indicate the possibility of the neutralization of underlying tones, comparable to lexical tones, of Na. For example, [lɑ˧] 'tiger' and [ʁɯ˧] 'ox' are both M tone words. However, in some analogous contexts, among other cases, when the noun 'skin' follows these words, they show different tone patterns: [lɑ˧ʁɯ˩] 'skin of tiger' ([lɑ^{33}ʁɯ^{31}]) and [ʁɯ˩ʁɯ˧] 'skin of ox' ([ʁɯ^{31}ʁɯ^{33}]). As evidence, these words must have different lexical tone categories that undergo neutralization in the context. In other words, beyond the three-way distinction of L, M, and H, further distinctions can be made according to the various lexical tone patterns.

In order to check and define the underlying tone categories, each category of words is examined by placing all items in a set of morpho-phonological contexts. As far as the nouns are concerned, they are: **1)** nouns followed by copula, **2)** compound nouns. As far as the verbs are concerned (including adjectives tonally behaving as stative verbs), those are: **3)** verbs in isolation and in other «moods» («to…», prohibitive, negative), **4)** verb-object phrases, **5)** reduplication of verbs. As for the classifiers, some are derived from nouns and some from verbs: **6)** numeral plus classifier (one to ten). As a primary draft, I report below the results about the monosyllabic nouns and verbs.

3.3. Tone Patterns of Monosyllabic Nouns

The application of the sentence carrier's experiment 'this is smth.', /tʂʰɨ˧ +___+ ɳi˧/ 'This ___ *copula*' (proximal demonstrative plus target noun plus copula), has allowed to discover five underlying tone categories of monosyllabic nouns. Two of them have a surface M tone, other two show a surface L tone, and one is characterized by a surface H tone. Moreover, also three surface lexical tone patterns of disyllabic phrases have been found: **1)** M + L (31), **2)** L (31) + L (13), **3)** L (31) + M. Most of the M tone syllables in L + M sequence are 43.

Table 2. Lexical Tones of Monosyllabic Nouns in Na

Transcription in the texts	Lexical tone after neutralization	Tone pattern when followed by the copula (phonological notion)	Tone pattern when followed by the copula (stylization of perceived pitch)	Lexical tone
lɑ˧ 'tiger'	M(id)	M + L	33 + 31	M1
ʁɯ˧ 'ox'	M(id)	L + L	31 + 13	M2

boɻ 'pig'	L(ow)	L + M	31 + 43	L1
ʁoɻ 'needle'	L(ow)	L + L	31 + 13	L2
tsʰɯ˥ 'goat'	H(igh)	L + L	31 + 13	H

All the nouns so far elicited (on the extent of 'n' items) follow one of these patterns. Table 3 provides a full set of items.

Table 3. Full Set of Nouns in Na

Lexical tone	Examples
Mid1	bɯɬ 'insect', bɯɬ 'intestine', dʐɣɬ 'friend', loɬ 'black goat', qʰɻɬ 'horn', siɬ 'blue sheep', ʑiɬ 'buffalo', ʑoɬ 'sheep', bɯɬ 'yak', dʑɯɬ 'water', pʰiɬ 'linen'
Mid2	æ̃ɬ 'copper', dziɬ 'bee', hṽɬ 'hair of animals', biɬ 'snow', dɣɬ 'leopard cat', dzoɬ 'hail', dʐwæɬ 'tusk', giɬ 'bear', kvɬ 'gallic', kʰv˥ 'dog', næ̃ɬ 'nightingale', ʂiɬ 'meat', zɯɬ 'grass', ʐwæɬ 'horse', χwʌɬ 'pheasant'
Low1	nɑɻ 'Na', æɻ 'chicken', liɻ 'tea', qɛɻ 'oil', ʁɯɻ 'skin', ɻvɻ 'maggot', siɻ 'liver', ʑɯɻ 'monkey'
Low2	---
High	ho˥ 'stomach', kʰʌ˥ 'bamboo basket', kʌ˥ 'eagle', ɬv˥ 'brain', mo˥ 'mushroom', tʂæ˥ 'joint', tʂʰwæ˥ 'deer', ʐæ˥ 'panther', kɯ˥ 'gut', ɬi˥ 'river deer', ɬo˥ 'rib', tɕʰɯ˥ 'red goat', tsʰi˥ 'salt'

3.4. Tone Patterns of Monosyllabic Verbs

Verbs in Na are often composed with prefixes [lɛ] or [tʰi], rather than to be used in their isolated forms, for example: [lɛɬdziɬ] 'to eat', [dziɬ] 'eat'; [tʰiɬdziɻ] 'to sit', [dziɻ] 'sit'. The prefix [lɛ] appears before non-static verbs, while [tʰi] is utilized for static verbs. There are also two other widespread lexical prefixes used in order to express prohibitive and negative meanings: [tʰɑ] and [mə]. These lexical prefixes can only appear with verbs. Their tones, therefore, are «established» by the verbs. As a result of this process, each verb shows the same tone patterns.

In analogy with nouns, verbs with the same underlying tones in isolated forms could show different tone patterns following the lexical prefixes. It is possible to find six phonological tone categories before neutralization through a careful analysis of the tone patterns with three kinds of lexical prefixes, see Table 4.

Table 4. Lexicon Tones after Neutralization of Monosyllabic Verbs in Na

Transcription in texts	Lexical tone after neutralization	«To…»: [lɛ]/[tʰi] + verb	Prohibitive: [tʰɑ] + verb	Negative: [mə] + verb	Lexical tone
doɻ 'see'	L(ow)	M + L	M + L	M + L	L1
diɻ 'chase'	L(ow)	L + L	L + L	L + L	L2
kʰɣɬ 'steal'	M(id)	M + M	M + M	M + M	M1

dzɨɬ 'eat'	M(id)	L + M	L + M	L + M	M2
dɑl 'chop'	H(igh)	L + L	L + L	L + L	H1
qwɑl 'dig'	H(igh)	L + H	L + H	L + H	H2

Table 5 shows more examples of monosyllabic verbs in Na:

Table 5. Full Set of Verbs in Na

Lexical tone	Examples
Low1	dziʌ 'cut', dziʌ 'fly', dzɨʌ 'sit', ɡwʌʌ 'sing', ʑɯʌ 'take'
Low2	ɡʌʌ 'shoulder', lɑʌ 'beat', qɑʌ 'help', ʁɻʌ 'shallow'
Mid1	hɤ̃ɬ 'go', liɬ 'look', mɣɬ 'hear', ʂiɬ 'look for', ʈʰɨɬ 'drink', tsʰoɬ 'jump', χwɑɬ 'buy'
Mid2	biɬ 'go', bɣɬ 'split', bɣɬ 'steam', dʑæɬ 'ride', kiɬ 'give', ɳiɬ 'listen', pʰæɬ 'tie', siɬ 'walk', tɕʰiɬ 'sell', tʂʌɬ 'calculate', ʑæɬ 'smile', ʔwɑ̃ɬ 'shout'
High1	bæl 'run', hĩl 'stand', lil 'bask', nɣl 'screw', pʰil 'spit', tɕʌl 'boil', tʂæl 'rob'
High2	kʰɯl 'burn', tɕɯl 'put', tsɑl 'put'

4. Conclusion

The level tone system in the analyzed languages seems to be a linguistic feature contrasting with the contour/ register tone system as it is defined in Sinitic languages, though they both can possess contour tones. These tones are different in their nature: The level tone system includes pure pitch tone, while Sinitic typical tones are describable as a combination with the phonation type for example according to [Michaud 2013a]). There is almost no evidence indicating that the phonation type could contribute to a tonal contrast in Naish languages, and the level tone system proves its efficiency in explaining the sandhi phenomena.

Basing our preliminary conclusions on the tone features analyzed above, we can safely assume that the syllabic tones in Qiansuo Na are distinguished by three levels of pitch: L, M, H. The range of pitch expresses the identification of tones, which are not contour tones, as we have highlighted in the register tone systems. The contour of the L tone syllable of Qiansuo Na derives from the post-lexical addition of the final H tone.

The initial linguistic experiments on monosyllabic nouns and verbs foreshadow and reveal further complex underlying tone systems, including at least five categories for nouns and six for verbs. This layer of tone patterns that goes beyond the surface of phonological tones can be called «layer of the lexical tones».

The findings can contribute to a better understanding of the Naish tone systems. Moreover, they could be used for comparisons among the Naish languages and for the reconstruction of the related proto-language and its proto-forms. Further on, the comparison of the synchronic pattern with the tonal ty-

pology in a wider linguistic field would also be able to give a useful feedback for the study of the diachronic development of Naish languages.

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