The rising tone of Naxi: from syntax and intonation to the lexicon?

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Michaud A., 2003, The Rising tone of Naxi: from syntax and intonation to the lexicon?, Proceedings of the « Prosodic Interfaces » Conference (Nantes, France), pp. 149-154.

IMPORTANT NOTE, JUNE 2006: Since it appeared, the present paper has been superseded by more detailed descriptions: an article in *Linguistics of the Tibeto-Burman Area*, setting out in detail the facts on the rising contours of Naxi/Na; and an article in *Journal of the International Phonetic Association*, reporting experimental evidence. Preprint versions of both of these articles are available online:

Michaud A., 2007, Floating tones and coalescent syllables: Field experiments on tonal contours and syllable reduction in Naxi (Tibeto-Burman), *Journal of the International Phonetic Association*, 37(2). http://halshs.archives-ouvertes.fr/hal-00144485

Michaud A., 2006, Tonal reassociation and rising tonal contours in Naxi, *Linguistics of the Tibeto-Burman Area*, 29(1), pp. 61-94. http://hal.archives-ouvertes.fr/hal-00130329

The rising tone of Naxi : from syntax and intonation to the lexicon ?

Alexis Michaud[*]

Abstract The Naxi language (Tibeto-Burman family) features a "floating tone" which calls to mind sub-Saharian tone systems. It results from the deletion of certain morphemes, and combines with a preceding Low or Mid tone to surface as a Rising tone. This Rising tone, which has no Falling counterpart, is also a component of Naxi intonation, used for *emphasis*. Lastly, the Naxi Rising tone has also come to serve a *lexical* function. This arguably paved the way for its use on Chinese loanwords with Rising lexical tone. The Naxi Rising tone is thus of interest to tonal typology, as well as to comparison within the Tibeto-Burman family.

Introduction The prosody of Naxi, a Tibeto-Burman language spoken in China, looks very straightforward: each syllable carries a High (˥), Mid (˧), or Low (˩) tone. However, Naxi[1] also features a Rising (˨˦) tone. As it appears on a number of Chinese and Tibetan loanwords, it tends to be considered as a "foreign" tone (e.g. Li, Zhang et al. 1953; Rock 1963-1972). The data that are presented here bring out the syntactic and intonative functions of this tone, which suggest the hypothesis that lexical borrowings carrying Rising tone in Naxi may be a consequence and not a cause of the existence of a Rising tone.

1. Rising tones of syntactic origin

1.1. Creation of a floating tone by deletion of a morpheme carrying High tone

Some morphemes can delete, leaving a floating tone which causes a preceding Low or Mid tone to become Rising.

1.1.1. Rising tone created by deletion of /tɑ˥/ "only" Examples (1) and (1') are taken from He and Jiang (1985:14-15; see confirmation in Pinson 1996:14). "There is only one day left" translates as either (1a) or (1b):

(1a)   **dɯ˧   ɲi˧   tɑ˥   dʐy˧   se˩.**
       "one" "day" "only" *verb of existence*   *perfective aspect*
(1b)   **dɯ˧   ɲi˨˦   dʐy˧   se˩.**

In (1b) the adverb deletes, only leaving a trace in the tone of the preceding syllable (/ɲi˧/ "day" becoming /ɲi˨˦/). Here is another example, from a narrative about a traditional song that takes one day and one night to sing:

(2)   **nɯ˧   be˨˦   ndza˧   lɑ˧   dɯ˧   ɲi˧   ndza˧   lə˧.**
       "little" adverbializer   "sing" "too" "one" "day" "sing" "need"

The lexical tone of the adverbializing particle is a Mid tone: **be˧**. Its change to a Rising tone is the trace of an underlying /tɑ˥/ "only"; the sentence means: "Even if you make it short, it takes one day to sing." Syllables with lexical Low tone can undergo the same process, as in (3a-b) (Dayan dialect): (3a) **tsʰə˨˦ kə˩ tɑ˥ tʰv˧.** *deictic-"place"-"only"-"come/come out"*, (3b) **tsʰə˨˦ kə˨˦ tʰv˧.** *deictic-"place"-"come/come out"*, both meaning "[I] will only go this far".

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[1] Unless otherwise indicated the dialect described is Western Naxi as spoken in the village of ɑ˧ʂɚ˩ (Jinshan Xiang, Wenhua Xingzhengcun), 20km from the town of Lijiang (Yunnan province).

The resulting tone is the same in (1b), (2) and (3b). To sum up: the tone from a deleted High-toned syllable gets attached to the syllable to its left; the resulting /MH/ and /LH/ sequences both come out phonetically as one and the same [Rising] contour tone.[2] A syllable with High lexical tone may not undergo tone change; ellipsis of **tɑ˥** after a High tone is impossible.

1.1.2. Rising tone created by deletion of /pu˥/: **pu˥** as a verb means "to bring"; it has grammaticalized uses as "gerundizer" (Pinson 1998). (4a-b) are answers to the question "Did you arrive by the 6 o'clock train?"

(4a) **mə˧ wɑ˩, ŋə˩ ʂə˧˥dʑɯ˩ gə˧ tʂʰɯ˧ tɕɑ˥ ndzɯ˩ pu˥ tsʰɯ˩ mə˩.**

(4b) **mə˧ wɑ˩, ŋə˩ ʂə˧˥dʑɯ˩ gə˧ tʂʰɯ˧ tɕɑ˥ ndzɯ˩ tsʰɯ˩ mə˩.**

Negation-"be"-1ˢᵗ pers. sg.-"seven"-"o'clock"-GEN.-deictic-classifier-"sit"-gerund [deleted in (4b)]-"arrive"-final particle indicating contradiction. Meaning: "No, I came by the 7 o'clock train".

Here again, utterances with the morpheme fully realized and those with rising tone are interchangeable. Indeed, an informant who was asked to repeat (4a) several times modified it to (4b) at the third repetition. Incidentally, this gives a clue as to the nuance that distinguishes (a-b) pairs: the morpheme is deleted in casual speech, or when attention is shifted to other parts of the utterance, as in the experiment reported here: the informant was asked to say the sentence "with special emphasis on *seven o'clock*". The sifting of examples (from a corpus of narratives) shows that ellipsis is much more frequent than full realization, though in every case informants agree that both are interchangeable.

1.1.3. Rising tone created by deletion of /u˥/[3] This third example reveals varying degrees in syntactic re-elaboration across dialects. Ms. He Jiezhen, a speaker of the Qi He dialect, reported to us the following sequence:

(5a) **tʰɯ˧ ka˧ le˨˩ dʐə˩.** *3ʳᵈ pers. sg.-"before, in front"-"again"-"run"* ("He is always running ahead"; can be used as a reproach to a child who won't walk at the same pace as others). He Jiren suggested to us that the underlying syllable must be **u˥**: **ka˧le˧u˥ > ka˧le˨**. In "Advanced Naxi"[4], the dialect of the town of Lijiang (centre of the Naxi Autonomous Province), our informant provided (5b) **tʰɯ˧ ka˨ dʐə˩** (and refused re-phrasing as (5a)).

Three stages can thus be distinguished, from an original **ka˧le˧u˥** to **ka˧le˨** (Qi He dialect) to **ka˨** (Lijiang dialect, a.k.a. "Dayan dialect").

No parallel change into Falling tone is found in Naxi, despite likely candidates for deletion, such as the morpheme **tʰe˩**, which conveys "static aspect" (Pinson 1998) and is frequently simplified to /ə˩/, a change already reported by Fu (1984). Over half a century after Fu's description, this morpheme shows no signs of simplifying further and becoming a Low tone which would "float" onto the preceding syllable: during narrative transcription sessions, informants always dictate **tʰe˩**/ə˩ as a separate syllable.

1.1.4. Rising tone created by deletion of /se˥/ (conditional/topicalizer) He and Jiang (1985) report similar behaviour for conditional /**se˥**/. To give only two examples, which illustrate the two configurations in which this process can take place (Low+High, Mid+High): (6b) **mə˧ wɑ˨** standing for (6a) **mə˧ wɑ˩ se˥** *(negation-"be"-conditional/topicalizer)*, both meaning "If not, ..."; and (7b) **ə˥ tʂʰɯ˧ ɲi˧ nɯ˨** standing for (7a) **ə˥ tʂʰɯ˧ ɲi˧ nɯ˧ se˥** *(deictic-"day"-"from"-conditional/topicalizer)*, meaning "From that day on,..." As reported in paragraphs 1.1.1-3, the process cannot take place in cases where the syllable before /**se˥**/ has a High tone.

In the **ɑ˧ʂə˩** dialect, this same morpheme usually displays a different tonal pattern, which is presented in 1.2.1.

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[2] Detailed phonetic data on Naxi tones will be presented in Michaud (forthcoming). In terms of registers, the Rising tone is in the Low register; it can be described as [LM], rather than [LH] or [MH].

[3] The syllable **u˥** has become highly grammaticalized and semantically elusive. In the compound **le˧u˥**, it means "again"; but so does the adverb **le˧** alone.

[4] A phrase coined in reference to "français avancé", "Advanced R.P.", "Advanced Stockolm" etc., referring to the colloquial, present-day speech of a major city.

1.2. Disyllables that have lost initial high-toned syllable, and carry a floating tone

1.2.1. The conditional/topicalizer morpheme in the ɑ˧ʂɚ˩ dialect: the syllable that precedes topicalizer/conditional /**se˥**/ becomes Rising-toned if it had Low or Mid tone. A High-toned syllable remains unaffected.

(8) **tʂʰɯ˧ ɲi˩ se˥**, "that day, ..." (made up of: **tʂʰɯ˧** deictic, **ɲi˧** "day", **se˥** topicalizer/conditional)

(9) **nɯ˩se˥**, "as for you" (made up of: **nɯ˩** : 2nd pers. sg., **se˥** topicalizer/conditional)

The change in tone is compulsory: *****nɯ˩se˥**, *****tʂʰɯ˧ ɲi˧ se˥**.

This phenomenon looks quite unlike that reported in the previous section, as there is no apparent syllable deletion involved. However, the process involved is actually the same in essence; the explanation to this puzzle was given to us by He Jiren, the doyen of Naxi linguistics, who pointed out the existence of a disyllabic conditional in some dialects: **lɯ˥se˥**, instead of **se˥**. Indeed, the syllable **lɯ˥** is also in use as a conditional in the dialect we investigated, where it stands in a paradigmatic relationship to **se˥** (no example has been found of their occurring together). The latter is used very frequently, whereas the former only appears in a restricted number of contexts. The floating tone accompanying the present-day **se˥** morpheme in this dialect can therefore be interpreted as a trace of former disyllabic *****lɯ˥se˥**.

This set of facts provides evidence in favour of a hypothesis formulated by David Bradley[5]: in neighbouring Lisu, conditional and topicalizer are homophonous; the hypothesis is that the two are actually one and the same thing. Homophony is not a sufficient criterion given the restricted inventory of phonemes that appear in grammatical words in Tibeto-Burman. The fact that, within each dialect of Naxi, the tonal behaviour of the two **se˥** morphemes is identical, and has very few equivalents in the language, provides convincing evidence for their identity[6].

1.2.2. The behaviour of "restrictive" adverb sɯ˧ This adverb, which Pinson (1998) translates as "until; just", has the same tonal behaviour as the conditional/topicalizer particle. E.g. (10) ə˥ **tʰɯ˧ kʰɑ˩ sɯ˧**,... *deictic for distant objects-"moment, time"-"only"*. Meaning: "It is only from that time onward that..." The Low tone of **kʰɑ˩** "moment, time" becomes Rising. As in 1.2.1, there is no exception. In light of 1.2.1, there must have been a High-toned syllable preceding **sɯ˧**. A likely answer is found in He and Jiang (1985:79): for another dialect of Western Naxi,[7] they indicate a disyllabic morpheme **se˩sɯ˧**, with cognate meaning. The Rising tone in that morpheme points further back to a third, High-toned syllable which changed the tone of *****se** from Low or Mid to Rising. Using the asterisk (*) for reconstructed forms, this yields: *****se** /M or L/ + *unknown syllable /H/ > **se** /MH or LH/. From language-internal evidence there is no telling whether *****se** carried Low or Mid tone before it underwent transformation: there is no phonetic or phonological criterion to tell whether a Rising tone derives from a Low-toned syllable or a Mid-toned syllable. Nor is there any way of saying whether the floating tone observed in the ɑ˧ʂɚ˩ dialect should be traced back to an older **se˩**, or whether *****se** did not appear in the "restrictive" morpheme at any stage of the language, there being one single ellipsis creating a floating High tone: *unknown syllable /H/ + **sɯ** /M/ > floating H tone+ **sɯ** /M/.

Conclusions

Syntactic processes creating Rising tone only involve a small set of morphemes; it does not seem likely that many more will be discovered. But this does not imply that these processes are marginal. First, the above morphemes are among the most frequent in the language; the process reported in 1.2.1 appears in most sentences of any length. Besides, from the point of view of language use, the set of morphemes that can undergo deletion should remain small for their identification to remain possible. A Rising tone is a clue to an underlying morpheme; the difficulty of recovering that morpheme from context is directly proportional to the number of likely candidates.

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[5] LACITO-Paris 3 seminar communication, 2002.

[6] See also Haiman (1978) "Conditionals are topics", *Language* 54:564-89.

[7] The book by He and Jiang (1985) draws from sources on two dialects of Western Naxi without indicating which form belongs where. Part of the data can be disentangled thanks to He Jiren, who went again through all of the vocabulary. There are complete audio recordings of these sessions.

2. Intonative use of the Rising tone

2.1. Emphasis by tonal change

2.1.1. The emphatic Rising tone; its difference from emphatic stress In Naxi, a syllable with Low tone may be given salience by changing its tone from Low to Rising. Only syllables carrying lexical Low tone are concerned; in words of more than one syllable, only the last syllable may undergo this tonal change. E.g. in the utterance "[The Naxi not only celebrate their own feasts, they] also celebrate some Chinese feasts":

(11) **xɑ˧pɑ˨ gə˧ lɑ˧ dɯ˧ xɯ˧ ko˥.** *"Chinese"-genitive-"too"-"some"-"celebrate"* The lexical tone of the word "Chinese" is **xɑ˧pɑ˩**. In (11) it is modified; in this context, the effect is to bring out the contrast between "Naxi" on the one hand and "Chinese" on the other. The emphatic Rising tone is optional.[8] The question arises as to what kind of identity can subsist between this optional Rising tone, which belongs to pragmatic intonation, and the Rising tone described in Section 1, which has its origin in syntax. Evidence must be provided that the emphatic Rising tone is a categorial phenomenon, and does not belong to the array of (scalar) intonative means to make part of an utterance stand out. In what follows, Naxi Rising tone is compared to the phenomena which since Coustenoble and Armstrong (1937) have been grouped under the name "emphatic stress" (also see note 10).

The emphatic Rising tone is compatible with emphatic stress, and indeed often goes hand in hand with it. Consider (12a-b): (12a) **dɯ˧ sy˩ wɑ˩.** *"one"-"thing"-"be"* "It is the same." (12b) **dɯ˧ sy˨ wɑ˩.** *(same words)* "Yes, it *is* the same." Utterance (12a) is the statement of a fact; (12b) is appropriate in a context where speaker and addressee disagree. Given this context, it is not surprising that (12b) should be pronounced with extra articulatory effort (its correlates including lengthening of consonants, modified voice quality, changes in vowel formants, etc.). But these phonetic parameters come are *superimposed* onto the Rising tone; in essence, they are distinct from it, witness the cases where Rising tone and emphatic stress are both present but are located on different syllables. Here is an example[9], from a narrative about the old times when marriage was planned during childhood but flirting was allowed during teenage, so that many fell in love with someone other than their future spouse, and finally committed "love suicide". In this passage, two lovers make a dream: "Let us go to the place where one reaps without sowing, where crops grow without plowing, where men ride tigers, where there are no fleas and mosquitoes..." As Naxi relative clauses come before their head (the "antecedent" of traditional Western grammar), the whole series of relative clauses (over half a minute on the recording) comes before the noun "place", **bə˩**, which is followed by the verbal cluster "let us go", **bɯ˧lɑ˩**. The three last syllables of the sentence are pronounced "**bə˨bɯ˧lɑ˩**", with Rising tone on /**bə**/, which lends prominence to this long-awaited head (or "antecedent"), and with a considerable burst of articulatory energy *on the last two syllables*, **bɯ˧lɑ˩**.[10] The fact that these two phenomena are not realized on the same syllable points to the "phonological" emphasis by a change of tonal category as being distinct from "phonetic" emphasis/insistance, which, as Garde insisted for French, "is added onto the word as an autonomous element" (Garde 1968:45).[11] In a field where there is no stabilized terminology at present, it seems wiser not to use a label such as "focus" to refer to the prominence bestowed on a word by the placement of a Rising tone; description as "emphatic Rising tone", though it mixes reference to phonetic realization and linguistic function, has the advantage of referring unambiguously to a discrete linguistic category identified by formal criteria.

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[8] The student of Naxi will realize the stylistic nature of this phenomenon during his first transcription sessions, as informants sometimes repeat non-emphatically (with Low tone) syllables which have Rising tone in the recording, or conversely.

[9] We plan to make the original data freely available through the online database of the LACITO Archive Programme; until this design comes to fruition, requests for sound files and transcriptions should be sent to the author.

[10] An alternative explanation (due to Thomas Pinson) is that there is an underlying **pu˥** following **bə˩**, in which case this is another instance of the pattern described in 1.1.2.

[11] For a phonetic description of the distinction between "emphatic" and "nonemphatic" pragmatic intonation, see references in Michaud (forthcoming); the article reports on an electro-glottographic experiment which gives evidence for this categorical distinction in Naxi.

2.1.2. The emphatic Rising tone is independent from "sentence mode" ("speech act") The emphatic Rising tone is frequently associated with interrogative and imperative sentences; but this does not make it an unambiguous indicator of "speech act". Both (13a) and (13b) are well-formed imperatives: (13a) **nɯ˩ ly˩** ! *2nd pers. sg.-"look"* Meaning: "Look!" (13b) **nɯ˩ ly˧˦** ! *(same words; same meaning)* Adding a Rising tone in (13b) has the effect of conveying greater emphasis, greater involvement of the speaker (it typically appears in commands to children). The difference between imperatives with and without Rising tone, then, is essentially the same as that between statements with and without Rising tone. The same holds for interrogation:

(14a) **tʰɯ˧ ə˥ tsʰɯ˩ le˧** ? *3rd pers. sg.- interrogative particle-"arrive"-secondary interrogative particle*[12]

(14b) **tʰɯ˧ ə˥ tsʰɯ˧˦** ? **tʰɯ˧ ə˥ tsʰɯ˧˦ mə˩** ? *3rd pers. sg.- interrog. particle-"arrive"-particle of contradiction*

In both (14a) and (14b), interrogation is signalled primarily by the interrogative particle ə˥. (14a) is an unmarked, unemphatic question : "Has he arrived ?". (14b) is a call for confirmation (it can be glossed as "Has he arrived, or not ?"), conveying speaker *involvement*, with its many nuances, all of them quite natural shades for the emphatic Rising tone to take on in such a context.

2.2. Emphasis with reduplication Rising tone is frequently encountered in combination with reduplication. Reduplication in Naxi offers a range of exercises for autosegmental phonology. The standard pattern for disyllables is: H > H+M, M > M+M, L > M+L. Examples are provided by He and Jiang (1985:48): **lɑ˥** "strike" > **lɑ˥lɑ˧**, **sɯ˧** "know" > **sɯ˧sɯ˧**, **ly˩** "look" > **ly˧ly˩**. Reduplication applied to verbs yields a "reciprocal" meaning, e.g. **lɑ˥** "to strike", **lɑ˥lɑ˧** "to quarrel".) Reduplication with emphasis, as could be predicted from 2.1, affects only syllables carrying a lexical Low tone, whereby the syllable reduplicates to Rising+Low. E.g. **ʂwɑ˧˦ʂwɑ˩** "very high; highest", from **ʂwɑ˩** "high"[13]. Other examples for monosyllabic adjectives are given in He and Jiang (1985:56); but the process extends to disyllables: **ma˥tɕy˧˦ ma˥tɕy˩** "edgemost, most to the back ", from **ma˥tɕy˩** "at the back ". There appears to be no formal restriction on its use: it is found on noun phrases, adverbs, and final particles: **tʂʰɯ˧kʰɑ˧˦ tʂʰɯ˧kʰɑ˩**, "right [at] that moment", reduplicates **tʂʰɯ˧kʰɑ˩** "now", which is made up of **tʂʰɯ˧** *deictic* + **kʰɑ˩** *"time, moment"*). Reduplication with emphasis is also very common on the final particle **mə˩**[14], which expresses contradiction of the addressee's point of view. Which words do appear with an emphatic Rising tone and which do not is a matter for semanticists to discuss; in the case of **mə˩/mə˧˦mə˩**, it is clear enough why this final particle more than any other should make the most of a device that conveys emphasis.

2.3. Borderline cases

To sum up, there are basically two kinds of Rising tones, one originating in syntax, and one which constitutes a phenomenon of emphasis distinct from "emphatic stress". The second kind has semantic affinities with various phenomena, and has undergone a measure of dialect-specific specialization. Take sentences (15a) and (15b):

(15a) **tʂʰə˧ be˧ be˧ na˩ v˩.** *deictic "this way"-adverbializing particle-"want"* "[I] want to do it that way."

(15b) **tʂʰə˧ be˧ be˧ na˩ v˧˦.** *(same words)* "Yes, this is how [I] want to do it!"

In the **ɑ˧ʂə˩** dialect, (15b) conveys insistance. The linguist He Jiren, a native speaker of another dialect of Western Naxi, was surprised by this piece of data: his judgment is that (15b) is only acceptable as an interrogative statement. If this is confirmed by other speakers, it means that even in fairly close dialects there can be different specializations of the Rising tone. Its specialization in expressing interrogation can be interpreted as following the universal tendency for high or rising pitch to be associated with interrogation (Hirst and Di Cristo 1998, Ohala 1984)—an "explanation" which amounts to acknowledging that only tentative conclusions may be drawn at present about the affinities between the Naxi Rising tone and interrogation.

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[12] For the sake of naturalness we indicate the final particles **le˧** and **mə˩**, which may be omitted but are usually present.

[13] He and Jiang (1985, *loc. cit.*) write that "Mid or Low tones" are affected, but only provide examples with Low tone.

[14] This particle is pronounced /**mv˩**/ in other dialects.

There can also be word-by-word lexicalization, probably resulting from an increasingly frequent use of emphatic Rising tone on a given lexical item, so that Rising tone comes to be perceived as the lexical tone. The verb "to want" is a case in point. In the **ɑ˥ʂɚ˩** dialect, it very often bears Rising tone, but in citation form its second syllable always bears lexical Low tone: /**na˩v˩**/; in other dialects, the second syllable has come to bear lexical Rising tone (Pinson 1998:76), yielding /**na˩v˩**/.[15] Another instance of such tone change through habitual emphasis is the adverb "very", /**dʐa˩**/: the form /**dʐa˩**/ is quite frequent in the **ɑ˥ʂɚ˩** dialect, but is still a distinctly *emphatic* counterpart to /**dʐa˩**/; in Pinson's (1998) glossary, two phonetic forms are given under this entry, one with Low tone and one with Rising tone: /**dʑja˩**/ and /**dʑja˩**/, implying that both forms are interchangeable. In other words, unlike in the (in this respect more conservative) **ɑ˥ʂɚ˩** dialect, Rising tone has become so habitual as to lose its emphatic content.[16]

3. Lexical use of the Rising tone

3.1. Syllabic coalescence

Naxi presents some cases of creation of lexical Rising tone from the coalescence of two syllables: the first with Mid tone, the second with High tone. If A represents syllabic Attack and R syllabic Rhyme, the segmental pattern is as follows: $A_1R_1 + A_2R_2 > A_1R_3$, where R_3 may be different from both R_1 and R_2. For example: /**xɯ˧a˥**/ > /**xa˩**/[17], and a disyllabic /**mə˧ji˥**/ merging to create the final particle /**mja˩**/ (this last example needs confirmation).

There are instances of coalescence of a Mid-tone syllable with a Low-tone syllable, with the same segmental pattern, but in these cases the resulting syllable carries Low tone: /**tɕa˧a˩**/ > /**tɕa˩**/ *("pickles")*, /**bu˧se˩**/ > /**bə˩**/ *("go"+perfective aspect)*. This echoes Section 1, which described the asymmetry between productive rules that create Rising tones and the absence of any Falling tone.

3.2. Lexical Rising tones awaiting explanation

Naxi features a small set of "native" lexical items with Rising tone. The most conspicuous (already pointed out by Fu 1944) make up a series of possessive pronouns ending in /-**ɑ**/: **ŋɑ˩, nɑ˩, tʰɑ˩** (compare: 1st sg. **ŋə˩**, 2nd sg. **nɯ˩**, 3rd sg. **tʰɯ˥**), and related **wɑ˩, mɑ˩**, pointing to a morphological process at an earlier stage of the language. Research on the few other lexical items with Rising tone should prove equally interesting for comparative linguistics.

3.3. Borrowings from other languages

All descriptions agree that in contemporary Naxi most Rising tones are found on borrowings from Chinese (and also from neighbouring Tibetan). The loanwords in question carry a Rising tone in Chinese, e.g. Chinese /**la˩**/, Naxi /**lɑ˩**/ "candle".[18] In light of the facts presented above, let us venture to place this development in historical perspective: (i) Naxi developed a floating tone (see section 1), giving birth to a Rising tonal pattern. This is the stage where the Naxi tone system diverges from the situation found in Maru (Okell 1988): both languages have three basic lexical tones and feature morphological floating High tones, and in both languages, lexical High tones are unaffected by these floating tones, but in Maru floating High tones do not create a distinct contour tone: they raise Low to Mid and Mid to High. (ii) Having thus come into phonetic existence, the Naxi rising tone then comes to have a lexical role (by processes analogous to those mentioned in 2.3 and 3.2), however marginal. (iii) The tone system is therefore able to accommodate Chinese syllables that have a Rising contour tone into the Naxi Rising-tone category. In contrast, there is no tonal category in Naxi that corresponds to Chinese Falling tone; Chinese words that carry a Falling tone are re-interpreted in terms of existing categories (becoming Naxi *High* tone). These borrowings seem quite as

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[15] An argument for /**na˩v˩**/ as an older form and /**na˩v˩**/ as an innovation is provided by the cognate verb **v˩** "consider or think", which carries a Low tone in Pinson's data.

[16] From a semantic point of view, it is no surprise that "to want" and "very" should come to carry habitual emphasis.

[17] See He and Jiang (1985:11). The first item refers to a special dish (called "liangfen" in Chinese). The conservative form /**xɯ˧a˥**/ is standard in **ɑ˥ʂɚ˩**; the simplified form /**xa˩**/ is used in the town of Lijiang ("Dayan dialect").

[18] This syllable carries a falling tone (the « fourth tone ») in Beijing Mandarin, but a rising tone in the dialect of the Southwest (called Xinan Guanhua, « Mandarin of the Southwest »); this item has apparently been borrowed from the latter dialect.

numerous as those in the Rising tone (no statistics have been calculated as yet), but did not cause the appearance of a Falling tone in Naxi. Syllables carrying "Tone 3" ("mid-low-mid tone") in Mandarin also have their tone changed when borrowed into Naxi.

Obviously, discussion of the historical influence of the various dialects of Chinese on Naxi should by no means be confined to modern borrowings that can be traced back to Mandarin Chinese. Cross-dialect analysis will hopefully yield historical evidence against which to test the working hypothesis proposed here: that lexical borrowings carrying Rising tone in Naxi are a consequence and not a cause of the existence of a Rising tone.

Concluding remarks

As a first step towards autosegmental modelization and cross-language comparison, the observations made in section 1 may be stated as: 1. Only High tones may float. 2. A floating tone attaches to the preceding syllable, and does not move further.[19] 3. /HH/ surfaces as [H], i.e. if the syllable to which the floating tone attaches has lexical High tone, the floating tone remains unattached (or is deleted).[20] 4. /MH/ and /LH/ surface as one and the same [Rising] contour tone.

From the point of view of Naxi itself, Observation 4 goes to show that the Mid tone should be acknowledged as a distinct tone, and not as "default tone" as opposed to /H/ and /L/[21]: otherwise, attachment of a floating High tone onto a "default tone" syllable would yield High tone and not Rising tone (see (1b), (2), (5a-b), (7b), among others).

As for emphatic Rising tone (section 2), its occurrence on Low-tone syllables only may be of interest to models of pragmatic intonation: considering the near-universal correlation between pitch height and informational prominence, the example of a tone language that has a special phonological device to lend salience to a Low-toned syllable is of interest for intonational typology.

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[19] E.g. when conditional/topicalizer **lɯ˥se˥** disappears altogether (1.1.4), there remain two High tones; but the second floating tone does not move to the second preceding syllable: **mə˧wɑ˩** + conditional/topicalizer becomes **mə˧wɑ˧**, not **mə˧wɑ˧**. Sequences of Rising tones encountered in the corpus can all be analyzed as separate tonal changes that happen to be close in the linear ordering of the sentence. For example: **mi˥ tʂʰɯ˧ ɲi˧ kv̩˥ tʰɯ˧ dzə˩ tsʰɯ˩ se˥** *"woman"-deictic-"two"-classifier-deictic/topicalizer-"run"-"arrive"-perfective aspect* "As the two girls ran over, ... / As the two girls came running, ..." The lexical forms are: **dzə˩** "run", **tsʰɯ˩** "arrive". The change of tone on **tsʰɯ˩** "arrive" is caused by the conditional/topicalizer that follows (see 1.2.1); quite independently, **dzə˩** receives emphatic Rising tone (see 2.1.2).

[20] Two theoretical possibilities are open : to forbid attachment of a floating tone onto a syllable that has lexical H tone, or to allow all floating tones to attach to the preceding syllable, adding later rules to the effect that /H...H/ sequences surface as [H], and that /MH...H/ and /LH...H/ sequences both surface as the same [Rising] contour tone. There is no language-internal evidence to help us choose among these two hypotheses: phonologically, there are no phenomena which discriminate between the syllables which would carry /H/ and /HH/, /MH/, /LH/, and /MHH/, /LHH/ etc.

[21] The latter situation is frequent in Sub-Saharian languages; see Odden (1995). According to Bradley's (1975) reconstruction, the three level tones of Naxi originate in a two-tone system; of the three modern tones, it is the High tone which is an innovation. This places the synchronic existence of a /Mid/ tone in historical perspective.

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