

# NOTES ON THE RECORDINGS ACCOMPANYING THE PAPER “THE PHONETIC EVOLUTION OF REDUPLICATED EXPRESSIONS: REDUPLICATION, LEXICAL TONES AND PROSODY IN NA (NAXI)”

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The communication is accompanied by the audio and electroglottographic recording of ten ABAB reduplicated expressions by speaker M1, i.e. the data represented in figure 1 of the paper.

For the sake of convenience, the simultaneously recorded audio and electroglottographic signals are provided here as two separate WAV files, one containing the audio, and the other the electroglottographic signal. The file names are:

- M1\_na\_redup\_audio.wav
- M1\_na\_redup\_electroglottography.wav

(Recall that M1 is the code assigned to the speaker, and ‘Na’ is the name of the language.)

The ten items recorded are:

- 1) /çỳ.zỳ.çỳ.zỳ/ ‘very, very red’ (/çỳ/ : ‘red’)
- 2) /çỳ.zỳ.çỳ.zỳ/ ‘very, very red’ (identical to 1)
- 3) /çỳ.zỳ.çỳ.zỳ.g̃s̃.sā/ ‘very, very red blood’ (/s̃ā/: ‘blood’; /g̃s̃/: possessive particle)
- 4) /p<sup>h</sup>ḏ.sá.p<sup>h</sup>ḏ.sá/ ‘very, very white’ (/p<sup>h</sup>ḏ/: ‘white’)
- 5) /nà.lú.nà.lú/ ‘very, very black’ (/nà/: ‘black’)
- 6) /hḏ.lḥ.hḏ.lḥ/ ‘very, very green’ (/hḏ/: ‘green’)
- 7) /hḏ.zúr.hḏ: zúr/ ‘very, very green’ (/hḏ/: ‘green’)
- 8) /hḏ.lḥ.hḏ.lḥ/ ‘very, very green’ (same as 6)
- 9) /hḏ.zúr.hḏ: zúr/ ‘very, very green’ (same as 7)
- 10) /p<sup>h</sup>ḏ.sá.p<sup>h</sup>ḏ.sá/ ‘very, very white’ (same as 4)

This recording was realised in 2002 at the Phonetics Laboratory of the Institute of Minority Studies of the Chinese Academy of Social Sciences (中国社会科学院民族学与人类学研究所). Many thanks to Pr. Kong Jiangping (孔江平教授), Head of the laboratory, for making these facilities available, and for technical advice. This recording is copyrighted © 2002 by: (i) Alexis Michaud, CNRS, and (ii) the Chinese Academy of Social Sciences.

The file was annotated with the software SoundForge, defining one *Region* for each syllable rhyme (i.e. for each vowel, as the syllables at issue have a very simple C+V structure). The codes used for each region are as follows: **Number of item** (two digits, from 01 to 10) + **Code of syllable within the reduplicated expression** (one letter plus one figure, A1 through B2). For instance, 08B1 is the syllable B1 (second syllable out of the four, A1B1A2B2) of the eighth item.

The Regions list for the file is provided below; it is the same for the audio and electroglottographic recordings. This Regions list was then used as the basis for analysis of the electroglottographic signal by means of the MatLab script <peakdet> (available online from <http://voiceresearch.free.fr/egg/>).

Name	In	Out	Duration
01A1	00:00:00,808	00:00:00,915	00:00:00,107
01B1	00:00:00,988	00:00:01,118	00:00:00,129
01A2	00:00:01,222	00:00:01,330	00:00:00,107
01B2	00:00:01,413	00:00:01,589	00:00:00,175
02A1	00:00:02,978	00:00:03,138	00:00:00,160
02B1	00:00:03,247	00:00:03,362	00:00:00,115
02A2	00:00:03,459	00:00:03,534	00:00:00,075
02B2	00:00:03,661	00:00:03,810	00:00:00,149
03A1	00:00:05,335	00:00:05,417	00:00:00,082
03B1	00:00:05,485	00:00:05,595	00:00:00,110
03A2	00:00:05,690	00:00:05,786	00:00:00,095
03B2	00:00:05,862	00:00:05,949	00:00:00,086
04A1	00:00:08,227	00:00:08,328	00:00:00,100
04B1	00:00:08,388	00:00:08,737	00:00:00,348
04A2	00:00:08,826	00:00:08,965	00:00:00,138
04B2	00:00:09,016	00:00:09,202	00:00:00,186
05A1	00:00:10,755	00:00:10,837	00:00:00,082
05B1	00:00:10,896	00:00:10,984	00:00:00,088
05A2	00:00:11,058	00:00:11,147	00:00:00,089
05B2	00:00:11,212	00:00:11,381	00:00:00,170
06A1	00:00:13,007	00:00:13,084	00:00:00,076
06B1	00:00:13,149	00:00:13,263	00:00:00,114
06A2	00:00:13,340	00:00:13,417	00:00:00,077
06B2	00:00:13,498	00:00:13,647	00:00:00,149
07A1	00:00:14,481	00:00:14,585	00:00:00,104
07B1	00:00:14,710	00:00:14,836	00:00:00,125
07A2	00:00:14,886	00:00:15,047	00:00:00,161
07B2	00:00:15,148	00:00:15,263	00:00:00,116
08A1	00:00:16,813	00:00:16,894	00:00:00,081
08B1	00:00:16,954	00:00:17,125	00:00:00,170
08A2	00:00:17,142	00:00:17,263	00:00:00,121
08B2	00:00:17,338	00:00:17,551	00:00:00,213
09A1	00:00:18,357	00:00:18,517	00:00:00,160
09B1	00:00:18,626	00:00:18,756	00:00:00,130
09A2	00:00:18,838	00:00:19,013	00:00:00,174
09B2	00:00:19,146	00:00:19,262	00:00:00,116
10A1	00:00:20,594	00:00:20,707	00:00:00,113
10B1	00:00:20,741	00:00:20,879	00:00:00,138
10A2	00:00:20,908	00:00:21,038	00:00:00,130
10B2	00:00:21,058	00:00:21,270	00:00:00,212

This very limited set of data, recorded in 2002 in Beijing, has some shortcomings: it includes a different number of repetitions for different tokens; item 3 is followed by a possessive particle and a noun, whereas

the other items are elicited in isolation; also, the quality of the audio is not ideal. It nonetheless appeared as a sufficient basis for the perception test reported in the present study.

The recordings of the seven other speakers, conducted in Lijiang (China) in 2004, are more systematic (more items; one repetition in isolation, one with a following possessive particle, /g̃/); due to their size, which by far exceeds the limit set for the ICPhS Proceedings, they are being made available over the Internet independently. They are documented in the PhD dissertation of the first author of this paper (reference [4] in the bibliography, available from <http://tel.archives-ouvertes.fr/tel-00130149/en/>). The recordings for one of the speakers (M5) can be accessed directly at:

[http://tel.archives-ouvertes.fr/action/open\\_file.php?url=http://tel.archives-ouvertes.fr/docs/00/13/01/49/ANNEX/reduplication/redAABB\\_avec-particule\\_M5\\_A.wav&docid=130149](http://tel.archives-ouvertes.fr/action/open_file.php?url=http://tel.archives-ouvertes.fr/docs/00/13/01/49/ANNEX/reduplication/redAABB_avec-particule_M5_A.wav&docid=130149)  
(audio; recording 1, AABB reduplication pattern)

[http://tel.archives-ouvertes.fr/action/open\\_file.php?url=http://tel.archives-ouvertes.fr/docs/00/13/01/49/ANNEX/reduplication/redAABB\\_avec-particule\\_M5\\_E.wav&docid=130149](http://tel.archives-ouvertes.fr/action/open_file.php?url=http://tel.archives-ouvertes.fr/docs/00/13/01/49/ANNEX/reduplication/redAABB_avec-particule_M5_E.wav&docid=130149)  
(electroglottography; recording 1, AABB reduplication pattern)

[http://tel.archives-ouvertes.fr/action/open\\_file.php?url=http://tel.archives-ouvertes.fr/docs/00/13/01/49/ANNEX/reduplication/redABAB\\_avec-particule\\_M5\\_A.wav&docid=130149](http://tel.archives-ouvertes.fr/action/open_file.php?url=http://tel.archives-ouvertes.fr/docs/00/13/01/49/ANNEX/reduplication/redABAB_avec-particule_M5_A.wav&docid=130149)  
(audio; recording 2, ABAB reduplication pattern)

[http://tel.archives-ouvertes.fr/action/open\\_file.php?url=http://tel.archives-ouvertes.fr/docs/00/13/01/49/ANNEX/reduplication/redABAB\\_avec-particule\\_M5\\_E.wav&docid=130149](http://tel.archives-ouvertes.fr/action/open_file.php?url=http://tel.archives-ouvertes.fr/docs/00/13/01/49/ANNEX/reduplication/redABAB_avec-particule_M5_E.wav&docid=130149)  
(electroglottography; recording 2, ABAB reduplication pattern)