Elicitation lists: Descriptions and metadata

**List 001**

List 001 comprises 261 words that were selected to represent all tonal patterns found on various syllable types for bimoraic lexical words (see List-001\_Tables-for-research-on-tone-all-syllable-types\_2010-12-07.docx for a clear presentation of the different syllable structures and tonal patterns of the words used in the elicitation). Each of 10 speakers were requested to go through the list twice, repeating the elicited token 3 times in each repetition for a total of six repetitions. Note that the first elicitation session, with Constantino Teodoro Bautista (Yolox\_Elict\_CTB501\_List-001-tonos-completos\_2010-12-08-a.wav) was flawed and though preserved in the archive as it was not segmented into individual tokens nor used with the other files in the research on tone that was carried out after the elicitation sessions. Besides this first flawed file, there are 20 original recordings of List 001 (2 sessions with each of 10 speakers). The ten speakers were: Constantino Teodoro Bautista, Constantino Teodoro Celso, Esteban Castillo García, Esteban Guadalupe Sierra, Estela Santiago Castillo, Guillermina Nazario Sotero, Rey Castillo García, Soledad García Bautista, Victorino Ramos Rómulo, Zoila Guadalupe Sierra. Each speaker was asked to repeat the 261 words 3 times in each session (x 2 sessions = 6 tokens). The targeted speaker was miked for one channel (usually left) and Rey Castillo García was miked on the other channel (usually right). Rey would try to elicit without pronouncing the target word, but this wasn't always possible. Rey would listen and, if the speaker uttered a tonal sequence that was not the targeted pattern, Rey would re-elicit. Thus there were sometimes 4 or 5 tokens uttered by the targeted speaker. For Rey Castillo's own recording the original file was only one channel as he needed no prompting. The original files names are like this, for Constantino Teodoro: Yolox\_Elict\_CTB501\_Lista-001-tonos-completos\_2010-12-08-c.wav. The speaker code (e.g., CTB501) and the Unique Identifier (e.g., 2010-12-08-c) change with each of the 20 files. The next step was to take the 18 recordings of the 9 native speaker consultants (Rey Castillo recorded the 19th and 20th repetitions of the list 001) and copy only the left channel, creating a mono, one-channel recordings. An example of the file name is as follows: Yolox\_Elict\_CTB501\_Lista-001-tonos-completos\_2010-12-08-c\_mono.wav. Rey Castillo then reviewed all the recordings and edited out superfluous material. This left a clean sound file of pure tokens, an average of 3 per word per session (3 x 261 = 783 tokens). This file was renamed: Yolox\_Elict\_CTB501\_Lista-001-tonos-completos\_2010-12-08-c\_mono-editado.wav.

 Rey Castillo then listened to all 20 files and noted how many repetitions there were of each target word. He placed these numbers in a spreadsheet next to the target word code number. At this point William Poser segmented each token into a separate file in an automated process that named the tokens with the speaker name, the UID of the target word token, and a, b, c, d, e, f, etc. for each repetition (e.g., CTB501\_001a.wav for the first word token, first pronunciation. Approximately 261 words x 10 speakers x 6 tokens yields 15,660 tokens). Poser then recombined all the token for a particular target word (e.g., for target word 018 he would select 018a, 018b, 018c, 018d, 018e, 018f) and then recombined them all into a single file usually with 6 repetitions of each target word. These files were named with the filename of the second repetition of the original elicitation recording to which was added the token and number of repetitons. For example, for Victor Ramos Rómulo the second elicitation session was Yolox\_Elict\_VRR504\_Lista-001-tonos-completos\_2010-12-10-c.wav. The recombined file with the 25th word token on the list is Yolox\_Elict\_VRR504\_Lista-001-tonos-completos\_2010-12-10-c\_0025x5.wav indicating that there are 5 repetitions of the targeted token word. For VRR we have, then, the following files:

Yolox\_Elict\_VRR504\_Lista-001-tonos-completos\_2010-12-10-a.wav

Yolox\_Elict\_VRR504\_Lista-001-tonos-completos\_2010-12-10-a\_mono.wav

Yolox\_Elict\_VRR504\_Lista-001-tonos-completos\_2010-12-10-a\_mono-editado.wav

Yolox\_Elict\_VRR504\_Lista-001-tonos-completos\_2010-12-10-c.wav

Yolox\_Elict\_VRR504\_Lista-001-tonos-completos\_2010-12-10-c\_mono.wav

Yolox\_Elict\_VRR504\_Lista-001-tonos-completos\_2010-12-10-c\_mono-editado.wav

Yolox\_Elict\_VRR504\_Lista-001-tonos-completos\_2010-12-10-c\_0001x6.wav

to

Yolox\_Elict\_VRR504\_Lista-001-tonos-completos\_2010-12-10-c\_0261x6.wav

Related to the recombined tokens are two sets of Praat TextGrid segmentation files. Leandro DiDomenico, a graduate student in France, was hired to segment the phonemes using a PRAAT Text Grid of the first and second utterances in each session. Generally these were the first, second, fourth, and fifth tokens of the six-token sequence recorded in two sessions. Much later, while on a postdoc at Haskins laboratories, Christian DiCanio went over and corrected each TextGrid. These corrected TextGrids have been filed as, for example, Yolox\_Elict\_VRR504\_Lista-001-tonos-completos\_2010-12-10-c\_0001x6-4tokens.TextGrid. The "4tokens" indicates that only four of the six tokens appear as segmented in the Praat TextGrid file. Finally, Christian DiCanio went over each of the Text Grid files (261 x 10 files) and segmented all six (or 5, 7, etc.) tokens in the recording. This was done to facilitate evaluation of the accuracy of an automatic aligner, which segments all tokens in a recording. DiCanio's full segmentation of all tokens is filed in the following format: Yolox\_Elict\_VRR504\_Lista-001-tonos-completos\_2010-12-10-c\_0001x6-6tokens.TextGrid

 The total number of hand-segmented tokens, therefore, is 10 speakers x 6 repetitions x 261 words = 15,660 individual tokens). Note that for acoustic analysis of tonal phenomena the 4 token Text Grids are being used as these avoid the "list bias" of the final token utterance in each elicitation. However, to test out the forced aligner (a goal of an NSF grant to Doug Whalen) all tokens must be segmented and thus DiCanio's 6-token data is used. In Doug Whalen's grant two automated segmenters were evaluated for accuracy against the hand-segmented 6-token tier. A short article whose principal author is Christian DiCanio was written about the results of this test: "Assessing agreement level between forced alignment models with data from endangered language documentation corpora."

 Note that the goal of this elicitation was to document occurrence of all the tonal patterns manifested on a Mixtecan word (bimoraice mora), particularly lexical tone. Sonority was taken into account in developing the list.

**List** **002**

**Lists 003 and 004**

2. Recorded by Christian DiCanio: Elicitation material from eight male speakers producing material from two lists (list 03 and list 04) to determine (a) possible effect of different tonal contexts (F0 of surrounding words in an elicitation frame) on target words of distinct tonal patterns (list 03); (b) variations in the realization of consonants in different word positions. The metadata descriptions of the two lists (each of which will also be archived) is the following:

Examples of filenames for the original complete recordings

* Yolox\_Elict\_RCG500\_Lista-003-tonos-en-context-tonal-pt1\_2012-01-29-k.wav
* Yolox\_Elict\_RCG500\_Lista-004-consonantes-en-palabras-aisladas\_2012-10-29-m.wav

NOTE: The original recordings will be cut into separate files for each target word/phrase. These will be archived under the following filename structures which mirror the names for the original recordings with the token number x number of repetitions following the UID that normally ends the filename.

* Yolox\_Elict\_RCG500\_Lista-003-tonos-en-context-tonal \_2012-01-29-k\_tokennumberxrepetitions.wav
* Yolox\_Elict\_RCG500\_Lista-004-consonantes-en-palabras-aisladas\_2012-10-29-m\_ tokennumberxrepetitions.wav

Metadata descriptions:

 List 003: The tone in context list, Lista 003, was designed to examine two questions: (1) the extent to which tone production varies isolation and in context, and (2) the influence of the surrounding tonal context on tone production. Obligatorily nominal target words manifesting most of the language's tonal patterns were placed in carrier phrases that were distinguished by having (a) a low (level 1) tone preceding and following the target word; (b) a mid (level 3) tone preceding and following the target word; and (c) a high (level 4) tone preceding and following the target word. For each target tonal pattern, three word structures were selected: monosyllabic (CVV), glottalized (CV'V), and disyllabic (CVCV).

 List 004: The consonant wordlist, Lista 004, targeted all the consonants in Yoloxóchitl Mixtec in three word contexts:

 a) word-initial in a monosyllabic word;

 b) word-initial in a disyllablic word;

 c) word-medial in a disyllablic word.

 All target words were elicited in a consistent frame: ni1-nda'1yu1-ra1 \_\_\_\_ ka1a3 ('s/he shouted \_\_\_ here'). Thus with the third target, ba3ta4, 'chismoso', the phrase would be ni1-nda'1yu1-ra1 (ba3ta4) ka1a3 ('s/he shouted ba3ta4 here'). The goal of this list is to compare the target consonants in this data set with the same consonants as manifested in running speech corpus data.

Lists 005,006, 007, 008

3. Recorded by Ryan Shosted: Elicitation material from from eight male speakers producing material from four lists (list 005, list 006, list 007, list 008) to study airflow dynamics of nasalization. Simultaneous nasal and oral flow were collected using a Glottal Enterprises OroNasal airflow mask fitted with Biopac TSD137 pneumotachometers attached via rubber cannulae to Biopac TSD160 pressure transducers. Audio was sampled using an AKG-C520 head-mounted condenser microphone. Signals were recorded using Biopac AcqKnowledge software in order to monitor signals in real-time. Software limitations allowed for a maximum sampling rate of 2 kHz. Oral flow, nasal flow, and audio were all sampled at 2 kHz. Oral and nasal pneumotachometers were calibrated using a 600 ml calibration syringe. Subsequently the same four lists were (will be) recorded using a Shure SM10a headworn dynamic microphone at 48KHz, 16 bit. Because of time limitations, in the October and November 2012 sessions only one consultant has been recorded for this acoustic data. The other seven will be recorded in March or April 2013.

 The original recordings were in a proprietary format with extension .acq. All these files will be converted to three .wav files. Note that in the original files each token is a separate file.

 nasal airflow

 oral airflow

 acoustic signal

To avoid problems of duplication of UIDs, each filename will be given a unique UID that will be in all filenames. The UIDs are a date format followed by a letter (e.g., 2012-10-19-a, etc.). Often the UID is the date of the recording plus the letter, though sometimes it may be another "date". To avoid problems all nasalization studies will have 2012-11-04-LETTER. The following are the correspondences.

 **Nasalization study with mask**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **List 05** | **List 06** | **List 07** | **List 08** |
| AGR524 | 2012-11-05-a | 2012-11-06-a | 2012-11-07-a | 2012-11-08-a |
| CTB501  | 2012-11-05-b | 2012-11-06-b | 2012-11-07-b | 2012-11-08-b |
| ECG503 | 2012-11-05-c | 2012-11-06-c | 2012-11-07-c | 2012-11-08-c |
| EGS505 | 2012-11-05-d | 2012-11-06-d | 2012-11-07-d | 2012-11-08-d |
| FNL520 | 2012-11-05-e | 2012-11-06-e | 2012-11-07-e | 2012-11-08-e |
| MFG512 | 2012-11-05-f | 2012-11-06-f | 2012-11-07-f | 2012-11-08-f |
| MMT517 | 2012-11-05-g | 2012-11-06-g | 2012-11-07-g | 2012-11-08-g |
| RCG500 | 2012-11-05-h | 2012-11-06-h | 2012-11-07-h | 2012-11-08-h |
| MSF515 | 2012-11-05-i | 2012-11-06-i | 2012-11-07-i | 2012-11-08-i |

Each speaker (with the exception of MSF515) completed 3 repetitions of Lists 1-4. MSF515 completed 1 repetition of Lists 1-4 plus an additional repetition of List 1. This speaker made a great deal of errors so although archived, his recordings will not figure into further analysis. Each pass through the list involved one utterance of the target phrase. There were 3 repetitions with each speaker. The tokens will be given a final letter (after the token's Unique Identification Number) that corresponds to the repetition: 1st=a, 2nd=b, 3rd=c. The token numbers will be consecutive through the 4 lists (thus the first token of list 007 will be 146).

The final filenames for the wave files will be standardized as follows:

 Yolox\_Elict\_speakerUID \_List-05-nasal-airflow\_2012-11-05-[letter]\_token[a,b or c]

 Yolox\_Elict\_speakerUID \_List-05-oral-airflow\_2012-11-05-[letter]\_token[a,b or c]

 Yolox\_Elict\_speakerUID \_List-05-acoustic-2000khz \_2012-11-05-[letter]\_token[a,b or c]

 Yolox\_Elict\_speakerUID \_List-06-nasal-airflow\_2012-11-06-[letter]\_token[a,b or c]

 Yolox\_Elict\_speakerUID \_List-06-oral-airflow\_2012-11-06-[letter]\_token[a,b or c]

 Yolox\_Elict\_speakerUID \_List-06-acoustic-2000khz \_2012-11-06-[letter]\_token[a,b or c]

 Yolox\_Elict\_speakerUID \_List-07-nasal-airflow\_2012-11-07-[letter]\_token[a,b or c]

 Yolox\_Elict\_speakerUID \_List-07-oral-airflow\_2012-11-07-[letter]\_token[a,b or c]

 Yolox\_Elict\_speakerUID \_List-07-acoustic-2000khz \_2012-11-07-[letter]\_token[a,b or c]

 Yolox\_Elict\_speakerUID \_List-08-nasal-airflow\_2012-11-08-[letter]\_token[a,b or c]

 Yolox\_Elict\_speakerUID \_List-08-oral-airflow\_2012-11-08-[letter]\_token[a,b or c]

 Yolox\_Elict\_speakerUID \_List-08-acoustic-2000khz \_2012-11-08-[letter]\_token[a,b or c]

For example, the first word on list 5 repeated in three sessions by Rey Castillo Garcia would be

 Yolox\_Elict\_RCG500\_List-05-nasal-airflow\_2012-11-05-i\_001a

 Yolox\_Elict\_RCG500\_List-05-nasal-airflow\_2012-11-05-i\_001b

 Yolox\_Elict\_RCG500\_List-05-nasal-airflow\_2012-11-05-i\_001c

 Yolox\_Elict\_ RCG500\_List-05-oral-airflow\_2012-11-05-i\_001a

 Yolox\_Elict\_ RCG500\_List-05-oral-airflow\_2012-11-05-i\_001b

 Yolox\_Elict\_ RCG500\_List-05-oral-airflow\_2012-11-05-i\_001c

 Yolox\_Elict\_ RCG500\_List-05-acoustic-2000khz \_2012-11-05-i\_001a

 Yolox\_Elict\_ RCG500\_List-05-acoustic-2000khz \_2012-11-05-i\_001b

 Yolox\_Elict\_ RCG500\_List-05-acoustic-2000khz \_2012-11-05-i\_001c

The acoustic recordings will be given as follows. Note that the UID for nasal-airflow, oral-airflow, acoustic are all the same for each speaker. This is because the three files are all derived from one original. However, the separate acoustics file will have a separate UID

**Separate acoustics of nasalization elicitation lists**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **List 05** | **List 06** | **List 07** | **List 08** |
| AGR524 | 2012-12-05-a | 2012-12-06-a | 2012-12-07-a | 2012-12-08-a |
| CTB501  | 2012-12-05-b | 2012-12-06-b | 2012-12-07-b | 2012-12-08-b |
| ECG503 | 2012-12-05-c | 2012-12-06-c | 2012-12-07-c | 2012-12-08-c |
| EGS505 | 2012-12-05-d | 2012-12-06-d | 2012-12-07-d | 2012-12-08-d |
| FNL520 | 2012-12-05-e | 2012-12-06-e | 2012-12-07-e | 2012-12-08-e |
| MFG512 | 2012-12-05-f | 2012-12-06-f | 2012-12-07-f | 2012-12-08-f |
| MMT517 | 2012-12-05-g | 2012-12-06-g | 2012-12-07-g | 2012-12-08-g |
| RCG500 | 2012-12-05-h | 2012-12-06-h | 2012-12-07-h | 2012-12-08-h |
| MSF515 | 2012-12-05-i | 2012-12-06-i | 2012-12-07-i | 2012-12-08-i |

 Yolox\_Elict\_speakerUID \_List-05-separate-acoustics-48Khz \_2012-12-05-i\_tokenxrep

For example, the first word on list 5 repeated 3 times by Rey Castillo García would be

 Yolox\_Elict\_RCG500\_List-05-separate-acoustics-48Khz \_2012-12-05-i\_001x3

The following are the metadata descriptions for each list:

 List 05 (List-005-Mixtec-Nasalization-Study-List-2012-11): This is a list of 41 monomorphemic words of the form C1V1C2V2 . Tonal patterns are varied to study possible effects of tone on nasalization. The values for C2 are: /s/, /x/, /ch/, /t/, /k/ (/x/ represents a voiceless palato-alveolar fricative). The final vowels are /u/, /i/, /a/ vs. /un/, /in/, /an/. There are no words with enclitics. Tonal patterns are 1.1, 1.4, 13.2, 14.2, 14.3, 14.4, 3.2, 3.3., 3.4, 4.1, 4.2, 4.3, 4.4. Insofar as possible, oral/nasal (CVCV/CVCVn) pairs are matched for identical or similar tonal patterns to avoid confounds between high tone (possibly resulting from higher subglottal pressure) and observations of higher airflow. Data were collected in the carrier phrase "ni1-nda'1yu1-ra1 \_\_\_ ta4ta2", "I yelled \_\_\_ father" except for a few exceptions where the test material had to follow another word in order to make sense to the speaker. The list is meant to explore the following research questions:

* + - In disyllabic monomorphemic words, is nasalization present on V1 if V2 is underlyingly nasal (regressive nasalization)?
		- Is the presence/degree of nasalization in V1 related to the kind of obstruent C2 (anterior vs. posterior fricative / fricative vs. stop)?
		- What are the differences in degree of nasalization between V1 and V2(nasal) in a V2(nasal)–final word or between V2(oral) and V2(nasal)?
		- What is the effect, if any, of tonal contour on nasalization?

 List 06 (List-006-Mixtec-Nasalization-Study-List-2012-11): This is a list of 104 monomorphemic words of the form C1V1V1 and C1V1Vn1 and C1V'1V1 and C1V'1Vn1 (i.e., CVV words in which the vowels are +nasal /-nasal or +laryngealized/-laryngealized. The vowels are /uu/, /ii/, /aa/ vs. /uun/, /iin/, /aan/ and /u'u/, /i'i/, /a'a/ vs. /u'un/, /i'in/, /a'an/. Tonal patterns are varied to study possible effects of tone on nasalization. Tonal patterns on the target word are: 1.1, 1.3, 1.4, 3.2, 3.3, 3.4, 4.2, 4.4 without enclitics, and 1.1=1, 1.1=4, 1.4=3, 1.4=4, 3.3=3, 3.3=4, 3.4=4, 4.2=2, 4.2=4, 4.4=3, and 4.4=4, with enclitics. Data were collected in the carrier phrase "ni1-nda'1yu1-ra1 \_\_\_ ta4ta2", "I yelled \_\_\_ father" except for a few exceptions where the test material had to follow another word in order to make sense to the speaker. The target words are elicited with oral and nasal enclitics:

 =on4, =un4 2sg

 =an4, =en4 3sgFem

 =o4, =e4 1plInclusive

 =aT, =eT inanimate (T indicates variable tone depending on final tone of word and phrase final or medial)

 Hay un ejemplo de =on4=a3.

 The list is meant to explore the following research questions:

* When nasal enclitics are added to dimoraic monomorphemic words of the form CVV (with oral vowels), what is the degree and time course of nasalization prompted by the enclitic on preceding segmental material?
* Does laryngealization/glottalization affect the regressive spread of nasalization.
* When oral enclitics are added to dimoraic monomorphemic words of the form CVVn (with nasal vowels), what is the degree and time course of decreasing nasalization of the root vowels prompted by the oral enclitic?
* Does laryngealization/glottalization affect the spread ofnasalization/denasalization on the root vowels?
* What is the relationship of tonal contours to nasalization patterns?

 List 07 (List-007-Mixtec-Nasalization-Study\_2012-11.docx): This is a list of 139 monomorphemic words of the following forms: NVV, NV'V, ndVV, ndV'V, CVNV, NVNV, CVndV, and CV'ndV. Nasals are /m/, /n/, /ñ/. Final vowels are /u/, /i/, /a/. Note that no final vowel is written Vn though those following a nasal consonant (N, not /nd/) are nasal/nasalized. Tonal patterns are varied to study possible effects of tone on nasalization. Tonal patterns on the target word are: 1.1, 1.3, 1.4, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 4.4 without enclitics and 1.1=1, 1.1=4, 1.1=4=3, 1.3=3, 1.3=4, 1.4=3, 1.4=4, 3.2=2, 3.2=4, 3.3=3, 3.3=4, 4.1=1, 4.1=4, 4.2=2, 4.2=4, 4.3=4, 4.4=3, and 4.4=4. Data were collected in the carrier phrase "ni1-nda'1yu1-ra1 \_\_\_ ta4ta2", "I yelled \_\_\_ father" except for a few exceptions where the test material had to follow another word in order to make sense to the speaker. The target words are elicited with oral and nasal enclitics. Some items have two enclitics.

 =on4, =un4 2sg

 =an4, =en4 3sgFem

 =o4, =e4 1plInclusive

 =aT, =eT inanimate (T indicates variable tone depending on final tone of word and phrase final or medial)

 The list is meant to explore the following research questions:

* + - Are vowels before /nd/ nasalized to any extent? If so, does glottalization affect the degree of nasalization?
		- How is nasalization realized in words of the form NVV and NV'V?
		- Does glottalization in NV'V affect the nature of nasalization (e.g., as compared to NVV)? Is there any effect in CVndV vs. CV'ndV?
		- How is nasalization in NVV and NV'V words affected by enclitics with (a) oral vowels; (b) nasal vowels?
		- Does regressive nasalization occur in CVNV words? In CVndV words?
		- When nasal enclitics are added to CVNV, NVNV, CVndV and CV'ndV words, how is nasalization of the preceding vowels affected?
		- When oral enclitics are added to CVNV and NVNV words (and perhaps to CVndV and CV'ndV words), how is nasalization of the preceding vowels affected?
		- Does glottalization affect the nature of regressive nasalization when a nasal enclitics is added to a NV'V, ndV'V or CV'ndV word?

 List 08 (List-008\_Mixtec-Nasalization-Study\_2012-11.docx): This is a list of 60 monomorphemic trimoraic words of the following forms: CVCVV and CVCVVn without and with enclitics (sometimes two enclitics). Final vowel sequences are /uu/, /ii/, /aa/ and /uun/, /iin/, /aan/. No words have a glottalized final long vowel (e.g., CVCV'V). C2 ranges between /x/ /kw/ /s/ /m/ /kw/ /ñ/ /k/ and /nd/. In no cases was C2 preceded by a glottal stop/laryngealized vowel. Tonal patterns are varied to study possible effects of tone on nasalization. Tonal patterns on the target word are: 1.1.1, 1.1.4, 3.1.1, 3.2.2, 3.3.3, 3.3.4, 4.3.3, 4.3.4 without enclitics and 1.1.1=1, 1.1.1=4, 1.1.4=3, 1.1.4=4, 3.2.2=2, 3.2.2=4, 3.2.2=4=3, 3.3.3=4, 3.3.3=4.3, 3.3.4=3, 3.3.4=4, 3.3.4=4=3, 4.3.3=4, 4.3.4=3, 4.3.4=4 with enclitics. Note that one word with 3.1.1 (ba1xa1a1 'arrive') was not elicited with enclitics. Data were collected in the carrier phrase "ni1-nda'1yu1-ra1 \_\_\_ ta4ta2", "I yelled \_\_\_ father" except for a few exceptions where the test material had to follow another word in order to make sense to the speaker. The target words are elicited with oral and nasal enclitics. Some items have two enclitics.

 =on4, =un4 2sg

 =an4, =en4 3sgFem

 =o4, =e4 1plInclusive

 =aT, =eT inanimate (T indicates variable tone depending on final tone of word and phrase final or medial)

 =on4=a3 2sg+inanimate

 =un4=a3 2sg+inanimate

 The list is meant to explore the following research questions:

 When nasal enclitics are added to trimoraic monomorphemic words with oral and with nasal final long vowels, what is the degree and time course of oral and nasal air flow on preceding segmental material?

 When oral enclitics are added to trimoraic monomorphemic words with oral and with nasal final long vowels, what is the degree and time course of oral and nasal airflow on preceding segmental material?

 Does the presence of a nasal C2 consonant condition an increase in either progressive or regressive nasalization, how is this affected by an oral vs. nasal enclitic?

 Does vowel length of the final vowel affect the degree and time course of nasalization (as compared to target words of the form CVCV?

 What are the nasal properties of the portmanteau enclitic sequences =on4=a3 and =un4=a3 (realized as [an43]).

Data collection:

|  |  |
| --- | --- |
| Yolox\_Agric\_MSF515\_El-cultivo-de-maiz\_2012-11-02-b.wav | 009:56 |
| Yolox\_Botan\_CTB501-EGS505\_I3ta2-kwe1e1-nu14u3-Asteraceae\_2012-10-27-g.wav | 005:10 |
| Yolox\_Botan\_CTB501-MFG512\_I3ta2-tio14ko3-Asteraceae\_2012-10-27-d.wav | 016:34 |
| Yolox\_Botan\_CTB501-MFG512\_I3ta2-yu1ku1-li4ma4-Asteraceae\_2012-10-27-f.wav | 008:47 |
| Yolox\_Botan\_CTB501-MFG512\_Yu1ku1-tio1o3t-si1ba1\_Familia-pendiente\_2012-10-27-c.wav | 004:10 |
| Yolox\_Comid\_CTB501-MFG512\_Preparacion-de-tamales-tipos-de-hojas\_2012-10-27-e.wav | 007:03 |
| Yolox\_Creer\_AGR524-RCG500\_Los-mal-agueros\_2012-10-30-b.wav | 028:05 |
| Yolox\_Creer\_FNL520-ECG503\_Los-mal-agueros-animales-y-otros\_1011\_2012-11-01-g.wav | 027:00 |
| Yolox\_Creer\_MSF515\_El-senyor-del-fuego-y-el-senyor-de-la-lluvia\_2012-10-28-i.wav | 033:19 |
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| Yolox\_Creer\_MSF515\_Los\_kwa14ku3-y-los-remedios\_2012-10-28-h.wav | 026:02 |
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| Yolox\_Cuent\_MFG512\_El-cantor-y-las-tres-palomas\_2012-11-01-c.wav | 031:26 |
| Yolox\_Cuent\_MSF515\_Comisario-y-ancianos-nombran-los-dias-sol-luna\_2012-11-01-b.wav | 015:28 |
| Yolox\_Cuent\_MSG516\_Los-dos-ninyos-se-transformaron-en-sol-y-luna\_2012-10-29-c.wav | 029:33 |
| Yolox\_Cuent\_VRR504\_El-muchacho-que-pidio-consejo-a-un-anciano\_2012-10-29-d.wav | 014:38 |
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| Yolox\_Narra\_MFG512\_Testimonio-de-experiencia-mayordomias-y-cargos\_2012-10-29-h.wav | 033:03 |
| Yolox\_Narra\_MFG512\_Testimonio-sobre-asesinato-de-rico-de-Yolox\_2012-11-01-d.wav | 011:02 |
| Yolox\_Narra\_MSF515\_Testimonio-Como-fue-mordido-por-una-vibora\_2012-11-02-a.wav | 013:18 |
| Yolox\_Narra\_SRG523\_Tenencia-de-tierras-comunales-y-linderos-Yolo\_2012-10-27-a.wav | 030:17 |
| Yolox\_Ritua\_AGR524-CTB501\_Pedimiento-de-novia-recreacion-del-proceso-pt-1\_2012-10-27-b.wav | 056:34 |
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| Yolox\_Ritua\_AGR524\_Rezo-para-curar-uno-afectado-de-kwa14ku2\_2012-10-30-a.wav | 019:22 |
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| Yolox\_Ritua\_MSF515\_Rito-de-pedir-la-lluvia\_2012-10-28-a.wav | 032:59 |
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| Yolox\_Zoolo\_CTB501-FNL520\_tio1ko4-ka4ya24-Formicidae\_2012-11-03-e.wav | 008:03 |
| Yolox\_Zoolo\_CTB501-FNL520\_tio1ko4-kwa4a-Formicidae\_2012-11-03-f.wav | 006:45 |
| Yolox\_Zoolo\_FNL520-CTB501\_tio1ko4-kwa4a2-ji1ni4-Formicidae\_2012-11-03-g.wav | 006:27 |
| Yolox\_Zoolo\_FNL520-CTB501\_tio1ko4-nda1ba32-Formicidae\_2012-11-03-h.wav | 005:33 |
| Yolox\_Zoolo\_FNL520-CTB501\_tio1ko4-nyu4nyu4-Formicidae\_2012-11-03-i.wav | 004:16 |
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| Yolox\_Zoolo\_FNL520-ECG503\_Avispa-named-yo3ko2-ya4a1\_2012-11-01-m.wav | 002:19 |
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| Yolox\_Elict\_ECG503\_Lista-004-consonantes-en-palabras-aisladas\_2012-10-31-c.wav | 013:36 |
| Yolox\_Elict\_EGS505\_Lista-003-tonos-en-context-tonal-pt1\_2012-10-30-c.wav | 045:09 |
| Yolox\_Elict\_EGS505\_Lista-003-tonos-en-context-tonal-pt2\_2012-10-30-d.wav | 018:56 |
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| Yolox\_Elict\_FNL520\_Lista-004-consonantes-en-palabras-aisladas\_2012-11-01-w.wav | 010:09 |
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