

FINAL EXAM: LING1111 - 2022

1. ARTICULATION

- A. What sound corresponds to the schematized vocal tract displayed in the image below?
- B. Describe how the sound [ŋ] is articulated (including laryngeal configuration) and name all active and passive articulators involved in articulating this sound.
- C. Name all relevant articulatory differences between [ŋ] and [p]



Possible solution:

- A. A velar nasal [ŋ].
- B. The tongue tip forms a closure at the palatum (retroflex). The velum is lowered such that air can flow through the nasal cavity. The vocal folds are closed against each other and vibrate.

- C. [p] is a voiceless bilabial stop. It differs from [ŋ] in three respects: [p] is not nasal, so the velum is closed; [p] has defined by closure of the lips; [p] is voiceless, so the glottis is open.

Point allocation:

A. 1 point for correct sound.

B. 3 points for correct description. Deduction of 1pt per erroneous element (e.g. velum position, place of articulation, manner of articulation, voicing)

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2. TRANSCRIPTION

Download/listen to the file `transcribe01.wav` and transcribe the sentence in IPA format.

A possible solution: [nɔ̃ʁʒveɡən]

Point allocation: overall 3 pts

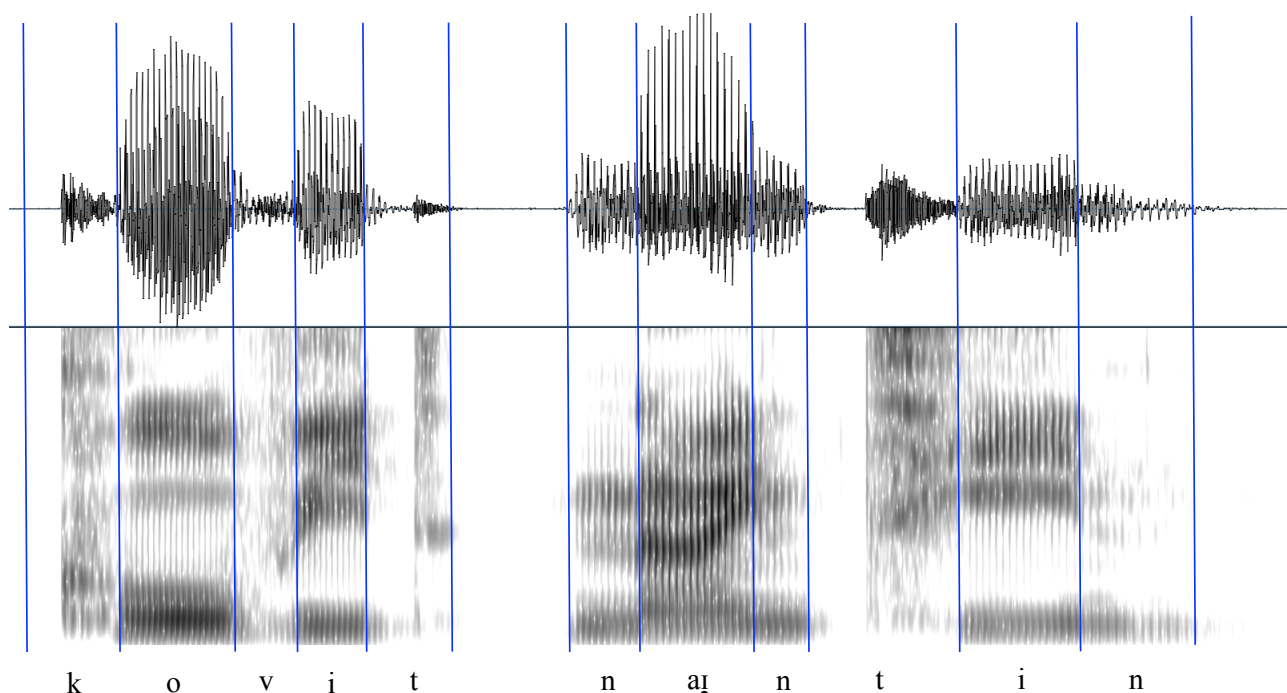
Deduct points for clear errors in 1 pts steps

- ɛ instead of e
- vowel quality needs to be in the ball park
- final reduced vowel is schwa
- <r> is uvular

3. ACOUSTICS

Segment the spectrogram below. It says “[kovit naɪ̯ntɪn]”. (see Covid19.pdf) spoken by a German native speaker. Draw in boundaries for all sounds and identify the intervals with the respective sounds. The sound file is provided as well (Covid19.wav).

A possible solution



Point allocation: overall 5 pts

deduct points 1 pts steps for grossly misaligning (however beginning and end of utterance is not evaluated, i.e. it was not communicated clearly how the segmentation of beginning and end of phrases is done correctly);

- using wrong IPA symbols (i for ɪ; e for ɛ),
- not including closure of k,
- including pause for n
- not recognising the diphthong in “nine”

4. PHONOLOGY

The following (slightly simplified) data are from the Apinayé language, spoken in central Brazil. The data are given in broad phonetic transcription, using the IPA. A vowel with a tilde (i.e., ã, ã) stands for a nasalized vowel, that is, one that is produced with airflow through the nasal cavity. [tʃ] and [dʒ] count as single (affricated) phones.

	word	translation
a	ba	liver
b	ɲõ	give
c	gw	clay
d	mõr	go (pl.)

e	nõt	slept
f	bɛdʒ	honey
g	dʒo	hang up
h	di	woman
i	ɲũ	sit
j	nõ	lie down
k	gruuk	angry
l	mõk	center

- A. Not all combinations of consonant and vowel types are permitted in Apinayé. State any restrictions that you encounter in the data above. Hint: the restrictions have to do with voicing and nasality, not with place of articulation in either consonants and vowels, and should be quite simple to state.
- B. Given the restrictions that you found, two analyses are possible to establish the phonemic system of Apinayé. What are they?

A solution:

- A. Nasal vowel only occur after nasal consonants; oral vowel only occur after non-nasalized oral consonants; they are in complementary distribution. The two voiceless stops that show up in the data appear after both a nasal and an oral vowel, but there aren't any examples of voiceless stops preceding either type of vowel.
- B. Ignoring the voiceless stops for the time being, there are two stories for the Apinayé data: 1. Both voiced stops and nasals are phonemes of the language, while only oral vowels are phonemic, and they get nasalized when following a nasal stop. 2. Nasal and oral vowels are phonemic in the language, while only one type of voiced consonant exists (either an oral consonant, or a nasal stop); this consonant, if it's oral, gets nasalized by a nasal vowel following it; if it's nasal, it gets denasalized by an oral vowel following it. We prefer the former analysis because assuming an underlying difference between vowels would force us to define a set of contexts that have to be defined very broadly (-nasal). Typologically, vowels are rarely nasal. And assimilation of nasalisation is common, while denasalisation of nasal consonants is not.

Point allocation: 9 pts

- + 2 for recognizing nasal consonant + nasal vowel
- + 2 for recognizing oral consonant + non-nasal vowel
- + 1 for mentioning complementary distribution, allophony
- + 1 for mentioning absence of minimal pairs
- + 1 reasoning for choosing underlying form
- + 2 for identifying the two possible directional interpretations of the process (2 pts for each direction of interpretation)

Overall 24 pts. Grade scheme:

< 9:	F (< 37.5%)
9-13.5:	E (35 - 56%)
14-16.5:	D (58 - 69%)
17-19.5:	C (71 - 83%)
20-22:	B (83 - 92%)
22.5-24:	A (< 94%)