

# Speech Science

WiSe 2023

## Exercise 2: Transcription

Nov 13, 2023

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# Assignment 1 Answers

Find the IPA symbol and an example word for the sounds described below.

01) bilabial nasal [m]

02) voiceless labiodental fricative [f]

03) glottal plosive [ʔ]

04) velar nasal [ŋ]

05) voiced alveolar fricative [z]

06) voiceless velar plosive [k]

07) voiceless palatal fricative [ç]

08) palatal approximant [j]

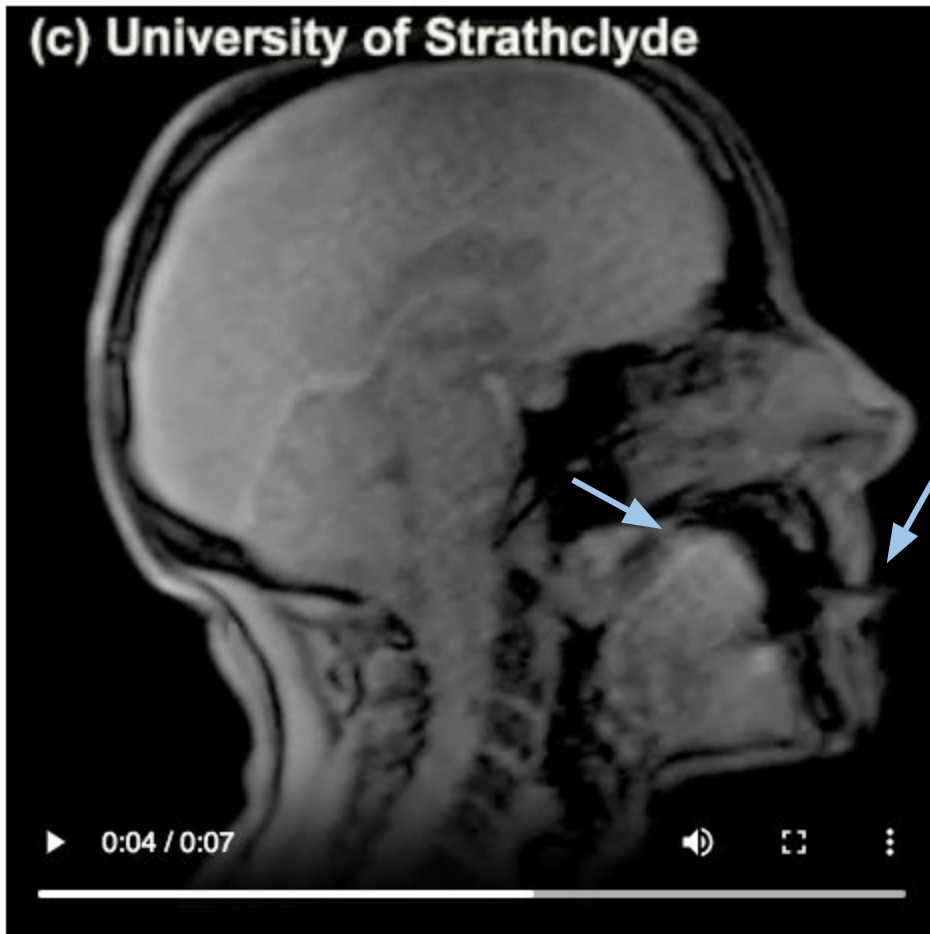
09) voiced postalveolar fricative [ʒ]

10) voiced bilabial plosive [b]

11) voiced uvular fricative [ʁ]

12) voiceless postalveolar fricative [ʃ]

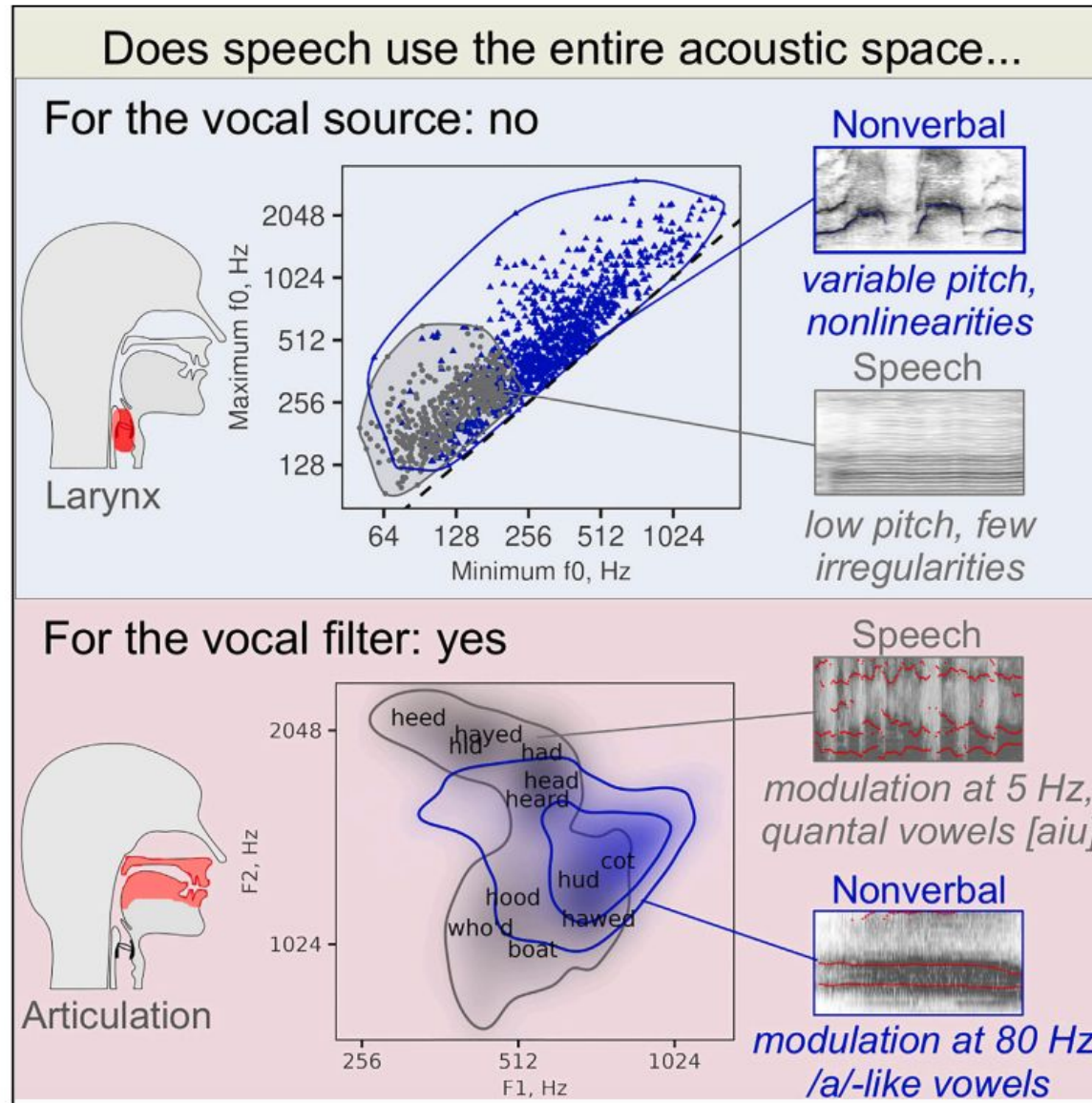
# Last week's question: Secondary vs Double Articulation



Janet Beck: Voiceless labial-velar plosive

$\overline{kp}$

# Interesting findings



## Consonants

CONSONANTS (PULMONIC)

© 2015 IPA

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b			t d		ʈ ɖ	c ɟ	k ɡ	q ɢ		ʔ
Nasal	m	ɱ		n		ɳ	ɲ	ŋ	ɴ		
Trill	ʙ			r					ʀ		
Tap or Flap		ⱱ		ɾ		ɽ					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ʂ ʐ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ		ɻ	j	ɰ			
Lateral approximant				l		ɭ	ʎ	ʟ			

Symbols to the right in a cell are voiced, to the left are voiceless. Shaded areas denote articulations judged impossible.

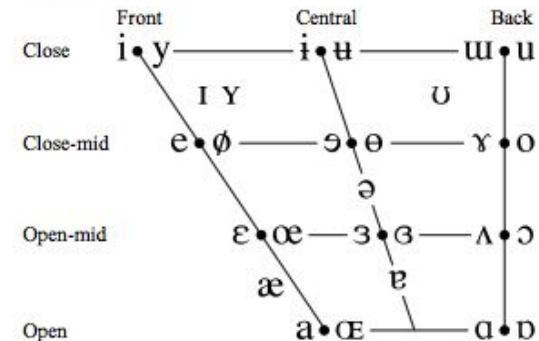
## Diacritics

DIACRITICS Some diacritics may be placed above a symbol with a descender, e.g. ɲ̥̄

◌̥	Voiceless	◌̥	◌̥	◌̥	Breathy voiced	◌̤	◌̤	◌̦	Dental	◌̨	◌̨
◌̇	Voiced	◌̇	◌̇	◌̇	Creaky voiced	◌̜	◌̜	◌̩	Apical	◌̪	◌̪
◌ʰ	Aspirated	◌ʰ	◌ʰ	◌ʰ	Linguolabial	◌̘	◌̘	◌̙	Laminal	◌̜	◌̜
◌̙	More rounded	◌̙	◌̙	◌̙	Labialized	◌̜ʷ	◌̜ʷ	◌̜̃	Nasalized	◌̜̃	◌̜̃
◌̜	Less rounded	◌̜	◌̜	◌̜	Palatalized	◌̜ʲ	◌̜ʲ	◌̜̃	Nasal release	◌̜̃	◌̜̃
◌̚	Advanced	◌̚	◌̚	◌̚	Velarized	◌̜ˠ	◌̜ˠ	◌̜̃	Lateral release	◌̜̃	◌̜̃
◌̚	Retracted	◌̚	◌̚	◌̚	Pharyngealized	◌̜ˤ	◌̜ˤ	◌̜̃	No audible release	◌̜̃	◌̜̃
◌̃	Centralized	◌̃	◌̃	◌̃	Velarized or pharyngealized	◌̜̃	◌̜̃				
◌̥̥̥	Mid-centralized	◌̥̥̥	◌̥̥̥	◌̥̥̥	Raised	◌̥̥̥	(ɹ̥̥̥ = voiced alveolar fricative)				
◌̥̥̥	Syllabic	◌̥̥̥	◌̥̥̥	◌̥̥̥	Lowered	◌̥̥̥	(β̥̥̥ = voiced bilabial approximant)				
◌̥̥̥	Non-syllabic	◌̥̥̥	◌̥̥̥	◌̥̥̥	Advanced Tongue Root	◌̥̥̥					
◌̥̥̥	Rhoticity	◌̥̥̥	◌̥̥̥	◌̥̥̥	Retracted Tongue Root	◌̥̥̥					

## Vowels

VOWELS



Where symbols appear in pairs, the one to the right represents a rounded vowel.

# Pulmonic and non-pulmonic consonants

**PHONETICS:**  
Uncommon Sounds

**NON-PULMONIC CONSONANTS**

Click	Facial Implosives	Ejectives
ǀ ǀǀǀǀ	ǃ ǃǃǃǃ	ǂ ǂǂǂǂ
ǁ ǁǁǁǁ	Ǆ ǄǄǄǄ	ǃ ǃǃǃǃ
ǂ ǂǂǂǂ	ǅ ǅǅǅǅ	Ǆ ǄǄǄǄ
ǃ ǃǃǃǃ	ǆ ǆǆǆǆ	ǅ ǅǅǅǅ
Ǆ ǄǄǄǄ	Ǉ ǇǇǇǇ	ǆ ǆǆǆǆ
ǅ ǅǅǅǅ	ǈ ǈǈǈǈ	Ǉ ǇǇǇǇ

**Non-Pulmonic Consonants: Ejectives, Implosives, and Clicks**

<https://www.youtube.com/watch?v=JKP10ARLnzM&t=88s>

# Importance of Phonetic Transcription

- Description of the sound system of a language
- Description of dialectal variation
- Language teaching (pronunciation training)
- Clinical linguistics
- Forensic phonetics

# Broad vs. Narrow Transcription

- **Broad Transcription:** includes only the necessary details to distinguish an utterance

Ex. Paul /pɔ:l/

- **Narrow Transcription:** details specific pronunciation of utterance

Ex. Paul [p<sup>h</sup>ɔ:l]





# Diacritics

DIACRITICS Some diacritics may be placed above a symbol with a descender, e.g.  $\overset{\circ}{\underset{\circ}{\eta}}$

◦	Voiceless	$\overset{\circ}{\eta}$ $\overset{\circ}{\delta}$	..	Breathy voiced	$\overset{\cdot}{\underset{\cdot}{\eta}}$ $\overset{\cdot}{\underset{\cdot}{\delta}}$	◡	Dental	$\underset{\text{◡}}{\underset{\cdot}{\eta}}$ $\underset{\text{◡}}{\underset{\cdot}{\delta}}$
✓	Voiced	$\underset{\checkmark}{\eta}$ $\underset{\checkmark}{\delta}$	~	Creaky voiced	$\underset{\sim}{\eta}$ $\underset{\sim}{\delta}$	◡	Apical	$\underset{\text{◡}}{\underset{\sim}{\eta}}$ $\underset{\text{◡}}{\underset{\sim}{\delta}}$
h	Aspirated	$\overset{h}{\eta}$ $\overset{h}{\delta}$	~	Linguolabial	$\underset{\sim}{\underset{\sim}{\eta}}$ $\underset{\sim}{\underset{\sim}{\delta}}$	◡	Laminal	$\underset{\text{◡}}{\underset{\sim}{\underset{\sim}{\eta}}}$ $\underset{\text{◡}}{\underset{\sim}{\underset{\sim}{\delta}}}$
◌	More rounded	$\overset{\circ}{\underset{\circ}{\eta}}$	ʷ	Labialized	$\overset{ʷ}{\eta}$ $\overset{ʷ}{\delta}$	~	Nasalized	$\underset{\sim}{\eta}$ $\underset{\sim}{\delta}$
◌	Less rounded	$\overset{\circ}{\underset{\text{◌}}{\eta}}$	j	Palatalized	$\overset{j}{\eta}$ $\overset{j}{\delta}$	ⁿ	Nasal release	$\overset{n}{\delta}$
+	Advanced	$\overset{+}{\eta}$	ʷ	Velarized	$\overset{ʷ}{\eta}$ $\overset{ʷ}{\delta}$	ˡ	Lateral release	$\overset{l}{\delta}$
-	Retracted	$\overset{-}{\eta}$	◌	Pharyngealized	$\overset{\text{◌}}{\eta}$ $\overset{\text{◌}}{\delta}$	ˠ	No audible release	$\overset{\text{ˠ}}{\delta}$
..	Centralized	$\overset{\cdot}{\underset{\cdot}{\eta}}$	~	Velarized or pharyngealized	$\overset{\sim}{\eta}$			
×	Mid-centralized	$\overset{\times}{\eta}$	˥	Raised	$\overset{\text{˥}}{\eta}$ ( $\underset{\text{˥}}{\text{J}}$ = voiced alveolar fricative)			
◌	Syllabic	$\underset{\text{◌}}{\eta}$	˥	Lowered	$\overset{\text{˥}}{\eta}$ ( $\underset{\text{˥}}{\text{β}}$ = voiced bilabial approximant)			
◌	Non-syllabic	$\overset{\text{◌}}{\eta}$	◌	Advanced Tongue Root	$\overset{\text{◌}}{\eta}$			
~	Rhoticity	$\overset{\sim}{\eta}$ $\overset{\sim}{\delta}$	◌	Retracted Tongue Root	$\overset{\text{◌}}{\eta}$			

# Diacritic Examples - English

- got      geese              bar              raw
- [gɑt]    [gʲis]                      [bɑɹ]              [ɹ<sup>w</sup>ɑ]

- long    log                      nine            ninth
- [lɔ̃ŋ]    [lɑg]                      [nɔ̃ɪn]            [nɔ̃ɪŋθ]

From *Introduction to Linguistics*

<https://www.youtube.com/watch?v=7-68m9QhzvM> (August, 2014)

Patrick Farrellarrington, UC Davis





- **Primary stress:** the loudest syllable in the word. Primary stress is marked in IPA by putting a raised vertical line [ˈ].
- **Secondary stress:** syllables which aren't completely unstressed, but aren't as loud as the primary stress. Secondary stress is marked with a lowered vertical line [ˌ].
- **Unstressed syllables:** syllables that have no stress at all. In English, almost all of these have schwa [ə] for their vowel

<https://home.cc.umanitoba.ca/~krussll/phonetics/transcription/stress.html>





# Transcription: Exercises

## EXERCISE 1.





Make both a phonemic (broad) and a phonetic (narrow) transcription of the following words.

1  0:00 / 0:00    26





car

 0:00 / 0:00   





taps

2  0:00 / 0:00    27





eat

 0:00 / 0:00   

link

3  0:00 / 0:00    28

map

 0:00 / 0:00   

caused

- Exercises: <https://tinyurl.com/34t5mpyu>
- Answers (phonemic): <https://tinyurl.com/2uj2psb7>
- Answers (phonetic): <https://tinyurl.com/49v52f9w>

From *An introduction to phonetics and phonology*

© Department of Linguistics, Macquarie University, 2000-2014

# Exercise 2: IPA to orthography

## Phonemic

ðə 'nɔ:θ 'wind ən ðə 'sʌn wə dɪ'spju:tɪŋ 'wɪtʃ wəz ðə 'strɒŋgə, wen ə 'trævlə keɪm ə'ləŋ 'ræpt ɪn ə 'wɔ:m 'kləʊk. ðeɪ ə'grɪd ðət ðə 'wʌn hu 'fɜ:st sək'si:dɪd ɪn 'meɪkɪŋ ðə 'trævlə teɪk hɪz 'kləʊk ɒf ʃʊd bi kən'sɪdəd 'strɒŋgə ðən ði 'ʌðə. 'ðen ðə 'nɔ:θ wind 'blu: əz 'ha:d əz ɪ 'kʊd, bət ðə 'mɔ: hi 'blu: ðə 'mɔ: 'kləʊsli dɪd ðə 'trævlə 'fəʊld hɪz 'kləʊk ə'raʊnd hɪm, ænd ət 'lɑ:st ðə 'nɔ:θ wind geɪv 'ʌp ði ə'tempt. 'ðen ðə 'sʌn ʃʌn aʊt 'wɔ:mli, ænd ə'mɪdɪətli ðə 'trævlə 'tʊk ɒf ɪz 'kləʊk. ɪ 'səʊ ðə 'nɔ:θ 'wɪn wəz ə'blaɪdʒd tʊ kən'fes ðət ðə 'sʌn wəz ðə 'strɒŋgə əv ðə 'tu:.

# Exercise 1: IPA to orthography - Answer

## Orthographic

The North Wind and the Sun were disputing which was the stronger, when a traveller came along wrapped in a warm cloak. They agreed that the one who first succeeded in making the traveller take his cloak off should be considered stronger than the other. Then the North Wind blew as hard as he could, but the more he blew the more closely did the traveller fold his cloak around him, and at last the North Wind gave up the attempt. Then the Sun shone out warmly, and immediately the traveller took off his cloak. And so the North Wind was obliged to confess that the Sun was the stronger of the two.

# Automatic transcription



Convert to IPA

The North Wind and the Sun were disputing which was the stronger, when a traveller came along wrapped in a warm cloak. They agreed that the one who first succeeded in making the traveller take his cloak off should be considered stronger than the other. Then the North Wind

blew as hard as he could, but the more he blew the more closely did the traveller fold his cloak around him, and at last the North Wind gave up the attempt. Then the Sun shone out warmly, and immediately the traveller took off his cloak. And so the North Wind was obliged to confess that the Sun was the stronger of the two.



Sure, here's the text you provided transcribed into the International Phonetic Alphabet (IPA):

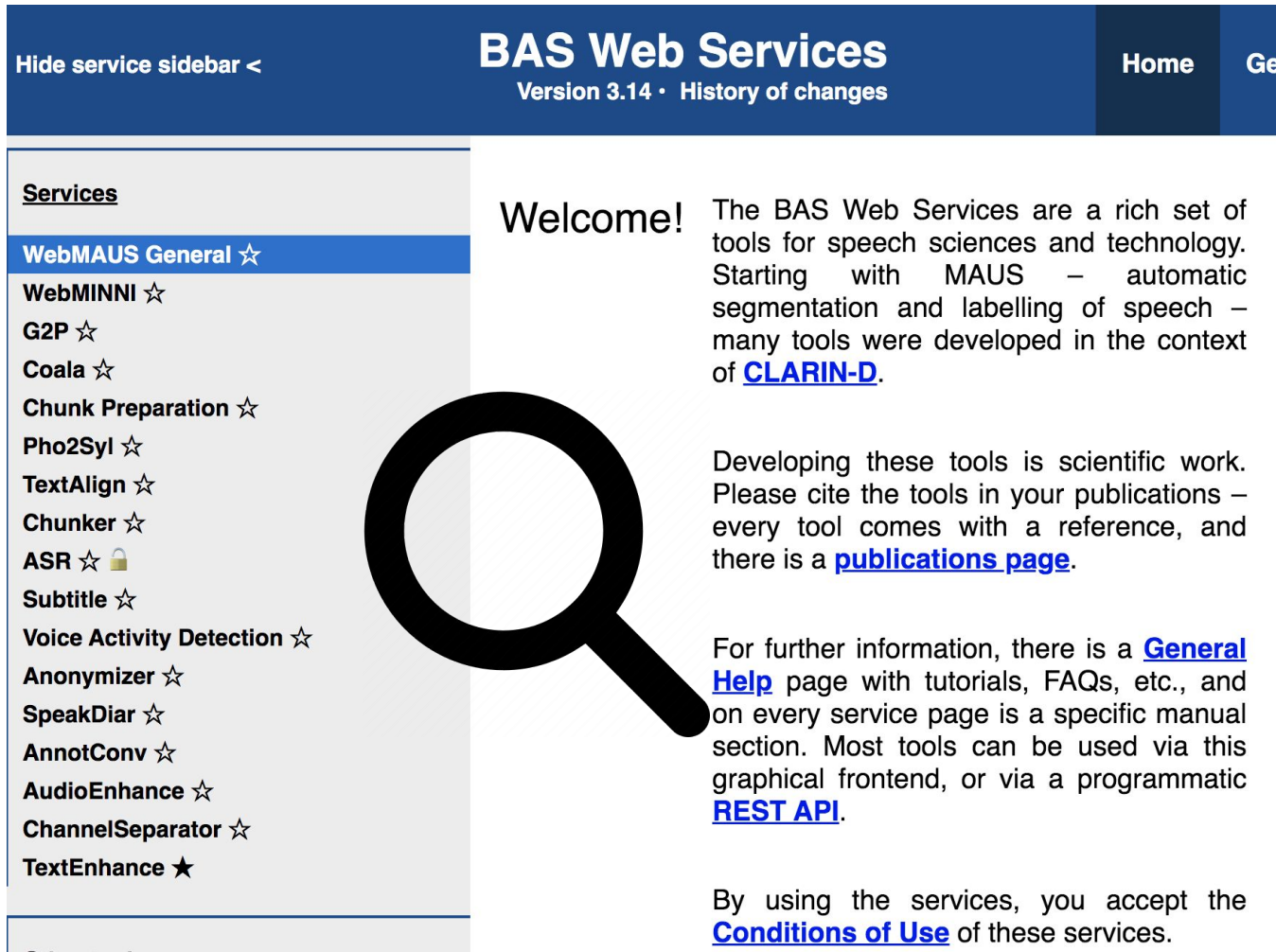


/ðə nɔːθ waɪnd ænd ðə sʌn wɜː dɪs'pjʊtɪŋ wɪtʃ wəz ðə 'strɒŋgə, wɛn ə 'trævələ kɛɪm ə'lon  
ræpt ɪn ə wɔːm kloʊk. ðeɪ ə'grɪd ðæt ðə wʌn huː fɜːst sək'sɪdɪd ɪn 'meɪkɪŋ ðə 'trævələ teɪk hɪz  
kloʊk ɒf ʃʊd bi kən'sɪdəd 'strɒŋgə ðæn ðə 'lðər. ðɛn ðə nɔːθ waɪnd blu æz hɑːd æz hi k  
bæt ðə mɔːr hi blu ðə mɔːr 'kloʊslɪ dɪd ðə 'trævələ fəʊld hɪz kloʊk ə'raʊnd ɪm, ænd ət 'lɑːst ðə  
nɔːθ waɪnd geɪv ʌp ðə ə'tempt. ðɛn ðə sʌn ʃʊn aʊt 'wɔːmli, ænd ɪ'mɪdiətli ðə 'trævələ tʊk ɒf  
hɪz kloʊk. ænd səʊ ðə nɔːθ waɪnd wəz ə'blaɪdʒd tu kən'fes ðæt ðə sʌn wəz ðə 'strɒŋgə ðə  
tu./



Regenerate

# Automatic annotation: BAS



Hide service sidebar <

## BAS Web Services

Version 3.14 · History of changes

Home Gen

### Services

- WebMAUS General ☆
- WebMINNI ☆
- G2P ☆
- Coala ☆
- Chunk Preparation ☆
- Pho2Syl ☆
- TextAlign ☆
- Chunker ☆
- ASR ☆ 🔒
- Subtitle ☆
- Voice Activity Detection ☆
- Anonymizer ☆
- SpeakDiar ☆
- AnnotConv ☆
- AudioEnhance ☆
- ChannelSeparator ☆
- TextEnhance ★

**Welcome!** The BAS Web Services are a rich set of tools for speech sciences and technology. Starting with MAUS – automatic segmentation and labelling of speech – many tools were developed in the context of [CLARIN-D](#).

Developing these tools is scientific work. Please cite the tools in your publications – every tool comes with a reference, and there is a [publications page](#).

For further information, there is a [General Help](#) page with tutorials, FAQs, etc., and on every service page is a specific manual section. Most tools can be used via this graphical frontend, or via a programmatic [REST API](#).

By using the services, you accept the [Conditions of Use](#) of these services.

<https://clarin.phonetik.uni-muenchen.de/BASWebServices/interface>



## The International Phonetic Alphabet (revised to 2005)

If you are a screen reader user, you may want to use [a more accessible version of the chart](#)

### Consonants (Pulmonic)

Missing some symbols? Apply Doulos SIL font

	Bilabial		Labiodental		Dental		Alveolar		Postalveolar		Retroflex		Palatal		Velar		Uvular		Pharyngeal		Glottal	
Plosive	p	b					t	d			ʈ	ɖ	c	ɟ	k	g	q	ɢ			ʔ	
Nasal		m		ɱ				n				ɳ		ɲ		ŋ		ɴ				
Trill		ʙ						r										ʀ				
Tap or Flap				ⱱ				ɾ				ɽ										
Fricative	ɸ	β	f	v	θ	ð	s	z	ʃ	ʒ	ʂ	ʐ	ç	ʝ	x	χ	χ	ʁ	ħ	ʕ	h	ɦ
Lateral fricative							ɬ	ɮ														
Approximant				ʋ				ɹ				ɻ		j		ɰ						
Lateral approximant								l				ɭ		ʎ		ʟ						

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.

Insert entities  Previously used: . æ : i n m u ?

ʔom.niæ

<https://westonruter.github.io/ipa-chart/keyboard/>

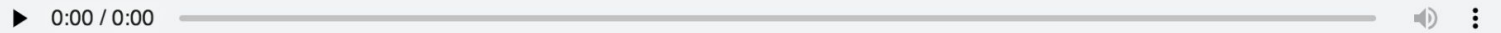
# Assignment 2

write a broad transcription: Exercise 6 - passage 1

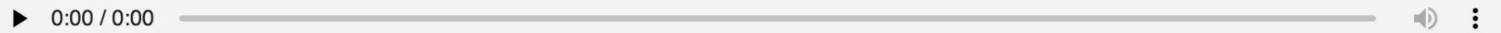
## EXERCISE 6

Make both a phonemic (broad) and a phonetic (narrow) transcription of the following passages.

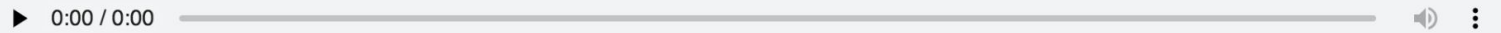
### Passage 1



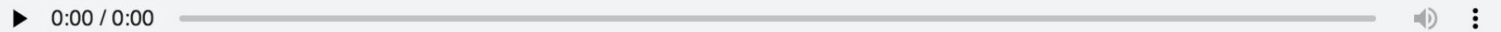
The sun was just rising as Dr Robert entered his wife's room at the hospital.



An orange glow



and, against it,



the jagged silhouette of the mountains.

Exercises: <https://tinyurl.com/34t5mpyu>