

# Phonetics I

## The International Phonetic Alphabet

Ling 301 (Spring 2021)

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# Phonetics

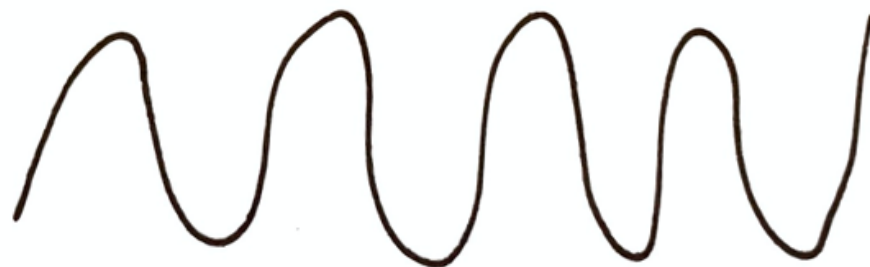
- Phonetics is the branch of linguistics that deals with speech sounds.
- There are three branches of phonetics.

# Phonetics

Articulatory



Acoustic



Auditory



# Phonetics

- For now, we'll be dealing with the most basic level of analysis.



# Phonetics

- For now, we'll be dealing with the most basic level of analysis: impressionistic phonetic transcription.
- Putting speech into writing.

# Putting speech into writing

- You might argue that regular English orthography (i.e. spelling) *already* puts speech into writing: letters correspond to speech sounds.
- Is English orthography good for phonetic transcription?



From *Boy Comics* 115, September 1955

# Putting speech into writing?

- What sound does <t> make?

< >

Angled brackets are used  
for graphemes. Indicate  
the way things are spelled.

# Putting speech into writing?

- What sound does <t> make?



top hat



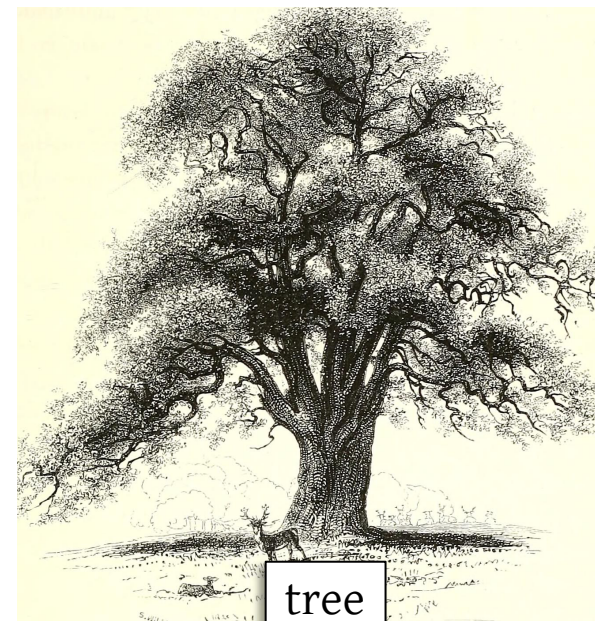
stop



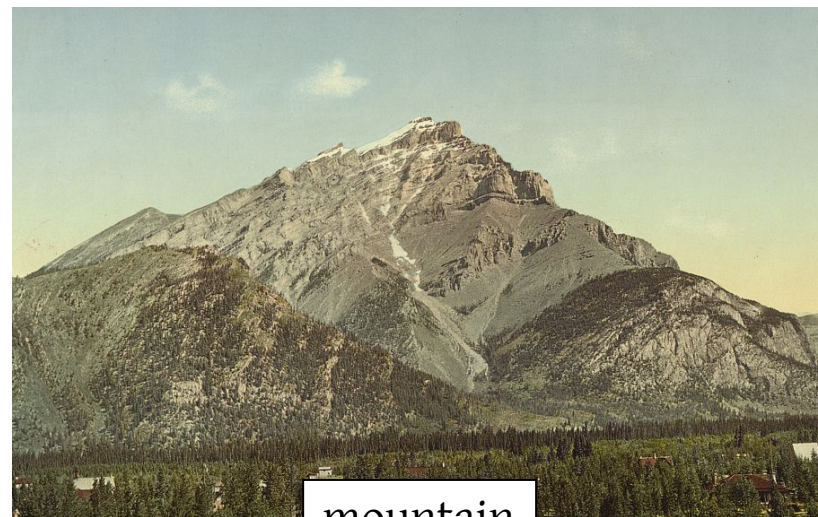
butter



potion



tree



mountain

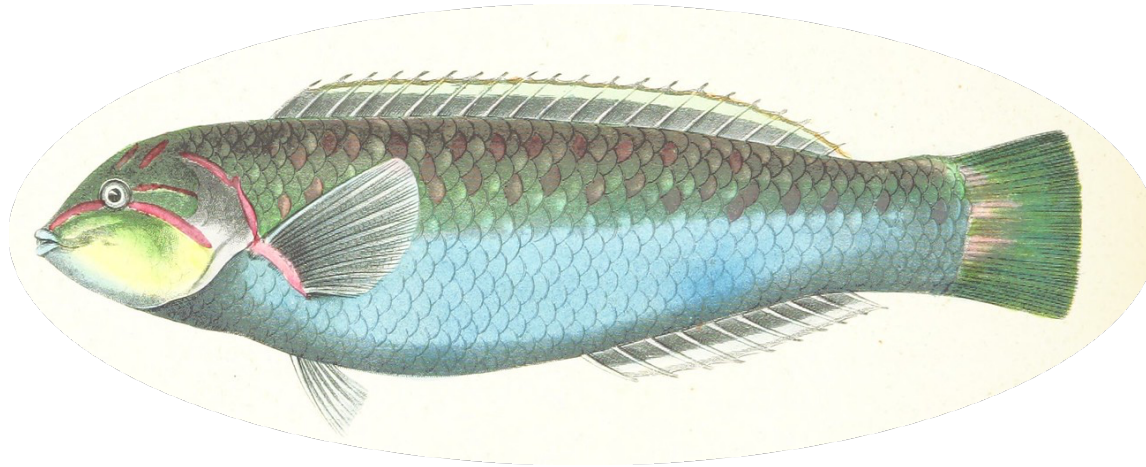


# Putting speech into writing?

- We might better ask what sounds does <t> make?
- Since <t> represents several different sounds, it's not very useful for phonetic transcription.

# Putting speech into writing

- Is English orthography good for phonetic transcription?
- Nope. It has tons of ambiguity, as we've seen with <t>.
- Another example: what does <ghoti> spell?



# Putting speech into writing

<gh>

cough

[f]

thorough

∅

ghost

[g]

[ ]

Square brackets are used  
for phonetic symbols.

# Putting speech into writing

<gh>

cough

[f]

thorough

Ø

ghost

[g]

[ ]

Square brackets are used  
for phonetic symbols.

<o>

woman

[ʊ]

women

[ɪ]

ghost

[oʊ]

hot

[ɑ]



# Putting speech into writing

<gh>

cough

thorough

There are a bunch of these examples in your reading.  
*Language Files*, chapter 2, pages 45–47.

<o>

woman

[ʊ]

women

[ɪ]

gho

[oʊ]

<t>

stop

[t]

butter

[ɹ]

mountain

[ʔ]

potion

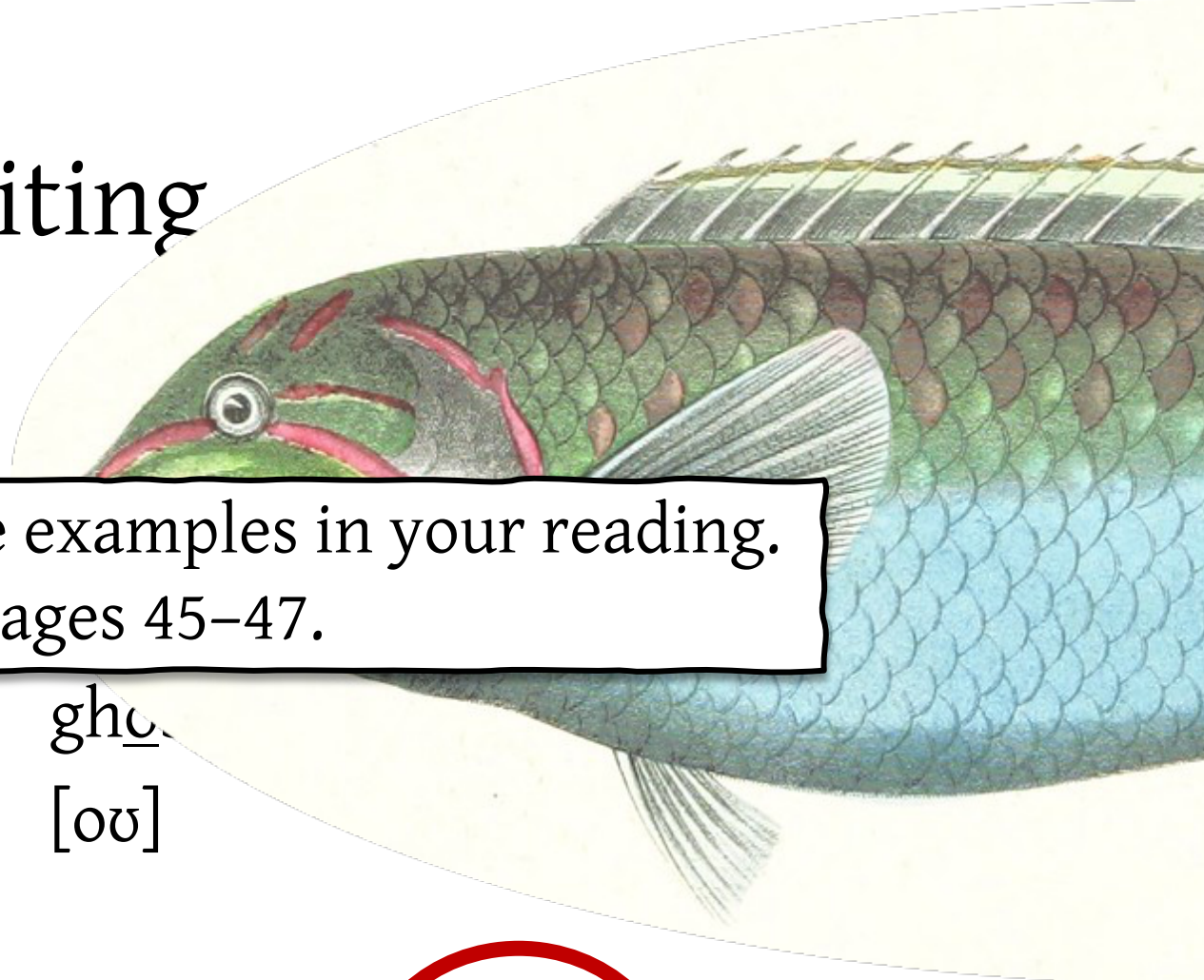
[ʃ]

top

[tʰ]

tree

[tʃ]



# International Phonetic Alphabet

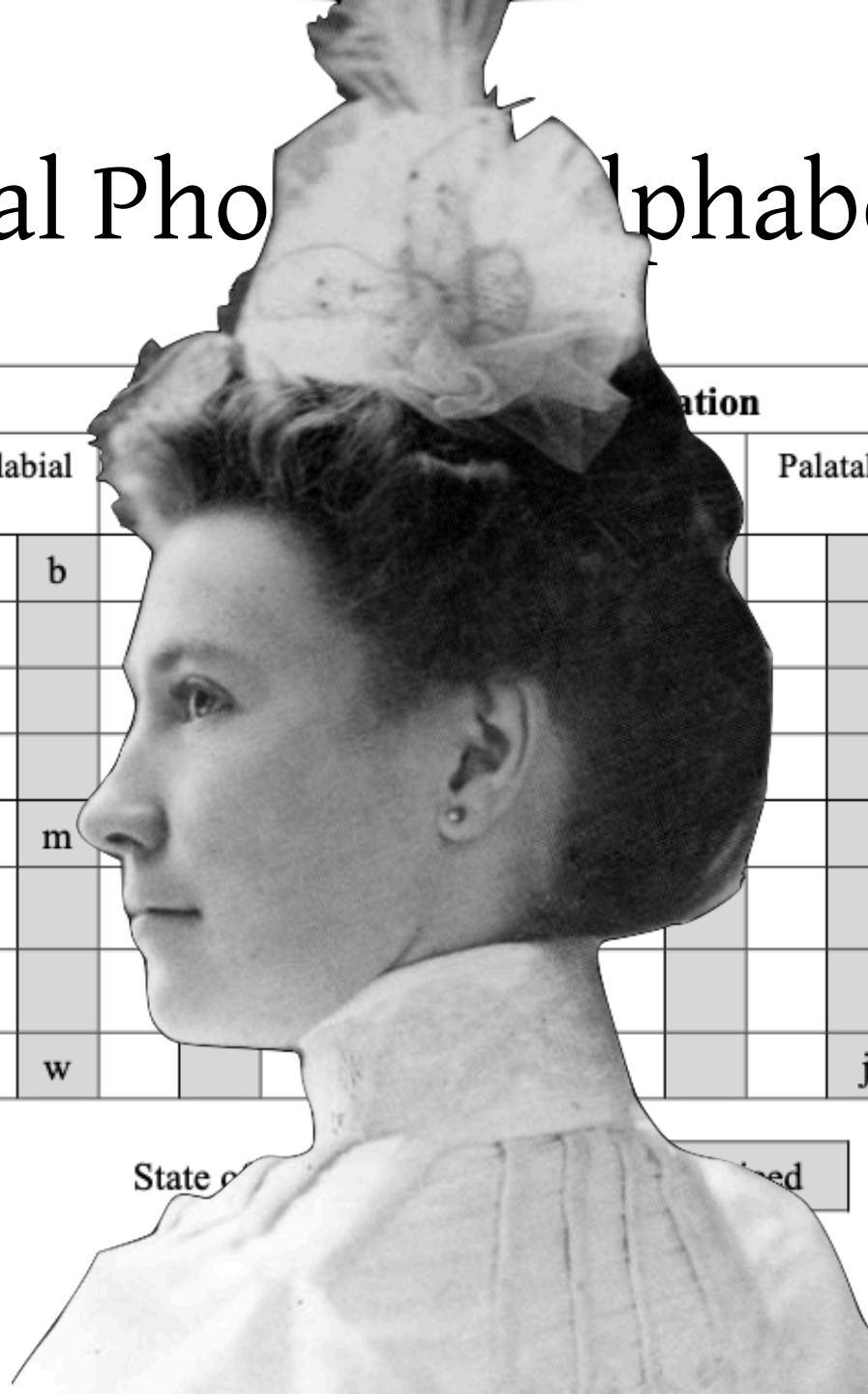
- English orthography is unsuitable for representing the phones (speech sounds) of English speech.
- Linguists use the International Phonetic Alphabet (IPA). Each symbol represents a speech sound.
- The IPA is devised and arranged on an articulatory basis.
- Key elements for consonants: **voicing**, **place**, and **manner**.

# International Phonetic Alphabet

		Place of Articulation															
		Bilabial		Labio-dental		Inter-dental		Alveolar		Post-Alveolar		Palatal		Velar		Glottal	
Manner of Articulation	Stop	p	b					t	d					k	g	ʔ	
	Fricative			f	v	θ	ð	s	z	ʃ	ʒ					h	
	Affricate									tʃ	dʒ						
	Flap								r								
	Nasal		m						n						ŋ		
	Lateral Liquid								l								
	Retroflex Liquid								ɭ								
	Glide	w	w										j				
State of the Glottis																	
<div> <div>Voiceless</div> <div>Voiced</div> </div>																	

# International Phonetic Alphabet

		Place of Articulation													
		Bilabial		Labiodental		Dental		Alveolar		Palatal	Velar		Glottal		
Manner of Articulation	Stop	p	b									k	g	ʔ	
	Fricative													h	
	Affricate														
	Flap														
	Nasal		m										ŋ		
	Lateral Liquid														
	Retroflex Liquid														
	Glide	w	w								j				



Portrait of May Mann Jennings, taken in 1901.  
In the archives of *Florida Memory*.

# International Phonetic Alphabet

		Place of Articulation															
		Bilabial		Labio-dental		Inter-dental		Alveolar		Post-Alveolar		Palatal		Velar		Glottal	
Manner of Articulation	Stop	p	b					t	d					k	g	ʔ	
	Fricative			f	v	θ	ð	s	z	ʃ	ʒ					h	
	Affricate									tʃ	dʒ						
	Flap								r								
	Nasal		m						n						ŋ		
	Lateral								l								
									ɹ								
									ɻ								
												j					

Vocal folds open: voiceless  
Vocal folds vibrating: voiced

State of the Glottis

Voiceless

Voiced



# International Phonetic Alphabet

Bilabial: two lips

		Place of Articulation															
		Bilabial		Labio-dental		Inter-dental		Alveolar		Post-Alveolar		Palatal		Velar		Glottal	
Manner of Articulation	Stop	p	b					t	d					k	g	ʔ	
	Fricative			f	v	θ	ð	s	z	ʃ	ʒ					h	
	Affricate									tʃ	dʒ						
	Flap								r								
	Nasal		m						n						ŋ		
	Lateral Liquid								l								
	Retroflex Liquid								ɭ								
	Glide	ɥ	w										j				

State of the Glottis

Voiceless

Voiced



# International Phonetic Alphabet

Labiodental: lips + teeth

		Place of Articulation															
		Bilabial		Labio-dental		Inter-dental		Alveolar		Post-Alveolar		Palatal		Velar		Glottal	
Manner of Articulation	Stop	p	b					t	d					k	g	ʔ	
	Fricative			f	v	θ	ð	s	z	ʃ	ʒ					h	
	Affricate									tʃ	dʒ						
	Flap								r								
	Nasal		m						n					ŋ			
	Lateral Liquid								l								
	Retroflex Liquid								ɭ								
	Glide	w	w									j					

State of the Glottis

Voiceless

Voiced



# International Phonetic Alphabet

Interdental: between teeth

		Place of Articulation															
		Bilabial		Labio-dental		Inter-dental		Alveolar		Post-Alveolar		Palatal		Velar		Glottal	
Manner of Articulation	Stop	p	b					t	d					k	g	ʔ	
	Fricative			f	v	θ	ð	s	z	ʃ	ʒ					h	
	Affricate									tʃ	dʒ						
	Flap								r								
	Nasal		m						n					ŋ			
	Lateral Liquid								l								
	Retroflex Liquid								ɭ								
	Glide	w	w									j					

State of the Glottis

Voiceless

Voiced





# International Phonetic Alphabet

Alveolar: on that ridge of flesh behind your upper teeth

		Articulation															
		Bilabial		Labio-dental		Inter-dental		Alveolar		Post-Alveolar		Palatal		Velar		Glottal	
Manner of Articulation	Stop	p	b					t	d					k	g	ʔ	
	Fricative			f	v	θ	ð	s	z	ʃ	ʒ					h	
	Affricate									tʃ	dʒ						
	Flap								r								
	Nasal		m						n					ŋ			
	Lateral Liquid								l								
	Retroflex Liquid								ɭ								
	Glide	w	w									j					

State of the Glottis

Voiceless

Voiced



# International Phonetic Alphabet

Postalveolar: behind  
your alveolar ridge

Manner of Articulation		Bilabial		Labio-dental		Inter-dental		Alveolar		Post-Alveolar		Palatal		Velar		Glottal	
	Stop	p	b					t	d					k	g	ʔ	
	Fricative			f	v	θ	ð	s	z	ʃ	ʒ					h	
	Affricate									tʃ	dʒ						
	Flap								r								
	Nasal		m						n					ŋ			
	Lateral Liquid								l								
	Retroflex Liquid								ɭ								
	Glide	w	w									j					

State of the Glottis

Voiceless

Voiced



# International Phonetic Alphabet

Palatal: on your palate

Manner of Articulation		Bilabial		Labio-dental		Inter-dental		Alveolar		Post-Alveolar		Palatal		Velar		Glottal	
	Stop	p	b					t	d					k	g	ʔ	
	Fricative			f	v	θ	ð	s	z	ʃ	ʒ					h	
	Affricate									tʃ	dʒ						
	Flap								r								
	Nasal		m						n						ŋ		
	Lateral Liquid								l								
	Retroflex Liquid								ɭ								
	Glide	w	w									j					

State of the Glottis    Voiceless    Voiced



# International Phonetic Alphabet

Velar: very back of your mouth

Manner of Articulation		Bilabial		Labio-dental		Inter-dental		Alveolar		Post-Alveolar		Palatal		Velar		Glottal	
	Stop	p	b					t	d					k	g	ʔ	
	Fricative			f	v	θ	ð	s	z	ʃ	ʒ					h	
	Affricate									tʃ	dʒ						
	Flap								r								
	Nasal		m						n						ŋ		
	Lateral Liquid								l								
	Retroflex Liquid								ɭ								
	Glide	w	w										j				

State of the Glottis
 

Voiceless
 Voiced



# International Phonetic Alphabet

Glottal: at your  
glottis/vocal folds

		Place of Articulation															
		Bilabial		Labio-dental		Inter-dental		Alveolar		Post-Alveolar		Palatal		Velar		Glottal	
Manner of Articulation	Stop	p	b					t	d					k	g	ʔ	
	Fricative			f	v	θ	ð	s	z	ʃ	ʒ					h	
	Affricate									tʃ	dʒ						
	Flap								r								
	Nasal		m						n					ŋ			
	Lateral Liquid								l								
	Retroflex Liquid								ɭ								
	Glide	w	w									j					

State of the Glottis    Voiceless    Voiced



# International Phonetic Alphabet

Fare thee well,  
young scholars!



		Place of Articulation															
		Bilabial		Labio-dental		Inter-dental		Alveolar		Post-Alveolar		Palatal		Velar		Glottal	
Manner of Articulation	Stop	p	b					t	d					k	g	ʔ	
	Fricative			f	v	θ	ð	s	z	ʃ	ʒ					h	
	Affricate									tʃ	dʒ						
	Flap								r								
	Nasal		m						n						ŋ		
	Lateral Liquid								l								
	Retroflex Liquid								ɭ								
	Glide	w	w										j				
State of the Glottis																	
Voiceless																	
Voiced																	

# International Phonetic Alphabet

		Place of Articulation															
		Bilabial		Labio-dental		Dental		Alveolar		Postalveolar		Retroflex		Velar		Glottal	
Manner of Articulation	Stop	p	b					t	d					k	g	ʔ	
	Fricative			f	v	θ	ð	s	z	ʃ	ʒ					h	
	Affricate									tʃ	dʒ						
	Flap								r								
	Nasal		m						n						ŋ		
	Lateral Liquid								l								
	Retroflex Liquid								ɭ								
	Glide	w	w											j			

Stop: Build up, then release, pressure

State of the Glottis

Voiceless	Voiced
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# International Phonetic Alphabet

		Place of Articulation															
		Bilabial		Labio-		Inter-		Alveolar		Post-		Palatal		Velar		Glottal	
Manner of Articulation	Stop	p	b	Fricative: Steady stream of constricted													
	Fricative			f	v	θ	ð	s	z	ʃ	ʒ					h	
	Affricate									tʃ	dʒ						
	Flap								r								
	Nasal		m						n						ŋ		
	Lateral Liquid								l								
	Retroflex Liquid								ɭ								
	Glide	w	w										j				

Fricative: Steady stream of constricted speech.

State of the Glottis

Voiceless

Voiced



# International Phonetic Alphabet

		Place of Articulation															
		Bilabial		Labio-dental		Inter-dental		Alveolar		Post-Alveolar		Palatal		Velar		Glottal	
Manner of Articulation	Stop	p	b														
	Fricative																
	Affricate								tʃ	dʒ							
	Flap							r									
	Nasal		m					n						ŋ			
	Lateral Liquid							l									
	Retroflex Liquid							ɭ									
	Glide	w	w									j					

Affricate: Stop that releases into a fricative.

State of the Glottis	Voiceless	Voiced
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# International Phonetic Alphabet

		Place of Articulation																			
		Bilabial		Labio-dental		Inter-dental		Alveolar		Post-Alveolar		Palatal		Velar		Glottal					
Manner of Articulation	Stop	p	b					t	d					k	g	ʔ					
	Fricative			f	v	θ	ð	Flap: Quick little flap of tongue.													
	Affricate																				
	Flap								ɾ												
	Nasal		m						n					ŋ							
	Lateral Liquid								l												
	Retroflex Liquid								ɭ												
	Glide	w	w										j								

State of the Glottis

Voiceless

Voiced

# International Phonetic Alphabet

		Place of Articulation															
		Bilabial		Labio-dental		Inter-dental		Alveolar		Post-Alveolar		Palatal		Velar		Glottal	
Manner of Articulation	Stop	p	b					t	d					k	g	ʔ	
	Fricative			f	v												
	Affricate																
	Flap																
	Nasal		m						n						ŋ		
	Lateral Liquid								l								
	Retroflex Liquid								ɭ								
	Glide	w	w										j				

Nasal: Velum lowers to let air escape through your nose instead of mouth.

State of the Glottis	Voiceless	Voiced
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# International Phonetic Alphabet

		Place of Articulation															
		Bilabial		Labio-dental		Inter-dental		Alveolar		Post-Alveolar		Palatal		Velar		Glottal	
Manner of Articulation	Stop	p	b					t	d					k	g	ʔ	
	Fricative			f	v	θ	ð	s	z	ʃ	ʒ					h	
	Affricate																
	Flap																
	Nasal		m														
	Lateral Liquid								l								
	Retroflex Liquid								ɭ								
	Glide	ɥ	w										j				

Liquid: Clear, flowing sound  
More constricted than vowel

Liquid: Clear, flowing sounds.  
More constricted than vowels.

State of the Glottis

Voiceless

Voiced

# International Phonetic Alphabet

		Place of Articulation															
		Bilabial		Labio-dental		Inter-dental		Alveolar		Post-Alveolar		Palatal		Velar		Glottal	
Manner of Articulation	Stop	p	b					t	d					k	g	ʔ	
	Fricative			f	v	θ	ð	s	z	ʃ	ʒ					h	
	Affricate									tʃ	dʒ						
	Flap								r								
	Nasal		m						n						ŋ		
	Lateral Liquid								l								
	Retroflex Liquid																
	Glide	ɰ	w											j			
		State of the Glottis															
		Voiceless								Voiced							

Glide: Very little obstruction.

# Practice

- What's the voiced bilabial stop?
- What's a word that starts with it?

		Place of Articulation															
		Bilabial		Labio-dental		Inter-dental		Alveolar		Post-Alveolar		Palatal		Velar		Glottal	
Manner of Articulation	Stop	p	b					t	d					k	g	ʔ	
	Fricative			f	v	θ	ð	s	z	ʃ	ʒ					h	
	Affricate									tʃ	dʒ						
	Flap								r								
	Nasal		m						n						ŋ		
	Lateral Liquid								l								
	Retroflex Liquid								ɭ								
	Glide	ɥ	w										j				
State of the Glottis																	
Voiceless									Voiced								

# Practice

- What's the voiced interdental fricative?
- What's a word that starts with it?

		Place of Articulation															
		Bilabial		Labio-dental		Inter-dental		Alveolar		Post-Alveolar		Palatal		Velar		Glottal	
Manner of Articulation	Stop	p	b					t	d					k	g	ʔ	
	Fricative			f	v	θ	ð	s	z	ʃ	ʒ					h	
	Affricate									tʃ	dʒ						
	Flap								r								
	Nasal		m						n						ŋ		
	Lateral Liquid								l								
	Retroflex Liquid								ɭ								
	Glide	ɥ	w										j				
State of the Glottis																	
Voiceless									Voiced								

# Practice

- What's the voiced alveolar nasal?
- What's a word that starts with it?

		Place of Articulation															
		Bilabial		Labio-dental		Inter-dental		Alveolar		Post-Alveolar		Palatal		Velar		Glottal	
Manner of Articulation	Stop	p	b					t	d					k	g	ʔ	
	Fricative			f	v	θ	ð	s	z	ʃ	ʒ					h	
	Affricate									tʃ	dʒ						
	Flap																
	Nasal		m						n						ŋ		
	Lateral Liquid								l								
	Retroflex Liquid								ɭ								
	Glide	ɥ	w										j				
State of the Glottis																	
Voiceless									Voiced								



# Practice

- What's the voiceless glottal fricative?
- What's a word that starts with it?

		Place of Articulation															
		Bilabial		Labio-dental		Inter-dental		Alveolar		Post-Alveolar		Palatal		Velar		Glottal	
Manner of Articulation	Stop	p	b					t	d					k	g	ʔ	
	Fricative			f	v	θ	ð	s	z	ʃ	ʒ					h	
	Affricate									tʃ	dʒ						
	Flap								r								
	Nasal		m						n						ŋ		
	Lateral Liquid								l								
	Retroflex Liquid								ɭ								
	Glide	ɥ	w										j				
State of the Glottis																	
Voiceless									Voiced								

# Practice

Give the **voicing**, **place**,  
and **manner**, in that order.

- How would you describe [w]?
- How would you describe [r]?
- How would you describe [tʃ]?
- How would you describe [ŋ]?
- How would you describe [k]?
- How would you describe [d]?
- How would you describe [z]?
- How would you describe [f]?
- How would you describe [ɹ]?

		Place of Articulation															
		Bilabial		Labio-dental		Inter-dental		Alveolar		Post-Alveolar		Palatal		Velar		Glottal	
Manner of Articulation	Stop	p	b					t	d					k	g	ʔ	
	Fricative			f	v	θ	ð	s	z	ʃ	ʒ					h	
	Affricate									tʃ	dʒ						
	Flap								ɾ								
	Nasal		m						n						ŋ		
	Lateral Liquid								l								
	Retroflex Liquid								ɭ								
	Glide	ɰ	w										j				

State of the Glottis
 

Voiceless	Voiced
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# Practice

You can refer to pp.45–46 in your reading.

- What's a word that starts with [s]?
- What's a word that ends with [s]?
- Does *shy* start with [s]?
- Does *dogs* end with [s]?

# Practice

You can refer to pp.45–46 in your reading.

- What's a word that starts with [m]?
- What's a word that ends with [m]?

# Practice

You can refer to pp.45–46 in your reading.

- What's a word that starts with [ʃ]?
- What's a word that ends with [ʃ]?

# Practice

You can refer to pp.45–46 in your reading.

- What's a word that starts with [j]?
- What's a word that ends with [j]?
- Does *joyful* start with [j]?

# Practice

You can refer to pp.45–46 in your reading.

- What's a word that starts with [dʒ]?
- What's a word that ends with [dʒ]?

# Practice

You can refer to pp.45–46 in your reading.

- What's a word that starts with [θ]?
- What's a word that ends with [θ]?
- Does *them* start with [θ]?
- Does *weather* have a [θ] in it?



# For next week...

- Read pp.58–63 in *Language Files*, on the Readings page of our website.
- Complete Quiz #1, which is available on the Updates page of our website, before 6:30pm next Wednesday.
  - I'll send you an email reminder soon as well.
  - We'll go over it in class next week.