

# Introduction

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*Ling 20: Introduction to Linguistic Analysis*

UCLA · Winter 2022

# What is linguistics?

- The scientific study of human language
- Our ability to learn and use a human languages constitutes a **profound biological mystery**

# Why study human language?

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- When you see an object, your brain automatically transforms the light waves that hit your retina into the colors, shapes, etc. that you perceive, without any conscious effort on your part and you being aware of these computations.

# Why study human language?

The complexity of human language is obscured by how effortless it is:

- When you see an object, your brain automatically transforms the light waves that hit your retina into the colors, shapes, etc. that you perceive, without any conscious effort on your part and you being aware of these computations.
- When you hear a sentence of a language you speak, you immediately and effortlessly understand it, largely without conscious effort and awareness of the computation.

## An example

*“The pink elephant in my pajamas is dancing on the grass.”*

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- I put a thought into your head, simply by making sounds and/or putting shapes on the screen.
- As speakers of English, you automatically converted these sounds into meaning.

## Key question

*What knowledge do speakers of a language have that allows them to do this?*



# Some aspects of this knowledge

- It is **abstract** and **unconscious**
  - ➔ Converting sounds into meaning “happens” automatically in your head. You have no conscious access to the process.

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- It is **abstract** and **unconscious**
  - Converting sounds into meaning “happens” automatically in your head. You have no conscious access to the process.
- It is **rapid** and **automatic**
  - When you hear an English sentence, you can't help but understand it virtually immediately.

# Abstractness of grammatical knowledge

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*Mary is eager to please.*

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*Mary is **easy** to please.*

→ Mary is the one who is pleased.

*Mary is **eager** to please.*

→ Mary is doing the pleasing.

# Abstractness of grammatical knowledge

*Deborah expected to surprise her.*

*Who did Deborah expect to surprise her?*

# Abstractness of grammatical knowledge

*Deborah expected to surprise **her**.*

→ *her* cannot mean *Deborah*

*Who did Deborah expect to surprise **her**?*

→ *her* can mean *Deborah*

# Key question

What is the unconscious knowledge that speakers of a language have that allows them to do this?



## A wrong answer

- A speaker of a language has simply memorized all the sentences of that language and what they mean.

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- A speaker of a language has simply memorized all the sentences of that language and what they mean.
- This cannot be the case because you can understand sentences you have never heard before.

# The role of rules

There is an infinite number of English sentences that you can understand, even if you have never heard them before:

*“I had not wanted to be buried in ice, and so I had not been. Thinking back, I had not wanted to be buried in the seafloor, covered over with layer after layer of drifting sediment, and so I had not been.” - Anne Leckie The Raven Tower*

# The role of rules

But not just every string of English words is a sentence of English:

*“Wanted I buried in been ice not.”*

- Even if you have never heard a sequence of words before, you know whether it is a sentence of English or not.

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- When you know a language, you know
  1. a list of **basic expressions** (words, sounds, ...)
  2. a **combinatory system** of **rules** that allow you to put them together

# The role of rules

- **A thought experiment:**

Kikuyu words:

*kihii* = “the boy”

*mutu* = “the girl”

*nikiaonire* = “saw”

# The role of rules

- **A thought experiment:**

Kikuyu words:

*kihii* = “the boy”

*mutu* = “the girl”

*nikiaonire* = “saw”

- Would you be able to translate “The girl saw the boy” into Kikuyu?



# The role of rules

It is not just the combination of words into sentences that is governed by rules. The same is true for the combination of sounds:

*glick*

*prasp*

*flib*

*traf*

*tlick*

*psapr*

*bfli*

*ftra*

# The role of rules

It is not just the combination of words into sentences that is governed by rules. The same is true for the combination of sounds:

|              |              |
|--------------|--------------|
| <i>glick</i> | <i>tlick</i> |
| <i>prasp</i> | <i>psapr</i> |
| <i>flib</i>  | <i>bfli</i>  |
| <i>traf</i>  | <i>ftra</i>  |

→ Only the “words” on the left could be English words.

# Conclusion

- What you know when you know a human language:
  1. a memorized set of **basic expressions**,
  2. a set of **rules** for combining these basic expressions
- Linguists are interested in discovering these rules.

# Language as it is, not as it “should be”

- As scientists, linguists are interested in the **real world**
  - As such, they are interested in the rules that speakers of a language actually **do** follow
  - They aren't interested in the rules that some people think speakers **should follow**

# Language as it is, not as it “should be”

- Stranding prepositions

*(Who did you talk to?)*

# Language as it is, not as it “should be”

- Stranding prepositions *(Who did you talk to?)*
- Splitting infinitives *(To boldly go ...)*

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# Language as it is, not as it “should be”

- Stranding prepositions (*Who did you talk to?*)
- Splitting infinitives (*To boldly go ...*)
- Passive voice (*Alex was hit by a car.*)
- Double negatives (*I didn't see nothing.*)



# Stranding prepositions

- The prohibition against stranding prepositions is clearly not a rule that characterizes English:

*“This is the sort of nonsense up with which I will not put.”*

- Since we are interested in **actual knowledge of language**, such rules are completely irrelevant to linguists.

# Language as it is, not as it “should be”

- A linguist treats all varieties of all languages as equally valuable.
- A linguist will never tell a native speaker of a language that they should or shouldn't talk in a particular way.

# The big question

What is the system of **rules** and **expressions** that underlies our ability to speak and understand a human language?

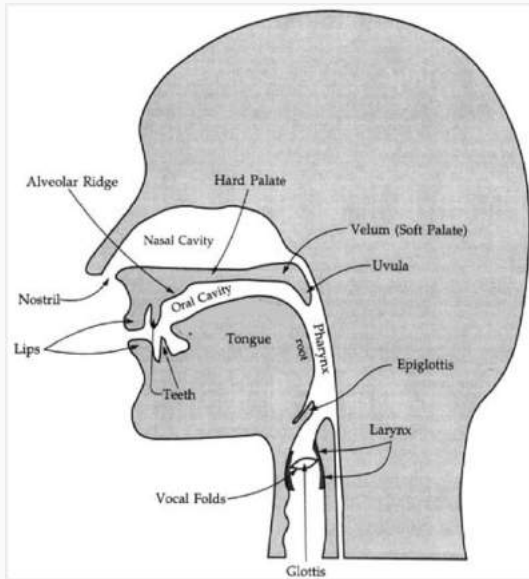
# Vocal-tract anatomy

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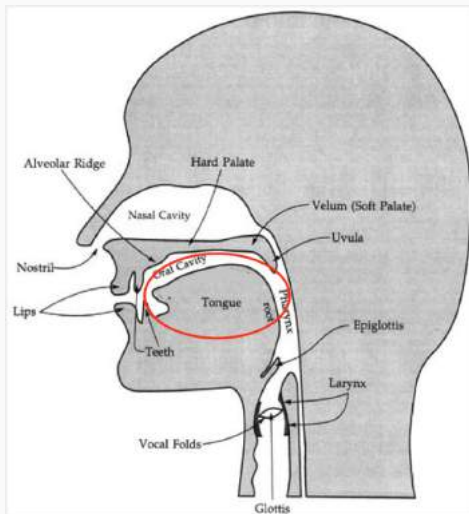
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# The vocal tract



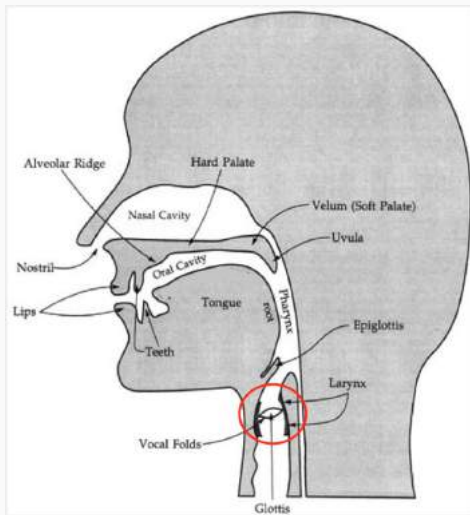
# The tongue

- **Tip** of the tongue
- **Blade** (or front) of the tongue
- **Body** (or back) of the tongue



# The larynx

- In the middle of your throat is your **larynx**
- Inside your larynx are muscles called the **vocal folds**
- The opening between the vocal folds is the **glottis**



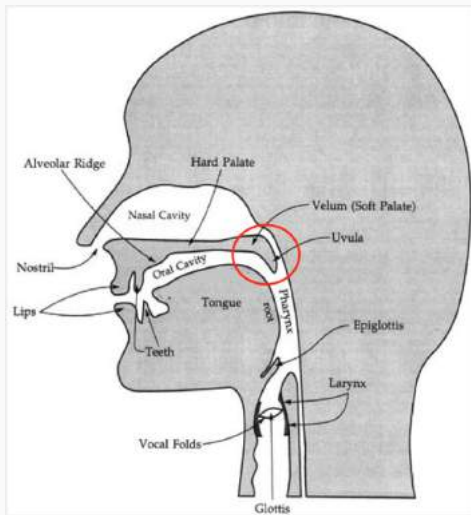
# The glottis

- The vocal folds have the ability to **open** and **close** the glottis.
  - When the glottis is **closed**, air can't leave the lungs.
  - When the glottis is **open**, air freely leaves the lungs.
- When the vocal folds come so close together that they are almost closed, they **vibrate**.
  - This vibration is your voice.



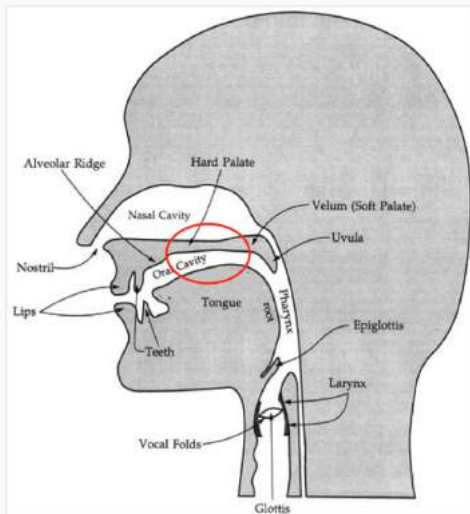
# The velum

- The soft area at the very back of your mouth is your **velum**.
- It is the doorway to the **nasal passage**.
- If it is **lowered**, air can go into the nasal cavity and out the nose.
- If it is **raised**, air has to go through your mouth.



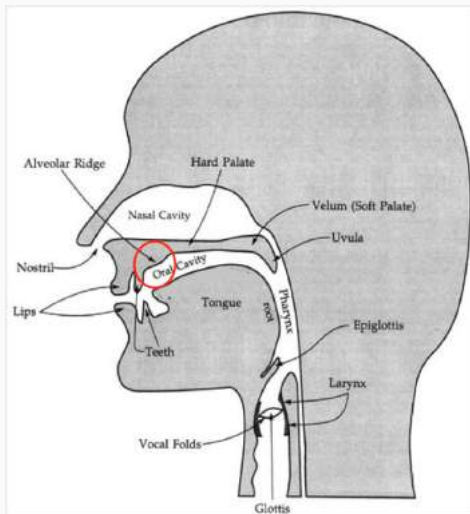
# The (hard) palate

- The **(hard) palate** is the hardest area of the roof of your mouth.
- Just in front of the velum



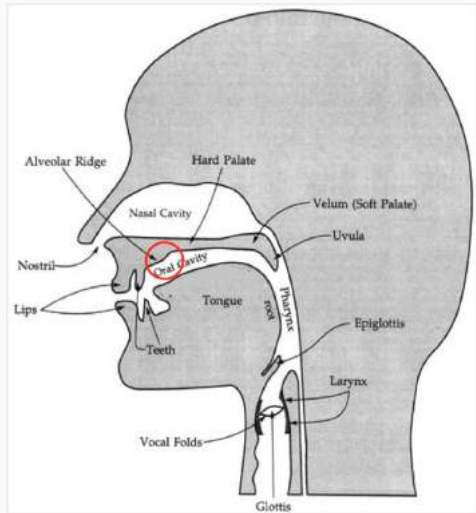
# The alveolar ridge

- The fleshy ridge just behind the top teeth is your **alveolar ridge**.



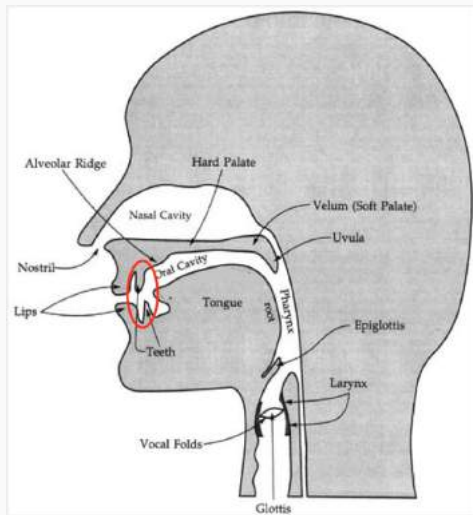
# The postalveolar region

- The area between your palate and your alveolar ridge is the **postalveolar** (or alveo-palatal) region.
- The roof your mouth rises sharply.



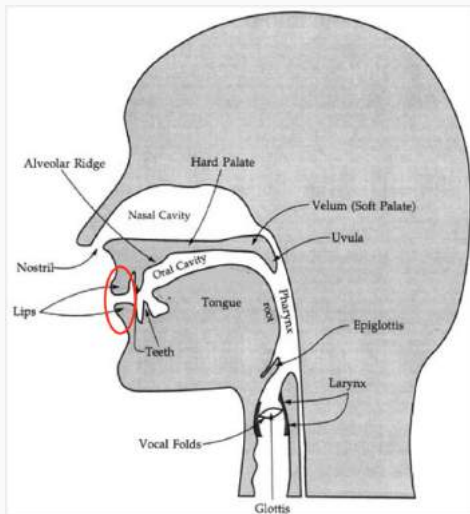
# The teeth

- The teeth are involved in making some speech sounds ("th", "f", ...)



# The lips

- The lips are involved in making speech sounds ("f", "p", "m", ...)



# The problem with spelling

In order to talk about sounds, we need a way of **representing** them in written form.

# The problem with spelling

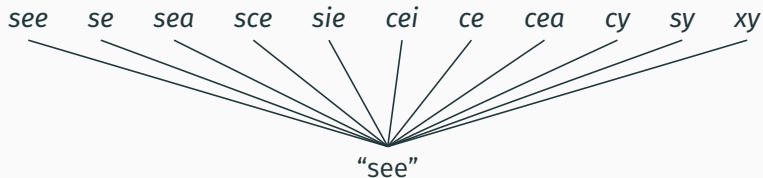
Why not use English spelling to represent sounds?

1. English spelling is often ambiguous:
  - same sound – different spelling:  
*there, their, they're*
  - same spelling – different sound:  
*read, bow, roof*
2. Some sounds don't have a designated symbol: thorn, this, sing, ...
3. Other languages have sounds that English lacks and therefore English does not have a symbol for; for example:
  - ñ in Spanish
  - ' in Hawaiian
  - đ in Vietnamese
  - ch or ö in German

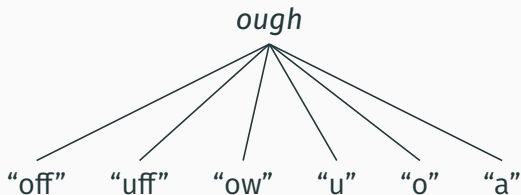


# Different spelling, same sound

see/senile/sea/scenic/siege/ceiling/cedar/cease/jucy/glossy/sexy



# Same spelling, different sound



*cough*  
*tough*  
*bough*  
*through*  
*though*  
*thoroughfare*

"koff"  
"tuff"  
"bow"  
"thru"  
"tho"  
"thurrafare"

# International Phonetic Alphabet (IPA)

- Developed over 100 years ago by the International Phonetic Association
- **Unambiguous:**  
1 symbol per sound, 1 sound per symbol
- **Universal:**  
all known human phones represented

# International Phonetic Alphabet (IPA)

- Many symbols used in the IPA are the same symbols used in our orthography.
- These aren't the same thing!
- If a symbol is from the IPA, it is enclosed in square brackets: “[ ]”
- When speech is represented in the IPA, we say that we are forming a **phonetic transcription**.