

Things you know  
about language  
you don't know  
you know

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Linguistics Program

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# Talk about linguistics

- What is linguistics?
- The scientific study of language and its structure, including the study of morphology, syntax, phonetics, and semantics. Specific branches of linguistics include sociolinguistics, dialectology, psycholinguistics, computational linguistics, historical-comparative linguistics, and applied linguistics.
- What does **that** mean?

# How about this instead....

- Linguistics is the study of things you know about language you don't know you know
  - Such as? A native speaker of English knows, for example, that the previous sentence could also be uttered as
- Linguistics is the study of things \_\_\_\_\_ you know about language \_\_\_\_\_ you don't know \_\_\_\_\_ you know
  -

# Sounds we don't hear

- Consider the following two words **what happens when we pluralize these words**
  - cap (as in baseball cap)
  - cab (as in taxi cab)

# Sounds we don't hear

- Consider what happens when we pluralize these words
  - caps
  - cabs
- Notice anything? Put a hand on your throat and pronounce the two words

# Sounds we don't hear

- Consider what happens when we pluralize these words
  - caps            the end sounds like [..ap**s**]
  - cabs            the end sounds like [..ab ]

# Who has ever noticed this?

- This is something you know about language that you don't know that you know!
- You might ask yourself at this point: WHY is this the case? In fact, this little fact raises two interesting questions:
  1. Why is it that the plural -s sometimes sounds like z?
  2. Why have you never noticed this before?
- There is an answer to both these questions, and we'll try to understand what these are here today...

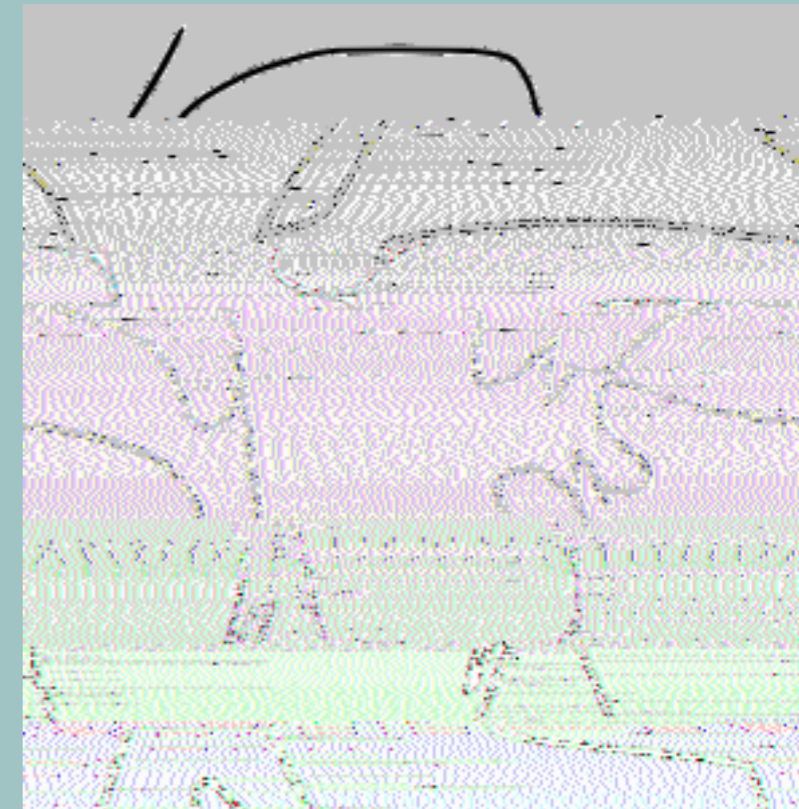
# The first question

- To answer why the plural -s sometimes sounds like [z] requires a basic understanding of **articulator phonetics**, which is
  - The production of speech sounds
    - Air in our lungs that is pushed through our throat and mouth
    - Position and movement of the articulators in your mouth and throat leads to the production of different sounds
- Important point to retain here: the sounds /s/ and /z/ are almost the same sounds



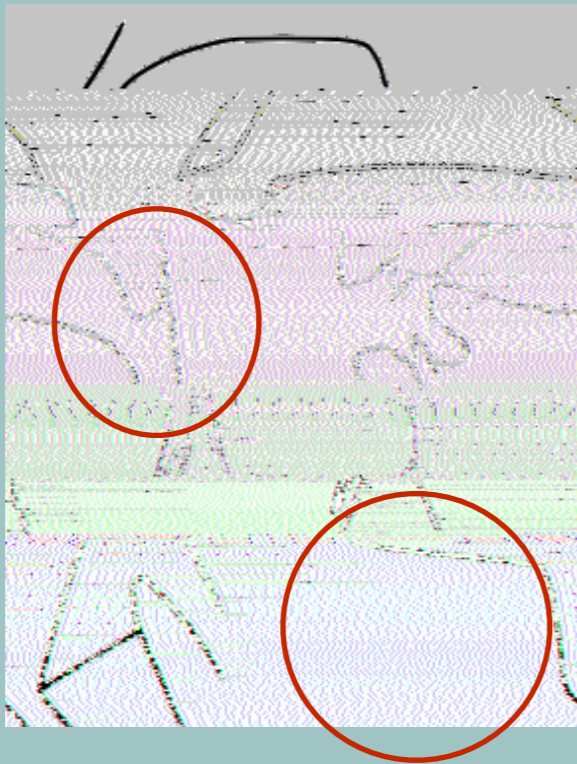
# */s/ and /z/: alveolar fricatives*

- Fricatives:
  - Continuous flow of air from the lungs through the mouth;
  - Noise made by passage of the air through a constriction (a narrow canal);
  - Constriction with */s/* and */z/*: tip of the tongue close to the alveoli, the little bumpy ridge right behind your upper teeth



- Pronounce /s/ and /z/ alternatively in a sequence (szszsz): observe that the position of the tongue in your mouth is the same with the two sounds.
- What differs between the two sounds? /z/ feels more noisy than /s/: why?
  - Your vocal cords vibrate with /z/, but not with /s/;
- Same position of tip of the tongue with alveoli

/s/



no vibration of vocal cord

/z/



vibration of vocal cord

# About /s/ and /z/

- /s/ is a voiceless alveolar fricative (no vibration of vocal cords)
- /z/ is a voiced alveolar fricative (vibration of vocal cords)
- This difference is called **voicing**

# Voiced and voiceless pairs

- Many pairs of consonants in English are articulatory identical, differing only with respect to voicing
- Among those: /p/ and /b/, the final sounds for cap**p** and cab**b** respectively

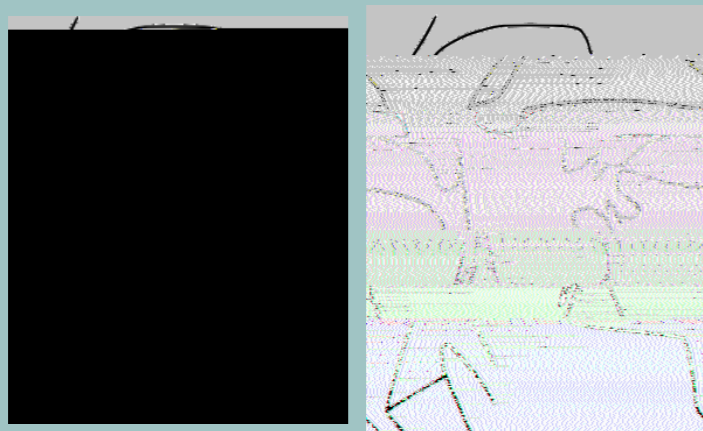
- Stops:
  - Stops involve the stopping and releasing of the air flow
  - The release of air makes a 'pop' type of sound



# Answering the first question

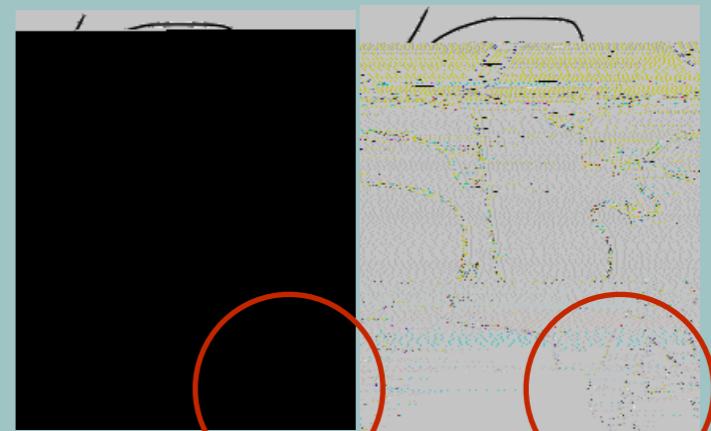
- Why is the s of the plural in *cabs* sound like z?
  - *caps* sounds like [...aps]
  - *cabs* sounds like [...abz]

When s is next to the voiceless sound /p/, nothing happens...



...a p s

When s is next to the voiced sound /b/, the vocal cords keep vibrating: **s** then sounds like



...a b z





# English consonants distinguished by the voiced feature



# More sounds

- Try to determine if the sound in bold in the following words is voiced or voiceless:
  - **pie** + s            s sounds like , /ai/ is voiced
  - **bee** + s            s sounds like , /i/ is voiced
  - tub**a** + s            s sounds like , /ɑ/ is voiced
  - sho**e** + s            s sounds like , /u/ is voiced
  - fram**e** + s            s sounds like , /m/ is voiced
  - fan**n** + s            s sounds like , /n/ is voiced
  - grill**l** + s            s sounds like , /l/ is voiced
  - boar**r** + s            s sounds like , /r/ is voiced

# All things you know, you did not know you know (before today!)

- Funny, the plural -s seems to sounds like -z more often than it sounds like an -s
- Why is it that the great majority of people never noticed this before (except linguists, and..you now!)?
- This is our second question




# Words and morphemes

- Do you hear the difference between
  - ap and **s**ap?
  - fu**ss** and fu ?
- Why do you hear these differences so clearly, yet you never heard the difference between the different realizations of the plural -s before, which are phonetically identical?
- It's all semantics!

- The sounds associated with words can be understood as instructions in the brain telling your articulatory apparatus to execute a specific set of movements.

- With *sap* and *zap*, or *fuss* and *fuzz*, the instructions associated with s and z serves to distinguish different WORDS:

- We say that in these cases, s and the z introduce a meaningful distinctions:

- the sequences of sounds *zap*, *sap*, *fuss* and   

# Distinctions that are meaningless

- The plural -s is a **morpheme** (a unit that must attach to a word): it also introduces its own specific reality (plurality of things)
  - The different realizations of this morpheme are not meaningful: although it is often realized as -z, what we actually *hear* is the notion of plurality, a reality associated with the instructions that produce /s/.
- Again, this happens all over the place, not just in morphemes: consider words that start with the sequence **ex** in English:
  - **Ex**pect: [...ksp...]
  - **Ex**ample: [...gza...]

- You now know a little more about
- things you know about language
- you did not know
- you know
- There is a lot more to find out
- This knowledge is at the very centre of what it means to be a human