

Speechreading (Lipreading)

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Topics

- ▶ Demonstration
- ▶ Terminology
- ▶ Elements of the communication context (a model)
- ▶ Factors that influence success
 - ▶ Contextual constraints
- ▶ Strategies to enhance success
- ▶ The importance of listening and lipreading together
- ▶ True/false quiz about speechreading
- ▶ Cued Speech
- ▶ True/false quiz about CS



Lipreading Exercise

- ▶ First try



Lipreading Exercise

- ▶ Second try – With context



Lipreading Exercise

1. The **boy** **threw** the **ball** over the **fence**.





Lipreading Exercise

2. The mailman delivered a letter to my house.

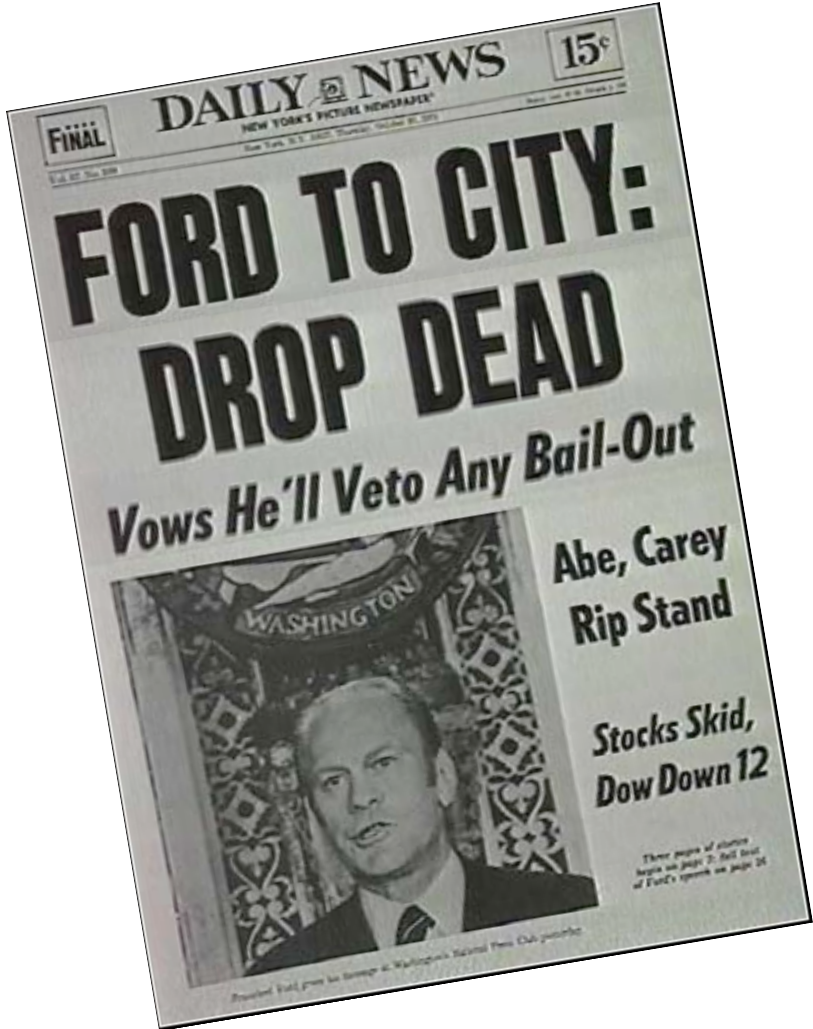




Lipreading Exercise

3. The **inspection** **surprised** the **school** **nurse**.





Lipreading Exercise

4. The **publication excited outrageous comments**.



Terminology

▶ **Lipreading means:**

Recognizing speech, with **only visual cues from the face** (primarily the mouth, lips, teeth, and tongue).



▶ **Speechreading means:**

Recognizing speech using **auditory and visual cues, and all contextual cues** (including environmental cues).



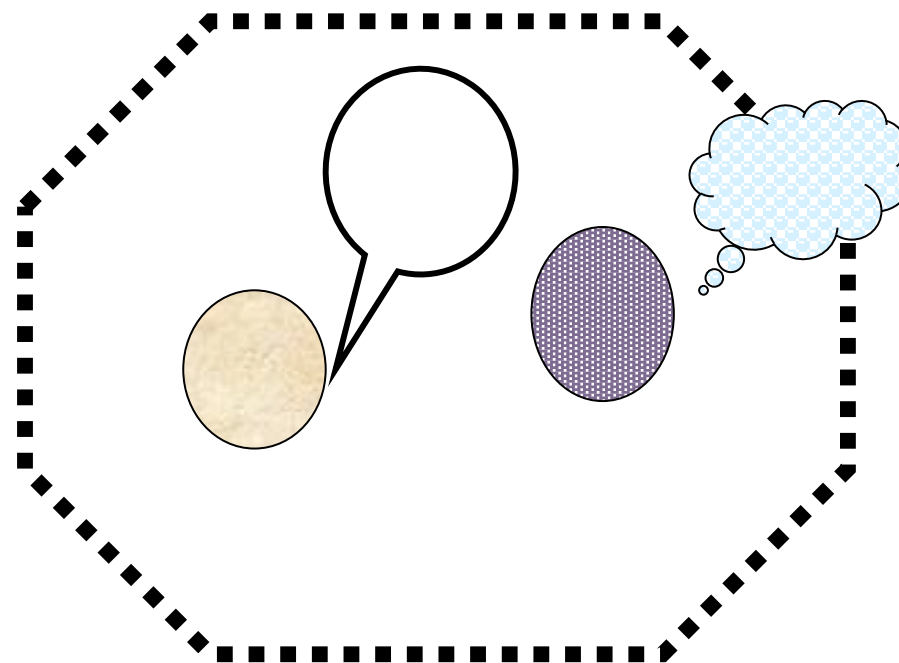
Elements of the communication context

Environment

Talker

Message

Listener/speechreader



Factors that influence success

- ▶ **Environment**

- ▶ Noise
- ▶ Relevance to the message

- ▶ **Talker**

- ▶ Articulation, accent
- ▶ Voice level
- ▶ Facial expression and vocal expression
- ▶ Flexibility (ability to match the lipreader's needs)

- ▶ **Message**

- ▶ Language level
- ▶ Topic familiarity
- ▶ Grammatical complexity
- ▶ Context



▶ Contextual constraints

▶ Phonological

▶ Example: **p** + [?] + **t**

▶ Semantic

▶ Example: Fish breathe through their _____ . [**gills** **elbows**]
I heard about the _____ . [**???**]

▶ Syntactic

▶ Example: The glass combed the tissues under the sharp ocean.
~~He blue ran.~~

▶ Topical

▶ Example: At a soccer game – “That player was off-sides!”
“~~That player missed the serve!~~”

▶ Pragmatic

▶ Example: Child to mother -- “Mommy, may I please have \$5?”
Student to teacher – “~~You’re ugly!~~”



Cloze technique

- ▶ Today, we have visitors _____ Viet Nam and the _____. Our visitors are teachers. _____ want to help deaf _____. They will stay in _____ for one month. They _____ learning a lot of _____ information.



Cloze technique

- ▶ Today, we have visitors **from** Viet Nam and the **Philippines**. Our visitors are teachers. **They** want to help deaf **people**. They will stay in **Rochester** for one month. They **are** learning a lot of **new** information.



▶ **Listener/speechreader**

- ▶ World knowledge
- ▶ Language and vocabulary knowledge
- ▶ Vision
- ▶ Attention
- ▶ Experience with lipreading
- ▶ Ability to give good feedback
- ▶ Guessing strategies, mental agility
- ▶ Flexibility (ability to revise)



Enhance the environment

- ▶ Stand where all students have a good, close view (about 6 feet is best)
 - ▶ Arrange chairs in a semicircle around you
- ▶ Move away from the window so light shines on your face
 - ▶ Do not stand where you have a shadow on your face
- ▶ Stand where the light is not in your students' eyes
- ▶ Reduce room noise
 - ▶ No children talking or scuffling around
 - ▶ Close the door to the hall
 - ▶ Turn off projectors that have a loud fan
- ▶ Use an assistive listening device (FM transmitter)



Present a clear signal

- ▶ Use appropriate facial expression and gesture
- ▶ Speak with clear articulation
 - ▶ Slightly slower rate
 - ▶ No exaggerated articulation
 - ▶ Pause between phrases and sentences (to avoid fatigue)
- ▶ Keep your head straight
- ▶ Provide a full-face view for a good viewing angle
- ▶ Keep your hair off your face
- ▶ Keep your hand, pencil away from your face and mouth
- ▶ Check students
 - ▶ Wearing their hearing aids, cochlear implants, and/or FM systems?
 - ▶ Wearing eyeglasses, if needed?



Enhance the message

- ▶ **Announce the topic first**
 - ▶ Example: Write a “**headline**” on the board
Write **keywords**
- ▶ **Provide context**
 - ▶ Example: For “Elections,” show a **photo** of the polling place from the newspaper
- ▶ **Break up long sentences**
 - ▶ Example: Orville and Wilbur Wright had a bicycle-making business in Ohio and they loved experimenting with flying machines, so they built the Wright Flyer in 1903.
Orville and Wilbur Wright had a bicycle-making business in Ohio.
They loved experimenting with flying machines.
In 1903, they built the Wright Flyer.



▶ Simplify the syntax (grammar)

▶ Example: Broccoli, which people often leave uneaten, is very nutritious.

Often, people do not eat their broccoli. However, broccoli is very nutritious.

▶ Allow the grammar to provide contextual cues

▶ Example: The dog was chased by the cat.

The cat chased the dog.

▶ Use words familiar to your grade level

▶ Example: Imposter vs. A person who tries to fool you.

▶ Choose words that have high visibility

▶ Example: Parents vs. Mother and father



Increase the speechreader's skills

- ▶ **Improve student's skills** in these areas:
 - ▶ World knowledge
 - ▶ Language and vocabulary knowledge
 - ▶ Vision
 - ▶ Attention
 - ▶ Experience with lipreading
 - ▶ Ability to give good feedback
 - ▶ Guessing strategies, mental agility
 - ▶ Flexibility (ability to revise)



Feedback

▶ Ineffective strategies

▶ Disregard the utterance

- ▶ Speechreader may decide that it's not important enough to pursue any further

▶ Bluff

- ▶ Student may nod, smile, and pretend to understand

▶ Useful repair strategies

▶ Nonspecific strategy

- ▶ “What?” “Huh?”
- ▶ “Please repeat more slowly.”
- ▶ “Please repeat more clearly.”
- ▶ “Please repeat a key word, using your best pronunciation. Then say the sentence again.”
- ▶ “Please show me what you mean.”

▶ Specific strategy



Specific repair strategies

- ▶ Teacher: Where is your history book?
- ▶ Child: Where is my *what* book?
 - ▶ Request a specific portion of the message
 - ▶ Indicate which parts were received OK

- ▶ Child 1: Can you give me a ride to hockey practice tomorrow?
- ▶ Child 2: I didn't hear that clearly. Are you asking about *hockey*?
 - ▶ Confirm the topic



Cloze technique

Today, we have visitors _____ Viet Nam and the
_____. Our visitors are teachers. _____ want to
help deaf _____. They will stay in _____ for one
month. They _____ learning a lot of _____
information.

▶ How to make Cloze exercises

<http://olc.spsd.sk.ca/DE/PD/instr/strats/cloze/index.html>



Add listening

- ▶ **Each channel (auditory and visual) is important**
 - ▶ There are some unique cues in each channel
 - ▶ There are some overlapping cues (redundant information)
 - ▶ Speechreading alone can be difficult
 - ▶ Listening alone can be difficult
 - ▶ Combining listening and lipreading makes communication easier
 - ▶ Less tiring
 - ▶ Removes ambiguity
 - ▶ Clarifies confusable speech elements
 - ▶ Enhances perception



-
- ▶ Even with minimal auditory information, the speechreader can extract suprasegmental patterns
 - ▶ Provides information about the pattern of speech
 - ▶ Syllabic structure and word boundaries
 - ▶ Syntax (e.g., question or statement)
 - ▶ Semantics (through stress patterns)
 - ▶ Some information about individual speech segments (whether a consonant is voiced or voiceless)

- ▶ The voice and the face modify the message

- ▶ Facial expression (ex., a raised eyebrow) →
- ▶ Tone of voice (ex., surprise, sympathy)
- ▶ Linguistic cues (ex., rising intonation signals a question)



-
- ▶ Speechreading provides information that depends on good high-frequency information
 - ▶ Place of articulation is difficult to hear
 - <http://www.uiowa.edu/~acadtech/phonetics/english/frameset.html>
 - ▶ Speechreading fills in some of this place information.
 - ▶ Speechreading allows the person to integrate visible cues (place of articulation) with audible cues (manner of articulation)
 - ▶ The speechreader has a more complete signal



True or False?

1. Lipreading is so difficult, it's not even worth trying.

False

2. Lipreading cannot be taught.

False

3. The skills of the lipreader are critical -- more important than the skills of the talker.

False

4. You need 20/20 vision to lipread.

False

5. “Mom” and “pop” are the *same* through speechreading for a person with severe hearing loss.

False

6. “Mom” and “pop” are the *same* through speechreading for a person with severe hearing loss with a profound hearing loss.

Depends on the individual



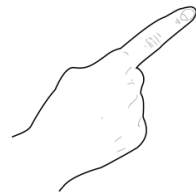
Cued Speech

- ▶ CS is a mode of communication to make the elements of speech visible
 - ▶ Natural mouth movements
 - ▶ Hand cues
 - ▶ Together, hand cues and mouth movements make each speech sound unique
- ▶ Each language has a different set of handshapes
- ▶ CS is useful for several applications
 - ▶ Can be used from infancy
 - ▶ Can be useful in autism, cerebral palsy, developmental disability
- ▶ CS has lead to improved speech, language, and literacy skills
- ▶ Demonstration
 - ▶ <http://www.cuedspeech.org/>

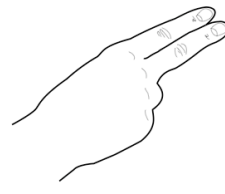


CUED SPEECH FOR AMERICAN ENGLISH

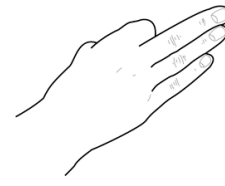
Handshapes



Handshape 1
/d, p, zh/
deep treasure



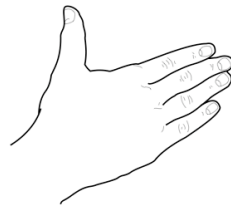
Handshape 2
/TH, k, v, z/
the caves



Handshape 3
/s, h, r/
sea horse



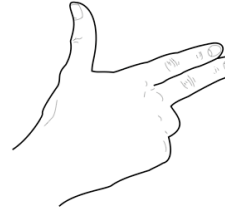
Handshape 4
/wh, b, n/
white bone



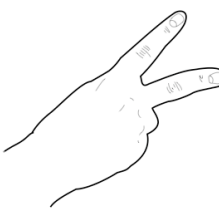
Handshape 5
/m, t, f/ & vowel alone
my taffy



Handshape 6
/w, sh, l/
wet shell



Handshape 7
/th, j, g/
thin jogger



Handshape 8
/y, ng, ch/
young child

Hand placements



Mouth
/ee, ur/
leisure



Chin
/aw, ue, e/
tall blue tent



Throat
/oo, i, a/
Look, big crabs!



Side
consonant alone



move 1" forward
Side Forward
/oe, ah/
boat dock



move 1/2" - 3/4" down
Side Down
/uh/
sun



Chin to 5 Throat
/oi, ay/
moist snails



Side to 5 Throat
/ie, ou/
light house

NGSA

National Cued Speech Association
800-459-3529 v/tty • info@cuedspeech.org • www.cuedspeech.org



Cued Speech

- ▶ Cued Speech requires the use of voice to communicate clearly.
 - ▶ *False*
- ▶ CS was developed for the purpose of improving a deaf person's speech skills.
 - ▶ *False*
- ▶ The handshapes and hand placements in CS are the same across all languages.
 - ▶ *False*
- ▶ You can't cue to babies.
 - ▶ *False*



Review

- ▶ Terminology
- ▶ Elements of the communication context (a model)
- ▶ Factors that influence success
 - ▶ Contextual constraints
- ▶ Strategies to enhance success
- ▶ The importance of listening and lipreading together
- ▶ Cued Speech

