

English Phonetics and Phonology

Lecture 3 The Speech Chain

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Phonetics and phonology: in the structuralist tradition

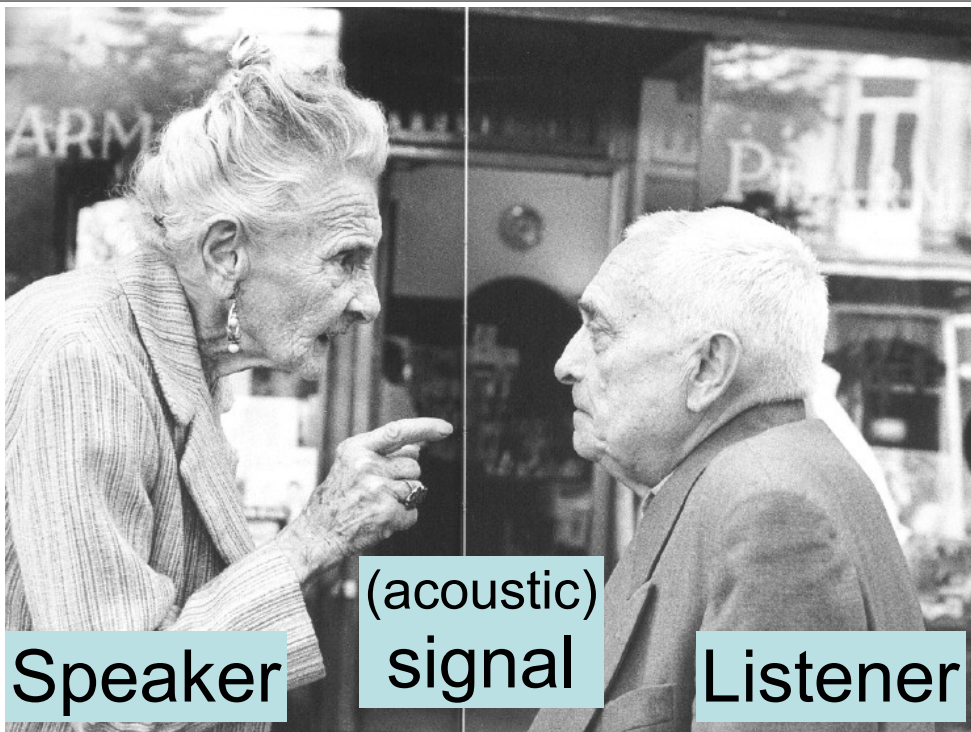
- **Phonetics** deals with **concrete physical realizations** of speech sounds (articulatory, acoustic, and perceptual characteristics).
- **Phonology** deals with the **sound system** of languages: how phonemes function, how they are used in a given language.

The Speech Chain

Peter B. Denes & Elliot N. Pinson (1963/1971)
The Speech Chain: The Physics and Biology of Spoken Language

The Speech Chain

- What are the necessary conditions for speech communication to take place?



Speaker

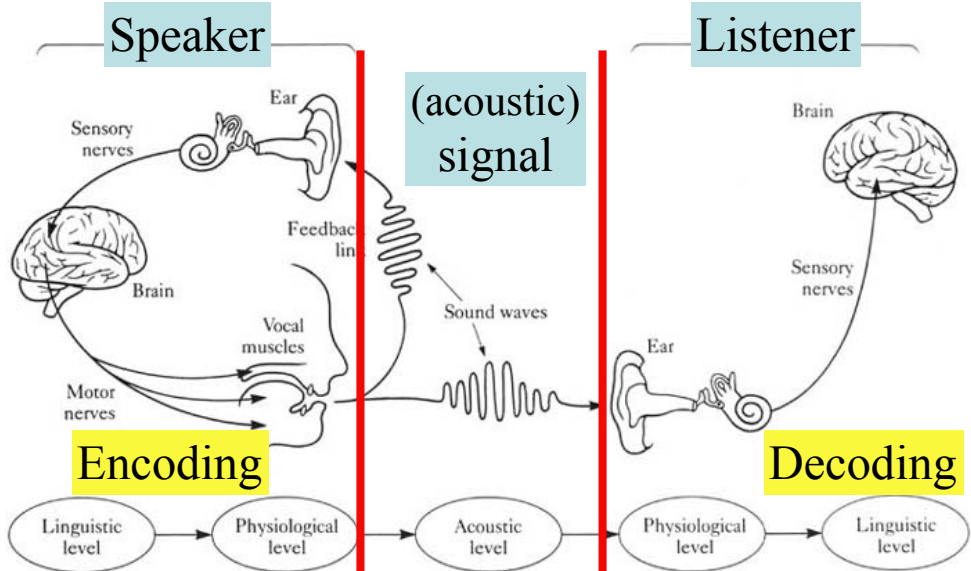
(acoustic)
signal

Listener

Then, three conditions ...

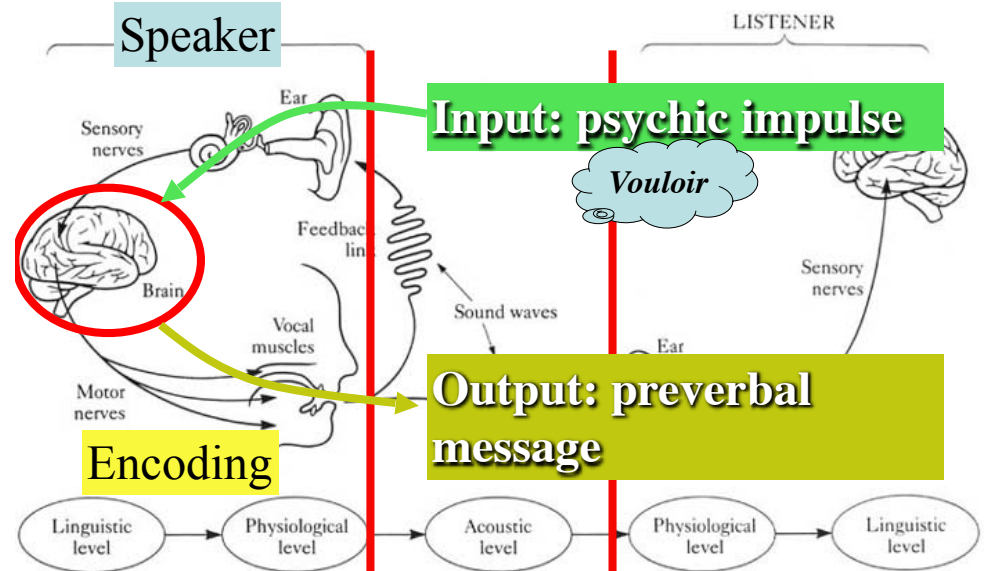
- *Savoir (+ savoir-faire)*
- *Pouvoir*
- *Vouloir*

The Speech Chain



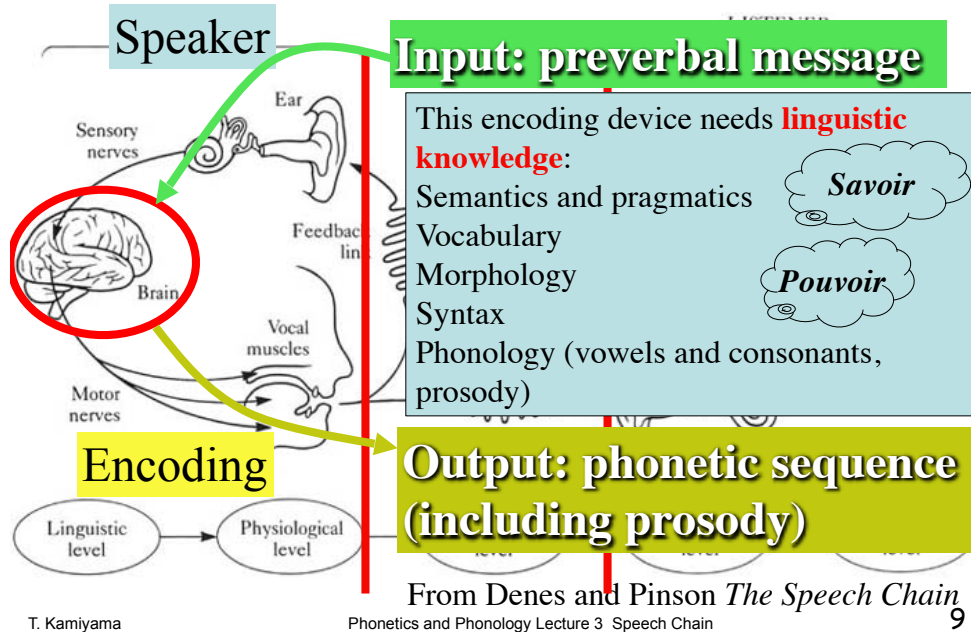
From Denes and Pinson *The Speech Chain*

Stage 1: Conceptualization

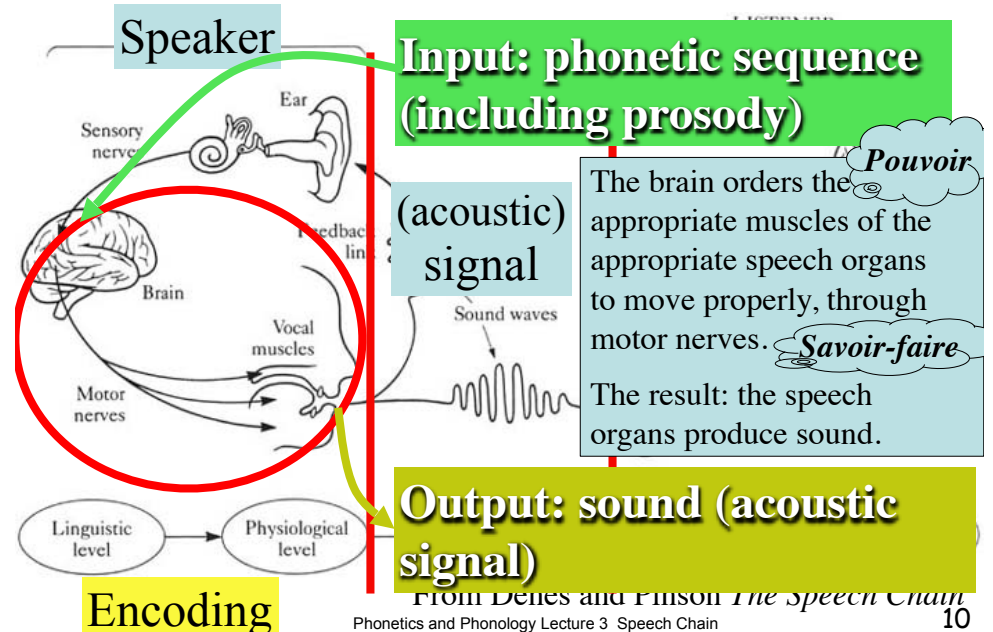


From Denes and Pinson *The Speech Chain*

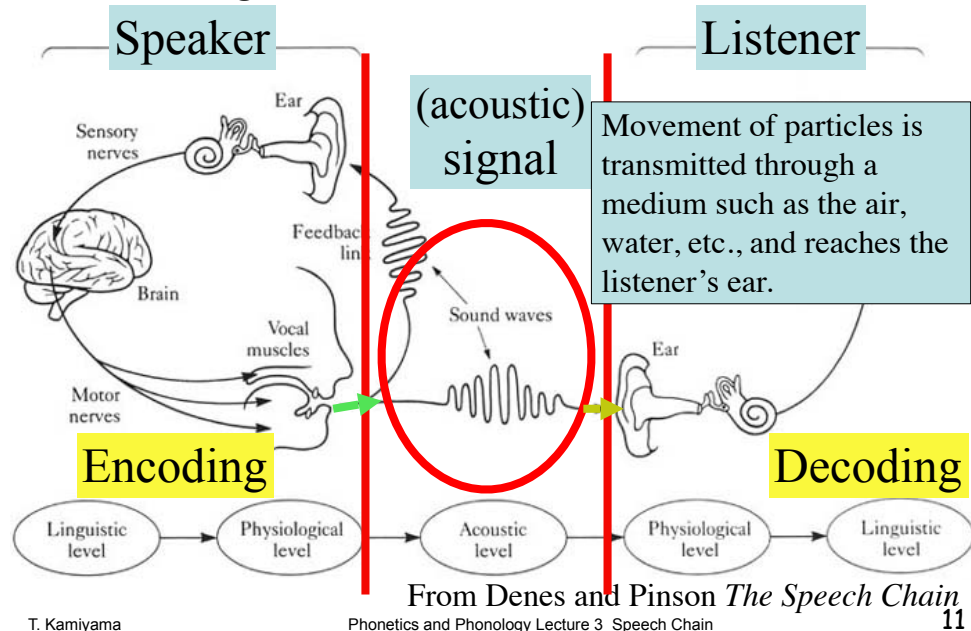
Stage 2: Linguistic encoding



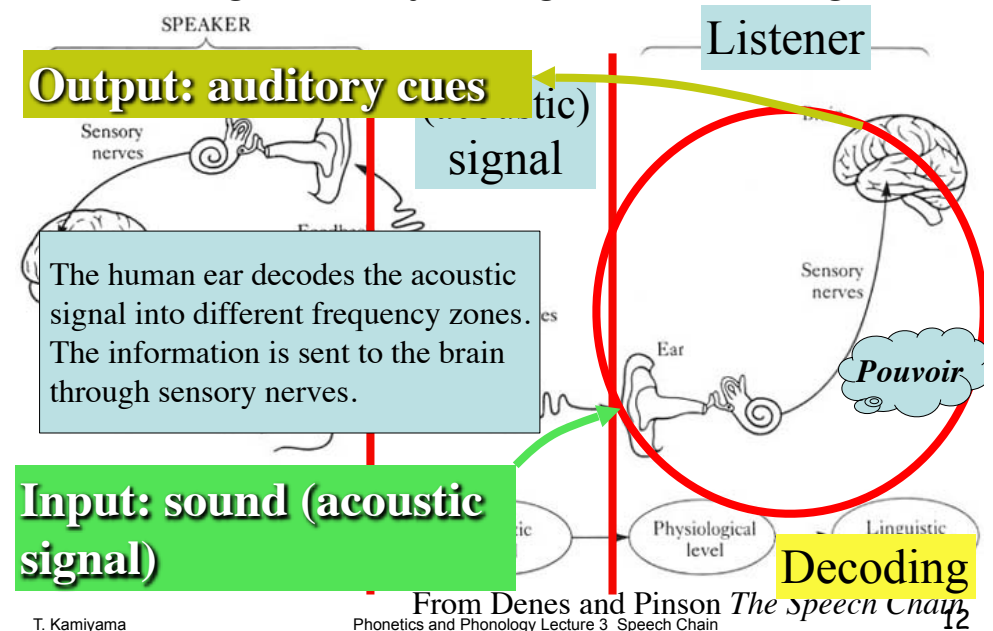
Stage 3: Physiological encoding



Stage 4: Acoustic transmission



Stage 5: Physiological decoding



Stage 6: Linguistic decoding

Output: preverbal message

This decoding device needs **linguistic knowledge:**

Phonology (vowels and consonants, prosody)
 Syntax
 Vocabulary
 Morphology
 Semantics and pragmatics

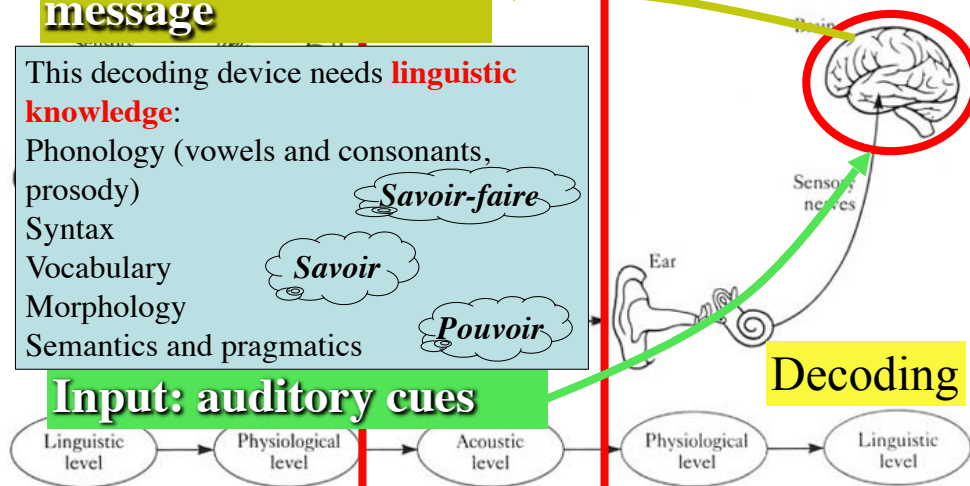
Savoir-faire

Savoir

Pouvoir

Input: auditory cues

Listener



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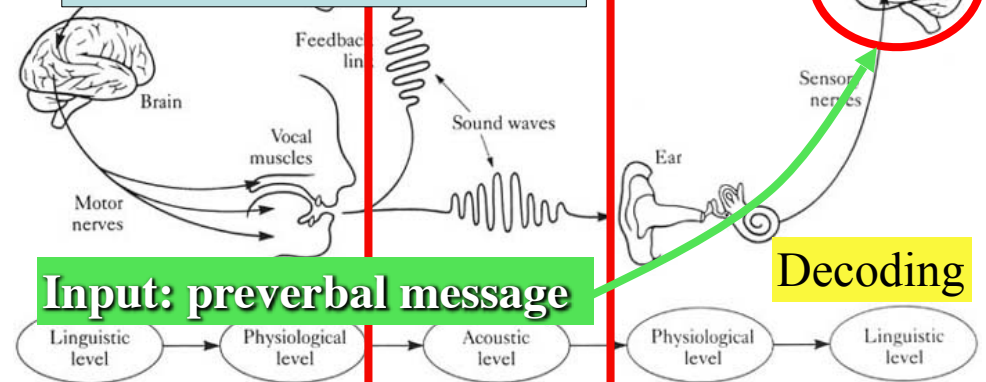
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Stage 7: Comprehension

Output: psychic pulse

Feeling that the listener has understood something.



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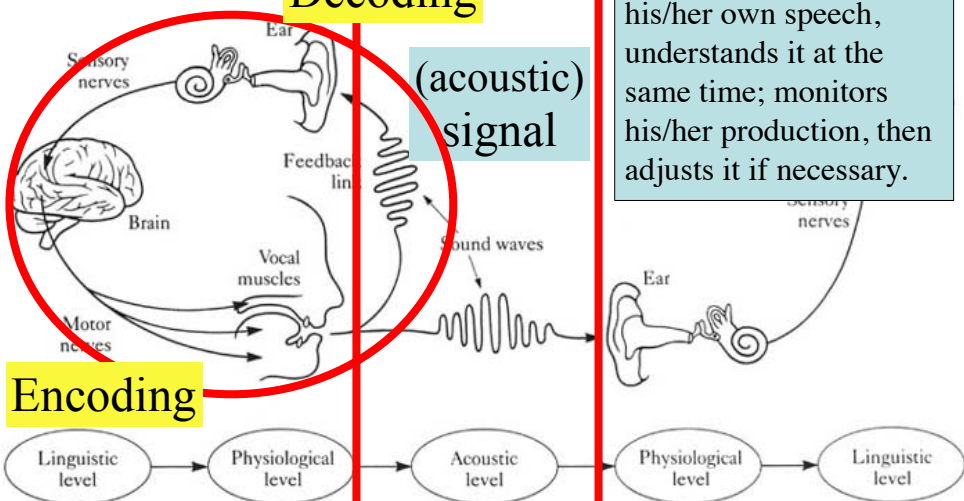
Feedback circle

Speaker

Decoding

(acoustic) signal

The speaker listens to his/her own speech, understands it at the same time; monitors his/her production, then adjusts it if necessary.



Encoding

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Delayed Auditory Feedback

- The feedback circle may be disturbed by delayed feedback. Demonstration :
- <https://stutterbox.co.uk/>

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