

Week 3: Levels of Representation in Speech Processing

Experimental Linguistics - Semester A 2011

Schedule for the Term

Week/Date	Topic	Deadlines
week 2: October 4	Basic Research Methods	
week 3: October 11	Levels of Representation in Speech Processing	
week 4: October 18	Language Specific Speech Processing: phoneme inventories	
week 5: October 24	Language Specific Speech Processing: phonotactics	
week 6: November 1	Experiment Set up (bring your pc laptops to class)	must have downloaded DMDX software and logged in as administrator before class
READING WEEK		
week 8: November 15	Linguistics and Cognition: Methodological Issues	
week 9: November 22	Modularity/Levels of Representation	
week 10: November 29	Prediction	
week 11: December 6	Data Analysis Workshop	data collection done
week 12: December 13	Final WrapUp	1000 word presentation writeup due

Plan for Today

- Admin/Intro [20 minutes]
- Discussion Pt. 1 [30-35 minutes]
- Break [10 minutes]
- Discussion Pt. 2 [50-55 minutes]

Admin: Discussion WriteUp Assignment

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- 1000 words (990-1010)

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- pdf!!!

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 - convince me that you've thought deeply about the topic and understood the point of the readings
 - provide a narrative & context - connect the dots between the papers and to the rest of the module/other modules

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- analytical (about 50%):
 - convince me that you've thought deeply about the topic and understood the point of the readings
 - provide a narrative & context - connect the dots between the papers and to the rest of the module/other modules
- reflective (about 50%):
 - discuss how you decided to structure the discussion/activities (what you left out, what extra background was required, etc)
 - reflect on what worked well, what you'd do differently, etc

Announcement: MA meeting

- Tuesdays 5-6pm
- Arts Research Center (the new lab)
- each week a student will present a paper and lead the discussion
- students are responsible for circulating a pdf of the paper to the MA mailing list and to me at least 1 week before the date we read the paper



Schedule for the Term

Week/Date	Topic/Presenters
week 3: October 11	Admin Meeting General Discussion
week 4: October 18	Aurela & Alice
week 5: October 24	Hui & David
week 6: November 1	Daniella & Sara
READING WEEK	
week 8: November 15	Kyle
week 9: November 22	Laverne & Ben
week 10: November 29	Alena & Sobia
week 11: December 6	
week 12: December 13	

Readings

- contents of search field: "title of paper" filetype:pdf

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 "Exploring developmental changes in cross-language speech perception" 
Advanced search

Search About 168 results (0.31 seconds)

Everything

Images



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infantstudies.psych.ubc.ca/uploads/.../1254849958Werker_1995b.pdf 
File Format: PDF/Adobe Acrobat - [View as HTML](#)
Exploring Developmental Changes in Cross-Language Speech Perception 89
syllables differing by only a single phoneme if that particular phonemic ...
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Exploring developmental changes in cross-language speech perception. In D ...

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Levels of Representation in Speech Processing

SEMANTICS
(compositional interpretation)

SENTENCE UNITS
(acceptable syntactic structure)

PHRASES
Noun phrases (noun + descriptor)
Verb phrases (verb + what it acts on)

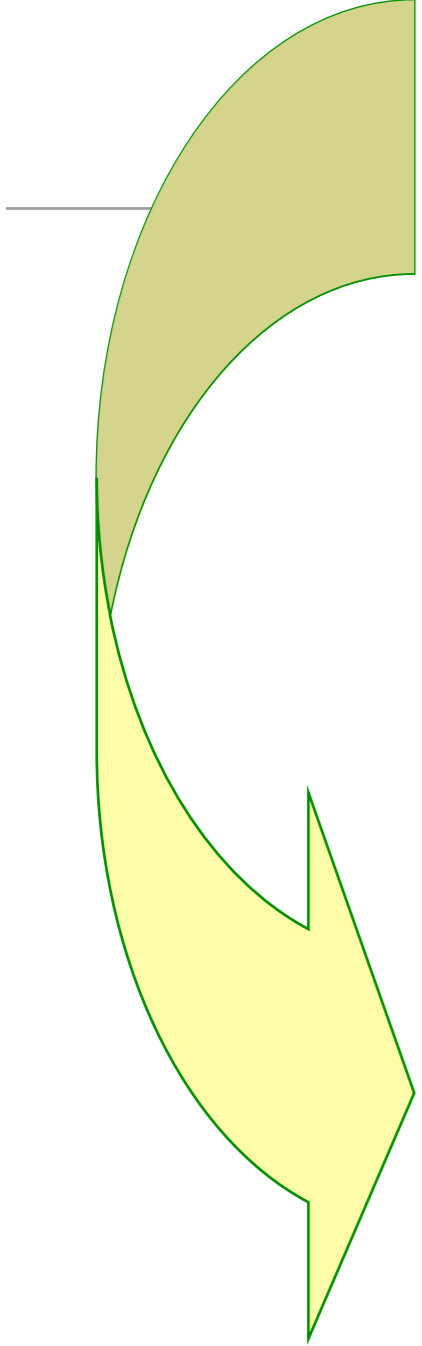
WORDS
(from the vocabulary)

MORPHEMES
(from the lexicon)

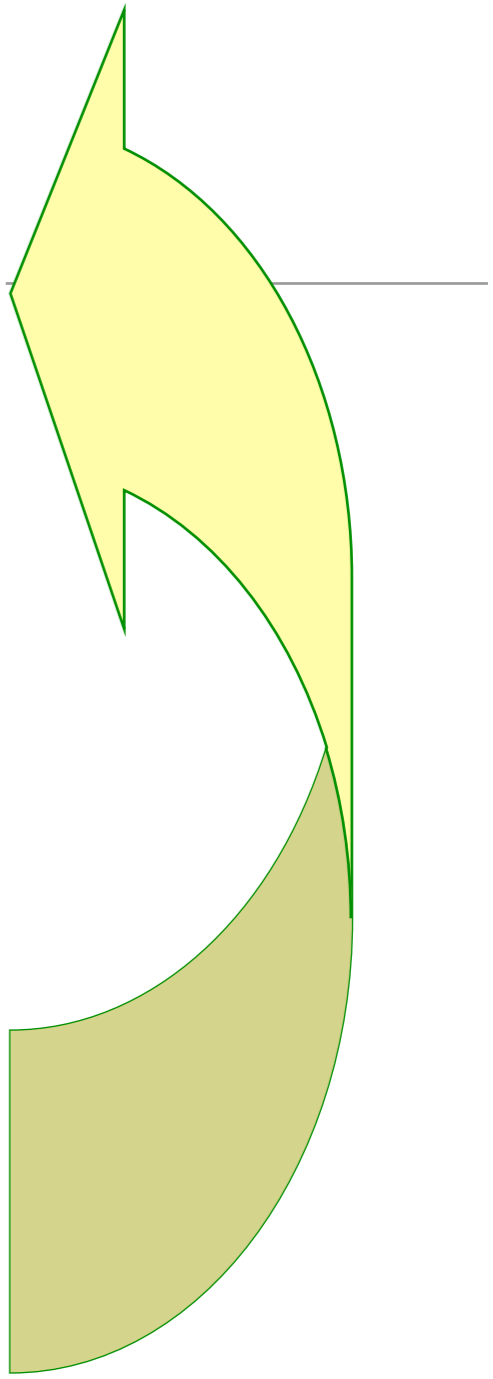
PHONEMES
(from the set of acceptable phones in the language)



Spoken Input



*Top-Down
Processing*

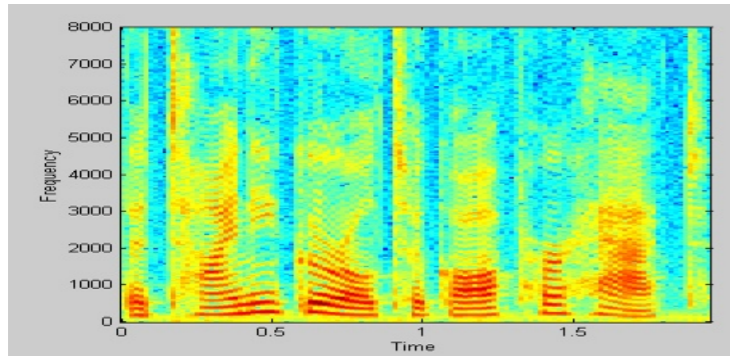


*Bottom-Up
Processing*

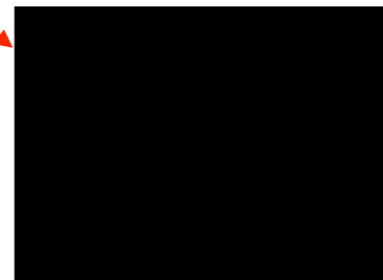
From vibrations in the ear to abstractions in the brain

sounds

words



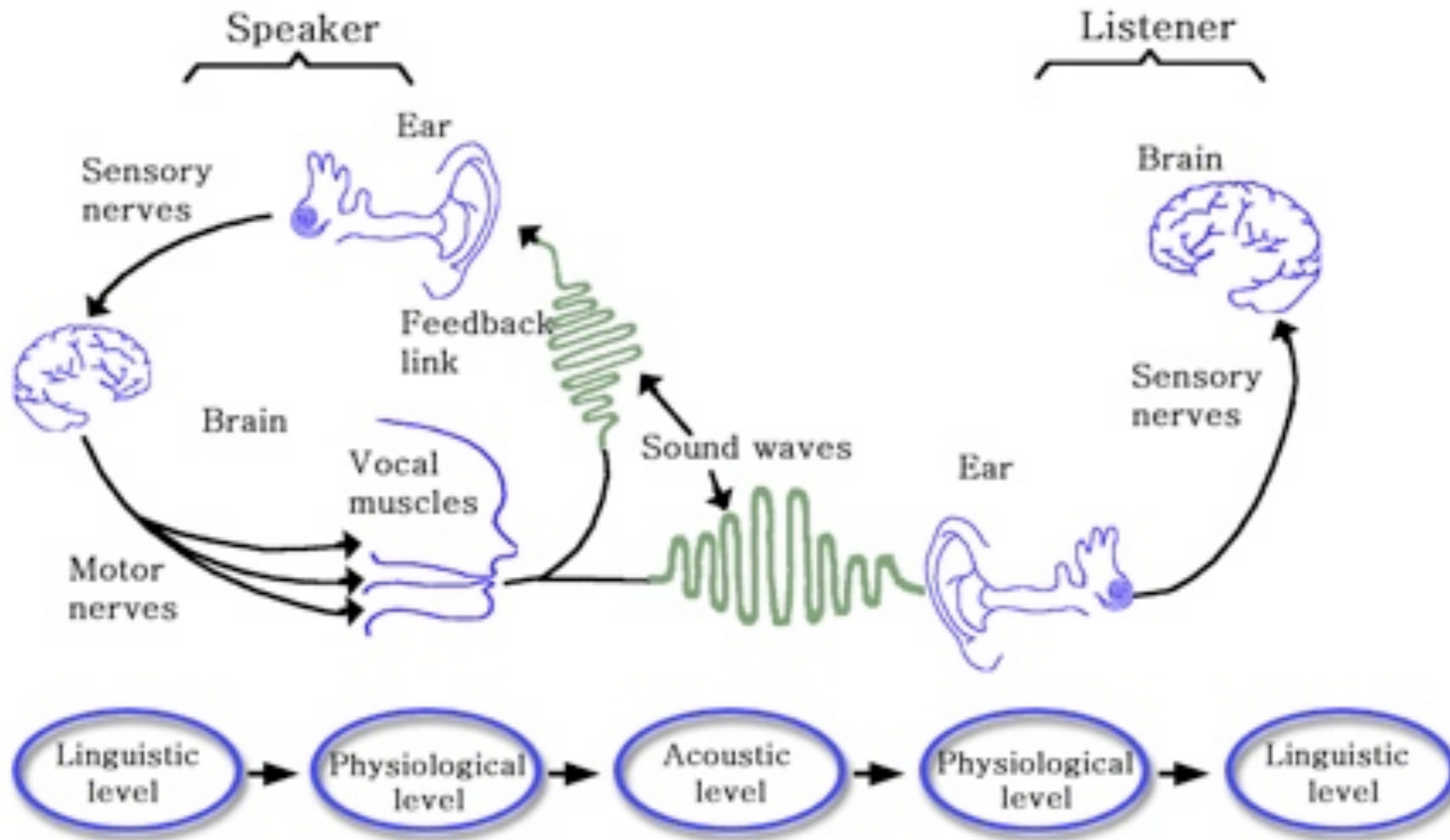
Continuously varying waveform with information on multiple time- and frequency scales must be encoded ...



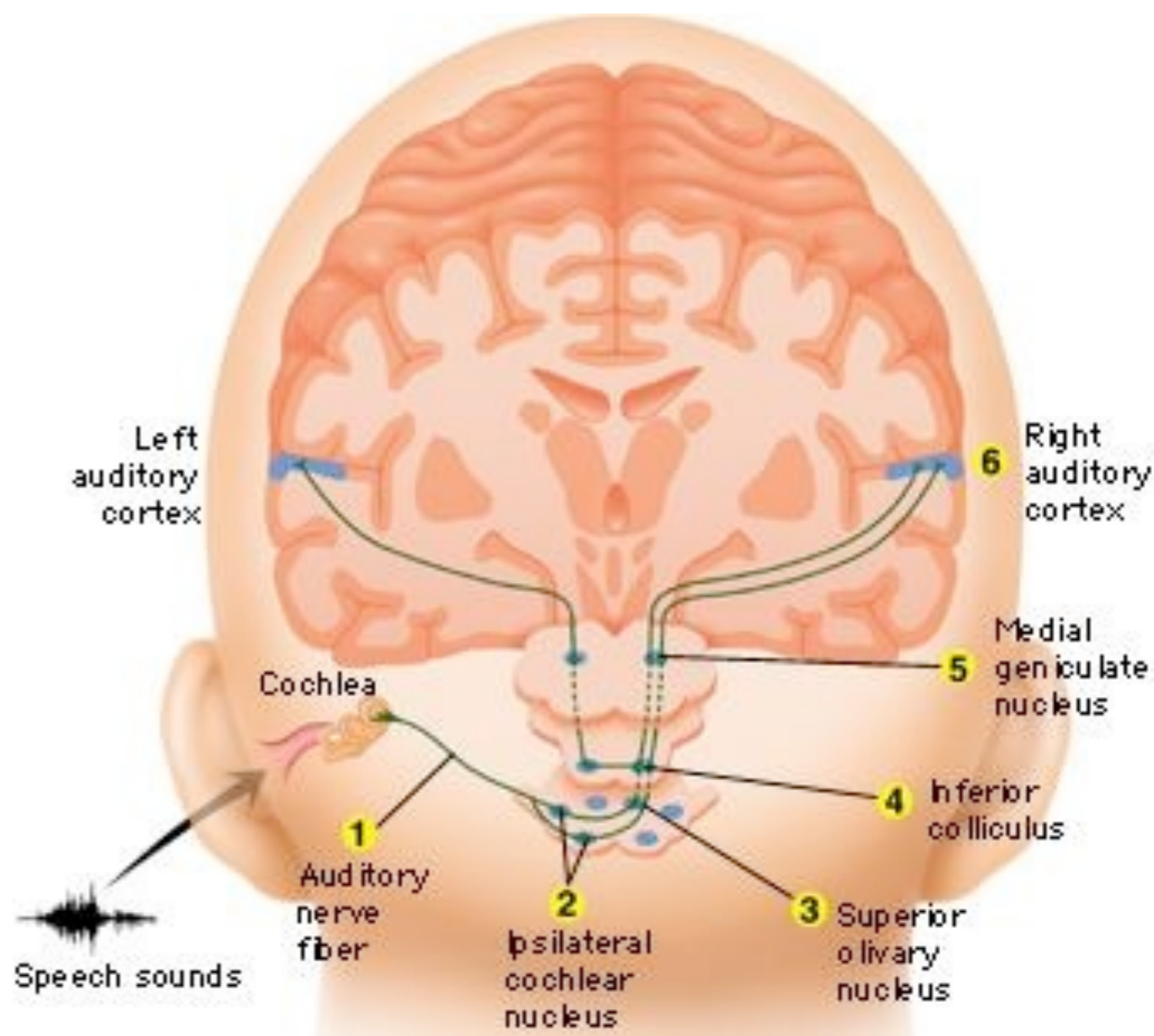
... and decoded to make contact with the long-term linguistic representations in memory

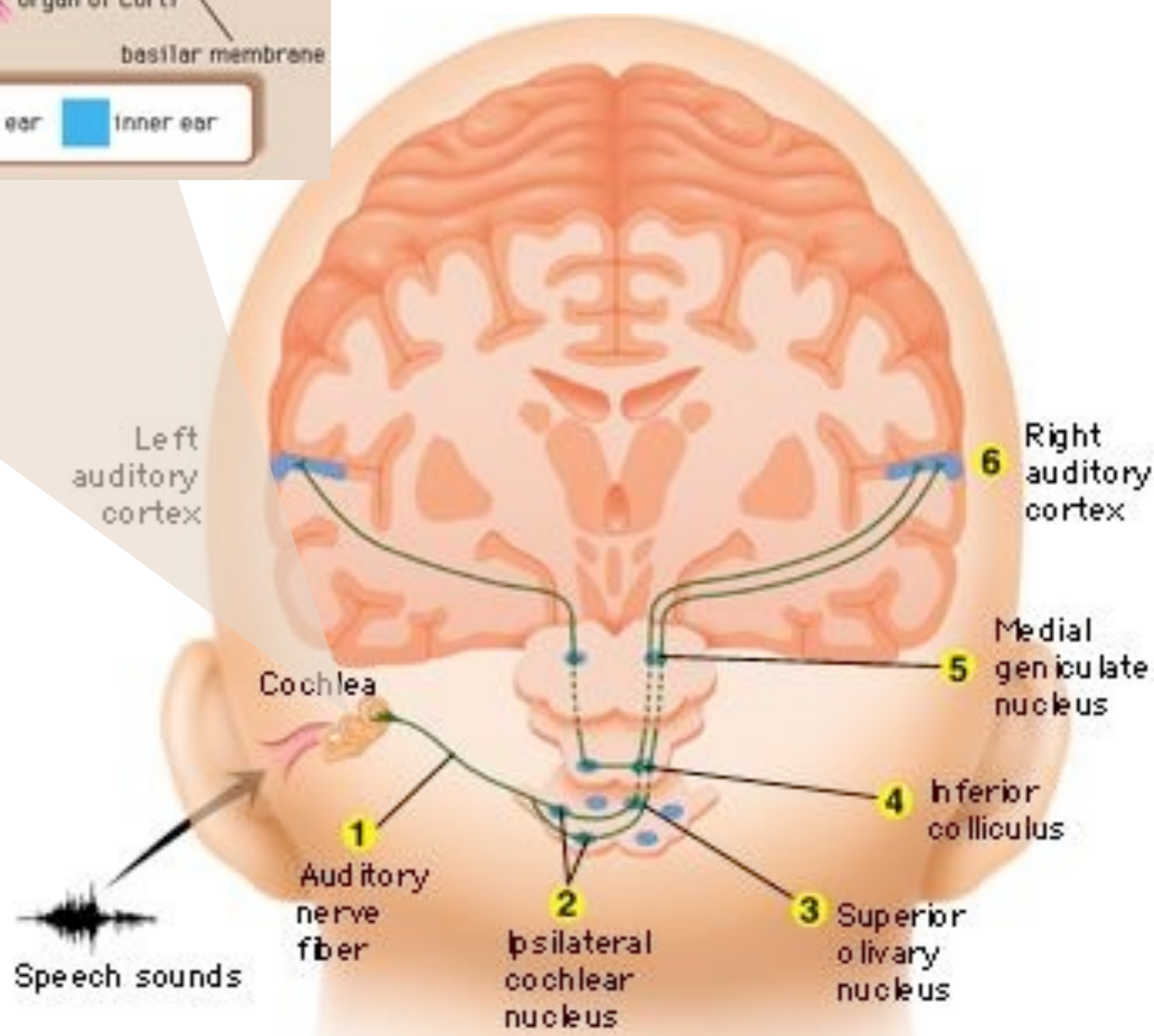
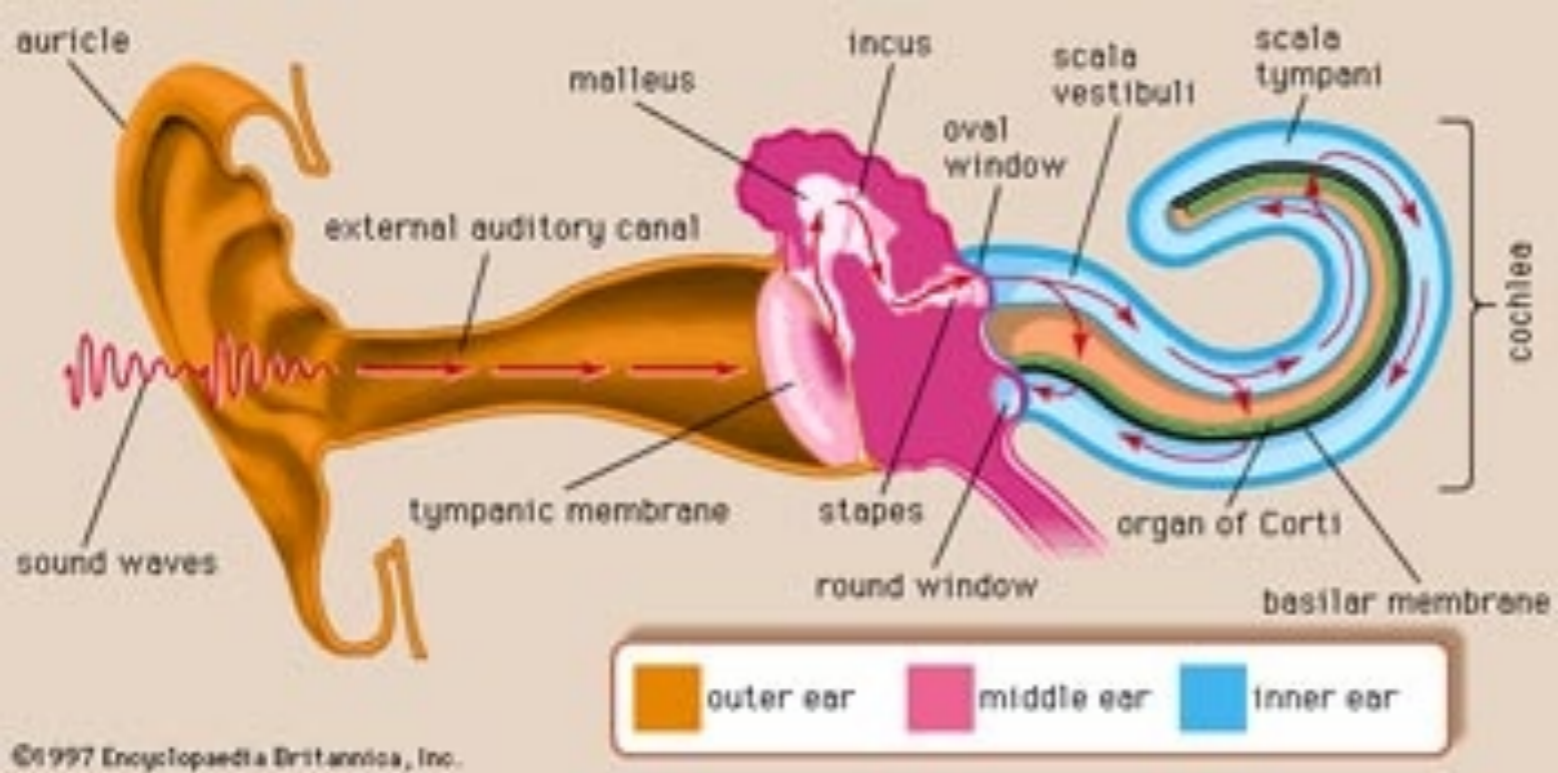


The Speech Chain



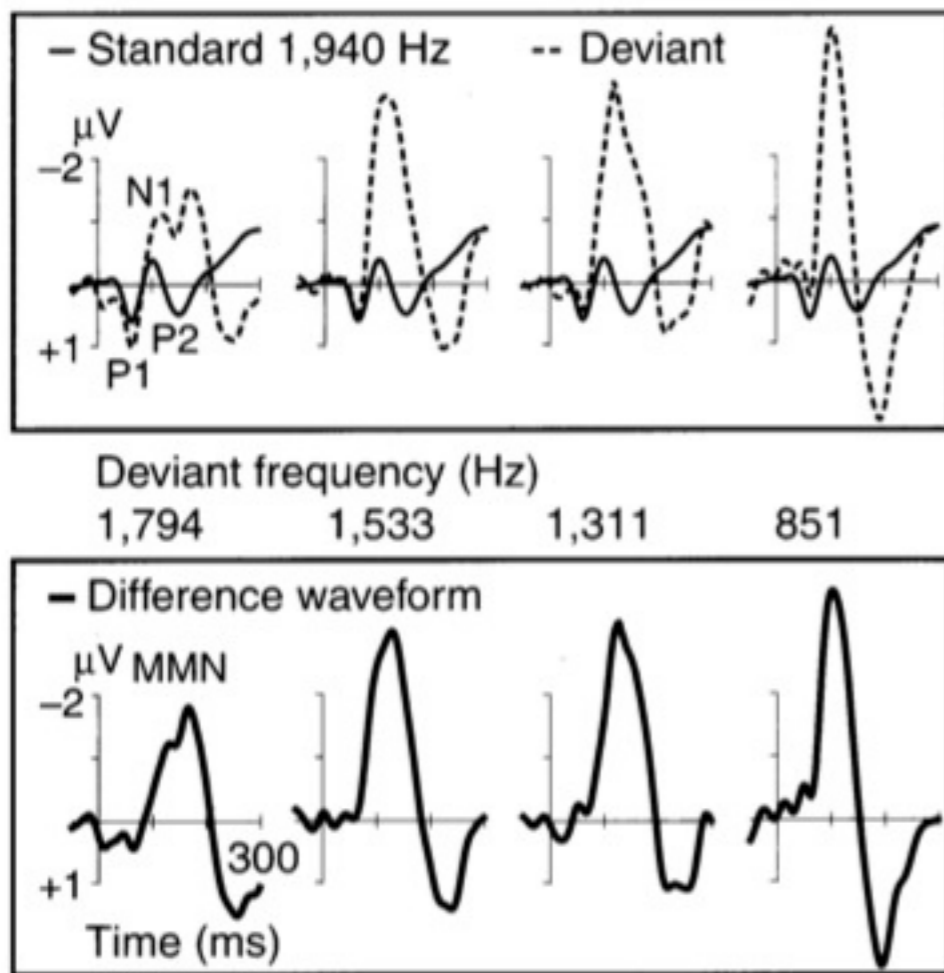
From Stevens, K. N. Acoustic Phonetics. Cambridge, MA: MIT Press, 1999



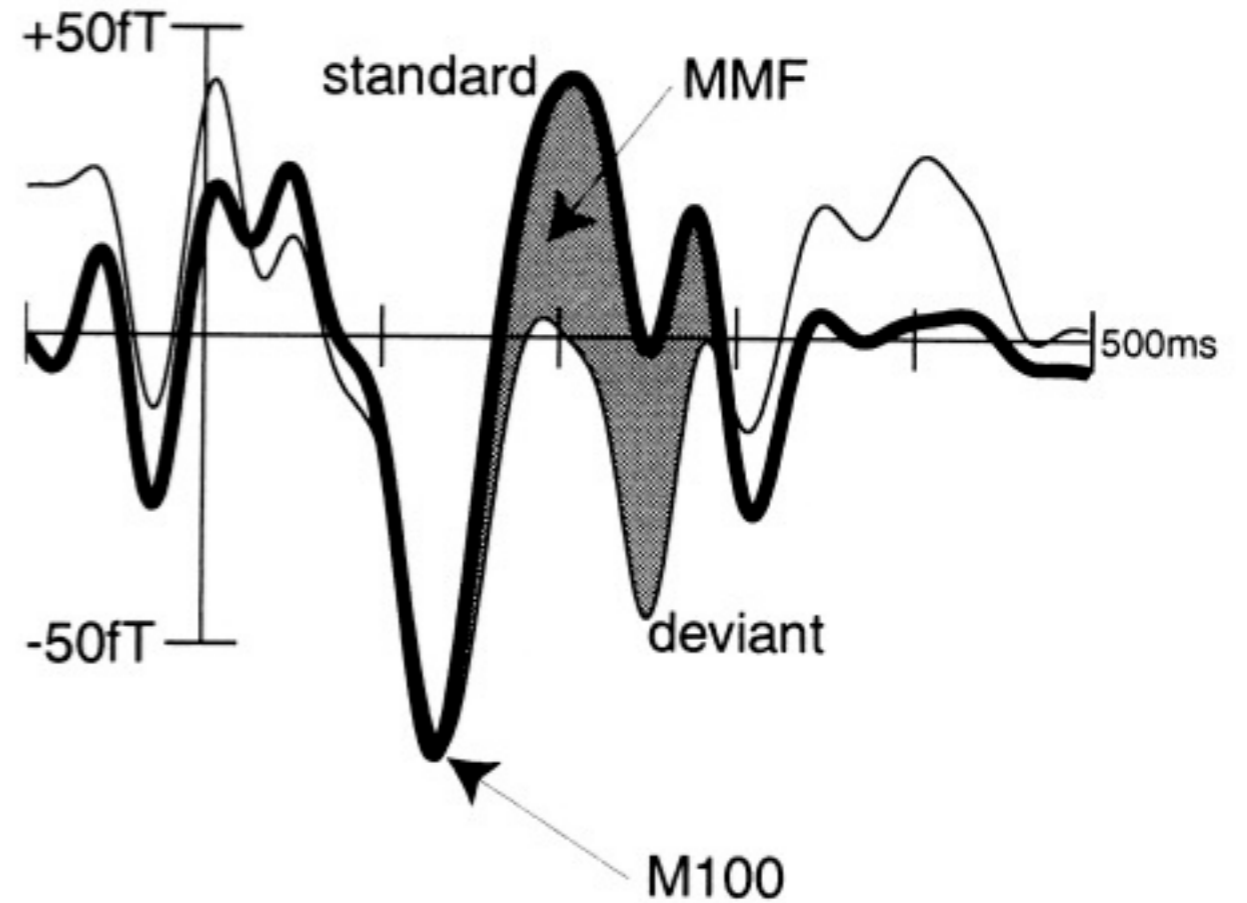


Basic Question

- when and how does the initial acoustic information become **linguistic** information?



EEG: MMN



MEG: MMF