

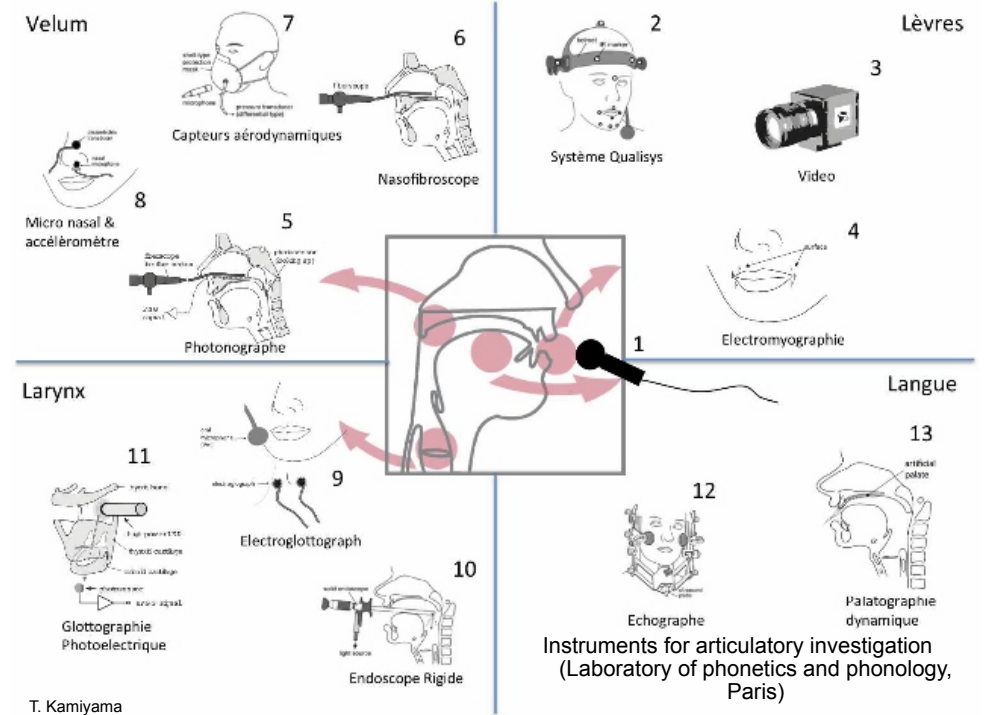
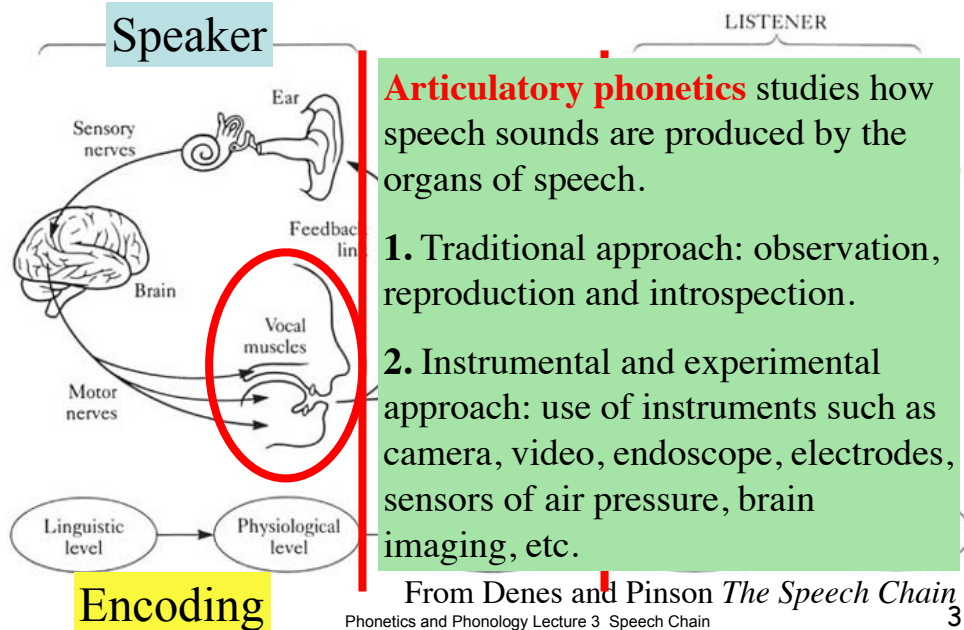
# English Phonetics and Phonology

## Lecture 3 The Speech Chain (cont'd)

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## 2. Phases of the Speech Chain and branches of phonetics

### Branches of phonetics



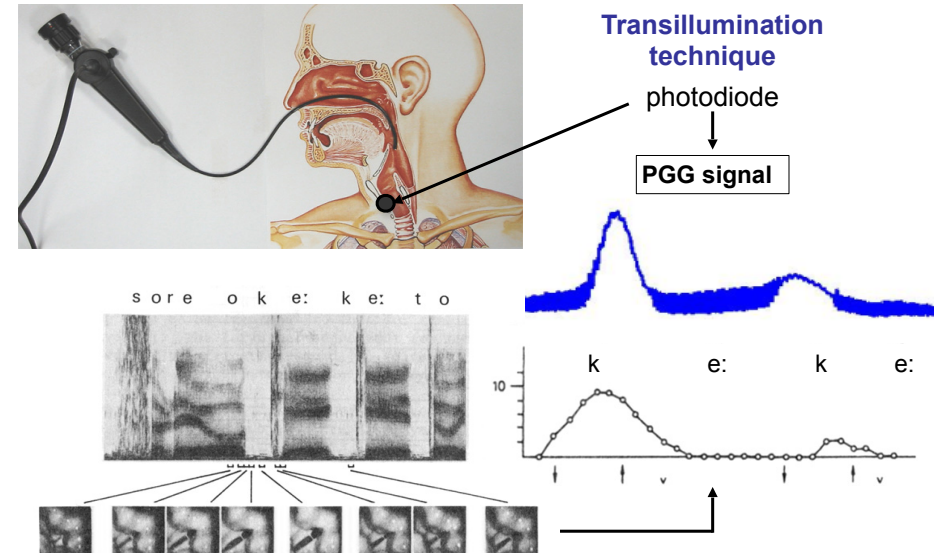
# Ultrasound imaging (ecography)



Queen Margaret University, Edinburgh  
[http://www.qmu.ac.uk/casl/ultra/subjectinfo\\_ESRC\\_2007\\_2008.htm](http://www.qmu.ac.uk/casl/ultra/subjectinfo_ESRC_2007_2008.htm)

# What is PGG?

Sawashima & Hirose (1981), In *Vocal Fold Physiology*

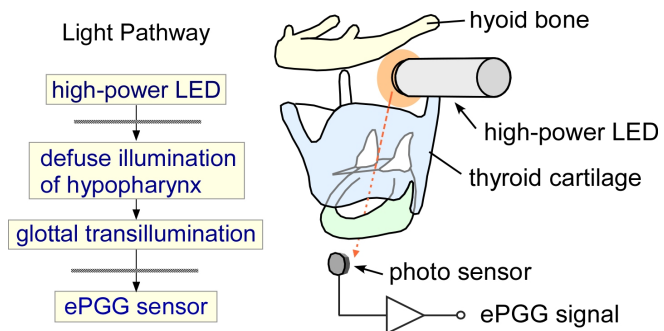


# New development?: ePGG

Honda & Maeda

## External lighting and sensing PGG (ePGG)

The ePGG sensor detects transillumination from a high-power LED placed on the neck skin.

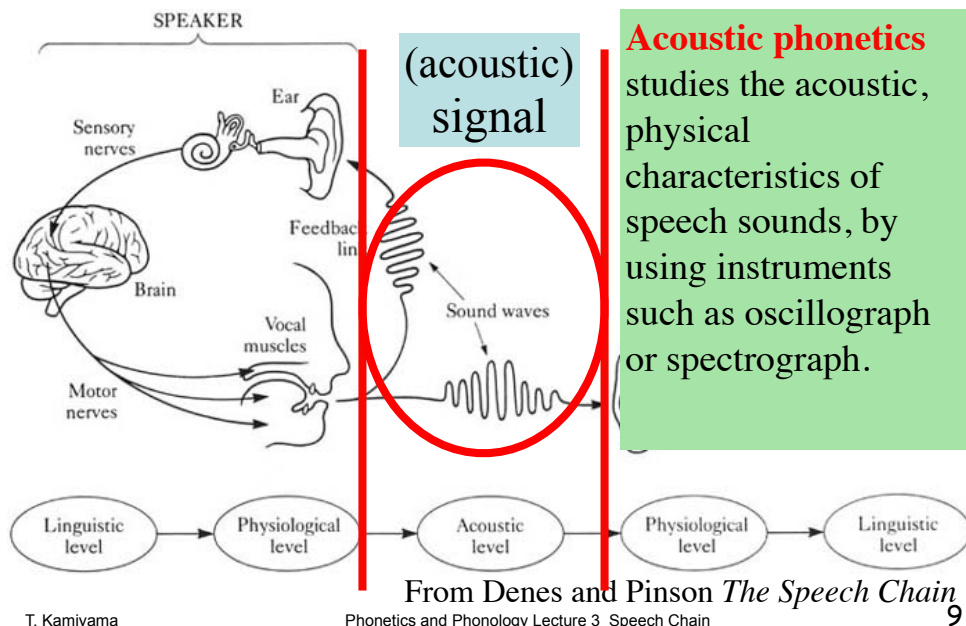


**Non-invasive method**

# Very experimental ePGG + Airflow + Pio setup



## Branches of phonetics

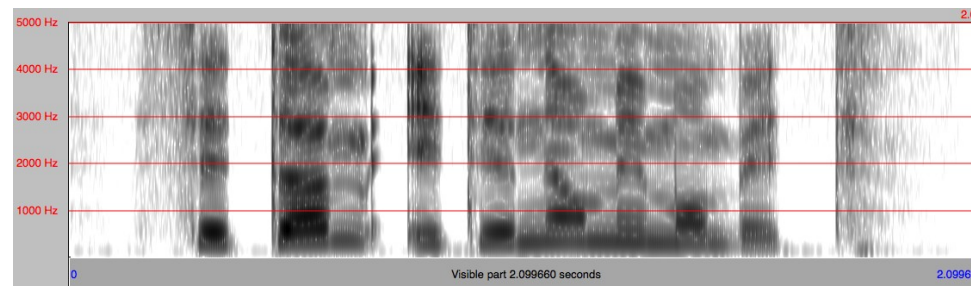


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## Sound spectrogram (or sonagram, sonogram)



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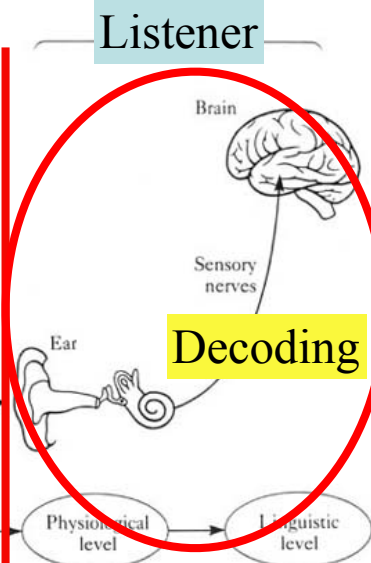
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## Branches of phonetics

**Auditory phonetics** studies how listeners decode and understand speech sounds.

1. Psycholinguistic approach: analysis of the behaviour (task of choice, judgement, etc.) in response to speech sounds, or synthesised sounds.

2. Neuroscience approach: direct observation of the brain by brain images obtained by MRI, EEG, etc.



From Denes and Pinson *The Speech Chain*

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## Perception test

- Identification test
- Discrimination test

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