

# Introduction to Linguistics:

## Phonetics: realising sounds

Dafydd Gibbon

B.A. British And American Studies  
Basic Module 2

Winter Semester 2006/2007

[Class Website](#)

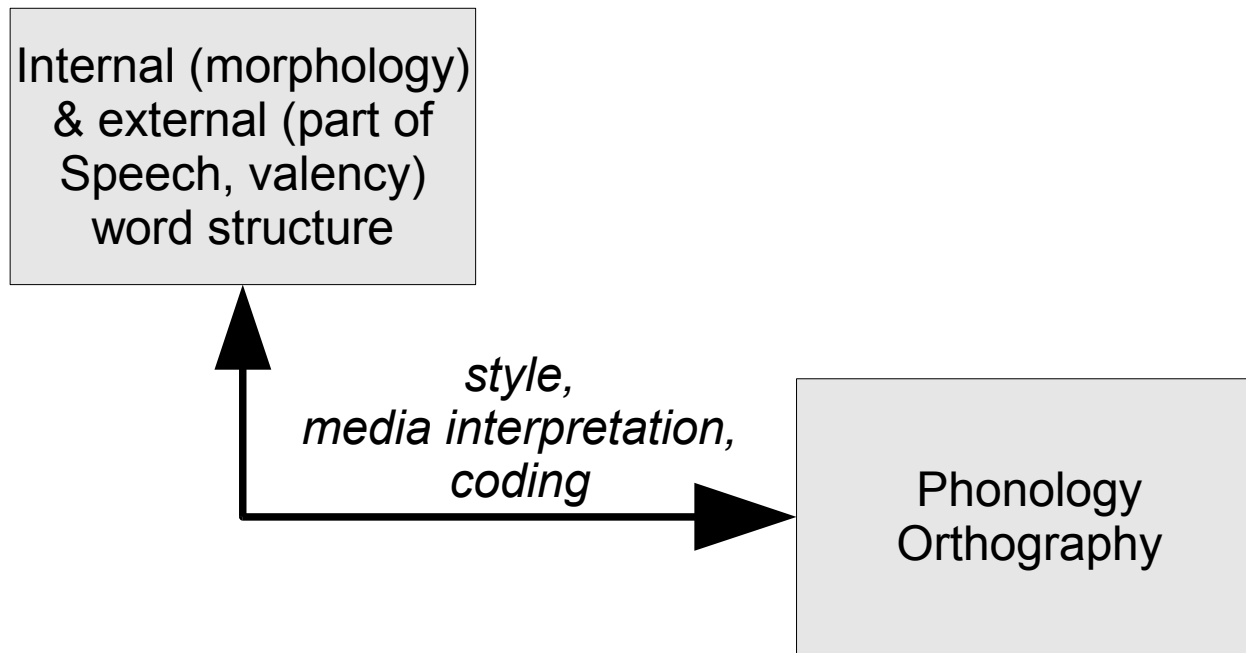
**PHONETICS:**

**THE WORLD OF SPEECH SOUNDS**

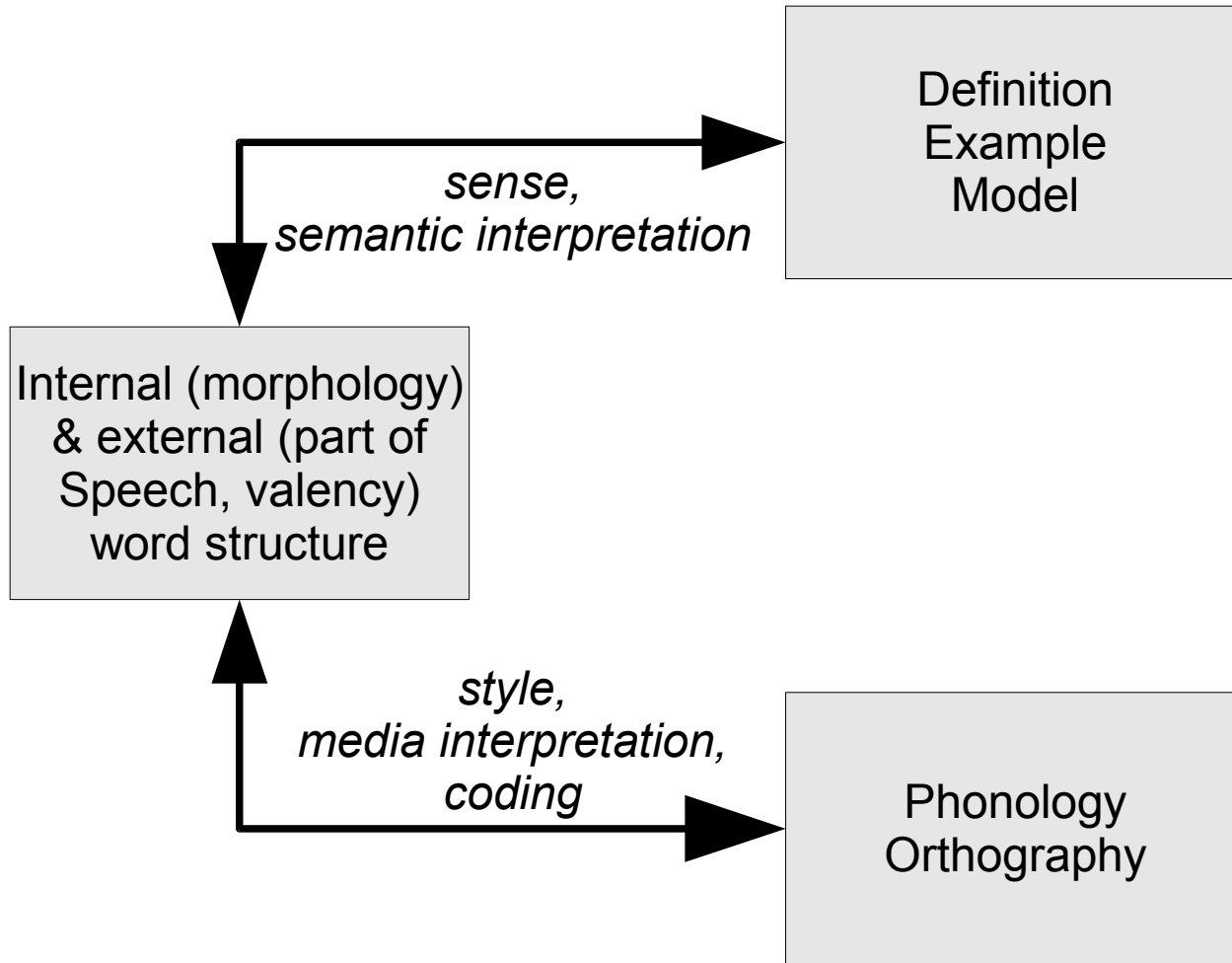
# Words, stems, etc. are SIGNS

Internal (morphology)  
& external (part of  
Speech, valency)  
word structure

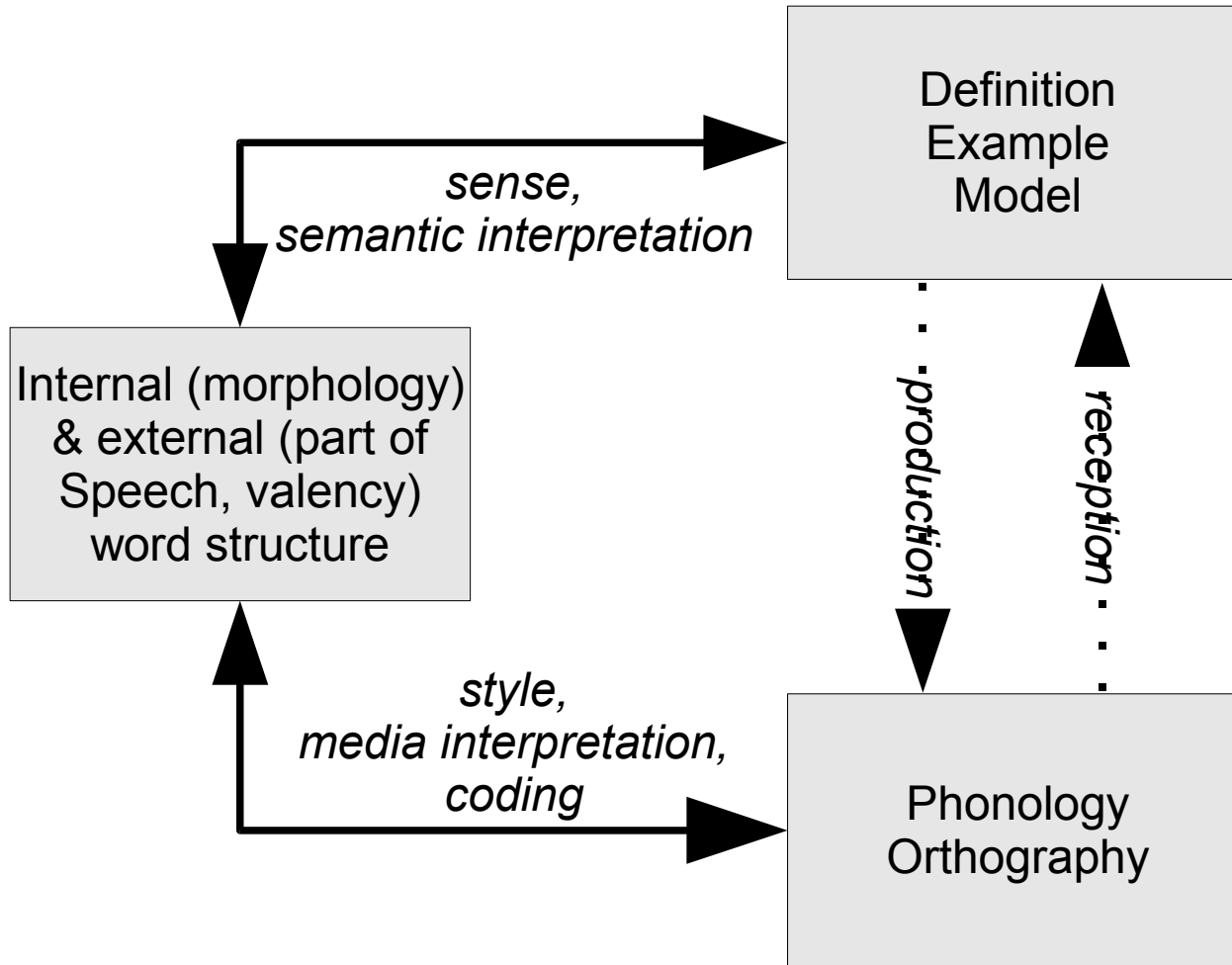
# Words, stems, etc. are SIGNS



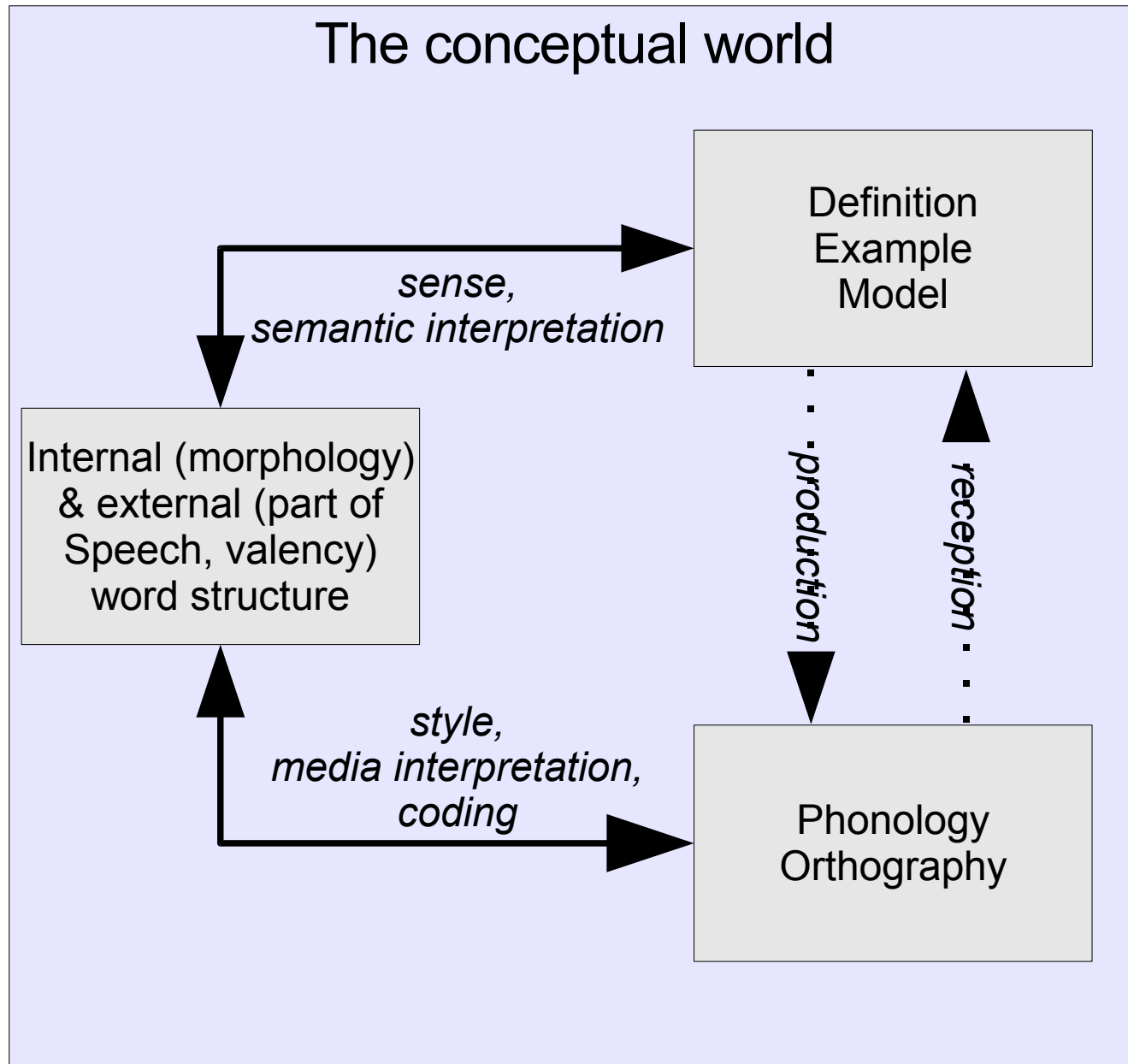
# Words, stems, etc. are SIGNS



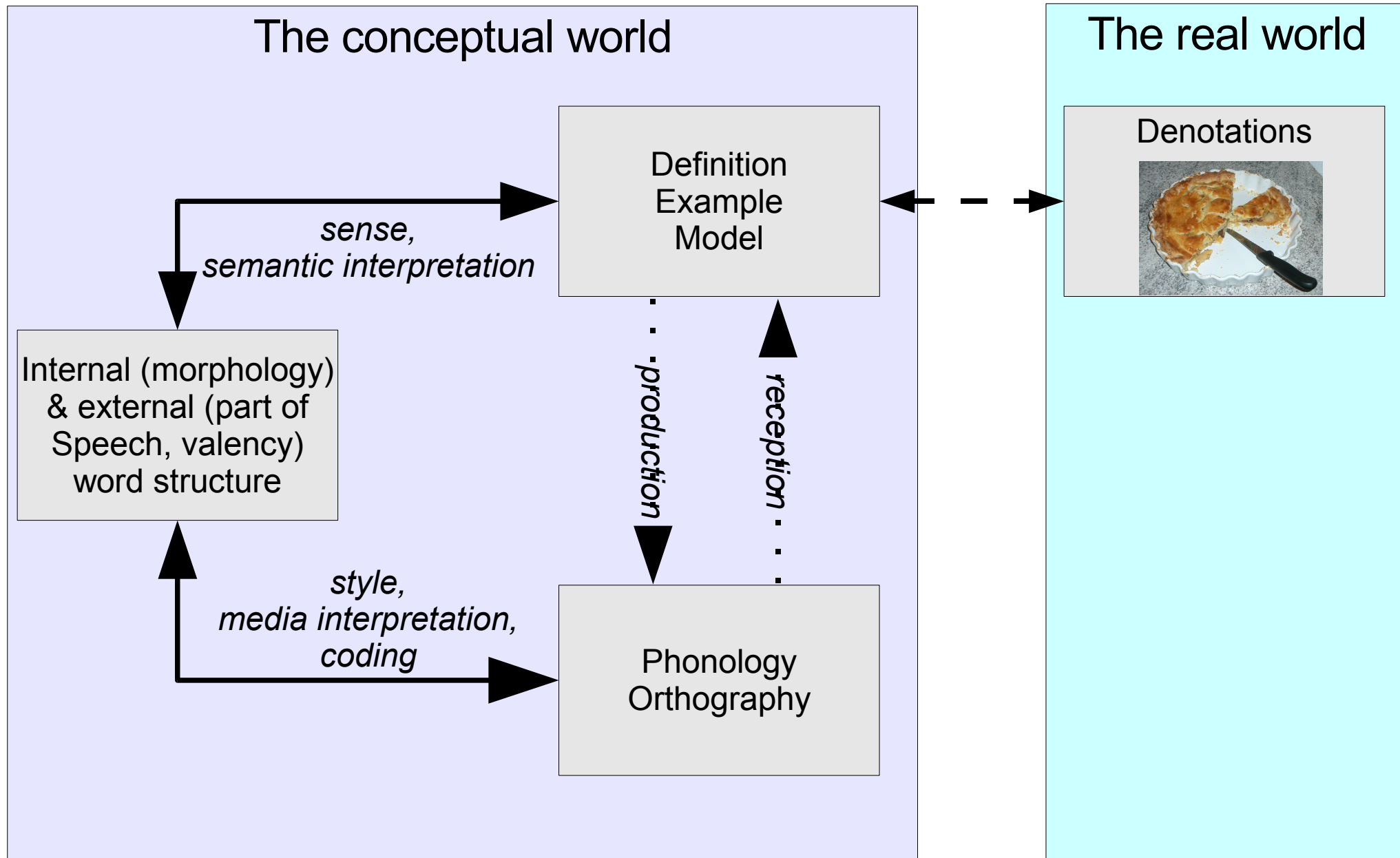
# Words, stems, etc. are SIGNS



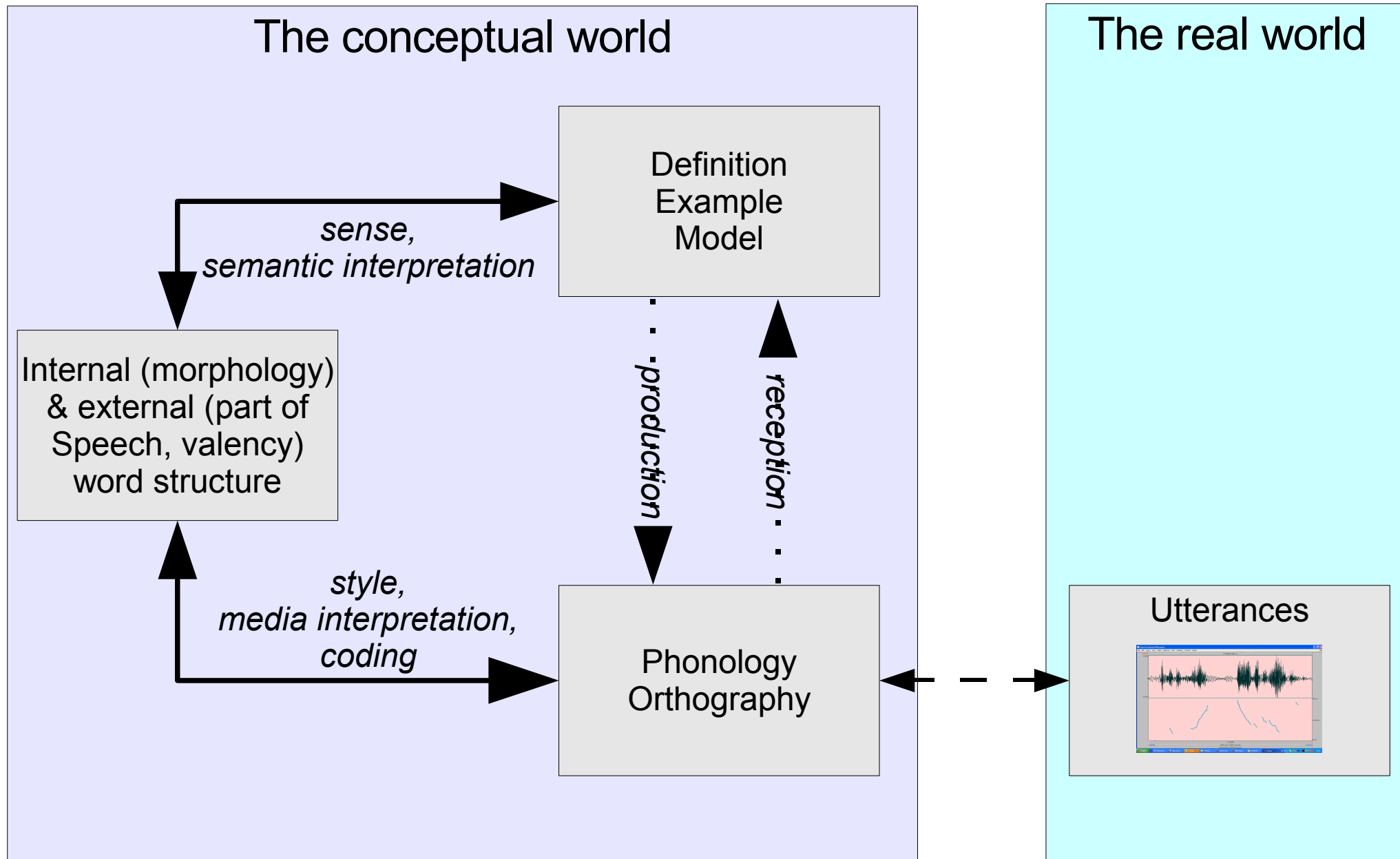
# Words, stems, etc. are SIGNS



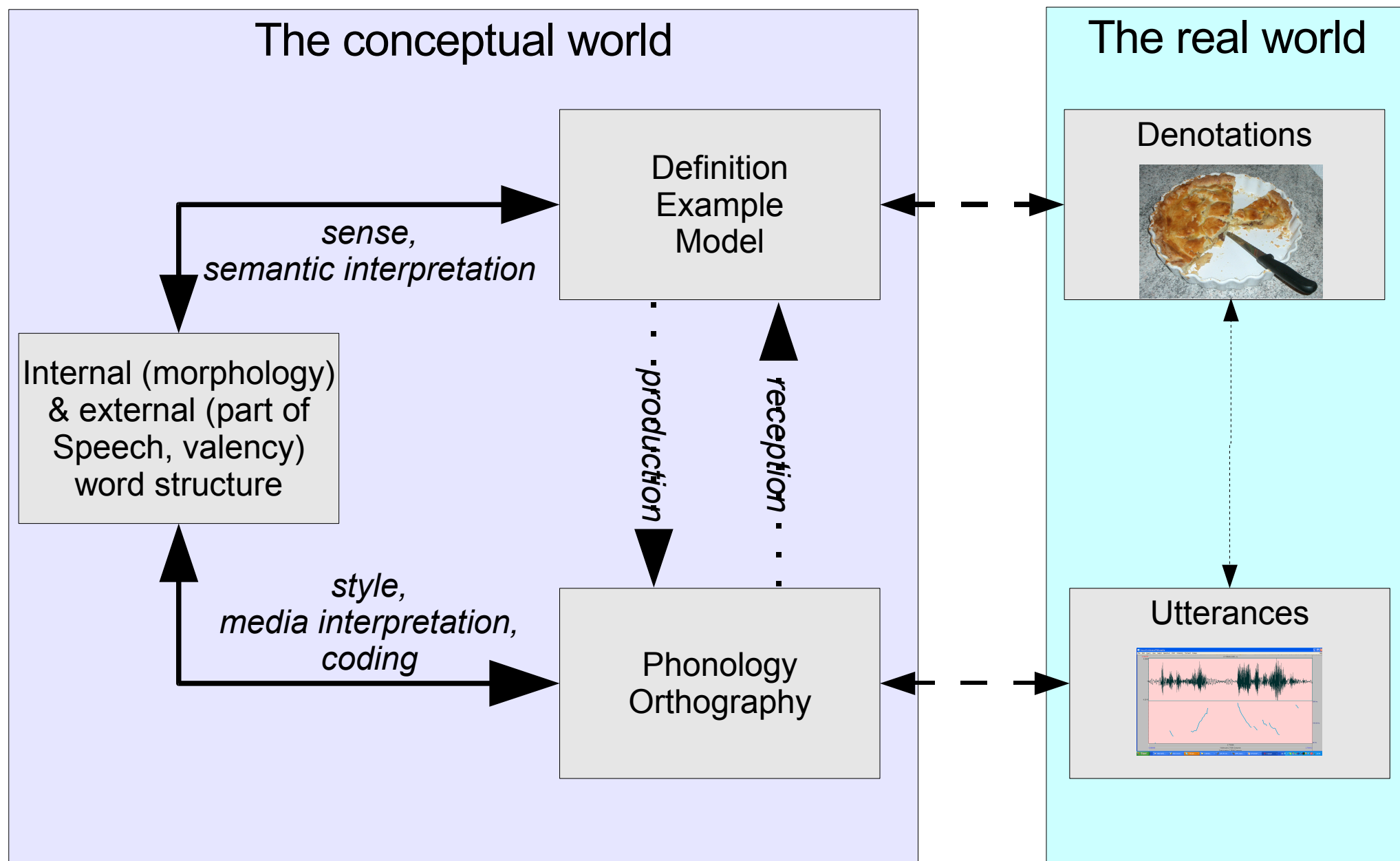
# Words, stems, etc. are SIGNS



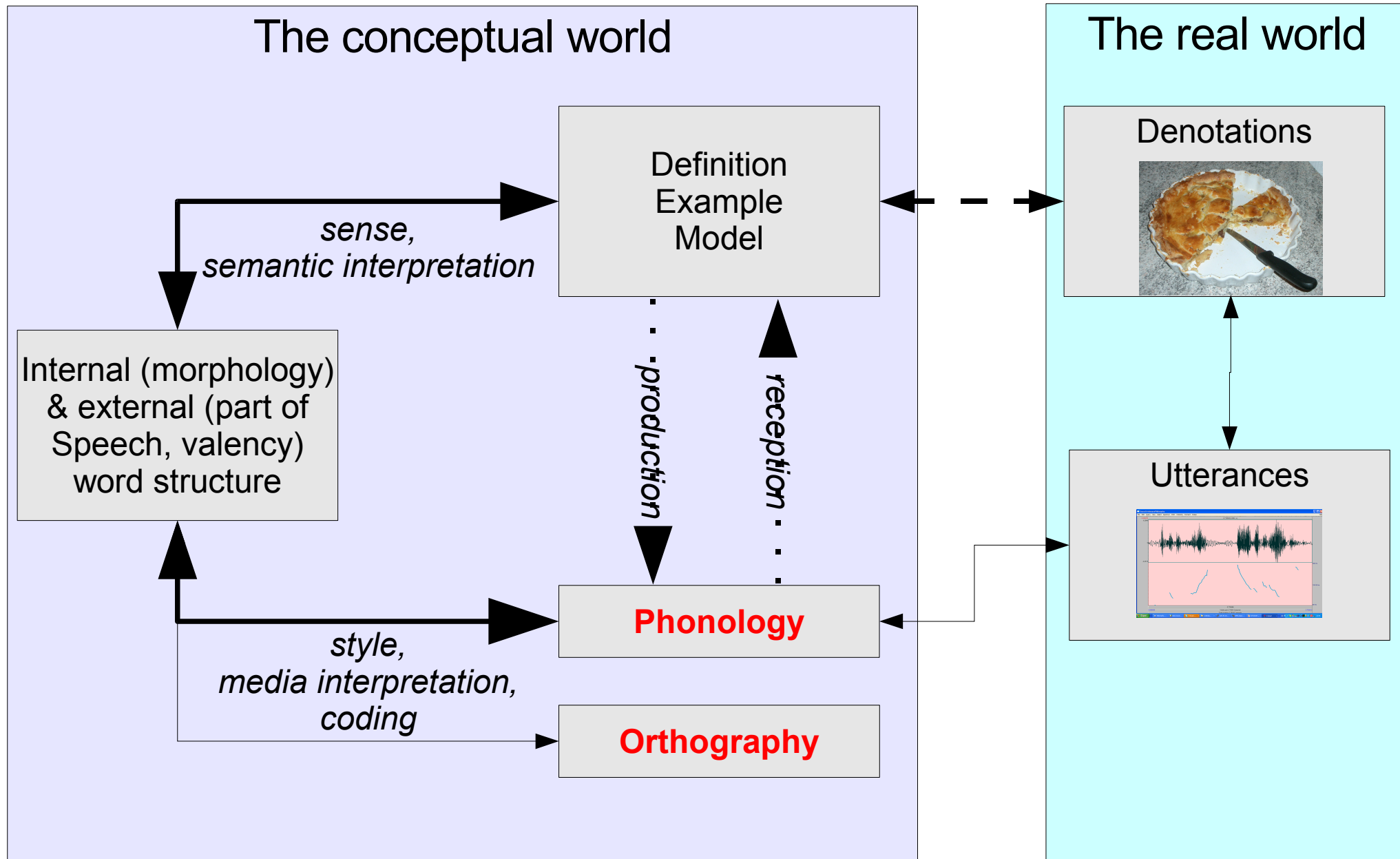
# Words, stems, etc. are SIGNS



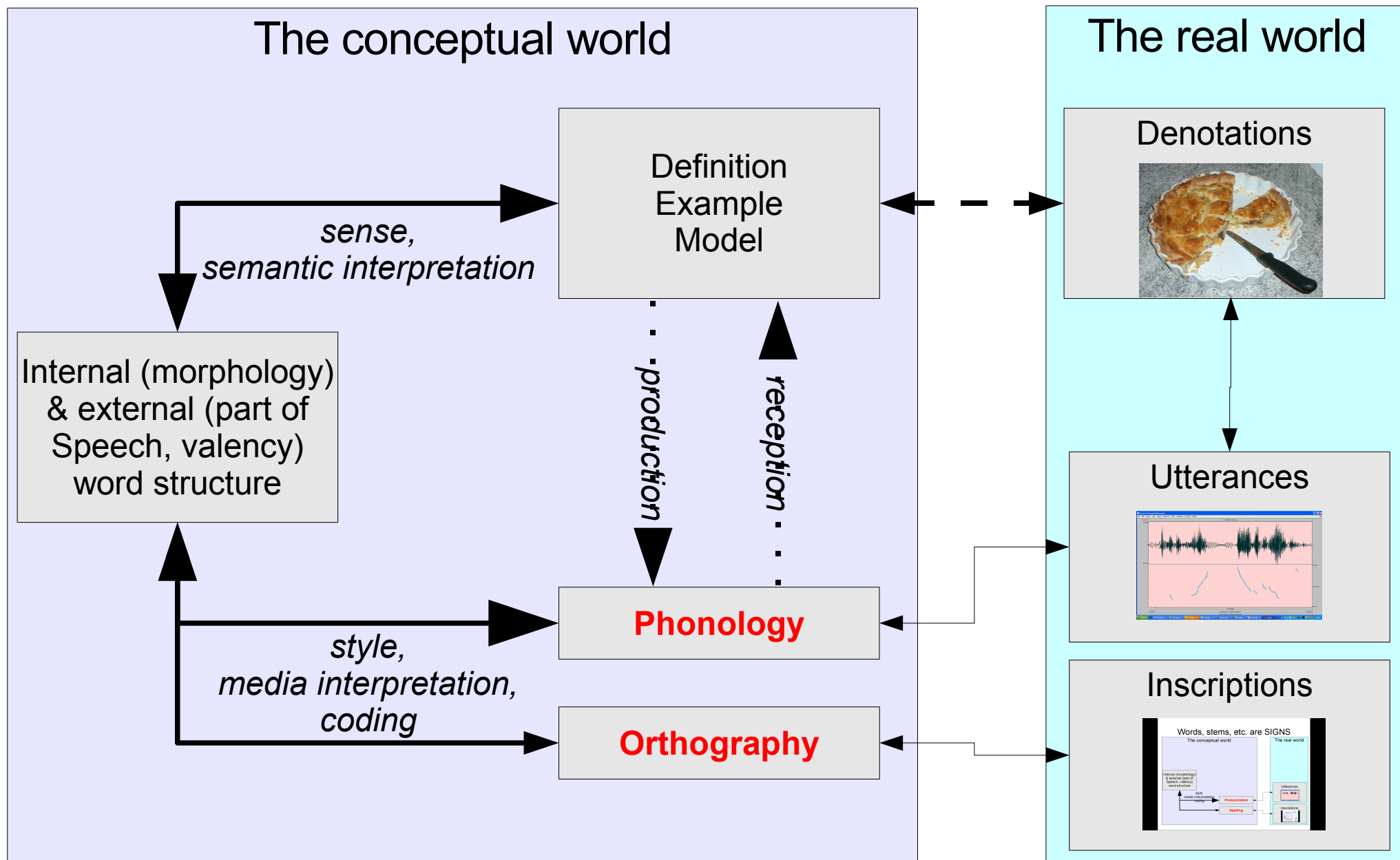
# Words, stems, etc. are SIGNS



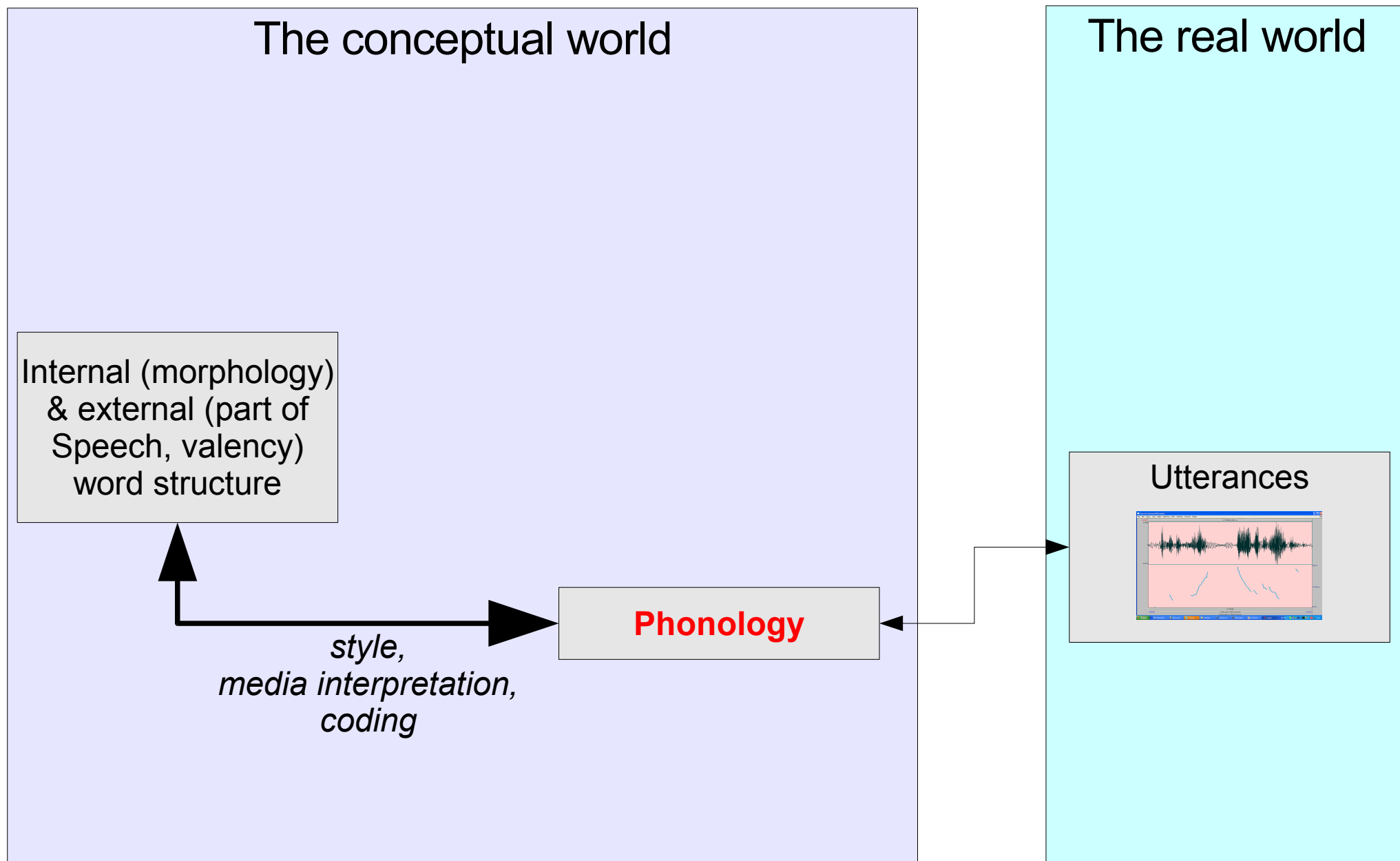
# Words, stems, etc. are SIGNS



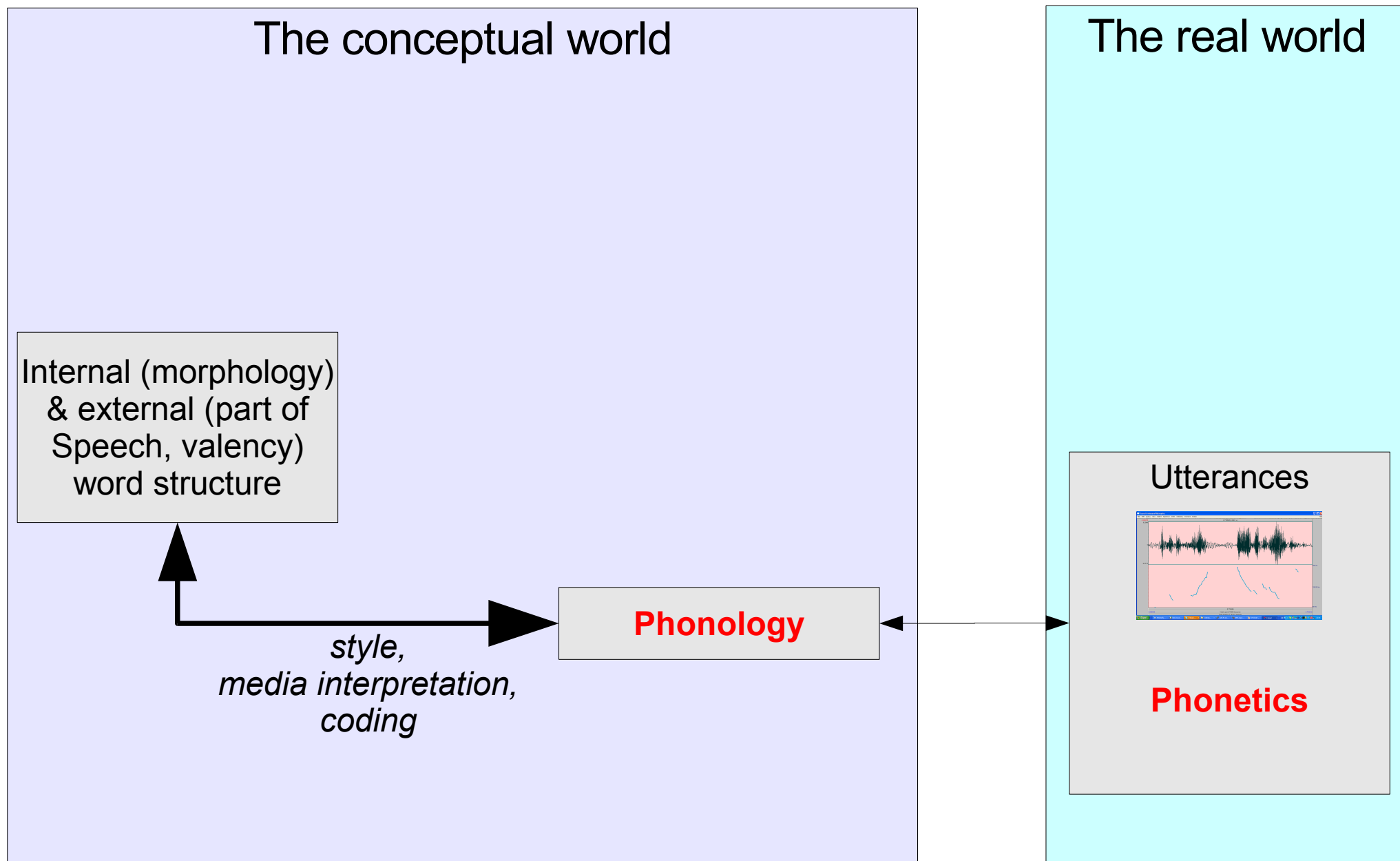
# Words, stems, etc. are SIGNS



# Words, stems, etc. are SIGNS



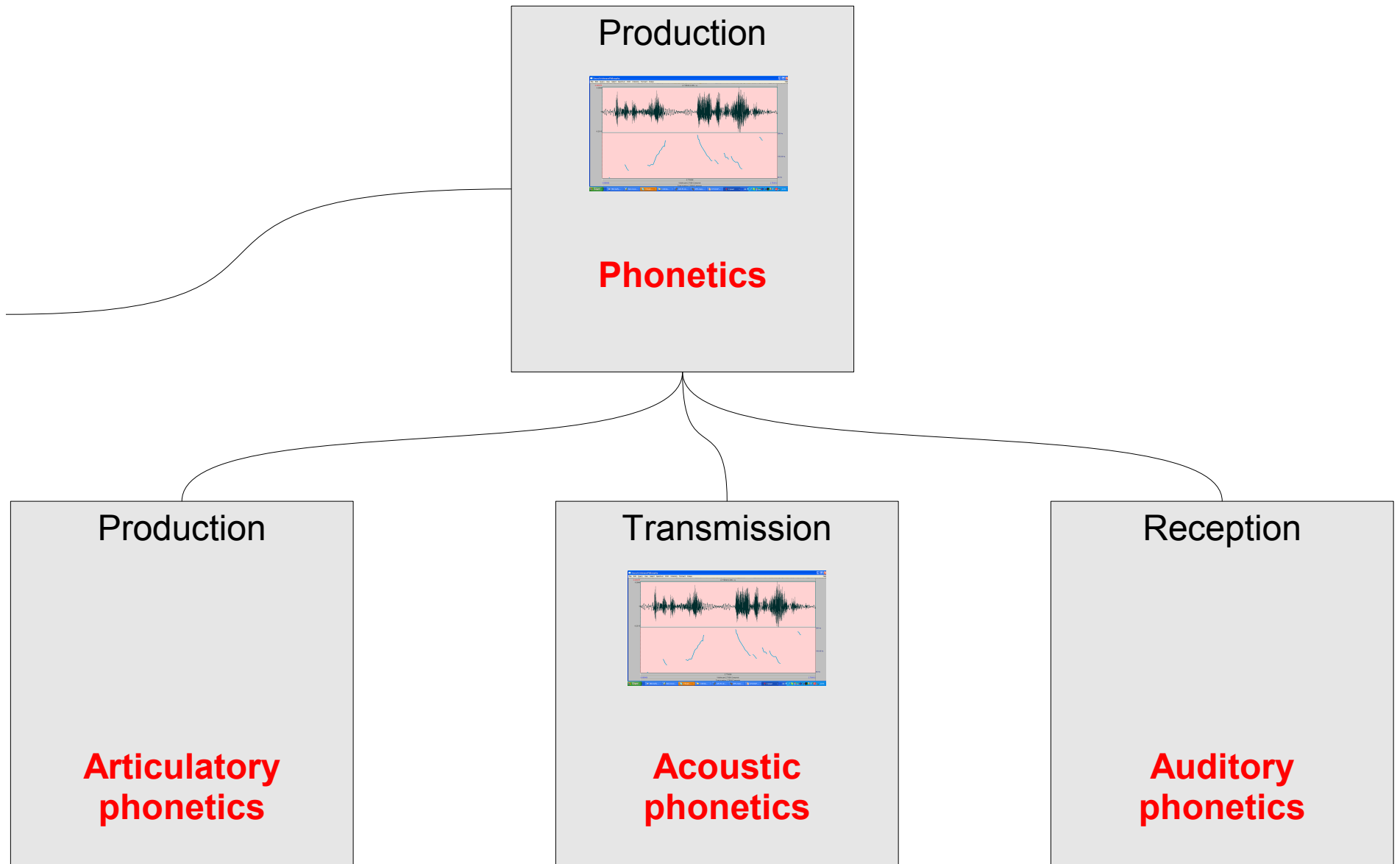
# Words, stems, etc. are SIGNS



# SPEECH

*production*  
*transmission*  
*perception*

# The domains of phonetics



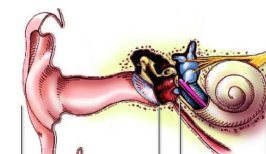
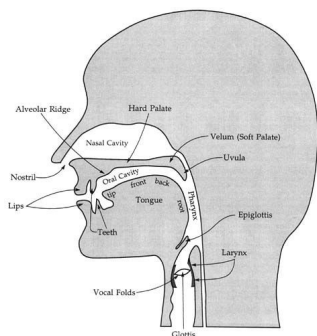
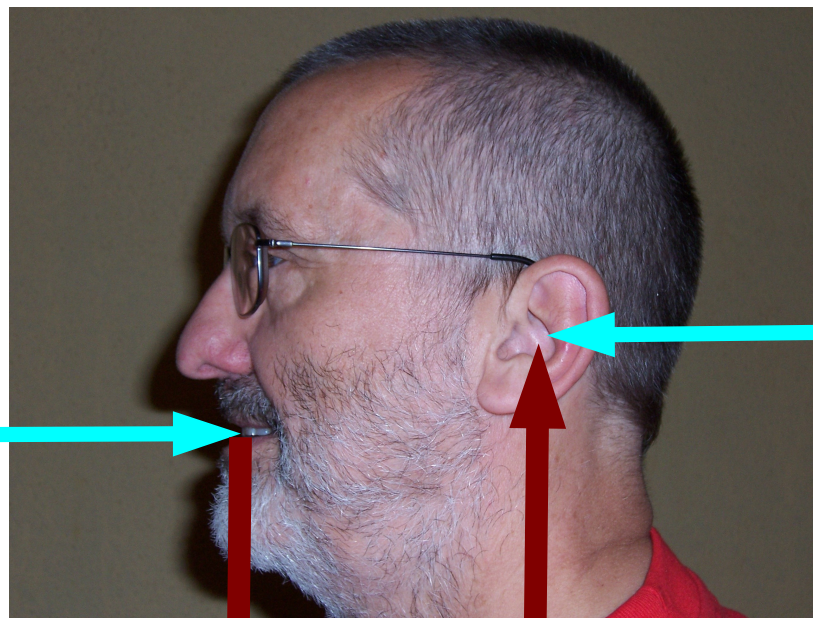
# Phonetic domains: the Phonetic Cycle

- The Articulatory Domain
  - The IPA (A = Alphabet / Association)
  - The Source-Filter Model of Speech Production
- The Acoustic Domain
  - The Speech Wave-Form
  - Basic Speech Signal Parameters
  - The Time Domain: the Speech Wave-Form
  - The Frequency Domain: simple & complex signals
    - Fourier Analysis: the Spectrum
    - Pitch extraction
  - Analog-to-Digital (A/D) Conversion
- The Auditory Domain: Anatomy of the Ear

# Phonetic domains: the Phonetic Cycle

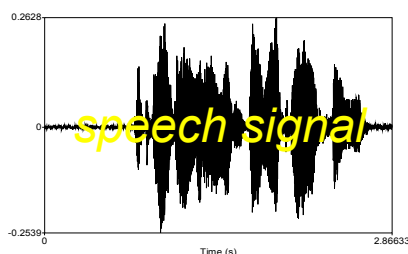
Articulatory Phonetics

Auditory Phonetics



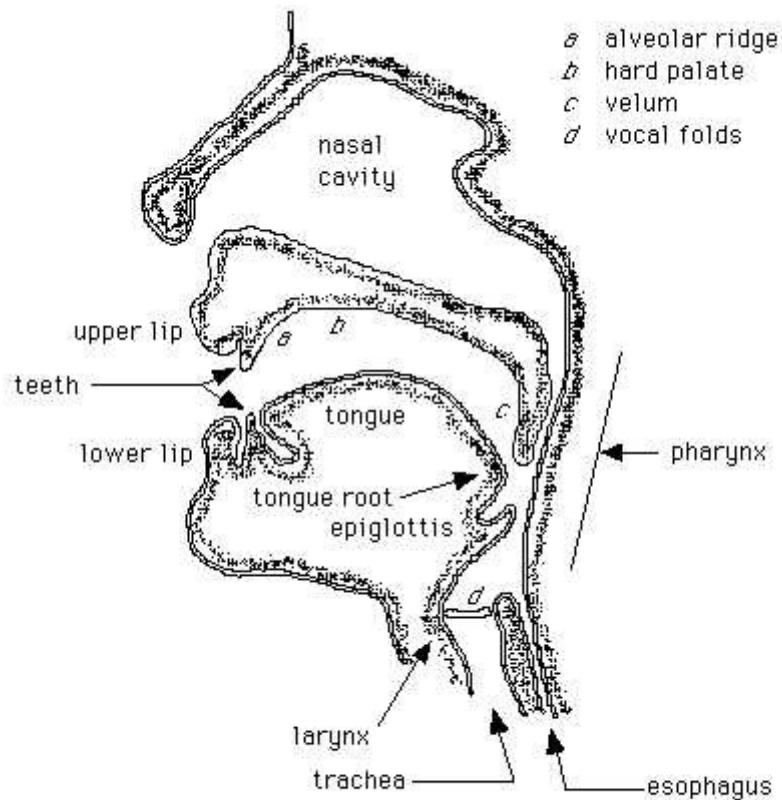
**A tiger and a mouse were walking in a field...**

Acoustic Phonetics

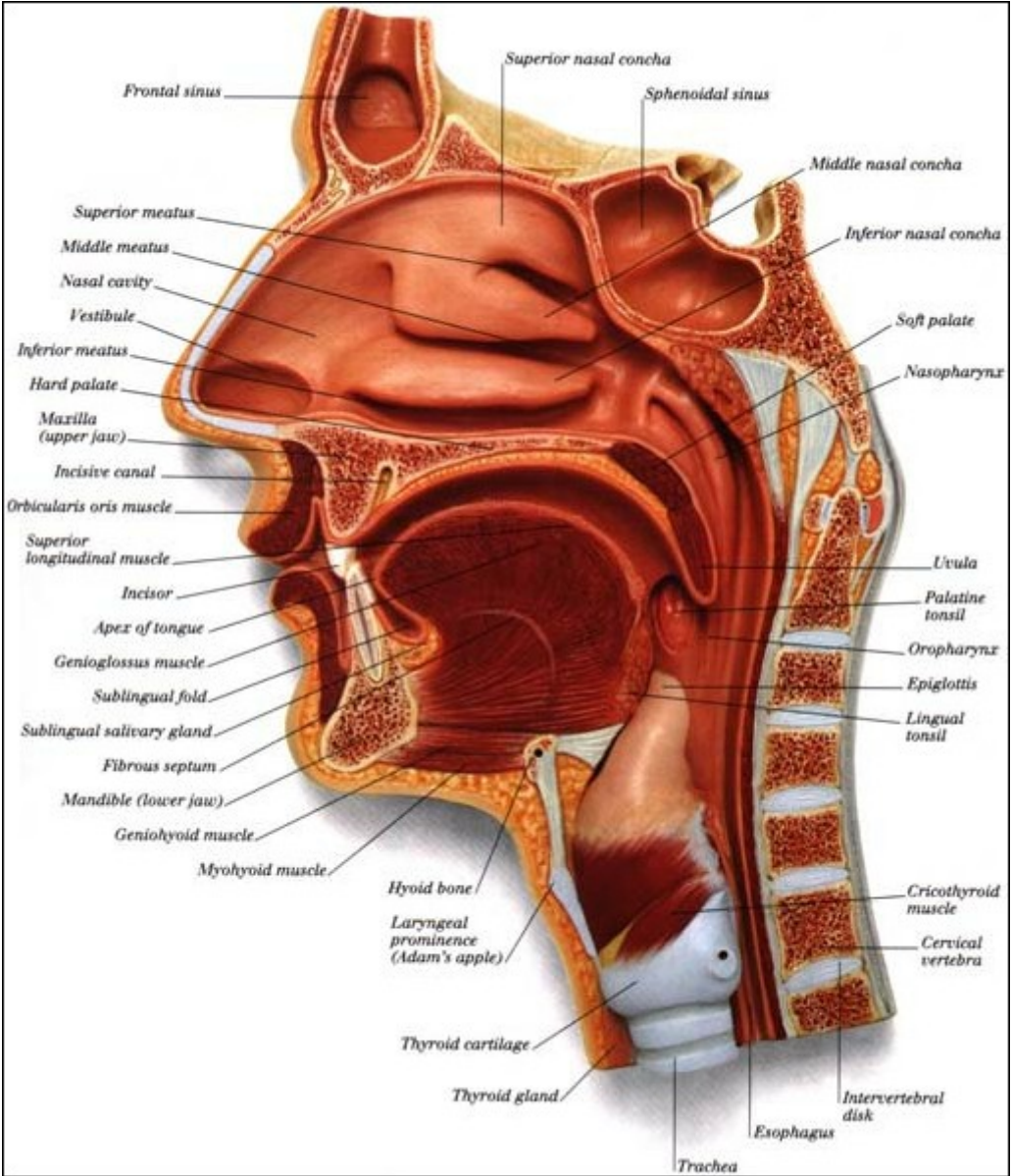
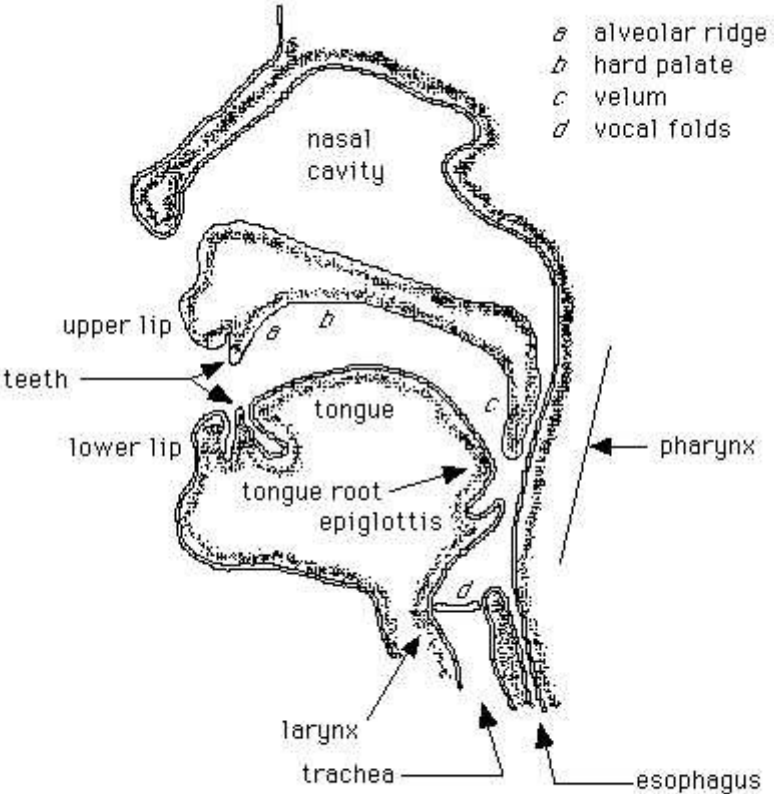


# ARTICULATORY PHONETICS

# Midsaggital section of the head



# Midsaggital section of the head



# The articulatory organs

- The articulatory organs:
  - Lungs
  - Vocal cords in the larynx (Adam's Apple)
- Positions:
  - Uvula
    - with back of tongue
  - Pharynx
    - with velum (nasals)
  - Velum (soft palate)
    - contact with tongue: velars
  - Palate (hard palate)
    - with tongue
  - Alveolar ridge
- Positions (continued):
  - Upper teeth
    - with tongue
    - with lower lip
  - Upper lip
    - with lower lip
    - perhaps with tongue

Midsaggital Section

Sagittal section

# Description of sounds: two levels

- For general pronunciation representation in the lexicon:
  - *phonemic transcription*
  - just enough phonetic detail to distinguish words
- For detailed representation of speech pronunciation:
  - *phonetic transcription* based on
    - articulatory phonetics (about speech production)

**Interactive Sagittal Section**

**IPA Chart      IPA fonts**

**Transcription systems for English**

- remember the other dimensions of speech description:
  - acoustic phonetics (about speech wave transmission)
  - auditory phonetics (about speech perception)

# ACOUSTIC PHONETICS (next week)

# HOMEWORK

# Articulatory phonetics tasks

- Take a look at the model on the Interactive Sagittal Section website and
  - practice with it to get used to the different combinations of active and passive articulators
  - pronounce all the sounds you form with the website, observing the movements of your articulatory organs

See you next week!