Introduction to General Linguistics

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Phonetics & Phonology

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organizational issues

lecture

fridays, 8:30-10:00

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room 1.19, Wilhelmstr. 19
office hours: tuesdays, 1pm - 2pm
organizational issues

schedule

22.10. introduction
29.10. articulatory phonetics: anatomy & physiology
05.11. articulatory phonetics: consonants
12.11. articulatory phonetics: vowels & complex articulation
19.11. phonology: basic concepts of generative phonology
26.11. phonology: phonological processes
03.12. phonology: distinctive features
10.12. phonology: distinctive features & rule ordering
17.12. autosegmental phonology: tone
14.01. autosegmental phonology: syllables
21.01. autosegmental phonology: metrical phonology & prosody
28.01. review session
04.02. exam
organizational issues

literature


Hall, Tracy Alan (2000), Phonologie. Eine Einführung. de Gruyter.


Pompino-Marschall, Bernd (2003), Einführung in die Phonetik. 2. Auflage, de Gruyter.
phonetics & phonology

What's that?

from the Greek φωνή (phōnē), meaning „sound“.

humans produce all different kinds of „sound“, e.g. by coughing, sighing, snoring, grunting, etc.

phonetics & phonology are only concerned with the analysis of the sounds that are used for speech.
phonetics & phonology

as part of general linguistics

- pragmatics
- semantics
- syntax
- morphology
- phonetics & phonology
- language use
- meaning
- sentences
- words
- speech sounds
phonetics

...is concerned with the physical aspects of speech sounds

this includes aspects of anatomy and physiology of speech production

in particular

phonetics investigates these aspects of speech sounds across languages and is not restricted to particular languages
phonetics

articulatory vs. acoustic vs. auditory/perceptual

a simple model of communication
articulatory phonetics

investigates how the various organs of speech are used to produce speech sounds.

comprises aspects of respiration (airstream process), matters of voice (phonation process) and articulation (in the strict sense).

acoustic phonetics

is concerned with speech as sound, i.e. sound waves, propagation of sound, frequency components in sound waves, ...

auditory/perceptual phonetics

looks at aspects of hearing and perceiving speech.
phonetics

articulatory phonetic — an example

by uttering the first consonant 't' in „two“...

air flows out of the lungs; through the larynx passing the non-vibrating vocal folds; into the pharynx and the oral tract (due to a velic closure); to a complete closure formed by contact of the tongue tip and the alveolar region, which is rapidly released causing the air to „burst“ out.

i.e. this sound is an egressive pulmonic voiceless apico-alveolar stop
phonology

is concerned with the organization of speech within a specific language.

describes the systems and patterns of sounds that occur in a specific language.

• Which sounds serve distinct functions/make a difference in meaning?

• What are the regularities in speech production?
phonology

example of „making a difference in meaning“:

in German, interchanging the sound corresponding to „t“ and the sound corresponding to „p“ makes a difference in meaning:

Taste vs. Paste Matte vs. Mappe

in German, interchanging the sound corresponding to „t“ and its aspirated version does not make a difference, e.g. in Tal

in Hindi, aspiration does make a difference:

unaspirated \([\text{tal}]\) means: to beat

aspirated \([\text{th}al]\) means: plate

as we will see in a minute, it is nonsense to say this, as orthography and sound never coincide perfectly - but for the moment it is good enough
phonology

example of a regularity:

in German, written „ch“ is pronounced differently depending on the preceding vowel:

schech vs. schoch

in English (usually, at least), the „normal“ „l“ sound is changed to „dark l“ (i.e. its velarized variant) before a consonant and word-finally

leaf vs. feel
areas of application

speech pathology
    investigation and therapy of speech disorders

computational linguistics/speech technology
    speech recognition, text-to-speech-systems

second language learning
    proper pronunciation of foreign words

speech training
    improving clarity of speech (e.g. actors, newsreader)
IPA

International Phonetic Association / Alphabet

to be able to talk about speech sounds in a formally clean and precise way, special symbols must be used and certain conventions must be followed

the alphabet of the International Phonetic Association (founded 1886 in Paris) provides a collection of such symbols

IPA is the common abbreviation for both: International Phonetic Association/Alphabet

the IPA comprises partially changed/rotated Latin and Greek letters, newly invented symbols and a collection of diacritics
IPA

International Phonetic Association / Alphabet

diagrams do not occur alone but are always combined with other symbols to indicate a change of some aspect, as in ß

you will get to know various IPA symbols in the course of this lecture as we proceed
written language vs. speech

due to our education in writing in primary school, we were taught to rather care for letters than sounds.

hence one may be inclined to think that an utterance of the German „Ruhe“ consists of four sounds: 'R', 'u', 'h', and finally 'e'.

that's quite wrong, however, since there is no sound that corresponds to the 'h'.

therefore: written and spoken language are quite dissimilar (even in German where the folk wisdom is that „things are written the same way they are spoken“)
written language vs. speech

instead of the term speech sound one often finds the term segment (or phon in the German literature)

convention:
phonetic symbols (i.e. the phonetic form/representation) are enclosed by square brackets
orthographic representations are displayed with angle brackets

Examples:

\(<\text{groß}>\) \quad [\text{groːs}] \\
\(<\text{mich}>\) \quad [\text{miç}]
written language vs. speech

correspondence letter ⇔ sound

There are several possibilities in which way letters and sounds may correspond.

<table>
<thead>
<tr>
<th></th>
<th>correspondence letter ⇔ sound</th>
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| Homography          | L    ← S1
                     |      S2                     |
| Heterography        | L1   ← S
                     | L2                          |
| ger. „Haplographie“ | L    ← S1S2                  |
| ger. „Plurigraphie“ | L1L2(L3) ← S                 |
written language vs. speech

correspondence letter $\Leftrightarrow$ sound

<table>
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<tr>
<th>Homography</th>
<th>correspondence letter $\Leftrightarrow$ sound</th>
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<td>L $\leftrightarrow$ S1 $\rightarrow$ S2</td>
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<th>&lt;Vater&gt;</th>
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<td>&lt;Gebet&gt;</td>
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written language vs. speech

correspondence letter ⇔ sound

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<th>Heterography</th>
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<td>&lt;fiel&gt;, &lt;Ferse&gt;</td>
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<td>&lt;viel&gt;, &lt;Verse&gt;</td>
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### written language vs. speech

**correspondence letter ↔ sound**

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<tr>
<th>(Haplography)</th>
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<tr>
<td>L</td>
<td>S1S2</td>
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<th>&lt;Zeit&gt;</th>
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### written language vs. speech

**correspondence letter ↔ sound**

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<th>(Plurigraphie)</th>
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<td>L1L2(L3)</td>
<td>S</td>
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<th>&lt;nichts&gt;, &lt;schlecht&gt;</th>
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<td>&lt;nachts&gt;, &lt;Schlucht&gt;</td>
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<td>&lt;Graph&gt;, &lt;Telephon&gt;</td>
<td>[f]</td>
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<td>&lt;Liebe&gt;, &lt;viel&gt;</td>
<td>[i:]</td>
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<td>&lt;Ruhe&gt;, &lt;Uhr&gt;</td>
<td>[u:]</td>
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<tr>
<td>&lt;Schlamm&gt;, &lt;Asche&gt;</td>
<td>[ʃ]</td>
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summary

phonetics & phonology are about the sounds of speech

phonetics is about the physical aspects, phonology about the functional aspects

phonetics can be subdivided in articulatory, acoustic und auditory

phonology is concerned with the functional aspects of speech

the international phonetic alphabet is used to describe speech sounds

orthography usually deviates in several aspects from speech