

Phonological Analysis of English Speech Sounds

- In connected speech a sound is generally modified by its phonetic environment (i.e. by the neighbouring sounds), by the position it occupies in a word or an utterance; it is also modified by prosodic features, such as stress, speech melody, and tempo of speech. For example:
- Compare \p\ in **pill, spill, slip, slipper.**

The Phoneme

- **The phoneme** may be defined as the smallest linguistically relevant unit of the sound structure of a given language which serves to distinguish one word from another. For example: **v**ine vs **w**ine; **v**eal vs **w**heel etc.

Allophones

- (or variants) of a certain phoneme are speech sounds which are realizations of one and the same phoneme and which, therefore, cannot distinguish words. Their articulatory and acoustic distinctions are conditioned by their position and their phonetic environment.
- Allophones of a phoneme which never occur in identical positions are said to be in **complementary distribution**. For example: **little** (a dark and clear allophone of /l/).

Allophones

- Allophones of a phoneme which do occur in the same phonetic position, but can never distinguish words, are said to be in **free variation**. For example: \t\ in “**Good night**” may be either a plosive or a non-plosive sound.

The Phoneme

- Is an abstraction and a generalization. It is abstracted from its variants that exist in actual speech and is characterized by features that are common to all its variants (e.g. \b\ is an occlusive, bilabial, lenis consonant, as these features are common to all its allophones).

The Phoneme

- Is material, real and objective, because in speech it is represented by concrete material sounds.
- The phoneme can therefore be regarded as a dialectical unity of its two aspects: the material and the abstracted aspects.

The Phoneme

- There exist other views of the phoneme:
- - an abstraction and deny its material character (the Prague Phonological School);
- - a family of sounds (D.Jones).

Modifications of Phonemes in Speech

- Every phoneme displays a vast range of variation in connected speech (**idiolectal** – the individual peculiarities of articulating sounds, **diaphonic** – affects the quality and quantity of particular phones, **and allophonic** – which is conditioned by phonetic position and phonetic environment.

Modifications of phonemes

- In every language there are positions in which the characteristic features of a phoneme are less obvious. Cf. \o□\ in “Oh!” \o□\, “So-so” \so□ so□\, “So late” \so leit| and “Not so late” \n□t s□ |leit\.
- English vowels are considerably modified in unstressed syllables: **reduction**; **accomodation**; **assimilation**.

The problems of phonological analysis

- 1) the identification of the phonemic inventory for each individual language;
- 2) the identification of the inventory of phonologically relevant features of a language;
- 3) the interrelationships among the phonemes of a language.

The Phonemic Inventory of English

- The **distributional** method is based on the phonological rule that different phonemes can freely occur in one and the same position, while allophones of one and the same phoneme occur in different positions and, therefore, cannot be phonologically opposed to each other. i.g. \p\ and \b\ can freely occur in the same phonetic context (**pea-bee**).

The Phonemic Inventory in English

- The **semiotic** method – a phoneme can distinguish words when opposed to another phoneme or zero in an identical phonetic position. The opposition \z\ vs \t\ is called a **phonological opposition**. The opposition \z\ vs \-\ is called a **zero phonological opposition**. The pairs of words which differ only in one speech sound are called **minimal pairs**.

The Phonemic Inventory

- To identify all the phonemes of a language is sometimes difficult:
- - the problem is whether there is a schwa vowel $\text{\text{[ə]}}$ phoneme in English/ E.g. $\text{\text{[ə]}}$ vs $\text{\text{[i]}}$

The Phonemic Inventory

- Accept- except; \æ\ vs \oæ\ temper-tempo; \æ\ vs \æ:\
forward-foreword.
- -there are controversial views on whether \j\ and \w\ in English are allophones of \i\ and \u\ or they are separate phonemes (yell-well, yet-met).

The phonemic inventory

- The sounds \t□\, \d□\, \tr\, \dr\, \ts\, \dz\ form phonological oppositions and distinguish such words as **eat-each**, **head-hedge**, **tie-try**, **buzz-buds**. But does that mean that all of them monophonemic and should be included into the phonemic inventory?

The phonemic inventory

- Phonemes $\text{\textit{t}\text{̥}}$ and $\text{\textit{d}\text{̥}}$ are produced by one articulatory effort and their duration does not exceed the duration of either $\text{\textit{t}}$ or $\text{\textit{d}}$ (tear-share).
- $\text{\textit{ts}}$, $\text{\textit{tz}}$ are biphonemic combinations as their duration exceeds the average duration of either $\text{\textit{t}}$, $\text{\textit{d}}$, $\text{\textit{s}}$ or $\text{\textit{z}}$.

The phonemic inventory

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