

Phonology

The sound pattern of English.

Phonetics versus Phonology

Phonetics is the study of human sounds and **phonology** is the classification of the sounds within the system of a particular language or languages.

Phonetics deals with the production of speech sounds by humans.

Phonology is about patterns of sounds, especially different patterns of sounds in different languages, or within each language etc.

Phonology

-the study how speech sounds form patterns

It can be easy (velar nasal [ŋ] cannot begin a syllable in English),

It can be complex (*g* is silent in a word *sign*, but is pronounced in a word *signature*),

Phonology refers to:

- the linguistic knowledge that speakers have about the sound patterns of the particular language,
- the description of the knowledge.

Phonology tells you what sounds are in your language and which ones are foreign.

It says what combinations of sounds could be an actual word, whether it is (*black*) or isn't (*blick*), and what combination of sounds could not be an actual word (**lbick*).

It explains why certain phonetic features are crucial to identifying a word, for example voicing in English as in *pat* versus *bat*, while other features, such as aspiration in English, are not vital to identifying a word.

It also allows us to adjust our pronunciation of a morpheme, for example the past or plural morpheme, to suit the different phonological contexts that it occurs in.

Because of this theoretical status, phonology is concerned with the abstract or mental aspect of the sounds in language rather than with the actual physical articulation of speech sounds.

When we think of the **[t]** sound in the words *tar, star, writer* as being 'the same'. It actually means that, in the phonology of English, they would be represented in the same way, but in actual speech, these [t] sounds are all very different.

All these articulation differences in [t] sounds are less important than the distinction between the [t] sounds in general and the [k] sounds, or the [f] sounds, or the [b] sounds,

because there are meaningful consequences related to the use of one rather than the others. Words such as *car*, *bar*, *tar* are meaningfully distinct.

Phonemes

Phoneme - the smallest unit of speech distinguishing one word (or word element) from another, as the element /p/ in “tap,” which separates that word from “tab” “tag” and “tan.”

An essential property of a phoneme is that it functions **contrastively**.

Two phonemes /f/ and /v/; they are the only basis of the contrast in meaning between the words fat and vat, or fine and vine.

This contrastive property is the basic operational test for determining the phonemes that exist in a language. If one sound is substituted for another in a word and there is a change of meaning, then the two sounds represent different phonemes.

Phonemes are the meaningfully different sound units in a language

For example, ‘pat’ and ‘bat’ differ in their first phoneme: the /p/ and /b/.

Vowels are also phonemes, so “pat” and “pet” differ by a phoneme.

Allophones are different ways to pronounce a phoneme based on its environment in a word.

For example, the two allophones of /l/ in “little” are in fact produced slightly differently, and the second one sounds slightly deeper.

[These different “l”s always occur in different environments in words, which is known as “complementary distribution”.]

- If you intend to say bead but say bad instead- that makes a difference.

The [i] in *bead* and the [æ] in *bad* are sounds from *different phonemes*. When we substitute one for another, we obtain a different word.

The [i] in *bead* and the [ĩ] in the nasalized *bead* do not make a difference in meaning. These two sounds, then, belong to the same phoneme, an abstract high front vowel that we denote between slashes as /i/.

Phonemes are not physical sounds. They are abstract mental representations of the phonological units of a language; the phonological rules of the language apply to phonemes to determine the pronunciation of words.

The process of substituting one sound for another in a word to see if it makes a difference is a good and effective way to identify the phonemes of a language.

Minimal pairs

sit/seat cot/caught buy/pie see/she free/three

- two *different* words that differ in one sound

The two sounds that cause the word difference belong to different phonemes.

[The pair [bid] and [bɪd] are not different words; they are variants of the same word.]

Minimal set

feat/fit/fat/fate/fought/foot big/pig/rig/fig/dig/wig

- a group of words that can be differentiated, each one from the others, by changing one phoneme (always in the same position in the word)

Phonotactics

Minimal sets (e.g. *big, pig, rig, fig, dig, wig*) allow us to see that there are definite patterns in the types of sound combinations permitted in a language.

This minimal set does not include forms such as *lig* or *vig*.

According to the dictionary, these are not English words, but they could exist as possible English words. That is, our phonological knowledge of the pattern of sounds in English words would allow us to treat these forms as acceptable.

However, forms such as [fsig] or [rnig] do not exist or are unlikely ever to exist. They have been formed without obeying some constraints on the sequence or position of English phonemes. Such constraints are called the **phonotactics** (i.e. permitted arrangements of sounds)

Co-articulation effects

The process of making one sound almost at the same time as the next sound.

There are two well-known co-articulation effects, described as:

- **assimilation,**
- **elision.**

Assimilation

When two sound segments occur in sequence and some aspect of one segment is taken or 'copied' by the other, the process is known as **assimilation**.

This assimilation process occurs in a variety of different contexts, e.g.

- the word *can* may be pronounced as [kæn], but: in *I can go*, the influence of the following velar [g] will almost certainly make the preceding nasal sound come out as [ŋ] (the velar nasal) rather than [n] (the alveolar nasal). The detected conversational version of the phrase should be: [ajkəŋgə]. [the vowel in *can* has also changed to schwa [ə] from the isolated word version [æ].]
- the word *and* as [ænd] by itself, but: in the normal use of the phrase *you and me*, we usually say [ən], as in [yuənmi].

Elision

This process of not pronouncing a sound segment that might be present in the deliberately careful pronunciation of a word in isolation.

- *you and me*, the [d] sound of the word and is not included in the transcription; In the environment of a preceding nasal [n] and a following nasal [m],
- *friendship*, [frɛnʃɪp]
- *He must be*, [himəsbi]
- *We asked him*, [wiæstəm].
- *every*, [ɛvri]

Normal speech

These two processes of assimilation and elision occur in everyone's normal speech and should not be regarded as sloppiness or laziness in speaking. In fact, consistently avoiding the regular patterns of assimilation and elision used in a language would result in extremely artificial-sounding talk. The point of investigating these phonological processes is not to arrive at a set of rules about how a language should be pronounced, but to try to come to an understanding of the regularities and patterns which underlie the actual use of sounds in language.

Phonology can be related to many linguistic disciplines, including psycholinguistics, cognitive science, sociolinguistics and language acquisition. Principles of phonology can also be applied to treatments of speech pathologies and innovations in technology. In terms of speech recognition, systems can be designed to translate spoken data into text. In this way, computers process the language like our brains do. The same processes that occur in the mind of a human when producing and receiving language occur in machines (Siri).

Sources:

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