

Introduction to Linguistics – LANE 321

CHAPTER 4 – THE SOUND PATTERNS OF ENGLISH

Introduction

- In the previous chapter, we have investigated the physical production of speech sounds.
- What made that investigation possible?
YET;
- Every individual has a vocal tract that is physically different than others'.
- So, every individual will pronounce sounds differently.
- Moreover, every individual will pronounce the same word differently on different occasions.
- What makes us recognize all the different versions of the word 'me' as [mi], not as any other word?

Phonetics vs. Phonology

PHONETICS

- The study of how speech sounds are made, transmitted, and received.
- It requires as its source of data a human being with vocal organs.
- The person's particular language background is not strictly relevant.

PHONOLOGY

- Phonology is the scientific study of the sound system and patterns of a language.
- It is based on a theory of what every speaker of a language unconsciously knows about sound patterns of that language.

Phonetics vs. Phonology

Whereas *phonetics* is chiefly concerned with the physical nature of speech sounds,

phonology deals with the ways in which sounds behave in languages.

Phonetics vs. Phonology

➤ We think of the /t/ sound in the following words to be the same:

- <i>star</i> –	[t]
- <i>tar</i> –	[t ^h]
- <i>writer</i> –	[D]
- <i>eighth</i> –	[t̚]

Phonetics vs. Phonology

- The human vocal organs can produce a very wide range of sounds; but only a small number of these are used in a language to construct all of its words and sentences.
- **Phonetics** is the study of all possible speech sounds;
- **Phonology** studies the ways in which a language's speakers systematically use a selection of these sounds in order to express meaning.

Phonology

- Phonology is concerned with the **abstract** or **mental** aspects of sounds in language.
- Phonology serves as the **underlying** design for all the variations in different physical articulations of a sound type in different contexts.
- Its primary aim is to discover the principles that govern the way sounds are organized in a language

Example: *lig / rnig*

Phonology

Phonology: The study of the systems and patterns of speech sounds in languages

Phonemes

➤ What is a phoneme:

The smallest meaning-distinguishing sound unit in a language.

➤ Phonemes are written between slashes

e.g. /t/

➤ Phonemes function contrastively

e.g. /f/ and /v/

fat	vat
fine	vine

Phonemes

To determine the phonemes that exist in a language:

we use the **contrastive property**:

if we substitute one sound for another in a word and there is a change in meaning, then the two sounds represent different phonemes.

e.g. In English, /b/ and /p/ are different phonemes

bark ≠ park

pat ≠ bat

,But in Arabic they are NOT (باب and پاب have the same meaning)

Phonemes

- **Rule:** If we substitute one sound for another in a word and there is a change in meaning, then the two sounds represent different phonemes.

Phonemes

- The basic phonemes of English are listed in the consonant and vowel charts of English.
- The **features** of each sound are used to create these charts.
- Those **features** are used to distinguish one phoneme from another.
- We use the (+) and (-) to mark the presence or absence of the phonemic features.
e.g. /p/ [-voice, +bilabial, +stop]
/k/ [-voice, +velar, + stop]

Phonemes vs. Phones

In the mind	In the mouth
<p>The phoneme is the abstract unit</p> <p>e.g. /t/</p>	<p>In actual speech,</p> <p>many different versions of that abstract unit</p> <p>e.g. tar, star, writer, eighth</p> <p>each version = phone</p>

Phones

- Phones are **phonetic units**.
- They appear in square brackets [], while phonemes appear between slashed //.

A Phone: A physically produced speech sound, representing one version of a phoneme

Phones and Allophones

➤ A group of several phones (versions of one phoneme) = **allophones** (of the phoneme)

e.g.

- /t/ = phoneme
- [t] (star) = 1 phone
- [t^h] (tar) = 1 phone
- [D] (writer) = 1 phone
- [t̪] (eighth) = 1 phone
- [t^h], [D] and [t̪] = allophones

Phones and Allophones

The basic distinction between phonemes and allophones:

- In **phonemes**: if we substitute one phoneme for another will result in a word with a different meaning (and of course pronunciation).

e.g. tar vs. bar

- When substituting allophones, only unusual pronunciations of the same word occur.

e.g. فـأر vs. فـأر

Minimal Pairs

How do we test phonemes?

We test phonemes by **pairs** and **sets** of words.

Minimal pair:

When two words are **identical** in form except for a **contrast** in one phoneme occurring in the **same position**, then the two words are described a **minimal pair**.

e.g. bat vs. fat

bat vs. bet

Minimal Sets

Minimal sets:

When a **group** of words can be differentiated by changing **one phoneme** in the same position in the word, then we have a **minimal set**.

e.g. feat

fit

fat

fate

foot

Minimal Pairs and Sets

Four golden rules:

1. They must have the same number of sounds
2. They must be identical in every sound except for one
3. The sound that is different must be in the same position in each word
4. The words must have different meanings

Phonotactics

- big/ pig/ rig/ fig/ dig/ wig
- The above minimal set doesn't include (lig/ vig)
- They are not English words
- But they could be!
- Our phonological knowledge of the patterns of sounds in English would allow us to consider them acceptable.
- In the future! (I think Joe is one very ignorant guy. ~ Yeah, he's a big vig)

Phonotactics

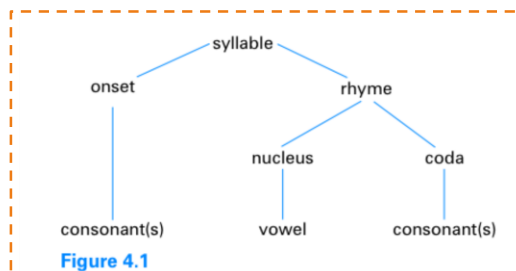
- [fʁɪŋ] / [rɪŋɪ]
- Do not and will never exist.
- Formed without obeying some constraints on the sequence or position of English phonemes.
- Such constraints/ rules = **Phonotactics**

Phonotactics: the permitted arrangements of sounds in a language.

Syllables

A syllable: a unit of sound consisting of a vowel and optional consonants before or after the vowel.

A syllable must contain a vowel or vowel-like sound, including diphthongs.



Syllables

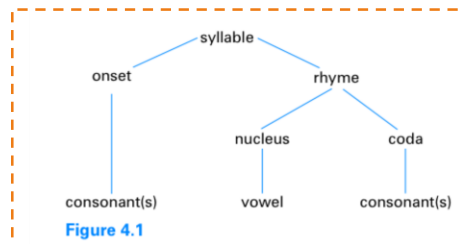
The basic elements of the syllable are: **Onset + Rhyme**

Onset = one or more **consonants**

Rhyme = **Nucleus + Coda**

Nucleus = a **vowel**

Coda = one or more **consonants**



Open vs. Closed Syllables

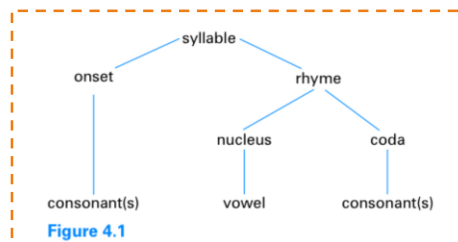
- Open syllables = an onset + a nucleus (but no coda)

e.g. me, to, no

- Closed syllables = the coda is present

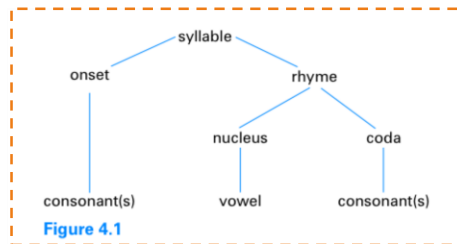
e.g. up, at,

cup, hat, Sam, dip



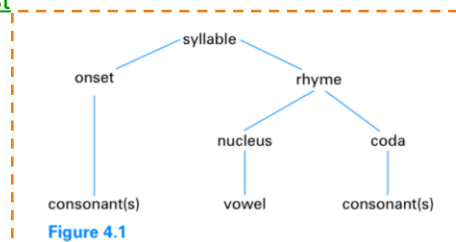
Open vs. Closed Syllables

- The basic structure of the kind of syllable found in English words like:
- green (CCVC), eggs (VCC), and (VCC), ham (CVC), I (V), do (CV), not (CVC), like (CVC), them (CVC), Sam (CVC), I (V), am (VC) is shown in Figure 4.1 below



Consonant Clusters

- Both the onset & the coda can consist of more than one consonant.
- e.g. /st/ = consonant cluster (CC)
- /st/ = CC = an onset in stop
- /st/ = CC = a coda in post



Consonant Clusters

- There are many CC onset combinations permitted in English phonotactics:

e.g. black, flat, bread, trick, throw, twin

Note: liquids (/l/, /r/) & a glide (/w/) are in 2nd position

Consonant Clusters

- English can have larger onset clusters
e.g. stress, splat (3 initial consonants = CCC)
- the phonotactics here are not too difficult to describe!
 1. 1st consonant = /s/
 2. -v stop = (/p/, /t/, /k/)
 3. a liquid or a glide = (/l/, /r/, /w/)
- splash, spring, strong, scream, square, exclaim
- exclaim = /ɪk-sklem/
- **Remember:** it's the onset of the syllable that is being described (not the beginning of the word)

Coarticulation Effects

- Our talk is often fast and spontaneous
- Our articulators move from one sound to the next without stopping.

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

- There are two well-know co-articulation effects:
- **assimilation & elision**

Assimilation

Assimilation is a common phonological process by which the features of a sound becomes more like that of an adjacent sound.

- articulation = easier, quicker
- e.g.
- *have* /hæv/ by itself
 - *I have to go* in everyday speech
 - As we start to say the -v /t/, we tend to produce a voiceless version of the preceding sound, resulting in what sounds more like /f/ than /v/.
 - [hæftə]

Assimilation

- Vowels are also subject to assimilation
- In isolation, we pronounce [ɪ] and [æ] without any nasal quality
- Try saying: pin and pan
- [ɪ] and [æ] → [ɪ̃] and [æ̃].
- **Phonological rule:** Any vowel becomes nasal whenever it immediately precedes a nasal.

Assimilation

Other examples:

- *can* [kæ̃n]
- *I can go*
- Because of the velar stop [g] in *go*, the alveolar nasal [n] in *can* will be the velar nasal [ŋ]
- [əjkəŋgə]
- Notice: æ̃ became ə̃
- *and* [ænd̃]
- *you and me* [juənmĩ]

Elision

- *you and me* [juənmi]
- Where is the [d]?
- The stop [d] between two nasals [n] & [m]
- *Friendship* [frɛnʃɪp]

Elision: The process of leaving out a sound segment that might be present in the deliberately careful pronunciation of a word in isolation

- More examples: p. 48

Elision

- In consonant clusters, especially in coda position, /t/ is a common casualty in this process
- e.g.
 - [æspeks] = aspects
 - [himəsbi] = he must be.
- [wiæstəm] = we asked him
- Vowels also disappear
 - e.g. [ɛvri] = every, [ɪntrɪst] = interest, [kæbnət] = cabinet,
 - [kæmrə] = camera, [prɪznər] = prisoner and [spawz] = suppose.

Normal Speech

- Assimilation & elision occur in everyone's normal speech
- They should not be regarded as sloppiness or laziness in speaking
- Constantly avoiding the regular patterns of assimilation & elision would result in extremely artificial-sounding talk.

Remember:

- 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.

References

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Thank you