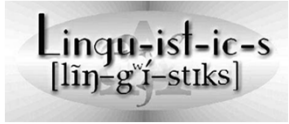


LNGT0101

Introduction to Linguistics



Lecture #8
Oct 3rd, 2012

Announcements

- Reminder: Screening of *The Writing Code* tonight at Warner 202.
- Any questions on HW2 or otherwise?

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Today's agenda

- Presentation: “*Everyone has an accent, except me.*”
- Talk about prosodic features: Syllable structure, stress, tone, and intonation.
- Ideally, introduce Phonology: phonemes and allophones.

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Syllables

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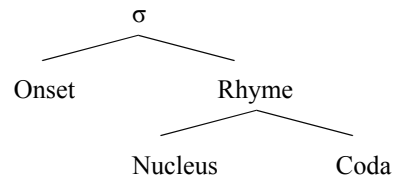
Syllable structure

- Sounds combine to form larger units called **syllables**.
- A syllable must contain a **nucleus** (typically a vowel) and may also contain consonants before or/and after the nucleus.
- The consonants before the nucleus vowel are called the **onset** of the syllable, whereas the consonants after the vowel are referred to as the **coda** of the syllable. The nucleus and coda are also assumed to form one unit called the **rhyme**.

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Syllable structure

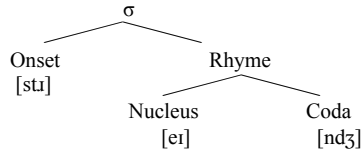
- We can represent syllable structure as in the following diagram, where σ = syllable:



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Syllable structure

- For example, a word such as *strange* [stɹeɪndʒ] has [eɪ] as nucleus, [stɹ] as onset, and [ndʒ] as coda. We can represent this syllable type as CCCVCC, and hierarchically as below:



Note: Diphthongs count as one V slot, and affricates count as one C slot.

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Examples of syllable structures in English

- [ɹeɪ.nɪŋ]
CV.CVC
- [səʊndʒ]
CVCCC
- [fə.ne.tɹks]
CV.CV.CVCC

- Notice that we mark a syllable boundary with a dot.

Syllable structure

- English is rather unusual in allowing a large number of syllable structures. Compare with other languages (N for 'a nasal C'):

Hebrew	Japanese	Hawaiian	Indonesian
CV	V	V	V
CVC	CV	CV	VC
CVCC	CVN		CV
			CVC

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Syllable structure

- All languages have syllables. The shapes of these syllables are governed by various constraints. Some universal tendencies are observable though. For example,
 - Syllable nuclei usually consist of one vowel.
 - Syllables usually begin with onsets.
 - Syllables often end with codas.
 - Onsets and codas usually consist of one consonant.
- Given these tendencies, the most common syllable structure in human languages is CV and CVC.

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Phonotactics

- When languages allow consonant clusters in onset and coda positions, there are typically constraints on the kind of consonants that occur in these clusters. We call such sequential constraints on the occurrence of consonants *phonotactics*.
- Languages differ in what is regarded as a permissible combination of consonants in each. English, for example, does not allow words to start with [ŋ], whereas Vietnamese does.

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Phonotactics

- English may have up to three consonants in onset position (as in [spreɪ]), but Arabic does not allow that.
- In fact, in English, there is a further restriction in the case of a CCC-onset that the first C has to be [s], the second has to be a voiceless stop (i.e. [p], [t], or [k]), and the third has to be a liquid or a glide (i.e. [l], [r], [j], or [w]).
- Compare that with Russian onsets in the following words:
[fslux] "aloud" [mgla] "fog"

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Phonotactics

- Another example of phonotactic constraints in English is the impossibility of words like [bɪol], where two stops occur initially.
- Knowledge of phonotactics is part of your subconscious knowledge of your native language.
- This knowledge allows native speakers to distinguish between what is a possible word in their language and what is an impossible word.
- This phonotactic knowledge is also the reason why native speakers syllabify words correctly.

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Syllabic Consonants

- In English, nasals and liquids can function as syllable nuclei when they occur in an unstressed syllable at the end of a word after any consonant. In narrow phonetic transcription, syllabic consonants are marked by an under-stroke [,]. Examples:

tunnel [tʰʌn̩] *ladder* [læd̩ɹ]
chasm [kʰæz̩m] *button* [bʌt̩n]

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Syllable structure

- Native speakers' knowledge of syllable structure is manifest in several ways:
- They can count the number of syllables in a word.
- They know where to draw syllable boundaries.
- They rely on syllabification in rhyming and in games like Pig Latin.
- And as we will see in phonology, they internalize phonological rules that do make reference to the unit 'syllable.'

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Prosodies (aka Suprasegmentals)

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Suprasegmental features

- In addition to "segmental" features, e.g., place of articulation, voicing, tongue height, etc., other phonetic features may "ride on top of" these segmental features.
- Four of these are: length, tone, intonation, and stress.

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Length

- The duration of a sound may be influenced by the sounds around it, e.g., compare your pronunciation of the two words in each pair below:

seat vs. *seed*
leak vs. *league*
leaf vs. *leave*

- In narrow phonetic transcription, length is typically marked by a colon-like symbol ":" after the lengthened sound.

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Vowel length in Finnish

- In some languages, the long-short contrast is crucial, since substituting a long segment for an otherwise identical short segment in a word can result in a change of meaning. Consider these data from Finnish:

[muta] “mud”
[mu:ta] “some other”
[muta:] “but”

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Consonant length (gemination) in Italian

- Italian shows the same length effect for consonants:
fato [fatɔ] “fate” vs. fatto [fatːɔ] “fact”
casa [kasa] “house” vs. cassa [kasːa] “box”

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Pitch

- Depending on the tenseness of the vocal folds and the amount of air passing through the glottis, we may get either a high or a low pitch.
- Pitch is an auditory property of a sound that allows us to put it on a scale that ranges from low to high.
- Two kinds of controlled pitch movement found in human language are *tone* and *intonation*.

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Tone

- In many languages, the pitch at which the syllables in a word are pronounced can make a difference in the meaning of the word. These are called *tone languages* (e.g., Thai, Zulu, Igbo, and Navajo).
- We use the uppercase letters H, M, and L, to stand for high, mid, and low tones. Consider this example from Mandarin:

[ma]	H	“mother”
[ma]	MH	“hemp”
[ma]	MLH	“horse”
[ma]	HL	“scold”

[Link to Thai tones](#) [Thai tongue twisters](#)

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Intonation

- Intonation is the pattern of rises and falls in pitch across a stretch of speech such as a sentence.
- For example, the same string of speech could be interpreted either as a statement or as a question, depending on its intonation contour:
Max is studying linguistics. (falling intonation)
Max is studying linguistics? (rising intonation)
Max is studying linguistics, ... (level intonation)

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Stress

- Stress refers to the perceived prominence of a particular syllable relative to syllables around it.
- In essence, stress is the combined effect of pitch, loudness, and length.
- In some languages, stress placement is predictable, e.g., in Czech stress almost always falls on the first syllable, whereas in Welsh stress falls on the next to last syllable.

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Stress

- In other languages, like English and Russian, stress is unpredictable and has to be learned for every word.
- In such languages stress placement may also create a difference in meaning:
 - export* could be [ˈɛkspɔːt] or [ɛksˈpɔːt]
 - present* could be [ˈpɹɛznt] or [pɹɛˈzɛnt]
- Some languages also distinguish between primary [ˈ] and secondary [ˌ] stress.

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Next class agenda

- We do phonology. Read Chapter 6, pp. 272-284.