

Phonology: Sound Patterns

Discreteness:

- Variation in speech heard as discrete sounds

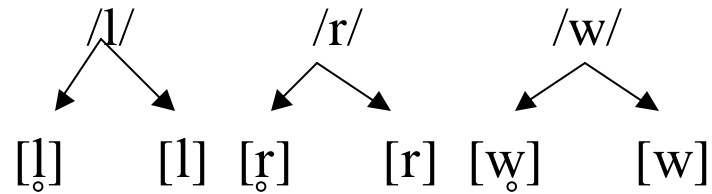
lay [le] play [p_le]
ray [re] pray [p_re]
wine [wayn] twine [t_wayn]

sew [so] sewn [s_õn]
lap [læp] lamp [læ_ẽmp]
tog [tag] tong [tãŋ]

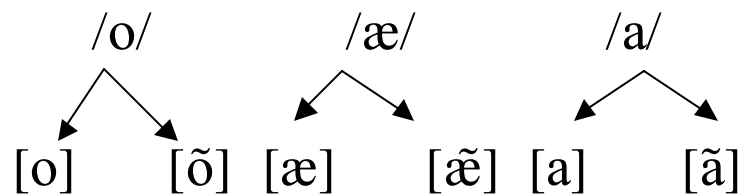
tar [t^har] star [star]
pa [p^ha] spa [spa]
car [k^har] scar [skar]

- The discrete or distinctive sounds are called *phonemes* and we use / / to represent them.
- The variations of phonemes are called *allophones* and we use [] to represent them.

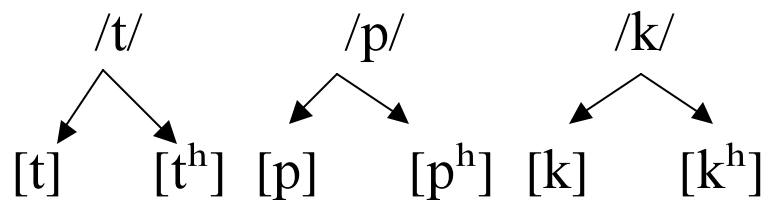
We can describe allophonic variation with the use of *features* (voicing, place, manner) to make generalizations.



- *Generalization*: Approximants are devoiced when they follow voiceless sounds.



- *Generalization*: vowels are nasalized when they precede nasal sounds.



- *Generalization*: voiceless stops are deaspirated when they follow [s].

How do we know if two sounds are separate phonemes or are allophones of the same phoneme?

Minimal Pair Test

- [p] and [t] are separate phonemes because we can find minimal pairs. They are able to create a *difference in meaning* by substituting one for another.

[pɪn] [tɪn]

[raɪp] [raɪt]

[spɒk] [stɒk]

- [p] and [p^h] are *not* separate phonemes because we cannot find minimal pairs. They cannot create a meaning difference when one is substituted for another.
 - [p^h] occurs at the beginning of a word
 - [p] occurs after [s]
- What about [p] and [b]?
- What about [æ] and [ǣ]?
- What about [r] and [l]?

What about these Hindi words?

[tal] 'applause'

[t^hal] 'plate'

[kaǰ] 'particle'

[k^haǰ] 'itch'

Native language allophones → Second language phonemes

English [k] and [k^h] → Hindi /k/ and /k^h/

Spanish [e] and [ɛ] → English /e/ and /ɛ/

What causes allophonic variation?

Co-articulation effects are a common cause.

- *Assimilation*: a sound becomes more similar to a neighboring sound

- *Vowel Nasalization*
- *Approximant Devoicing*
- *Place Assimilation*

I can try [aykəntray]

I can go [aykəŋgo]

I can be [aykəmbi]

- *Elision*: Deletion of a consonant in clusters

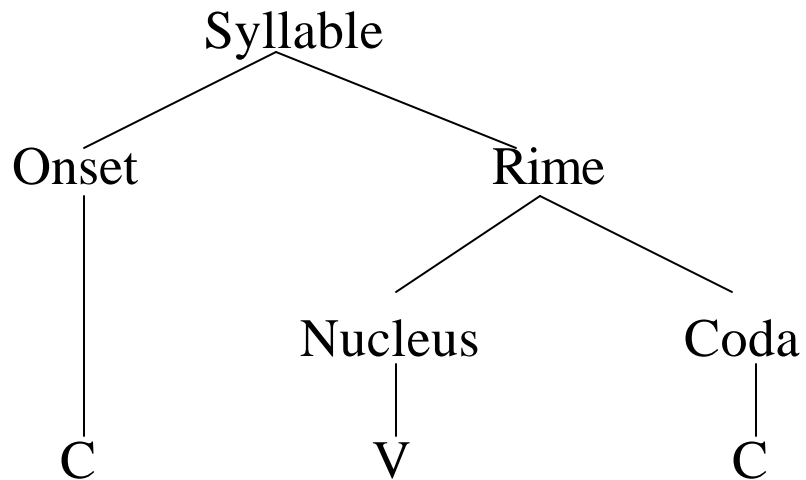
- [t] is often deleted when part of a syllable final cluster

aspects [æspɛks]

trust me [trəsmi]

we asked him [wiaskɪm] or [wiastɪm]

Syllable Structure



Possible English Syllables:

open

V	[ay]
CV	[re]
CCV	[tre]
CCCV	[stre]

closed

CVC	[θeŋ]
CVCC	[θæŋk]
CVCCC	[θæŋks]
CCCVCCCC	[streŋkθs]

Compare the possible Japanese syllables:

V CV CVN

- *What do you think happens when English words are borrowed into Japanese?*