

BASIC PHONETICS AND ENGLISH PHONOLOGY

TOPIC: PHONOLOGICAL PROCESSES IN ENGLISH

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Introduction

- The phonological systems of different languages are obviously different.
- No two languages have exactly the same inventory of phonemes which are realized by the same set of allophones;
- No two languages have exactly the same phonological rules regulating the deployment of their sounds.
- However, while all that is true, there similarities between languages:
 - languages tend to exploit the same phonetic parameters in building their phonological systems
 - there are certain patterns that recur frequently.
- This lesson focusses on the phonological occurrences in English

PHONETIC CONDITIONING

- Term used to refer to the way in which speech segments are influenced by adjacent (or near adjacent) segments.
- They cause phonemes to vary in their realization according to the phonetic context.
- These can cause:
 - Allophonic variations (we already studied this aspect)
 - Assimilation
 - Elision

ASSIMILATION

- Often in language a phoneme has several allophones,
- the allophone selected in a particular position is dependent on the other sounds that are adjacent to it.
- Assimilation is the modification of a sound in order to make it more similar to some other sound in its neighbourhood.
- The advantage of having assimilation is that it results in smoother, more effortless, more economical transitions from one sound to another.
- It facilitates the task of speaking.
- The speaker usually tries to conserve energy by using no more effort than is necessary to produce an utterance

- Consider:
- the alternation in the phonological realizations of a MORPHEME
- (i.e. minimal meaningful or distributional unit in a language, which may be
- a word like *dog*,
- or a suffix like the -s plural marker in *dogs*,
- or the negative prefix *un-* in *un-do*)
- These can be accounted for in terms of assimilation.
- this suffix must always agree in voicing with the preceding sound.

- Consider the regular plural ending in English:
- It is written as *s*, but it may, in fact, be pronounced as:
 - [-s] as in [pet-s] *pets*,
 - or as [-z] as in [bel-z] *bells*
 - or even as [-iz] as in [rauz-iz] *roses*.
- The choice is not random.
- The principle that determines the shape of the suffix is VOICE ASSIMILATION:

English plural formation

A		B		C	
Singular	Plural	Singular	Plural	Singular	Plural
dog	dogs	dock	docks	witch	witches
bid	bids	bit	bits	nose	noses
rib	ribs	tip	tips	marsh	marshes
love	loves	giraffe	giraffes	badge	badges
sea	seas	moth	moths	bus	buses

- the English plural suffix has the following allomorphs:
 - i. [_z] occurring with the words in column A
 - (ii) [-s] occurring with the words in column B
 - (iii) [-iz] occurring with the words in column C
- These are called ALLOMORPHS (i.e. alternative realization of the morpheme)

- These examples show that the alternation in the shape of a morpheme is not arbitrary but PHONOLOGICALLY CONDITIONED.
- the allomorph of a morpheme that occurs in a given context is partly or wholly determined by the sounds found in the allomorphs of adjacent morphemes.
- It is not merely coincidence that is responsible for the allomorphs of the plural morpheme and the third person plural being [-z -s -iz].
- The suffix AGREES IN VOICING with the preceding sound
- Thus, we can have a rule that
- **The plural suffix is realized by a voiced or voiceless alveolar fricative depending on whether the noun ends in a voiced or voiceless segment.**

English third person singular present tense

A		B		c	
see	sees	Paint	Paints	Teach	Teaches
love	loves	Hate	Hates	Wish	Wishes
rub	Rubs	Talk	Talks	Judge	Judges
mend	Mends	Make	Makes	Kiss	Kisses
come	Comes	Laugh	Laughs	Rise	Rises
call	Calls	Wipe	Wipes	Lose	Loses
know	Knows	keep	keeps	catch	Catches

- Similarly,
- the English third person singular present tense has the following allomorphs:
 - i. [z] occurring with the words in column A
 - (ii) [-s] occurring with the words in column B
 - (iii) [-iz] occurring with the words in column C

- Generally then, we can say that:
- the base form of the noun plural suffix is / - z / ,
- we can further assume that the base form of the third person singular present tense morpheme is also /-z/,
- we can derive the various allomorphs of each morpheme using the informal VOICE ASSIMILATION

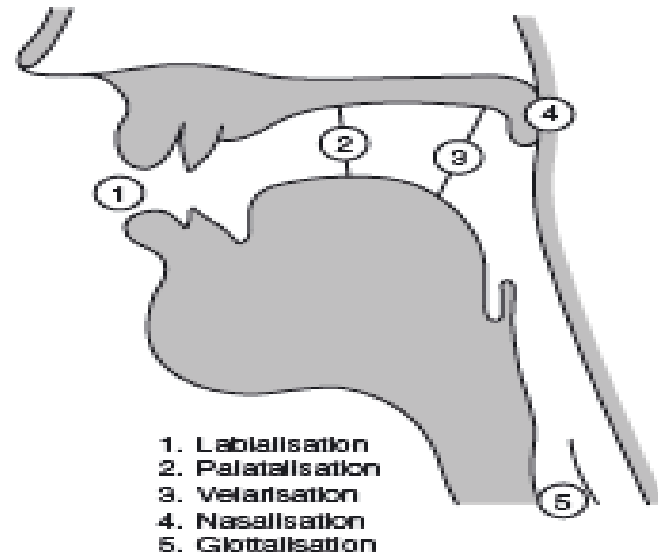
Direction of assimilation

- When discussing assimilation, it is useful to look at processes in terms of DIRECTIONALITY,
- (i.e. we can say whether a sound becomes more like either the sound that **precedes** it or the sound that **follows** it.
- If a sound becomes more like the sound that precedes it, the process is called REGRESSIVE assimilation;
- If a sound is modified so that it becomes more like the sound that follows it, the process is called PROGRESSIVE/anticipatory assimilation. /two/
- In the plural and third person singular present tense examples, the suffix consonant is made to agree in voicing with the root segment that precedes it.
- Hence, the rule of suffix voice agreement is an instance of regressive assimilation.

ASSIMILATION PROCESSES

- Another way in which assimilation processes can be seen is in terms of whether
- a vowel or consonant acquires vowel or consonant features of a neighbouring segment.
- We shall examine few but the coverage is not intended to be exhaustive.
- It is only meant to show some of the commonest assimilation processes found in the languages of the world.
- These processes have also been described as secondary articulation or co-articulation.

Secondary articulation



From Collins, B & Mees, M.I (2013). *Practical phonetics and phonology: A resource book for students*.UK: Routledge.

PALATALIZATION

- Palatalization adds to the main articulation the raising of the front of the tongue towards the hard palate (the tongue takes on an [i]- like shape with possible [j] off-glide).
- Say the following words and describe the position of your tongue during the production of the first consonant in each one of them:

key	[k̟i]	car	[kɑ]	then say:	[kɑ k̟iz]
keep	[k̟ip]	calm	[kɑm]		[k̟ip kɑm]
get	[g̟et]	garlic	[gɑlɪk]		[g̟et gɑlɪk]
give	[g̟iv]	guns	[gʌnz]		[g̟iv gʌnz]

From Katamba, F. (1989). *An introduction to phonology*. UK: Longman.

- In each case when a velar consonant is followed by a front vowel, there occurs some slight anticipatory fronting of the part of the tongue that makes contact with the roof of the mouth.
- This fronting is indicated by a subscript (+) under the consonant.
- It is shown by [j] placed *after* the symbol.
- The effect of the fronting is that the velar consonant is made partly in the palatal region.
- That is why it is called PALATALISATION.

- Velar consonants often have slightly palatalized allophones which occur after front vowels
- the tongue is raised towards the hard palate in the production of front vowels
- and speakers anticipate that gesture and start making it before they have completed the articulation of [kʲ] or [gʲ].
- Palatalization is not limited to velar consonants.
- Say the English words *tune, dune, new, mew, assume, beautiful, putrid*.
- These all involve palatalized consonants [tʲ dʲ nʲ mʲ sʲ bʲ pʲ].
- It is equally possible to palatalize anterior consonants.

Casual spoken English, for instance, alveolar consonants are usually palatalized when they occur at the end of a word and are followed by another word which begins with an alveopalatal consonant:

his shoes	[hɪz ʃuz]	→	[hɪʒ ʃuz]
nice shirt	[naɪs ʃɜt]	→	[naɪʃ ʃɜt]
miss Ure	[mɪs juə]	→	[mɪʃ juə]
John's shorts	[dʒɒnz ʃɔts]	→	[dʒɒnʒ ʃɔts]

From Katamba, F. (1989). *An introduction to phonology*. UK: Longman.

LABIALIZATION

- Labialization adds lip rounding and is shown phonetically with the diacritic mark [ʷ].

Illustration:

Look in a mirror and say *me*.

What shape are your lips?

Now say *more*.

Where does the lip-rounding begin?

Now say the words *door, saw, core, bore*.

You'll find that lip-rounding typically starts in the consonant preceding the rounded vowel.

We can show these labialized consonants as [d^w s^w k^w b^w].

- Also consider the data below:

	A		B
peel	[pi:l]	pool	[p ^w u:l]
tea	[ti:]	two	[t ^w u:]
she	[ʃi:]	shoe	[ʃ ^w u:]
leek	[li:k]	Luke	[l ^w u:k]
get	[gɛ:t]	got	[g ^w ɒ:t]

From Katamba, F. (1989). *An introduction to phonology*. UK: Longman.

- In each case, the word in B is said with some degree of secondary lip rounding.
- Anticipating the next segment, which is a rounded vowel, the speaker starts rounding the lips before the articulation of the consonant is completed.
- This assimilation is why this process is called LABIALISATION or (ROUNDING).
- It can be indicated in a phonetic transcription by using the raised [^w] after a consonant [t ^w].

NASALIZATION

- **Nasalisation** adds nasal resonance through lowering the soft palate.
- It is shown by the diacritic [~] placed above the symbol.
- In English, and many other languages, vowels preceding nasals are regularly nasalized, e.g. *strong man* [strɔŋ mæn]
- The two vowels are nasalized.
- NASALISATION is a process whereby an oral segment acquires nasality from a neighbouring segment.
- (In order to produce a nasal segment, it is necessary to lower the velum (soft palate);
- and allow air to escape through the nose the lower the soft palate is, the higher will the degree of nasalization be);

- To produce an oral sound, it is necessary to completely block off access to the nasal cavity by raising the velum as high as it can go.
- Any leakage of air past the velum will cause some nasalization.
- To maintain an absolute distinction between oral and nasal consonants would require
 - perfect synchronisation of velic closure with the other articulatory parameters of
 - (a) PHONATION (i.e. production of voicing),
 - (b) the PLACE OF ARTICULATION and
 - (c) the MANNER OF ARTICULATION.
 - This is not always possible.

VELARIZATION

- **Velarisation** adds to the main articulation the raising of the back of the tongue towards the velum (the tongue takes on an [u]-like shape).
- It is shown by [~] written *through* the symbol, e.g. [ɫ].
- Velarised /ɫ/ is often termed **dark l**.
- Listen and repeat the following words in English: *still, tell, shall, bull*.
- The /l/ consonant is velarized.
- Dark (velarized) ɫ occurs before a consonant or a pause.
- Clear l occurs before vowels

GLOTTALIZATION

- **Glottalization** adds reinforcing of the glottal stop [ʔ].
- The English fortis stops /p t k tt/ are regularly glottalized when syllable-final.
- Glottalization is symbolized as [ʔ], e.g. *lipstick* [lɪʔpstɪʔk].
- Some accents make heavy use of the glottal stop.

Summary of

<i>Modification</i>	<i>Description</i>	<i>Symbol</i>	<i>Example</i>
Palatalisation	Addition of front tongue raising to hard palate	ʃ after symbol	<i>tune</i> [tʃu:n]
Velarisation	Addition of back tongue raising to velum	~ through symbol	<i>still</i> [stɪl]
Labialisation	Addition of lip-rounding	ʷ after symbol	<i>talk</i> [tʰɔ:k]
Glottalisation	Addition of glottal stop	ʔ before symbol	<i>stopwatch</i> ['stɒpʔwɒtʃ]
Nasalisation	Addition of nasality	̃ above symbol	<i>morning</i> ['mɔ:nɪŋ]

From Collins, B & Mees, M.I (2013). *Practical phonetics and phonology: A resource book for students*. UK: Routledge.

DISSIMILATION

- Not all phonological processes can be plausibly explained in terms of assimilation.
- If we recognize the fact that phonological systems have to meet the needs of language users
- both as speakers and as hearers, we can easily appreciate that
- While assimilation (by making sounds more similar to each other) facilitates speech production,
- it does also have the undesirable effect of making the hearer's task of discriminating between sounds somewhat more difficult.

- Phonological processes which ensure that differences between sounds are enhanced
- sounds become more auditorily distinct make speech perception easier.
- DISSIMILATION is the term used to refer to processes of that kind.
- The effect of dissimilation is to make sounds more distinct from other sounds in their environment.
- After a dissimilation rule has applied, phonological elements are less like each other than they were before the rule applied.

	A		B
<i>noun</i>	<i>adjective</i>	<i>noun</i>	<i>adjective</i>
electric	electrical	angle	angular
region	regional	circle	circular
orbit	orbital	table	tabular
baptism	baptismal	circle	circular
genitive	genitival	title	titular
culture	cultural	single	singular

From Katamba, F. (1989). *An introduction to phonology*. UK: Longman.

- The pattern is clear. The shape *-al* is the base form.
- It is the form which you add in column A where the last consonant of the noun is a sound other than [l].
- The shape *-ar* is the alternant which is normally added where the last consonant of the noun is [l].
- The addition of *-al* after a root ending in [l], which would have resulted in two [l] sounds merely separated by a schwa, is thus avoided.
- But like many other rules, this rule has exceptions, e.g. *linear* not **lineal* although *line* does not end in *-l*.
- (Note also in passing that in column B, [ju] is inserted between the final [l] and the consonant preceding it.)

ELISION

- Under certain circumstances, sounds disappear.
- Technically, in certain circumstances, a phoneme may be realized as a zero, or have a zero realization or be deleted.
- It is also as a result of rapid and casual speech.
- Examples:
 - Loss of weak vowel after p, t, k.
 - In words like 'potato', 'tomato', 'canary', 'perhaps', 'today', the vowel in the first syllable may disappear; the aspiration of the initial plosive takes up the whole of the middle portion of the syllable, resulting in these pronunciations
 - ph'teitaʊ th'ma:taʊ kh'neəri ph'haeps th'dei

- Weak vowel + n, l, r becomes syllabic consonant
- For example:
 - 'tonight' tnaɪt 'police' plɪs 'correct' kɹekt
 - Loss of final v in 'of' before consonants; for example:
 - 'lots of them' lɒts ə ðəm 'waste of money' weɪst ə mʌni

LIAISON

- The converse of elision is liaison
- (i.e insertion of an extra sound in order to facilitate the articulation of a sequence).
- Two English accents:
 - rhotic accents, where /r/ is pronounced in all contexts
 - Non- rhotic (like the RP) where /r/ is pronounced only preceding a vowel.
- In non-rhotic varieties, /r/ is regularly restored as a link across wordboundaries.
- Sooner / su:nə / soon or later [su:nə r ɔ: leɪtə]
- Sure / ʃʊə / sure enough [ʃʊə r ɪ'nʌf]

References

- Collins, B & Mees, M.I (2013). *Practical phonetics and phonology: A resource book for students*.UK: Routledge.
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