LINGUISTICS 130 **LECTURE #12**

SPEECH DYNAMICS: CO-ARTICULATION AND SEQUENCES

Speech is *dynamic* rather than static.

TARGET POSITIONS: Those positions of speech organs that are specified for a given sound.

During speech, target positions are most of the time only approximated.

A speech sound begins to be articulated before the completing of the articulation of the previous sound.

The fastest rate at which a person can produce and perceive speech sounds is about *20 to 30 sounds per second* (=1,200 to 1,800 per minute).

Most speech sounds have a single place of articulation:

e.g. [b] bilabial
[f] labiodental
etc.

CO-ARTICULATION: simultaneous articulation in two different locations.

There are two types of co-articulation:

1. **SECONDARY ARTICULATION**: The addition of a lesser constriction (=secondary, usually an approximant type) to the greater constriction (=primary) of a consonant.

[b] bilabial voiced stop
↓
Primary articulation

[b^{w}] oboe
↓
LABIALISATION: simultaneous lip-rounding is added.

[^{w}]

PALATALISATION: simultaneous raising of the front of the tongue towards the palatal region.

Russian: bra$\underline{t}$’ [t^{j}] *to take*

bra$\underline{t}$ [t] *brother*

VELARISATION: simultaneous raising of the dorsum toward the velum.

[ɾ] or [$^{\gamma}$]

sea$\underline{l}$ [ɬ]

PHARYNGEALISATION: The dorsum is lowered and the tongue root is retracted simultaneously with the primary articulation.

[ɾ] or [$^{\varsigma}$]

Arabic: mas *to touch*

mas$^{\varsigma}$ *to suck*

2. **CO-ORDINATE OR DOUBLE ARTICULATION**: simultaneous articulation of the *same manner* of articulation.

STOP + STOP

[k͡p] [p͡t] etc.

FRICATIVE + FRICATIVE (uncommon)

[f͡s] [v͡z] [ʃ͡x]

↓

Swedish $\underline{t}$jugo [ʃ͡x] or [ɧ] *twenty*

SEQUENCES

1. **STOP AND NASAL SEQUENCES:**

Same place of articulation: The velum is *lowered* for the nasal, but the articulatory closure continues.
One release only: Nasal release.

top<u>m</u>ost	[p^{n}m]
su<u>bm</u>arine	[b^{n}m]
cat<u>n</u>ap	[t^{n}n]
lou<u>dn</u>ess	[d^{n}n]

2. NASAL AND STOP SEQUENCES:

Same place of articulation: The transition from the nasal to the stop is marked by raising the velum: the stop has a <u>nasal onset</u>.
The articulatory closure remains the same for the sequence -- there is only one release!

ru<u>mp</u>	[m˺p]
lu<u>mb</u>er	[m˺b]
we<u>nt</u>	[n˺t]
be<u>nd</u>ing	[n˺d]
dri<u>nk</u>	[ŋ˺k]
fi<u>ng</u>er	[ŋ˺g]

Study the timing relationship between the articulatory closure and the opening of the nasal passage (Handout).

3. STOP AND LATERAL APPROXIMANT SEQUENCES

The transition from the alveolar stop consonant to the alveolar lateral approximant involves the falling of the sides of the tongue.

fi<u>dd</u>ler [d^{l}l]

4. LATERAL APPROXIMANT AND STOP SEQUENCES

The transition from the lateral approximant to the central articulation of the following stop involves the *rise of the sides of the tongue.*

bui<u>ld</u> [l˺d]

Study the Handout!