**LINGUISTICS 221**                                                           **Lecture #1**

*PHONETICS AND PHONOLOGY*

PHONETICS: The study of the inventory of all speech sounds which humans are capable of producing.

PHONOLOGY: The study of the sound systems of languages.   Out of the very wide range of sounds the human vocal apparatus can produce (studied by PHONETICS) only a relatively small number is used *distinctively* in any one language. Phonology is concerned with the *function* of sounds.

The relationship between phonetics and phonology is a complex one:

*Statement (a):*

> Phonetics is concerned with universal properties of speech, studied by scientific methods; it deals with physical or concrete reality while phonology is concerned with the linguistic organization of this reality.

*Statement (b):*

> Reversing this argument, phonology may be said to tackle the true mental reality behind speech, while phonetics handles 'merely' the concrete manifestations of this reality.

Phonology deals with the systems and structures of speech, while phonetics focuses more narrowly on articulation and acoustics. But: the boundary should not be sharply drawn; speech is analyzed by breaking it down into its several aspects, but the true reality is one of *integration*.

SPEECH SOUND (=Segment): Any *discrete unit* that can be identified in the stream of speech.

> *c a n*
> (3 segments)
>
> *science*
> (6 segments)

Utterances can be represented as sequences of discrete units (=segments).

>    BUT:

Speech sounds are *not* produced as a series of discrete segments; rather, they merge and

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blend together.

The vocal apparatus does *not* work like

[kʰ]     *pause*  [æ]     *pause*  [n]

BUT: [k̪ʰæ̃n]

Speech is DYNAMIC rather than STATIC.

TARGET POSITIONS: Those positions of speech organs that are specified for a given sound. During speech, these target positions are most of the time only *approximations*.

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

      e.g.    book  [bʷ]      ⎱
                               *labialization*
            queen [kʰʷ]  ⎰

Although a speech signal is physically *continuous*, we seem to perceive it as a sequence of *discrete entities*.

BUT: Do we have the right to claim that speech is segmentable if the articulatory and acoustic aspects suggest the opposite?

<u>SPEAKER</u>:

    Intention:     "can"

    The speaker intends to utter a sequence of discrete sounds, but the vocal apparatus instead functions continually in motion, moving from one sound to the next.

    Assumption:   The transitions from one sound to the next are *automatic features of the vocal mechanism* -- as such can remain outside the intention of the speaker.

<u>LISTENER</u>:

Perceives the continuous signals as *discontinuous*.

**EVIDENCE FOR THE RECOGNIZING OF INDIVIDUAL SEGMENTS IN THE FLOW OF SPEECH:**

1.      <u>Alphabetic writing</u>

There is a correlation between a sequence of symbols and a sequence of speech sounds (the correlation may not always be ideal, but it is undeniable that *there is* a correlation).

*can*

in the written word there is a continuum, yet we perceive it as consisting of three letters just like in the printed form: <u>can</u>

Alphabetic writing teaches us:

(i)      that speech consists of linear sequences of unitary, discretely different sounds;
(ii)     that a sound occurring at a given place in one word can be identified with certain sounds occurring at different places in other words.

2.      <u>Slips of the tongue</u>

e.g.    *you have hissed my mistery lectures;*

*with this wing I thee red*

etc.

Slips of the tongue illustrate the treatment of speech sounds by speakers as discrete segments which can be shunted from one word to another.

3.      <u>Rhymes</u>
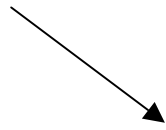
e.g.    *the fat cat in the hat*

Rhymes suggest the need for recognizing individual segments.

4.       <u>Adding or deleting segments</u>

e.g.    *r*-addition (*idear is* for *idea is*)
        *h*-drop (*at* for *hat*)

*Segments* rather than syllables or words are added or deleted.

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"Same" utterance:                *can*

$$\downarrow$$

> (i)      speaker differences
>
different! {
> (ii)    the same person never says it in
> the same way

BUT: We perceive them as identical utterances even though they are physically different.

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In language the *PERCEPTUAL*, the *SUBJECTIVE*, the *DISCRETE* take precedence over the *PHYSICAL*, the *OBJECTIVE*, the *CONTINUOUS* -- A BASIC ASSUMPTION OF PHONOLOGY.