Language

Development, brain mechanism
Perception of continuous speech involves different mechanisms from those used in perception of isolated speech sounds. Words are within context which provide important cues for understanding.

The isolated words are more difficult to identify than words presented in context.

Contextual cues; warren warren 1970—people fill in a missing phoneme according to context.

Feel, wheel, heel, peel, meal –eel;, the …..eel was on the shoe
Environment also provide cue for recognition of words

Persons non verbal behavior tone of voice, facial expression, lip movement; watching video tape of people talking without sounds-lip reading—....papa, gaga, mama

Syntactical Analysis

We used cues not only from word order but also from suffixes and prefixes such as ing—ed-es
Syntactical rules; how to put words together • Function words ;determiner,quantifier,to.the,in • Content words ;nouns ,verbs and most adjectives and adverbs
Relation between semantic and syntax • Deep structure; what the person intend to say • Surface structure ;the particular form the sentence take
the recognition of words in continuous speech is a complex mechanism, effected by neighboring sounds-
stress-
accent-
speech peculiarities-
Meaning is a joint function of syntax and semantics
Speech comprehension

Studies of the verbal behavior with brain damage suggest that mechanism involved in perceiving and producing speech are located in different areas of the cerebral cortex.

Aphasia; loss of ability to produce meaningful speech caused by brain damage according to the location.

Karl Wernicke 1874 reported that a particular form of aphasia was caused by damage to a region of auditory association cortex located on the upper part of the temporal lobe of the left side of the brain.
Wernicke's area, disorder called Wernicke's aphasia

- Very poor speech comprehension
- Fluent and meaningless speech
- Talk in effortless manner—nonsense

May be Wernicke's area contains memories of the sounds of words. These memories are necessary for comprehending others people's speech and for translating one's own thoughts into words.
Pure word deafness; caused by brain damage that disconnects the primary auditory cortex on both sides of the brain from the auditory association cortex. The results of this disconnection is inability to understand speech. The person does not become deaf – I can hear but not understand sounds like ringing, horn still recognizable, can communicate with other people by writing. Wernicks area receive no auditory input so cannot analyze speech sounds.
Paul Broca 1861; discovered that damage to the region of the left frontal cortex (Brocas area) caused a severe deficit in speech (Brocas aphasia) characterized by 
the speech is labored, meaningful and ungrammatical.

Ah…..Monday….ah dad….hospital…..to…and …er… Thursday

Brocas area contains memories of the sequences of muscular movements that must be performed to pronounce words thus loss of this area makes it very difficult to speak
It also perform some complex actions, damage to Brocas area often produce agrammatism.

Loss of ability to produce speech that is employ complex syntactical rules. Many content words but few function words.

Also damage to Brocas area impairs the production of proper syntax because syntactical rules involve motor operations (putting words in proper position).
readings

Phonetic reading; when reading aloud; seeing individual letters and decoding them into sounds—pronounce

Whole word reading; seeing a word as a whole and then pronouncing it

Phonological Dyslexia; have difficulty reading phonetically—they can read words that they learn before the stroke or head injury but unable to read unfamiliar words. Usually the damage involve the region near the junction of the parietal, temporal and occipital lobes.
Development of verbal behavior in children

Preschool period; new born infant turn their heads to source of sound
weeks can discriminate the sound of a voice 2-3 from nonspeech sounds
months discriminate angry voice from pleasant 2 one-responds accordingly
The infant like the adult can discriminate between speech sounds whose voice –onset time differed by only 0.02 seconds
Stages of infant speech sounds

crying-new born-1

vocalizations and cooing-one month of age--2

sound 00h,sounds that mimic sounds of crying

Babbling--;6months resemble those that occur-3

in speech –most of the sounds present in most

of languages

patterned speech ;one year of age transition-4

from stage 3 to stage 4 occur gradually or

suddenly after periods of silence days or weeks
The first vowel is usually soft a – then consonant produced by the lips – p or b
Papa, baba •
Nasality which convert the consonant p, b into m, so next word is mama
Speech process continue with the age •