**Language (Module)**

**Module: Introduction**

**Subtopic: Natural Language  
-**language is *regular*-meaning that it is governed by rules and grammar (sentence can be reorganizes and still retain its meaning)  
-language is *arbitrary-* lack of resemblance between words and their meaning  
-language is *productive-* limitless ways to combine words to describe objects, situations, and actions

**Subtopic: Whorf Sapir Hypothesis  
- Whorf Sapir Hypothesis:** language influences our thoughts and the way we perceive and experience the world

**Subtopic: The Structure of Language  
-Morpheme:** the smallest unit of sound that contains information  
-often a word, but some words contain multiple morphemes  
-**Phonemes:** constituent sounds when breaking up a morpheme

**Subtopic: Syntax and Semantics**  
-**Syntax:** rules that govern how sentences are put together, aka grammar  
-**Semantics:** meaning of each individual word (meaning of the sentence)

**Module: Developmental and the Segmentation Problem**

**Subtopic: Language Development  
-Milestones:**-12 weeks: make cooing sounds  
-16 weeks: turns head towards voices  
-6 months: imitates sounds  
-1 year: babbles  
-2 years: uses 50-250 words, uses 2 words phrases  
-2.5 years: vocabulary > 850 words  
-**Babbling:** characterized by drawn-out sounds made of a variety of combinations of vowels and consonants  
-may sounds like real sentences or questions because of the use of inflection and rhythm in the production of the babble  
-combination progresses to become real words

**Subtopic: Language Explosion  
-**1.5 🡪6 years children enter language explosion and vocabulary increases rapidly and have for the most part mastered major aspects of language

**Subtopic: Language Comprehension  
-**language production can be limited by factors such as vocal anatomy

**Subtopic: Segmentation  
-**translates into perception that a person speaking an unfamiliar language often sounds like they are speaking very quickly

**Subtopic: Implications  
-**children who now had larger expressive vocabulary had earlier demonstrated good speech segmentation skills as infants (and vice versa)  
-findings could lead to infant screening tests to predict later problems in language development and allow for early treatment interventions

**Subtopic: Infant-Directed Speech  
- Infant-Directed Speech:** tendency for mothers to use higher pitch and exaggerated changes in pitch when speaking to infants  
-may help infants learn to segment speech

**Module: Universal Phonetic Sensitivity**

**Subtopic: Different Phonemes  
-**infants can discriminate more phonemes that adults can  
-**Universal Phoneme Sensitivity:** the ability of infants to discriminate between any sounds they’re tested on  
-includes sounds from non-native languages  
-clinicians test this by doing the head turn test  
-usually lose this ability by 1 year old  
-learning new language at young age leads to superior mastery of all aspects of language

**Module: Accents**

**Subtopic: Introduction  
-**various accents within a language contain subtle differences in phoneme use

**Subtopic: Foreign Accent Syndrome  
-**following brain injury, someone can develop FAS there they speak in a different accent fluently

**Subtopic: Theories of FAS  
-**damage to Broca’s area (brain region important for language), may also be part of speech production  
-cerebellum: area involved in motor coordination; lack of motor coordination can affect individual’s ability to pronounce the phonemes specific to his native language  
-having trouble pronouncing these phonemes, individual may automatically alter the prosody, or rhythm, with which they speak, creating a speech that resembles a foreign accent in an attempt to make speech less difficult  
-FAS sufferers actually sound as though they are speaking more than one accent  
-may result because patient is adopting various rhythms that facilitates speech and happen to remember a family of accents

**Module: Theories of Language Development**

**Subtopic: Social Learning Theory  
-**children learn language through a combination of imitation and operant conditioning

**Subtopic: Evidence of Social Learning Theory  
-**if not exposed to language throughout childhood, will not have any language skills

**Subtopic: Evidence Against Social Learning  
-**language development in children is far too rapid to attribute it to the earlier two methods only  
-once children have learned to produce words; they combine them in novel ways

**Subtopic: Overextensions and Underextensions  
-Overextensions:** apply a rule too broadly and can occur at the level of meaning or syntax  
-**Underextensions:** occur when children apply a rule to a specific object only

**Subtopic: Innate Mechanism Theory  
-Language Acquisition Device:** an innate mechanism, present only in humans, that helps language develop rapidly according to universal rules (Noam Chomsky)  
-all language follow certain fundamental, underlying rules  
-brains are prewired to adapt to the sounds and their associated meanings that are present in their environment  
-very young infants also prefer listening to speech rather than non-speech sounds

**Module: Animal Communication**

**Subtopic: Animal Communication  
-**The Waggle Dance- Honey bee’s way of communicating to show location of food  
-distance of waggle🡪distance of food  
-angle of waggle🡪direction of food  
-return phase: two loops backward either left or right, making a figure 8  
-bird song-use for mate attraction and competition

**Subtopic: Washoe  
-**able to use sign language to communicate  
-used classical conditioning

**Subtopic: Sarah  
-**learned to use many different symbols, showing evidence of large vocabulary  
-used classical conditioning

**Subtopic: Kanzi  
-**communicated using a set of geometric figures known as lexigrams arranged on a keyboard  
-used complete immersion in the language  
-ale to communicate without any reward or prompting and able to communicate requests and respond to demands  
-grammar was limited, no understanding of advanced concepts such as nouns, verbs, or plurals