

Social Psychology Lecture 3: Language

Language: system of communication using sounds or symbols to express feelings, thoughts, ideas, and experiences. It is governed by the rules of grammar and syntax.

- Hierarchical system: components can be combined to form larger units. Example: letters make words, words make sentences, and words can be combined to make new words.
- Phonemes: specific units of sound used in language. Often consistent with the alphabet but not always. Some phonemes don't have specific letters. There are about 47 different phonemes in the English language.
- Morphemes: smallest units of language that have a specific semantic meaning. Example: "headache" has two morphemes - "head" and "ache". Prefixes and suffixes are usually morphemes.
- Grammar and syntax: all languages follow specific rules for how the components can be arranged to convey meaning. Without rules, it would be difficult to make sense of the meaning. Grammar and syntax are often used interchangeably but there is a difference.
 - o Grammar: the rules for a specific language.
 - o Syntax: the specific structure used to convey meaning.
- Languages are "unique but the same". Each language has different words, sounds, and rules, nouns, verbs, negatives, questions, past, and present tense. Language development is similar across cultures. Critical period: until 6-7.
- Language may be a fundamental drive for humans. New languages can be invented to allow communication. Deaf children raised together invent their own ways of communicating (sign languages).
- Pidgin languages: people that speak different languages may create a new language from combining words from each language. Pidgin languages may lack strict syntax but then become more formal as they are passed on. Example: creole language.
- Regional dialects: the same language may have different names for objects depending on where you are from. Example: soda, pop, coke.
- Linguistic relativity: language influences cognitive processes because different languages and cultures may have words that can't be directly translated, different cultures may process information differently. Many languages assign gender to objects.
- Language may determine the perception of categories. Multiple words for certain words.
- Across culture only 11 different color categories exist. But not all cultures use all categories. The boundaries between colors vary from culture to culture.

Learning language: understanding how humans learn language is a key step in the development of cognitive psychology.

- BF Skinner (1957) - Verbal Behavior. He believed language is learned through reinforcement. Babies learn how to speak and what to say because they are rewarded for it.

- Noam Chomsky (1957) – Syntactic Structures. Believed that humans are not “blank slates”. They are born with language instincts. Human language is encoded in the genes. Underlying basis of all language is similar.
- Behaviorism did not win the debate. Children produce sentences that were not reinforced. Neural basis of language also demonstrate more than reinforcement. Humans are built with the capacity to learn and produce language. An animal could not learn a language even with reinforcement.
- Language is an example of prepared learning. There are brain areas that are dedicated to language. There is a critical period of learning. Children are capable of learning phonemes from any language prior to critical period. After the critical period, they can only hear phonemes from their own language.
- Child directed speech → motherese: the melodic way that we speak to children and pets. Helps teach children the different structures of language (slower speech, more differentiation between sounds, more emphasis of specific phonemes). Also shows up in sign languages.

Stages of development:

- 0-3 Months (prevocal learning): attention to speech sounds, phonemic distinction (can learn sounds of any language), babbling.
- 3-6 Months: babbling with inflection, phonemic imitation, respond to speech and recognition of own name.
- 6-12 Months: attempted word imitation, understand simple instructions, vocalization of first simple words.
- 12-18 Months: recognize object names, point to named objects, follow simple directions, small word vocabulary.
- 18-24 Months: telegraphic speech, ask for common foods and objects, ask simple questions, use of simple phrases, use of pronouns, use of prepositions, understanding of two step directions, vocabulary of about 100 words.

Language in the Brain

- Broca’s area: area in the left hemisphere dedicated to language production. Discovery after Paul Broca studied a man who had brain damage to syphilis. He could only say one word, “tan”, but he could understand language. After Leborgne’s death, Broca removed his brain and saw a lesion in the left frontal lobe which then became known as Broca’s area. This is needed to produce speech.
- Wernicke’s area: area involved in understanding language. Discovered by Carl Wernicke. He studied patients that could speak fluently but the language didn’t make sense. His patients could not understand language. Post mortem examination of their brain revealed damage to the specific area of the left temporal lobe.
- The areas are connected and later research has shown that each is involved in both aspects of speech to some degree. Damage to analogous areas on the right side of the brain is involved in producing/understanding non-verbal information such as gestures, vocal tone, sarcasm, etc.

Slips of the Tongue: speech production is complicated task and it can go wrong.

- Stages of speech production: mentally create meaning of utterance, choose words, put words into right forms, organize into phrases for sentence, and put together the phonemes.
- Errors can occur at each stage. Types of errors:
 - o Anticipation: use an element meant for later in the sentence too early.
 - o Perseveration: continue to use an element from earlier in the sentence.
 - o Transposition: switch between two elements.
 - o Substitution: one element is accidentally used in place of another.
 - o Spoonerism: when the initial sounds of two words are reversed to make 2 different words.
 - o Malapropism: when one word is replaced by another word that sounds similar but has a different meaning.