

Cognitive Psychology (EXP 4680)

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**LANGUAGE COMPREHENSION  
CHAPTERS 4 & 9**

**PSYCHOLINGUISTICS**

- ◆ The area of psychology devoted to the study of language is psycholinguistics.
- ◆ **3 MAJOR CONCERNS OF PSYCHOLINGUISTICS:**
  - How people understand spoken and written language.
  - How people produce language.
  - How language is acquired.

**WHAT IS LANGUAGE?**

**PRINCIPLES OF HUMAN LANGUAGE**

- ◆ Humans are active information processors:
- ◆ Human Uniqueness
- ◆ Animals do not have \_\_\_\_\_ and do not communicate about the \_\_\_\_\_.

## STRUCTURE OF LANGUAGE

- ◆ Language is organized into a \_\_\_\_\_ of levels: \_\_\_\_\_.
- ◆ At top of hierarchy are \_\_\_\_\_.
- ◆ \_\_\_\_\_ are composed of \_\_\_\_\_, which in turn are composed of \_\_\_\_\_.
- ◆ \_\_\_\_\_ are composed of \_\_\_\_\_ and morphemes are composed of \_\_\_\_\_.

### ◆ Phonemes

#### ◆ Distinctive features:

- Voicing:
- Nasality:
- place of articulation:
- voice-onset time:

- ◆ Allophones: are pronunciation variants of phonemes that are influenced by time, frequency, and coarticulation.

- ◆ These sound the same to us, but created at \_\_\_\_\_.

- Keep            Kool
- Pin             Spin
- "Tom Burtton tried to steal a bitter plate of butter."

## CATEGORICAL PERCEPTION: Janet Werker (1984)

- ◆ *One of the tasks of acquiring a language is to learn which sound units make a difference.*

### ◆ Infant Speech Sound Discrimination

## MORPHEMES & MORPHOLOGY

### ◆ Morphemes:

- ◆ free morpheme
- ◆ bound morpheme

### ◆ Morphology

- ◆ Rules: (Berko-Gleason's Wugz study)
  - Add an /s/ to words that end in a voiceless consonants
    - ◆ e.g., cat /s/                      tack /s/
  - Add a /z/ to words that end in voiced consonants
    - ◆ e.g., rug /z/                      gum /z/
  - Add /es/ to words ending in fricatives or affricates
    - ◆ e.g., wishes, churches, cabbages, garages

### ◆ Semantics

### ◆ Syntax

### ◆ Pragmatics:

## WHAT DOES THIS LEVELING OF LANGUAGE GIVE TO US?

### ◆ Productive/Generative:

### ◆ Utterances are Novel but Appropriate

- "Last night at Yankees stadium I punched Hitler's widow in the face."

## WHY IS SPEECH PERCEPTION A PROBLEM?

### ◆ Lack of Invariance:

#### Reasons for Variability of Speech Sounds

### ◆ Coarticulation:

### ◆ Speaker Characteristics:

◆ We do not pronounce the same utterance in exactly the same way twice.

### ◆ Speech Rate:

◆ Speaker Dependent vs. Speaker Independent

## WHY IS SPEECH PERCEPTION A PROBLEM

### ◆ Segmentation Problem:

◆ Classification Problem (parsing):

### ◆ Phrase Structure

◆ Ambiguous sentences are used to study parsing. Why?

## Syntax: Phrase Structure

- ◆ Phrase structure rules:
  
- ◆ Deep Structure vs. Surface Structure
  - surface structure
  
  - deep structure

## CONTEXT EFFECTS

- ◆ MULTIPLE INPUTS
  
  
  
  
  
  
  
  
  
  
- ◆ McGurk Effect (McGurk & MacDonald, 1976)
  
  
  
  
  
  
  
  
  
  
- ◆ Phonemic Restoration Effect
  
  
  
  
  
  
  
  
  
  
- ◆ Warren & Warren (1970) cough study
  
  
  
  
  
  
  
  
  
  
- ◆ Pollack & Pickett (1964)

## CONTEXT EFFECTS

◆ Ladefoged & Broadbent (1957):

◆ Christmas Carols & Music

## THE SOCIAL CONTEXT OF SPEECH: PRAGMATICS AND COMPREHENSION

◆ Pragmatics:

◆ Given-New Strategy:

◆ Loftus and Palmer (1972):

◆ Common Ground:

◆ Conversational Maxims (Grice, 1975)

◆ Quantity:

◆ Quality:

◆ Relation

◆ Manner