Introduction to Speech, Language, & Communication

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SPEC 2231
Speech Defined

• a verbal means of communicating
• Results from planning and executing specific motor sequences
• Requires precise neuromuscular coordination
• A particular spoken language has specific sounds, called phonemes.
• Involves voice quality, intonation, & rate, which may enhance messages.
Language Defined

• “A socially shared code or conventional system for representing concepts through the use of arbitrary symbols and rule-governed combinations of those symbols.”

• Each language has unique symbols and rules for symbol combination.

• **Dialects** – subcategories of a parent language that use rules that are similar but not identical to rules of the parent language.
Language Defined cont.

ASHA Committee on Language, 1983:

Language -

• ... “evolves within specific historical, social, & cultural contexts.”

• Described by at least 5 parameters:
  phonology, morphology, syntax, semantics, pragmatics

• “Language learning & use are determined by the intervention of biological, cognitive, psychosocial, & environmental factors.”

• “Effective use of language for communication requires ...understanding of human interaction including...nonverbal cues, motivation, and sociocultural roles.”
Evolution of Language

• Languages evolve over time.
• Many languages currently face extinction.
• Languages adapt to cultural changes.
  e.g., words added to English – blog, racial profiling
• Speech is not a necessary aspect of language (e.g., signing).
• Language users encode and decode according to their shared concepts of a given object, event, or relationship.
Communication Defined

- The process used to exchange information & ideas, needs, and desires.
- An active process that involves encoding, transmitting, & decoding the intended message.
- Complex, systematic, collaborative, context-bound tool
- **Communicative competence** – the degree to which a speaker is successful in communicating in terms of the appropriateness and effectiveness of the message
Communication Across Animal Species

• Is language unique to humans?
  – Bee communication (von Frisch, 1920s)
  – Dolphin communication – whistles (Tyack, 2000)
  – African elephants – subsonic calls (O’Connell, 2007)

• Resemble human language?
  – Stimulus dependent, limited to present & restricted messages
  – Language (Brown, 1973): productivity/generativity; semanticity/symbolism; displacement
  – Attempts to teach language to chimpanzees (Rumbaugh & Beran, 2003) —
    https://www.youtube.com/watch?v=X4bVqcsuOi0
Bee Communication

http://www.youtube.com/watch?v=-7ijl-g4jHg
Human Language

Species specific & species uniform (Lenneberg, 1967):

- Onset of speech (developmental milestones) is regular
- Speech is “not suppressible”
- [Adult-level] Language cannot be taught to other species.
- Languages share universals – e.g., phonology, semantics, syntax, social rules for language use.
Extralinguistic Factors

Factors other than speech and language that may enhance or change the linguistic code:

1) **Paralinguistic** – superimposed on speech to signal attitude or emotion
   e.g., intonation, stress, speed, pause

Paralinguistic mechanisms are called **suprasegmental devices** – mechanisms superimposed on the verbal signal to change the form and meaning of the sentence by acting across the elements or segments of that sentence.
Extralinguistic Factors cont.

2) **Nonlinguistic cues** – e.g., gestures, eye contact, proxemics

3) **Metalinguistic skills** – the abilities to talk about language, analyze it, think about it, judge it, and see it as an entity separate from its content
   
e.g., Learning to read requires awareness of the components of language – sounds, words, etc.
Properties of Language

1) **Social tool** – serves as the code for transmitting messages between people.
   - Reflects the collective thinking of a society and impacts that thinking.
   - Influenced by its context.

2) **Rule-governed system** – demonstrated by the non-arbitrary organization of language.
   - **Grammar** – a set of underlying rules that describe the relationships between symbols and form the structure of a language.
   - **Language does not = grammar.**

Language includes the rules AND the process of using rules.
Linguistic Competence v. Linguistic Performance

**Linguistic competence** – a language user’s underlying knowledge about the system of rules.
- Can’t be measured directly; it’s deduced from performance.

**Linguistic performance** – linguistic knowledge in actual use.

Why are there discrepancies between linguistic competence and performance?
- e.g., ethnic background results in dialectal variation, language learning disability, distraction, fatigue
Properties of Language cont.

3) **Generative system** – Language is a creative tool

- An almost infinite # of sentences can be created from a finite # of words and a finite set of rules.
Components of Language

3 major components:
(Bloom & Lahey, 1978)

Form - syntax, morphology, phonology
Content - semantics
Use - pragmatics
Syntax

- Rules of syntax govern the structure of a sentence.
- Specifies word and phrase order, word classes, etc.
- Specifies which word combinations are acceptable.
- Main elements of a sentence are noun and verb phrases, which compose different word classes (nouns, verbs, adjectives).
Hierarchical Sentence Structure

Sentence
  ├── Noun phrase
  │    ├── Article
  │    │    └── The
  │    └── Determiner + Noun
  │         └── young
  ├── Verb phrase
  │    ├── Verb + Noun phrase
  │    │    ├── Verb
  │    │    │    └── ate
  │    │    └── Noun phrase
  │    │         └── Determiner
  │    │             └── his
  │    └── Possessive pronoun
  │        └── his
  └── Adverb
       └── quickly

The young man ate his hamburger quickly.
Oral v. Written Grammar

“I’ve written a book on grammar. Can I see it?”

“May I see it?”

“Not only that, you can keep it.”

Morphology

• Aspect of language concerning the rules governing the internal organization of words.
• **Morpheme** - the smallest unit of meaning (e.g., bed)

2 types:
**Free morphemes** – independent, can stand alone (e.g., red)

**Bound morphemes** – grammatical markers that cannot function independently (e.g., est)
- Attached to nouns, verbs, & adjectives
Bound morphemes can be either:

**Derivational** – prefixes & suffixes
- Precede (prefix) or follow (suffix) the free morpheme.
- Change whole classes of words (e.g., -ly for adjectives)

**Inflectional** – suffixes
- Change the state or increase the precision of the free morpheme
- Include tense markers (-ed), plural markers, third person singular present tense verbs ending in –s (“He talks.”)
Phonology

• Aspect of language related to the structure, distribution, & sequencing of speech sounds and the shape of syllables.

• **Phoneme** – the smallest linguistic unit of sound that can signal a difference in meaning

**Phoneme** – a family of very similar sounds

**Allophone** – individual members of a phoneme that differ slightly from one another, but not enough to modify the meaning of a word.
Phonology cont.

• English has ~43 phonemes

• Phonological rules – govern the
  1) distribution (e.g., “ng” at the end but not the beginning of words) &
  2) sequencing (e.g., /dn/ can’t be within one syllable) of phonemes within a language.
Phonological Rules

B.C. By Johnny Hart

YES, HE'S IN ... CAN I TELL HIM WHO'S CALLING?

I DOUBT IT. MY NAME IS OSCAR XNOSKRBNWZTL.

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Semantics

- A system of rules governing the meaning or content of words and word combinations.
- **World knowledge** – an individual’s autobiographical and experiential understanding and memory of particular events.
- **Word knowledge** – contains word & symbol definitions and is primarily verbal.
Pragmatics

• The study of language in context as a communication tool that is used to achieve social ends.

• Includes: communication intentions & recognized ways of executing them, conversational principles or rules, types of discourse (e.g., narratives, jokes) and their construction.

• Requires understanding of culture and of individuals.
Pragmatics cont.


• “Cooperative principle” (Grice, 1975): Participants of a conversation cooperate with each other by following 4 maxims: quantity, quality, relation, & manner.