

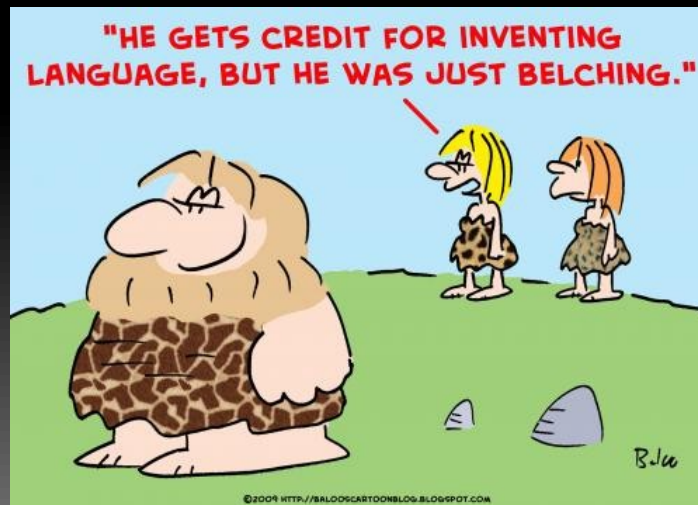
LANGUAGE

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Language

- a system of communication using sounds or symbols that enables us to express our feelings, thoughts, ideas, and experiences



Language

- **Phonology** sound of words- systematic organization of sounds
- **Morphology** smallest unit of L with some autonomous meaning
- **Syntax** grammar rules
- **Semantics** word meanings
- **Lexicon** mental vocabulary



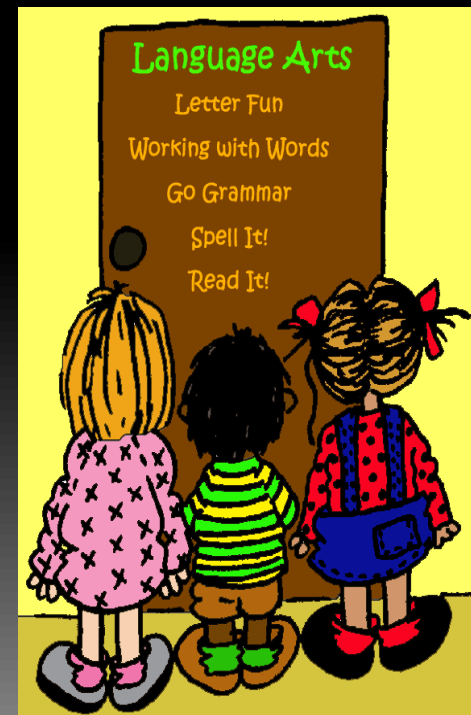



Creativity of language

- new words
- Metaphors
- New combinations of words

Language

- A, Hierarchical (combinations of elements into greater wholes)
- B, governed by rules (we all implicitly know the grammar rules)
- C, universal (rules, language production in children)



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- Skinner (behaviorism)- Language as entirely learned behavior
 - Noam Chomsky- genetic grammar
 - **Psycholinguistics** (comprehension, speech production & acquisition)

Chomsky: Universal grammar

- **Poverty of the stimulus** (ungrammatical and incomplete input in children → grammatical output)
 - Infinite number of sentences without prior knowledge
- **Constraints and principles cannot be learned**
 - Children start babbling early; first word 1 year; basic grammar around 6 (without the cognitive capacities to understand the grammar)
- **Patterns of development are universal**
 - LAD language acquisition device (innate)

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- <http://www.youtube.com/watch?v=qu3XxSDRuKM&feature=related>


Why do we have language?

- Communication
 - Adaptation
 - Social interaction
 - Thinking?
 - Problem solving
-
- When is language insufficient?
 - Language and thoughts!
 - Do we think only using language?



Does language enhance our thinking?

- Could we have complex, complicated thoughts without language?
- Does language help our ability to think?
- Does language limit our ability to think?

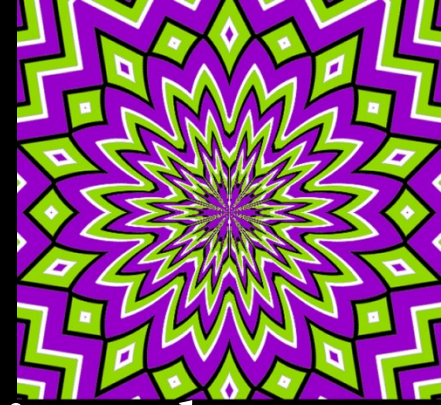
- 
- Complex thoughts are ingrained in simple elements (words, concepts)
 - Language is “labeling” our reality
 - L is a means to solving problems



Representations

- Computational approach to language
- Role of R in thinking

Sapir- Whorf hypothesis



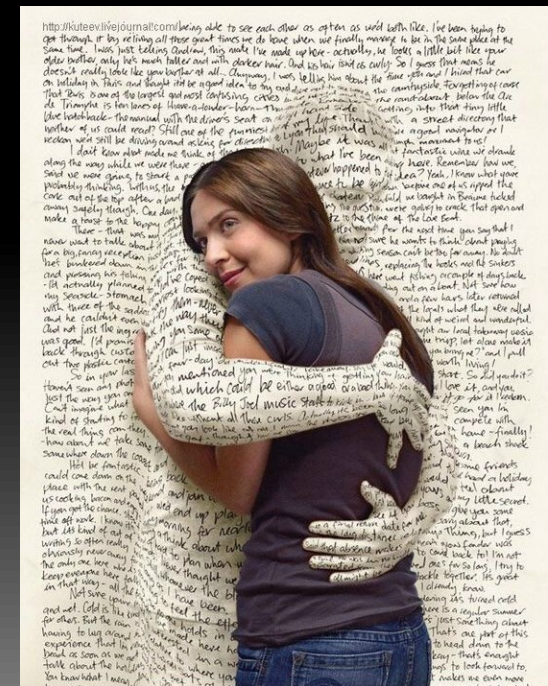
- The principle of **linguistic relativity**- the structure of a language affects the ways in which speakers are able to conceptualize their world, i.e. their world view
 - (i) the *strong* version that language determines thought and that linguistic categories limit and determine cognitive categories
 - (ii) the *weak* version that linguistic categories and usage influence thought and certain kinds of non-linguistic behavior
- Research on color perception

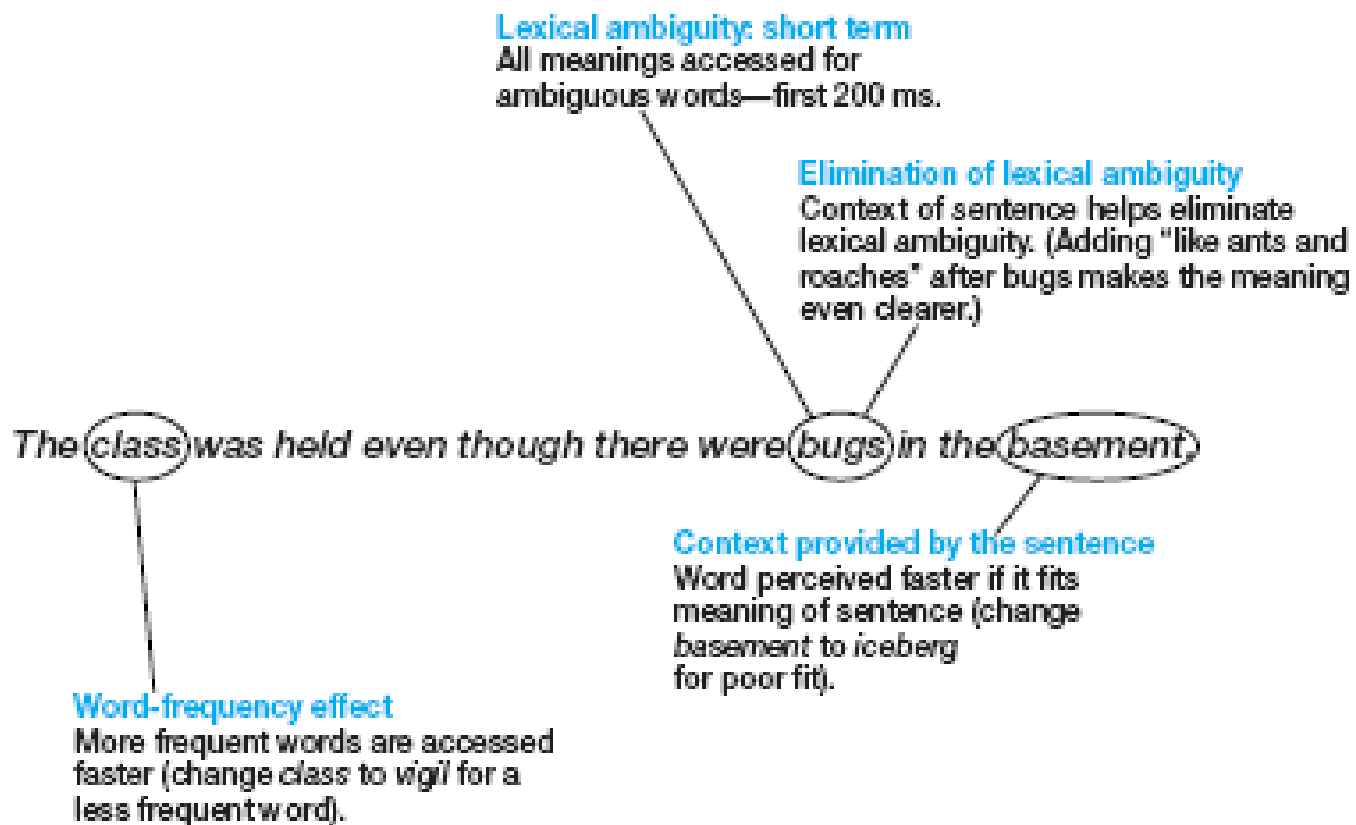
phonemic restoration effect

- restoring the missing speech sound perceptually without any difficulty
- Inability to identify the position of coughing
- Top-down influence in language processing

Understanding words

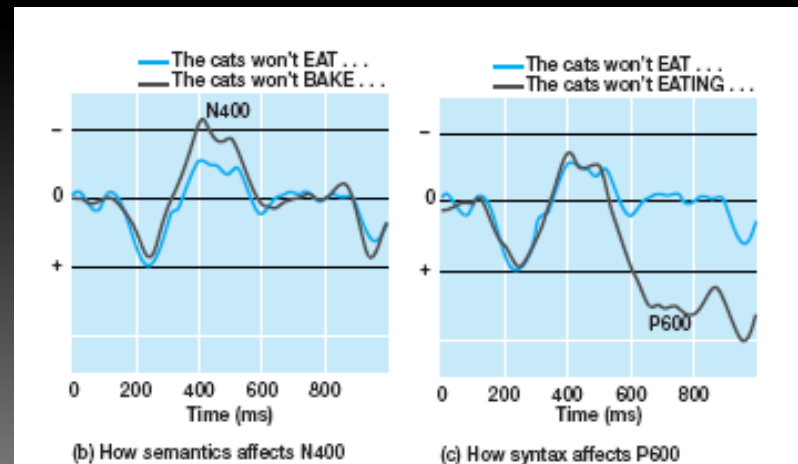
- **Word-frequency effect**
- People read high-frequency words faster than low-frequency words
- “Sam wore the horrid coat though his pretty girlfriend complained,”
- contains the high-frequency target word *pretty*.” (*demure*)
- **Effect of the context**
- *The bankers were frightened by the walrus*
- *The Eskimos were frightened by the walrus*
- **Lexical ambiguity**





Understanding Sentences

- **Semantics (N400)**
- **Syntax (P600)**
- **Parsing sentences**
 - *The spy saw the man with the binoculars. (syntactic ambiguity)*
- **Late closure principle**



Late closure principle

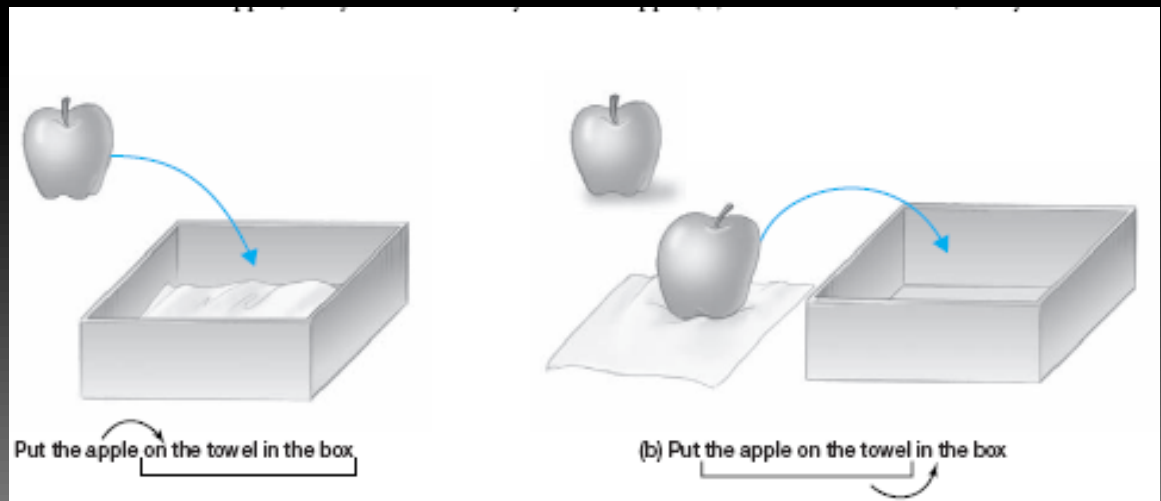
- Garden-path model (Syntax models)
- Understanding of sentences based on syntax

Table 10.1 The Principle of Late Closure

First Try	
Part of the Sentence	Probable Reader's Reaction
(a) Because he always jogs	This is about a man who jogs.
(b) a mile	He jogs a mile.
(c) seems like	This doesn't make sense. How does "seem like" fit in here?
(d) a short distance to him.	OK. I read the sentence incorrectly the first time. I'll try again.
Second Try	
Part of the Sentence	Probable Reader's Reaction
Because he always jogs	The man jogs.
a mile seems like a short distance to him.	He is in good shape so a mile doesn't seem like much.

The Interactionist Approach to Parsing

- Both syntax and semantics help understanding the sentence
- *when semantics comes into play?*
- *EMT- eye movement tracking*
- *Put the apple on the towel in the box.*



Text/discourse processing

- Continuity of the sentences in the story
- **Coherence**- relations between individual sentences
- Inferences
- **situation model**- creating a representation of a story based on locations, people and objects

1. Melanie ran downstairs and threw herself onto the couch.
2. An exciting horror movie was on television.
3. She opened a bag of chips and dug right in.
4. She watched a vampire stalk the helpless victim.
5. She had never seen this movie before.

Participants are then presented with one of the following endings:

Blocked story continuation (Figure 10.11a):

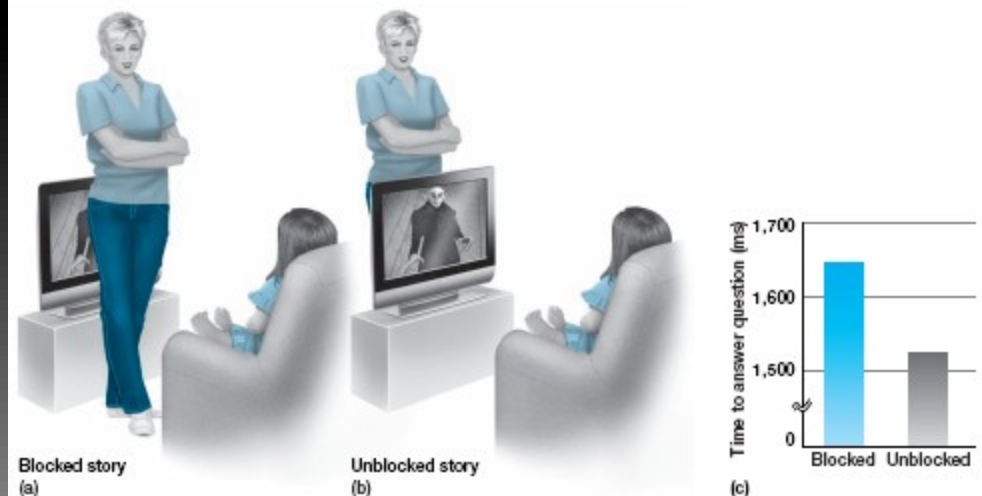
- 6a. Melanie's mother appeared in front of the TV.
- 7a. She told Melanie not to forget about her homework.

or

Unblocked story continuation (Figure 10.11b):

- 6b. Melanie's mother appeared behind the TV.
- 7b. She told Melanie not to forget about her homework.

“Was the victim being stalked by a vampire?”





- readers represent story events in a manner similar to actual perception



Mark Pagel on language

- http://www.ted.com/talks/lang/eng/mark_pagel_how_language_transformed_humanity.html