

Psyc 346  
Week 6, Class 2

- Discourse
- 1. Discourse and discourse coherence
- 2. Discourse and memory
- 3. Inferences
- 4. Schemata
- 5. Story grammar

## Discourse

- - any group of sentences combined meaningfully
- E.g., stories, lectures, papers, instructions
- **Discourse coherence**: how the sentences “stick together”
- **Local** structure (microstructure)
- **Global** structure (macrostructure)

## Local cohesion

- - Cohesion at local level refers to relationships between individual sentences in a discourse
- - it can be established by many devices
- e.g., Reference, Substitution (and Ellipsis), Conjunction, Lexical (reiteration, synonymy, hyponymy)

## Reference

- semantic relation whereby information needed to interpret one item in text is found elsewhere in the text
- Anaphoric vs. cataphoric reference

## Anaphoric Reference

- relating a current expression to one encountered earlier.
- *Mary laughed at John, and he was pretty upset.*
- “he” (anaphor) refers back to “John” (antecedent)

## Anaphoric Reference, contd.

- There are strict constraints on anaphoric reference within a sentence. eg
- *Bill asked John to tell Fred about him.*
- *Bill asked John to tell Fred about himself.*
- In (1) “him” can only refer to “Bill”, NOT “John”
- In (2), “himself” can only refer to “John” or possibly “Fred”, but NOT “Bill”.
- Across sentences, the constraints are not as clear:
- *Bill saw his old friend John. He smiled.*

## Cataphoric Reference

- Refers to something ahead
- *This is what we'll do. I'll rob the bank and you drive the getaway car.* (“this” refers..)
- *I didn't see him clearly at first, but when the monster finally walked into the bright light, I screamed.*
- (“him” refers ahead to “monster”)

## Discourse Comprehension: A model

- Given-New Contract (Clark & Haviland)
- We link new information with given (old) information
- given (old, assumed) information vs. new information is sometimes cued by syntax.
- [The man] [lived in New York]
- OLD NEW
- [A man lived in New York]
- NEW
- Eg “the” indicates “old info” vs. “a” - “new”

## Given/New Information, contd.

- *It was Steve who robbed the bank.*
- *It was the bank that Steve robbed.*

## Given/New Contract - Three steps

1. Identify given and new information in current sentence
2. Find antecedent for given information in memory
3. Attach new information to this spot in memory

## Given/New, contd.

- Reaction times for sentence comprehension are shortest if
- - there is a direct match found for an antecedent,
- **Direct Matching**
- *We got some beer out of the trunk.*
- *The beer was warm.*
- RTs are increased if
- - the antecedent is implicit rather than explicit (and thereby requires a bridging inference)
- **Bridging Inference**
- *Last Christmas Jim went to a lot of parties.*
- *This Christmas he got very drunk again.*

## Memory for Discourse

- How is discourse represented in memory?
- **Surface Representation** – exact wording
- **Propositional Representation** – underlying meaning
- **Situational Model Representation** – spatial or causal relations

## Discourse Comprehension at Macro Level

- Kintsch's Model: two inputs –
- 1) the text
- 2) the goals of the reader
- Goals are represented by **goal schema** –
- These indicate
- - what is relevant
- - what to expect/infer

## Propositional View of Discourse Representation

- We understand and store discourse in terms of **propositions**, which are **hierarchically organized**. (Kintsch)
- Propositions consist of
- 1. one or more **arguments**
- - nouns (what the proposition is about)
- 2. a **predicate**
- - verb, adjective or conjunction (i.e. what is said about the proposition)

## Propositional View, contd.

- *The Egyptian king prepared an impressive pyramid.*
- Prop. 1 – *Egyptian king*
- Prop. 2 – *King prepared*
- Prop. 3 – *Impressive pyramid*
- Prop. 1 and 2 have an overlapping (shared) argument (*king*) and Prop. 2 is subordinate to 1 (i.e., repeats things from 1).
- **propositions stored at higher levels are recalled better than those at lower levels**

## Discourse Representation, contd.

- **Number of propositions affects text processing ease.**
- *Cleopatra's downfall lay in her foolish trust in the fickle political figures of the Roman world.*
- 8 propositions, vs.
- *Romulus, the legendary founder of Rome, took the women of the Sabine by force.*
- 4 propositions
- **Sentence with more propositions takes longer to read**

## Inferences

- Are they stored in memory the same way as propositions derived from explicit sentences?
- Bransford et al.:
- *Three turtles rested ON a floating log, and a fish swam beneath them.*
- [implies the fish swam beneath log too]
- *Three turtles rested BESIDE a floating log and a fish swam beneath them.*
- [no such implication]

## Inferences

- Subjects were asked which of the following they had gotten earlier.
- ...and a fish swam beneath THEM/IT.
- Results: "on" subjects were more likely to falsely recall "it" than the "beside" subjects
- Interpretation: "On" subjects were storing the following implicit proposition in memory, as if it had been presented explicitly:
- *The fish swam beneath the floating log.*
- Note: the memory quiz was a surprise and was given long after the memory for the sentence forms had faded.

## Schemata (Global Structure)

- Bartlett (1932) - The War of the Ghosts
- We remember in terms of fitting details into pre-existing schemas.
- Memory distortions may occur in the process when details don't easily fit.

## Story Grammars

- **Stories have a structure or rules**
- "Story Grammar" -
- Story = Setting + Theme + Plot + Resolution
- Setting = characters+location+time
- Theme=event(s)+goal
- Plot=episode
- Episode=subgoal+attempt(s)+outcome
- Resolution=event or state
- **Stories that go against the prescribed sequence are harder to understand.**