

## Presentation 10: Memory for utterances



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## Two representations of utterances

A tells B: "My friend clobbered that guy"

Textual representation (what is uttered)

1. Labeled constituents  
[[My friend]<sub>NP</sub> [clobbered [that guy]<sub>NP</sub>]<sub>VP</sub>]<sub>S</sub>
2. Propositions represented  
friend(x,y), y = individual<sub>1</sub>, x = individual<sub>2</sub>  
clobber(x,z), guy(z), that(z), z = individual<sub>3</sub>

Situational representation (what the utterance is about):



## What do we remember? Conventional wisdom

1. Surface structure of utterances (textual representation)  
remains in memory *for brief time*  
can be retained *by rehearsal*  
can be *memorized*  
*but with special techniques* (plays, poetry, Bible, Koran)
2. Meaning (situational representation)  
remains in memory *for long time*  
requires *no special rehearsal*  
is the *product of normal understanding*

## Recognition memory for utterances (Sacks)

Utterance	Change
1. A wealthy manufacturer, Matthew Boulton, sought out the young inventor.	original
2. A wealthy manufacturer, Matthew Boulton, sought the young inventor out.	formal
3. The young inventor was sought out by a wealthy manufacturer, Matthew Boulton.	passive/active
4. The young inventor sought out a wealthy manufacturer, Matthew Boulton.	semantic

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## Utterances with high interactional content

Utterance	Change
a. Italians, you know what Italians are like, they had a strike, they had a heat wave.	<i>target</i>
b. Everyone knows what happens in Italy, first they had a strike, then they had a heat wave.	<i>paraphrase</i>
c. If in Madagascar they're weird enough to put the verb first, you can guess what their eye movements must be like.	<i>new distracter</i>
d. They're so weird in Madagascar they put verbs first; you can imagine what they do with their eyes.	<i>paraphrase of new distracter</i>

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## Results of recognition experiment

**High interactional** content utterances

Do you always put your foot in your mouth?  
I think you've made a fundamental error in this study.

**Low interactional** content

Do you always use CRT displays?  
I think there are two fundamental tasks in this study.

Recognition of exact form of utterance: after two days

High interactional: 56%  
Low interactional: 19%

Control participants (students not in discussion): immediate

High interactional: 47%  
Low interactional: 47%

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## Recognition of utterances in soap opera (Bates)

1. I wanted to get that Pendleton work done while **he** was out of the office.
2. I wanted to get that Pendleton work done while **Robert** was out of the office.
3. We're doing everything we can to make sure that **she** does, Ada.
4. We're doing everything we can to make sure that **she keeps the baby**, Ada.

Participants distinguished 1 vs. 2, and 3 vs. 4, above chance. But how?

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## Memory for utterances in conversation (Hjelmquist)

Original conversation (but in Swedish)

A I'd never vote for Palma  
B Well, I think you did just the wrong thing.

Test items (for A)

Old I'd never vote for Palma  
Paraphrase I wouldn't ever cast a vote for Palma  
New Palma is a really wily politician

Rate whether the utterance occurred in yesterday's conversation: 1 = definitely no, 7 = definitely yes

	old	paraphrases	new
my own	5.51	4.78	2.37
my partner's	5.13	4.62	3.25

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## What is recognized?

Every difference in form → difference in meaning

John went home vs. He went home  
We pulled in the rope vs. We pulled the rope in  
Mary is here vs. My wife is here

Irony

What a fine friend you are! vs.  
What a good friend you are!

So-called indirect speech acts

Please hold these for me  
Would you hold these for me?  
Why the hell aren't you holding these for me?

Hence *not* memory for textual representation

Every change in sentence → change in meaning  
If meaning is predictable from narrative, then people *seem* to have good verbatim recognition  
We have good memory for a *speaker's style*

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## What precisely *is* verbatim recall?

Original spontaneous exchange

Sidney	I- I've only been- we've only been to like . four of his l- five of his lectures, right?
Jim	no we've been to more than that something like seven eight.

Possible "literal" reports of Sidney's utterance:

*Actual speech (including disfluencies)*

Sidney says 'I- I've only been- we've only been to like . four of his l- five of his lectures, right?'

*Illocutionary acts (all)*

Sidney says 'We've only been to, like, five of his lectures, right?'

*Sentence uttered*

Sidney says 'We have only been to five of his lectures.'

(Clark & Gerrig)

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## What precisely *is* verbatim recall?

Original spontaneous exchange

Sidney	I- I've only been- we've only been to like . four of his l- five of his lectures, right?
Jim	no we've been to more than that something like seven eight.

Four actual reports of Sidney's utterance:

Sidney says . 'we've only been to what, five of his lectures?'

Sidney goes 'well you've only been to like . four or five of his lectures'

Sidney said 'well I've only been to like four or five of his lectures'

Sidney says 'oh I've only been to like . what . four . or five or something like that of his lectures'

(Clark & Gerrig)

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## Quotation vs. verbatim reproduction

Part 1: Short scene from *Breakfast at Tiffany's*

All students memorized scene verbatim

All students could reproduce it accurately

Part 2:

Half the students: tell story with accurate dialogue

Other half: tell story to entertain or amuse

Results:

Accuracy instructions: 99% accurate dialogue

Amuse instructions: 62% accurate dialogue

(Wade & Clark)

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## Quotations normally *not* verbatim

Scene from *Breakfast at Tiffany's*

**Customer** We can only afford to spend a limited amount.

**Sales clerk** May I ask how limited?

Excerpts from stories with "accuracy" instructions:

- And the clerk says, "May I ask how limited?"

Excerpts from stories with "amuse" instructions:

- And the clerk asks, "What is the limited amount?"
- And the clerk says, "Well, how much can you spend?"
- And then the clerk said, you know, "Well, I'd like to help you. Can you tell me how limited this amount is?"

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## What is difficult to recall later?

**Word order** (Wanner)

- Incidental vs. intentional recognition:
- When you score your results, do nothing to [correct your/your correct] answer but [mark carefully/carefully mark] those answers which are wrong.

**Synonyms** (Brewer)

- coffin → casket
- attempt → try

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## What is difficult to recall later?

**Two references to one object** (Bransford et al.)

"something heavy" vs. "something that makes nice sounds" as retrieval cue to ...

- The man lifted the piano.
- The man tuned the piano.

**Two wordings for same reference** (Anderson et al.)

- The container held the cola → The bottle held the cola
- The container held the apples → The basket held the apples

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## Even *immediate* memory is not verbatim

Participants told to "Change pronoun to plural" and immediately write the sentence down

- He badly treated the servant → They treated the servant **badly**
- He badly needed the money → They **badly** needed the money

So word order isn't fixed

(Greenbaum)

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## Even *immediate* memory is not verbatim

**Immediate memory is conceptual**

You hear: "The knight rode around the **palace** searching for a place to enter"

Then you hear word list with "castle" (to recognize)

Your immediate recall:

22% intrusions from "palace" to "castle" vs. 8% on controls

**Immediate memory accommodates**

You hear: "The rich widow is going to **give** the university a million dollars"

Then you hear word list with "donate" (to recognize)

Your immediate recall:

"The rich widow is going to **donate** a million dollars to the university"

(Potter and Lombardi)

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## Recognition memory for content

The procedure is quite simple. First you arrange things into different groups depending on their makeup. Of course, one pile may be sufficient depending on how much there is to do. If you have to go somewhere else due to lack of facilities that is the next step, otherwise you are pretty well set.

It is important not to overdo any particular endeavor. That is, it is better to do too few things at once than too many. In the short run this may not seem important, but complications from doing too many can easily arise. A mistake can be expensive as well. The manipulation of the appropriate mechanisms should be self-explanatory, and we need no dwell on it here.

At first the whole procedure will seem complicated. Soon, however, it will become just another facet of life. It is difficult to foresee any end to the necessity of this task in the immediate future, but then one never can tell.

(Bransford & Johnson)

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## Recognition memory for content

Recall of passage

with title before	5.83 idea units
with title after	2.65 idea units
with no title	2.82 idea units

(Bransford & Johnson)

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## Eye-witness questions

Week 1 (after movie about a demonstration)

Eye-witness questions

1. Was the leader of the four demonstrators who entered the classroom a male?
2. Was the leader of the four (or 12) demonstrators who entered the classroom a male?

Week 2 (brought back for questions)

Eye-witness questions

How many demonstrators were there?

"4" group	6.40 people
"12" group	8.85 people

(Loftus)

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## Eye-witness questions

Week 1 (after movie about auto accident with no barn)

How fast was the white sports car going *[when it passed the barn]* while traveling along the country road?

Week 2:

Did you see a barn?	yes
Long question	17.3%
Short question	2.7%

(Loftus)

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## Eye-witness questions

Week 1 (after accident movie with *no* school bus)

1. Did you see a school bus in the film?
2. Did you see the children getting on the school bus?
3. (no question about a school bus)

Week 2:

Did you see a school bus in the film?	yes
Group 1	16%
Group 2	29%
Group 3	8%

(Loftus)

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## Framing situations: Range

Range of answers (about headache products):

1. "In terms of the total number of products, how many other products have you tried? 1? 2? 3?"
2. "In terms of the total number of products, how many other products have you tried? 1? 5? 10"

1/2/3 participants	3.3 other products
1/5/10 participants	5.2 other products

Headache study:

1. "Do you get headaches frequently, and if so, how often?"
2. "Do you get headaches occasionally, and if so, how often?"

frequently	2.2/week
occasionally	.7/week

(Loftus)

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## Framing situations: Range

After car accident movie (with no broken glass):

Week 1 How fast were the cars going when they ...

smashed	41 mph
collided	39
bumped	38
hit	34
contacted	32

Week 2 Did you see any broken glass? "yes"

"smashed" group	32%
"hit" group	14%

(Loftus)

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## False memories from therapy

"In 1986 Nadean Cool, a nurse's aide in Wisconsin, sought therapy from a psychiatrist to help her cope with her reaction to a traumatic event experienced by her daughter.

During therapy, the psychiatrist used hypnosis and other suggestive techniques to dig out buried memories of abuse that Cool herself had allegedly experienced.

In the process, Cool became convinced that she had repressed memories of having been in a satanic cult, of eating babies, of being raped, of having sex with animals and of being forced to watch the murder of her eight-year-old friend.

She came to believe that she had more than 120 personalities—children, adults, angels and even a duck—all because, Cool was told, she had experienced severe childhood sexual and physical abuse.

The psychiatrist also performed exorcisms on her, one of which lasted for five hours and included the sprinkling of holy water and screams for Satan to leave Cool's body."

(Loftus)

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## Lost in the mall technique: Method

A study of "the kinds of things you may be able to remember from your childhood."

Brief description of four events of participant and family member

- three true events
- one false "lost" event

(Loftus & Pickrell)

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## Lost in the mall technique: Example

**False-memory paragraph**

*20-year-old Vietnamese-American woman from Washington state:*

"You, your mom, Tien and Tuan, all went to the Bremerton K-Mart. You must have been five years old at the time. Your Mom gave each of you some money to get a blueberry ICEE. You ran ahead to get into the line first, and somehow lost your way in the store. Tien found you crying to an elderly Chinese woman. You three then went together to get an ICEE."

**False events included these elements**

1. lost for an extended period of time
2. crying
3. lost in a mall or large department store at about age five
4. found and aided by an elderly woman
5. reunited with the family

(Loftus & Pickrell)

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## Lost in the mall technique: Results

Immediate: all participants remembered ...

- 68% of true events
- no false events

1-2 weeks later, ...

- 29% remembered part of false events

1-2 weeks after that,

- 25% remembered part of false events

But where do the false “memories” come from, and why?

Stay tuned!

(Loftus & Pickrell)

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Remember anything?



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