

## Chapter 8b – Applications

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### Attention and Memory

- integration due to contiguity – Don Thomson story
- weapon focus (Johnson & Scott, 1976)
- arousal narrows attention, sometimes too much

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### The Line-Up

- line-up as signal detection
  - signal = criminal
  - noise = innocent
- need enough distractors to reduce guessing
- need similar distractors
- should administer several line-ups, including some without suspected perpetrator (Malpass & Devine, 1985)

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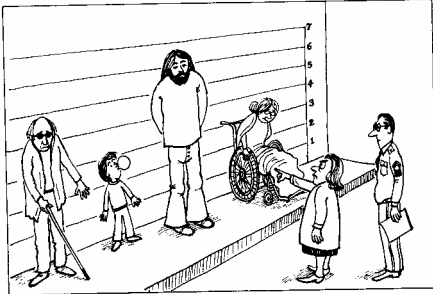
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## Line-Up Problems...



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## Line-Up Cautions

- inform the victim that the suspect may not be in the lineup to get a fairer criterion
- make the people in the lineup as similar as possible to the description, even in apparently nonessential ways
- do not rely on the witness's confidence too much; confidence has been shown to have little relation to accuracy in this sort of situation (Deffenbacher, 1980)

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## Elizabeth Loftus

- Univ. of Washington / California - Irvine
- foremost expert on eyewitness testimony
- helped re-emphasize reconstructive memory
- now also a leading expert on false memory

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## Integration

- Loftus & Palmer (1974)
- How fast was car 1 going when it \_\_\_\_\_ car 2?
- Part I: speed estimates:
  - smashed into: 40.8 mph
  - collided with: 39.3 mph
  - hit: 34.0 mph
  - contacted: 31.8 mph

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## Integration

- Part II: damage estimates:
  - Did you see any broken glass?
    - smashed into: 32% yes
    - hit: 14% yes
    - control: 12% yes

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## Reconstruction & Integration

- Loftus, Miller, & Burns (1978)
- showed subjects a series of slides depicting an accident and later asked a series of questions

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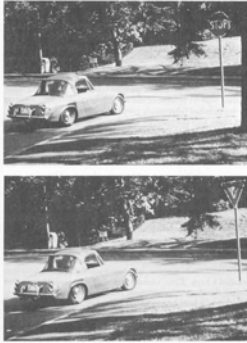
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## Integration in Memory



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## Reconstruction & Integration

- Loftus, Miller, & Burns (1978)
- showed subjects a series of slides depicting an accident and later asked a series of questions
- early question: "As the Datsun rounded the corner at the **stop/yield** sign, did you see the blue sedan approaching?"
- later question: "Which sign did you see?"
  - accurate suggestion: 75% correct
  - inaccurate suggestion: 41% correct

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## Prior Knowledge & False Recall

### Holst & Pezdek (1992)

- S's hear mock testimony of robbery
  - 4 typical events stated - ex. (demand \$)
  - 4 unstated - ex. (took \$)
- Test: recall testimony (1 week later)
- Results:
  - recalled 31% stated
  - *falsely* recalled 15% unstated

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## Repressed Memories

- horrible memory from the past
- recovered in therapy using
  - imagery
  - suggestive questioning
  - repetition
- PTSD

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## Flashbulb Memories

- Challenger explosion
- 9/11
- rehearsal through repeated retellings

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## Understanding Instructions

- File & Jew (1973): greater difficulty understanding instructions that contained negatives
- Do not leave cigarettes lighted. Do not leave any sharp objects on your person. When using the slides, do not keep your shoes on, do not bend knees, nor fail to place hands on knees.
- Extinguish cigarettes. Remove all sharp objects from your person. When using the slides, remove your shoes, straighten your legs, and place your hands on your knees.
- probably even worse in the real world, with stress, than in the controlled lab setting

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## Understanding Instructions

- Keating & Loftus (1977): instructions for a building fire—public safety
- (Female voice) May I have your attention, please. May I have your attention please.
- (Male voice) There has been a fire reported on the 12th floor. While this report is being verified, the building manager would like you to proceed to the stairways and walk down to the 10th floor. Wait on the 10th floor for further instructions. Please do not use the elevators, as they may be needed. Please do not use the elevators, but proceed to the stairways.
- Potter (1972): road signs—spacing, repetition, and pictures

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## Cell Phones...

- Do they present a danger?
- Israel, New York state, and other outlaw use of hand-held phones in cars
- Strayer & Johnston (2001): research shows it's the cognitive demands, not the physical ones, that are dangerous



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## Advertising

- the power of repetition
- attention + rehearsal

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## Advertising

- inferences remembered as assertions (Harris & Monaco, 1978)
- uniqueness (Mayer, 1958; Reeves, 1961)
- ads faster than “real time”

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## Subliminal Advertising?



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## Subliminal Perception

- James Vicary (1957) – Eat Popcorn Drink Coke
  - 18% rise in Coke, 58% rise in popcorn
- criticism (Vokey & Read, 1985)
  
- Marcel (1983)
  - physical information
  - semantic information

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### Marcel (1983)

- masked trial with word or no word; find rate at which subject cannot distinguish
- test trials vary “prime” that is masked, then ask for judgments
  - see 'horse' or 'xxxxx', then mask
- Which is more like the word in shape?
  - tense slack      60% correctly pick 'tense'
- Which is more like the word in meaning?
  - cow slack      90% correctly pick 'cow'

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### Speed Reading

- one more example of the “cognition should be effortless” school of thinking
- 250 ms/ fixation and per saccade, 3 of each per line, 44 lines/page (and 500 words/page) = max speed of about 500 words/minute
- normal speed = 300-400 wpm; quite good
- eyes cannot handle 1500 wpm, nor can you “spread” attention in the way courses claim

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### Value of Testing

- even many study trials does not yield perfect performance on a test (Izawa, 1972)
- inter-mingle a few test trials during study, and now ultimate test performance is perfect
- distribute study/rehearsals (Hintzman, 1972; Bjork & Landauer, 1977)

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## Effective Studying

- have a framework (e.g., SQ3R) for studying (Glaser & Resnick, 1972)
- study groups help (Fraser & Schwartz, 1975)
- set a specific (higher) goal—e.g., 90% correct on the test—rather than setting the standard goal—i.e., “doing your best”—Laporte and Nath (1976)
- taking notes in class or underlining in books does not help on tests **unless you study them later** (Carter & Van Mater, 1975)

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## Schizophrenia

- Oltmanns and Neale (1975): schizophrenics have relatively poor memories; disability increasingly evident as list length grows
- do not organize or **chunk** materials, because they are distracted and have less attentional and STM capacity available
- Frame & Oltmanns (1982): true even when in apparent remission, although training in organization can help

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## Sex Diffs in Spatial Ability

- on standardized tests & in experiments, women tend to have lower spatial abilities than men
- Hyde (1981): difference is usually significant, but in fact is virtually always **tiny**
- Waber (1977): Is it really maturational differences, not sex differences?

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## Laterality & Handedness

- how do we tell which hemisphere controls which function—verbal versus spatial?
- almost all right handers are left verbal
- lefties make up about 8% of the population (12% in universities): about 60% are left verbal and 40% reversed
- Levy (1984): normals (40%); “hookers” (60%)

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## Aging

- Hasher, Zacks & Rahhal (1999)
  - inhibitory control of working memory
  - time of day
- sensory functioning
- myelination & pruning

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