

ECPS6005: COGNITION IN ACTION

MEMORY IN THE REAL-WORLD EYEWITNESS MEMORY

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NOTICING CHANGE: WHO DUN IT VIDEO?

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EYEWITNESS MEMORY: CONSIDERATIONS OF IMPORTANCE

- Devlin report (1976): even when the only evidence is EW ID = 74% conviction rate.
- EW ID accepted even when contradicted by physical and/or expert evidence.
- Juries tend to be suspicious of paid experts

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EYEWITNESS MEMORY: CONSIDERATIONS OF IMPORTANCE

- Eyewitnesses are:
 - Perceived as independent
 - No vested interest in outcome of trial
 - (Usually) have no scientific, legal, or Ψ expertise
 - Peers of the jury, lay-people
 - Not paid to give testimony – perhaps even had to spend money

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EYEWITNESS MEMORY: CONSIDERATIONS OF IMPORTANCE

- However, EVs are not always independent
 - May be getting something out of it
 - Do genuine acts of altruism really exist?
 - CPS sometimes use co-accused (who will get a lesser sentence) as a witness.
 - E.g., Michael Stone case: cell mate used as prosecution witness, claims Stone admitted murders
 - Some people want 15-minutes of fame: 24-hour news channels, tabloids paying to hear EVs story

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EYEWITNESS MEMORY: RESEARCH TO HIGHLIGHT ISSUES WITH IMPORTANCE

- Loftus (1974): Students used as mock jury presented with “evidence” about a murder

Type of “Evidence”	% Conviction
1. Circumstantial	18%
2. Circumstantial + EW ID	72%
3. Circumstantial + EW ID but with expert contradicting EW	68%

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EYEWITNESS MEMORY: RESEARCH TO HIGHLIGHT ISSUES WITH IMPORTANCE

- Rattner (1988):
 - 205 exonerations by physical evidence in US
 - Mistaken EW ID main source of errors
 - Executions halted in Illinois.
- Brandon & Davies (1973); Huff et al. (1986):
 - 1000 wrongful convictions due to EW error

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EYEWITNESS MEMORY: RESEARCH TO HIGHLIGHT ISSUES WITH IMPORTANCE



- Introduction of physical evidence e.g., fingerprint, DNA, much more reliable and exemplifies mistakes by EWs.
- Wells et al. (1998): 40 cases of DNA evidence exonerating suspect wrongly identified
 - In 5 cases, the wrongly convicted person had been on death row!

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INFLUENCES ON EYEWITNESS MEMORY



- May inadvertently pick out innocent person.
- False IDs often "honest errors"
 - Over eager to help?
- Recall prone to distortion by prior knowledge/expectation
- Susceptible to reconstructive error (Zaragoza & Lane, 1998)
- Prone to error when events involve violence - less perceptive when frightened (Loftus & Burns, 1982)

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EYEWITNESS MEMORY: EFFECTS OF POST-EVENT (MIS)INFORMATION

- Event recall distorted by post-event (mis)info (Wright et al., 2000).
- Misleading info can intentionally/unintentionally be communicated:
 - Leading questions from investigators or content of questions
- (Mis)information can “fill-in” gaps/contradict memory
- Co-witness effects:
 - In time between witnessing event & police arriving, EW may talk to other witnesses who may have seen something different (possibly due to difference in interpretation, difference in viewpoint, etc.), which can **contaminate** EWs memory.

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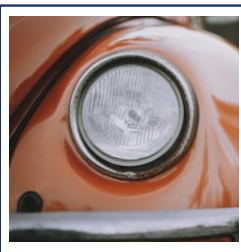
EYEWITNESS MEMORY: EFFECTS OF POST-EVENT (MIS)INFORMATION

- Loftus & Palmer (1974): Car accident
 - PEQ: “How fast were cars travelling when they hit/smashed/bumped/etc.”
 - Week later: “Did you see broken glass”: response depends on wording
 - Report of car speed ranged depending on wording.
- Phrasing of questions is important
 - Highlights interaction between visual and verbal memory - Question was verbal but constructed a visual memory



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EYEWITNESS MEMORY: EFFECTS OF POST-EVENT (MIS)INFORMATION



- Loftus and Zanni (1975):
 - After viewing car crash, Ps likely to report seeing broken headlight if asked if they saw “**the** broken headlight” rather than “**a** broken headlight”
- No broken headlight shown.
- Changing single word sufficient to influence retrieval – makes implicit suggestion about what they should have seen

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EYEWITNESS MEMORY: EFFECTS OF POST-EVENT (MIS)INFORMATION



- How/why does this happen?
- Loftus: memory is **not** a recording; it reconstructs/changes
- Two types of info are encoded:
 1. Info encoded during initial event
 2. Info encoded after (learning new info)
 - Both cannot be remembered (especially contradict)
 - Info from both sources become integrated memory
 - Memory updated by adding/subtracting info.

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EYEWITNESS MEMORY: EFFECTS OF POST-EVENT (MIS)INFORMATION



- Loftus, Miller, & Burns (1978):
 - Ps shown car sat at **stop** sign.
 - PEQ: "Did another car pass while car was stopped at **give-way** sign?"
 - Ps given recognition test for original vs. misleading slide
 - Sig decrease in recognition accuracy for original slide when misleading info given
- Memory becomes increasingly vulnerable with increasing interval between witnessing event and receiving contaminated info due to original trace being weaker.

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EYEWITNESS MEMORY: EFFECTS OF POST-EVENT (MIS)INFORMATION

- How does misinformation affect memory?
- **Destructive Updating hypothesis**.....
 - We have single memory representation, which can be updated with leading info
 - New or contradictory post-event info may integrate into existing memory
 - Original memory trace destroyed and replaced by post-event misleading trace
 - In EW situations, there is no opportunity to re-encode the info.
- However, Loftus' work has received major backlash and criticism.

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EYEWITNESS MEMORY: EFFECTS OF POST-EVENT (MIS)INFORMATION

- **Non-retention Account:**
- McCloskey and Zaragoza (1985): even if misinfo has no effect on memory, misled participants still choose original items less than controls
 - Why? Perhaps original item has decayed or never encoded.
 - Thus, PEQ provides a source of memory
 - Those who cannot remember original item base choice from misinfo
 - So, does not show a destructive memory effect

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EYEWITNESS MEMORY: EFFECTS OF POST-EVENT (MIS)INFORMATION

- Major issue with suggestibility research:
 - Demand characteristics
 - Is there a change or do people go along with it because they assume experimenter must be correct?
 - Shows there is a problem with the paradigm.

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EYEWITNESS MEMORY: EFFECTS OF POST-EVENT (MIS)INFORMATION

- Control Ps:
 1. Remember original item → choose original (50% of Ps are correct straight away)
 2. Do not remember original item → ½ guess original, ½ guess misinfo
- Misled Ps
 1. Remember original item → choose original
 2. Do not remember original or misinfo → ½ guess original, ½ guess misinfo
 3. Remember original & Misinfo → ½ guess original, ½ guess misinfo
 4. Remember misinfo → choose misinfo

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EYEWITNESS MEMORY: MODIFICATION OF PARADIGM TO TEST NON RETENTION ACCOUNT OF MEMORY

- McCloskey & Zaragoza (1985): modified test.
 - Remove misinformation as a choice at test –
 - Equalises guessing rates across conditions - Removes demand characteristics
 - If memory for original item remains, misled Ps should choose original
 - If original memory decayed, misled Ps should perform at chance

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EYEWITNESS MEMORY: MODIFICATION OF PARADIGM TO TEST NON RETENTION ACCOUNT OF MEMORY

- However different studies produce different findings:

Misinfo effect with modified test:
 Chandler (1989, 1991);
 Chandler & Gargano (1998)
 Belli et al. (1992)
 Ceci et al. (1987)
 Toglia et al. (1992)

NO misinfo effect with modified test:
 Belli (1993); Belli et al. (1992)
 Bonto & Payne (1991)
 Loftus et al. (1989)
 McCloskey & Zaragoza (1985)
 Zaragoza et al. (1987)

Retention intervals 3-7 days

Retention intervals 30 min or less

Major implications for police questioning, which can take place days/weeks after event. Therefore, memory trace would become weaker.

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EYEWITNESS MEMORY: REVISION OF DESTRUCTIVE UPDATING HYPOTHESIS

- Loftus & Hoffman (1989): original trace not destroyed
 - Misinfo weakens original trace leading to disintegration of features
 - Original trace may remain in degraded form and retrievable
- Reversed suggestibility effect: Lindsay & Johnson (1989):
 - Ps read narrative describing cluttered office scene
 - Some info consistent with yet to be seen slide
 - Some info inconsistent (8 additive items suggested)
 - Ps then view slide depicted from narrative
 - Yes/no test for items in picture
 - Misled Ps state they have seen the suggested items more than controls.
 - Shows source monitoring error: rather than just error remembering items

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EYEWITNESS MEMORY: SUMMARY



- So, can witness memory be adapted?
 - To some degree, but not as easily as we might think.
 - Need to consider social factors or demand characteristics
 - Should not underestimate EW wanting to be helpful
 - Weak memories likely to be most vulnerable
 - Blending of memories possible
 - Retrieval failures and source misattribution need to be considered.
