

# Assessing Witness Credibility



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# The Plan

- Background
- The characteristics and limitations of human memory
  - Acquisition/Encoding
  - Storage
  - Retrieval
- What can be done?



# Background

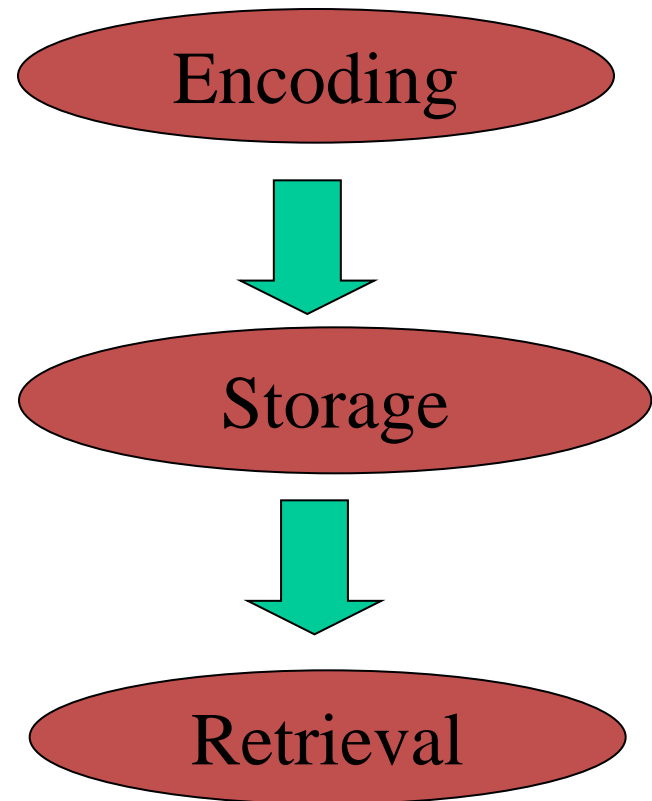
- Human Memory Evidence:
  - Can be critical to an investigation
  - Can be very influential
  - Like other trace evidence, is very vulnerable to contamination
  - We must handle it with care

# Background

- Memory is not like a video recorder
- Your memory is not a veridical record of an event
- Your memory of an event is affected by many factors

# Background

- When/why do eyewitnesses go wrong?
  - I. Acquisition/Encoding: Witness's perceptions at the time of the event
  - II. Storage: Witness stores memory to avoid forgetting
  - III. Retrieval: Witness retrieves information from storage when needed.



# I. ACQUISITION/ENCODING:

We don't always see what's there

- Many features of an event can influence a person's perception
  - Exposure time
  - Lighting
  - Distance
  - Physical disguise
  - Distraction

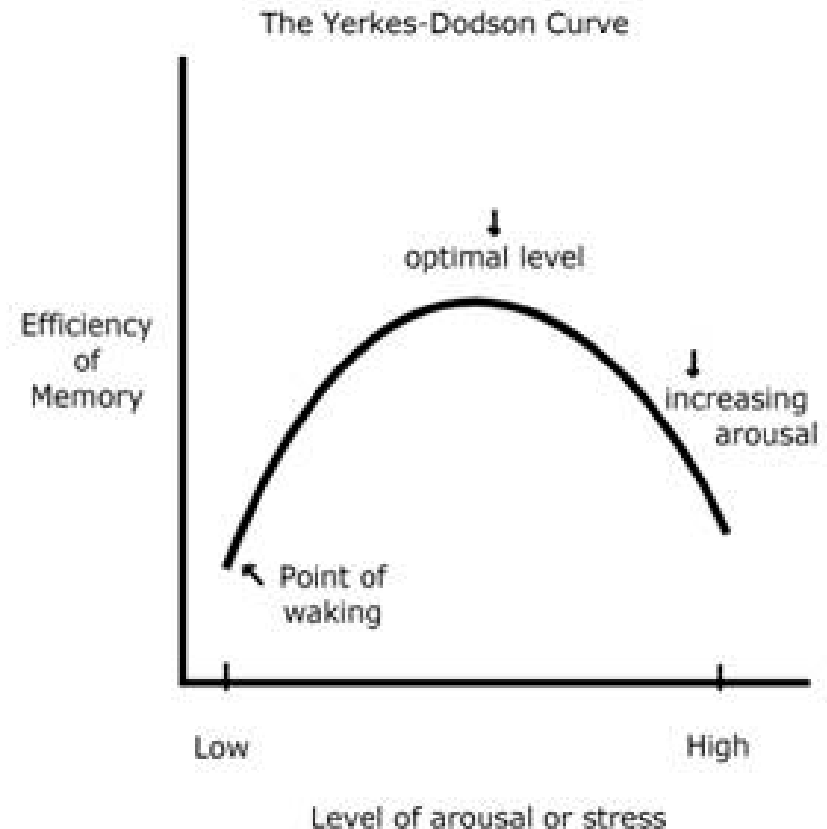
# Expectations and Prior Knowledge

- Expectations and prior knowledge affect perception
  - We construct our memories partly on what we perceived at the time and partly on our expectations, beliefs, and current knowledge

# Memory for Stressful Events

## *Emotional Level*

- Yerkes-Dodson law
  - Memory best at optimum level of arousal





# Memory for Stressful Events

- Easterbrook hypothesis
  - Highly aroused witnesses have better memory for central details than peripheral details
- Weapons focus effect
  - Presence of a weapon draws attention and impairs a witness' ability to identify a culprit

# Memory for Stressful Events

- Eyewitnesses who can describe trivial details of a crime scene are often *less* able to correctly identify the perpetrator
- That is, those who pay attention to details are less likely to pay attention to the culprit's face (Wells & Leippe, 1981)

# Memory for traumatic Events

- We do not know enough about the effects of trauma on memory
  - It is very difficult to test memory for traumatic events leading to PTSD
- We don't usually have access to "ground truth"
- Some indication of enhanced memory, some of reduced accuracy
- People suffering from a trauma may find it hard to give a coherent account.
- We should be very careful when trying to assess the veracity of an account of a traumatic event.

# Memory for traumatic Events

- Aug 2001, flight AT236 developed fuel leak mid-Atlantic. For 30 minutes passengers had very grave fears for their lives before eventually managed to land.
- Many, but not all, have developed PTSD
- Recent study of survivors found that both those with PTSD and those without had good but not perfect recall of episodic details of the event
- Those with PTSD were more likely to include irrelevant details when recounting both traumatic and non-traumatic events

Empirical Article

**aps**  
AMERICAN  
PSYCHOLOGICAL SOCIETY  
PSYCHOLOGICAL SCIENCE

## Threat of Death and Autobiographical Memory: A Study of Passengers From Flight AT236

Clinical Psychological Science  
1-16  
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sagepub.com/journalsPermissions.nav  
DOI: 10.1177/2167020114542280  
cps.sagepub.com  
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### Abstract

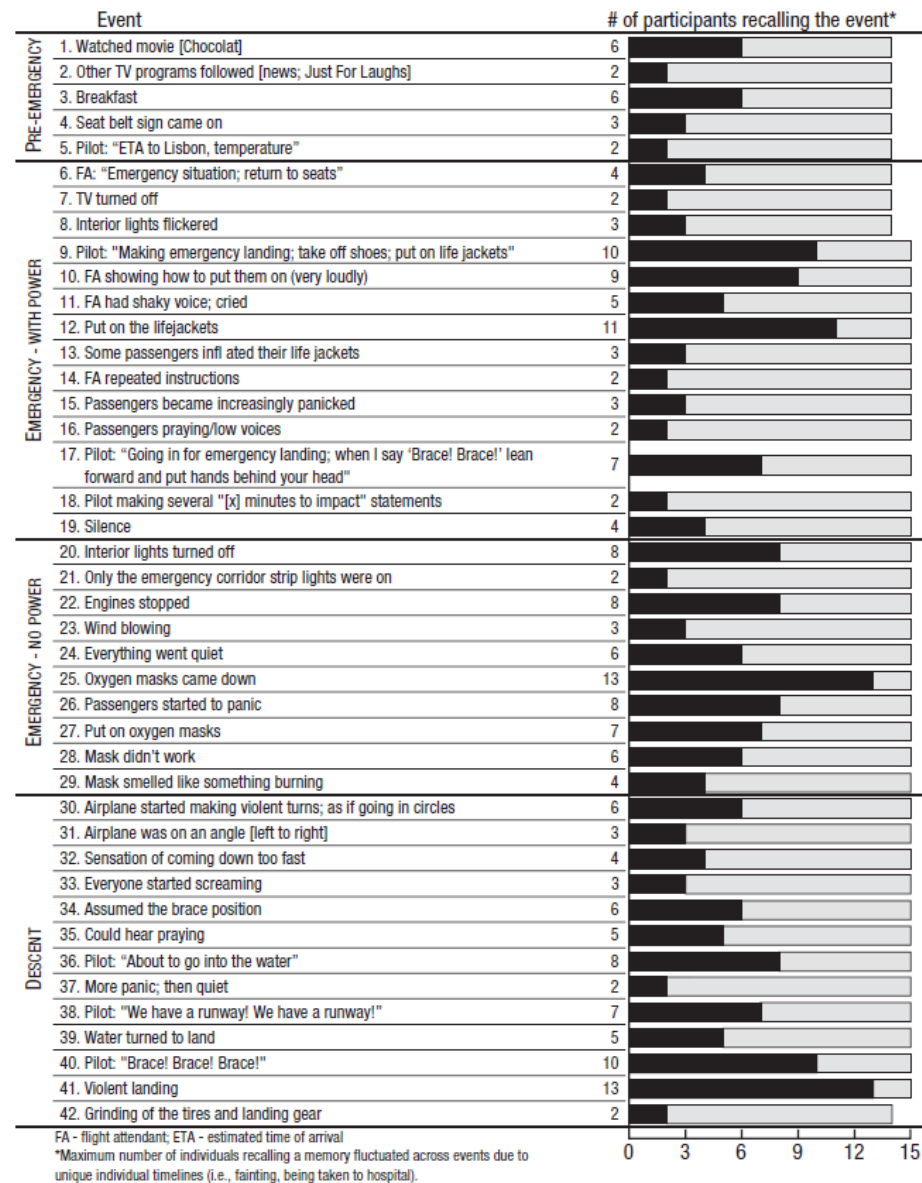
We investigated autobiographical memory in a group of passengers onboard a transatlantic flight that nearly ditched at sea. The consistency of traumatic exposure across passengers, some of whom developed posttraumatic stress disorder (PTSD), provided a unique opportunity to assess verified memory for life-threatening trauma. Using the Autobiographical Interview, which separates episodic from nonepisodic details, passengers and healthy controls (HCs) recalled three events: the airline disaster (or a highly negative event for HCs), the September 11, 2001, attacks, and a nonemotional event. All passengers showed robust mnemonic enhancement for episodic details of the airline disaster. Although neither richness nor accuracy of traumatic recollection was related to PTSD, production of nonepisodic details for traumatic and nontraumatic events was elevated in PTSD passengers. These findings indicate a robust mnemonic enhancement for trauma that is not specific to PTSD. Rather, PTSD is associated with altered cognitive control operations that affect autobiographical memory in general.

### Keywords

memory, trauma, posttraumatic stress disorder

## Appendix B

Sequence of Events That Occurred During the Air Transat Incident, Including the Number of Individuals Recalling Each Event



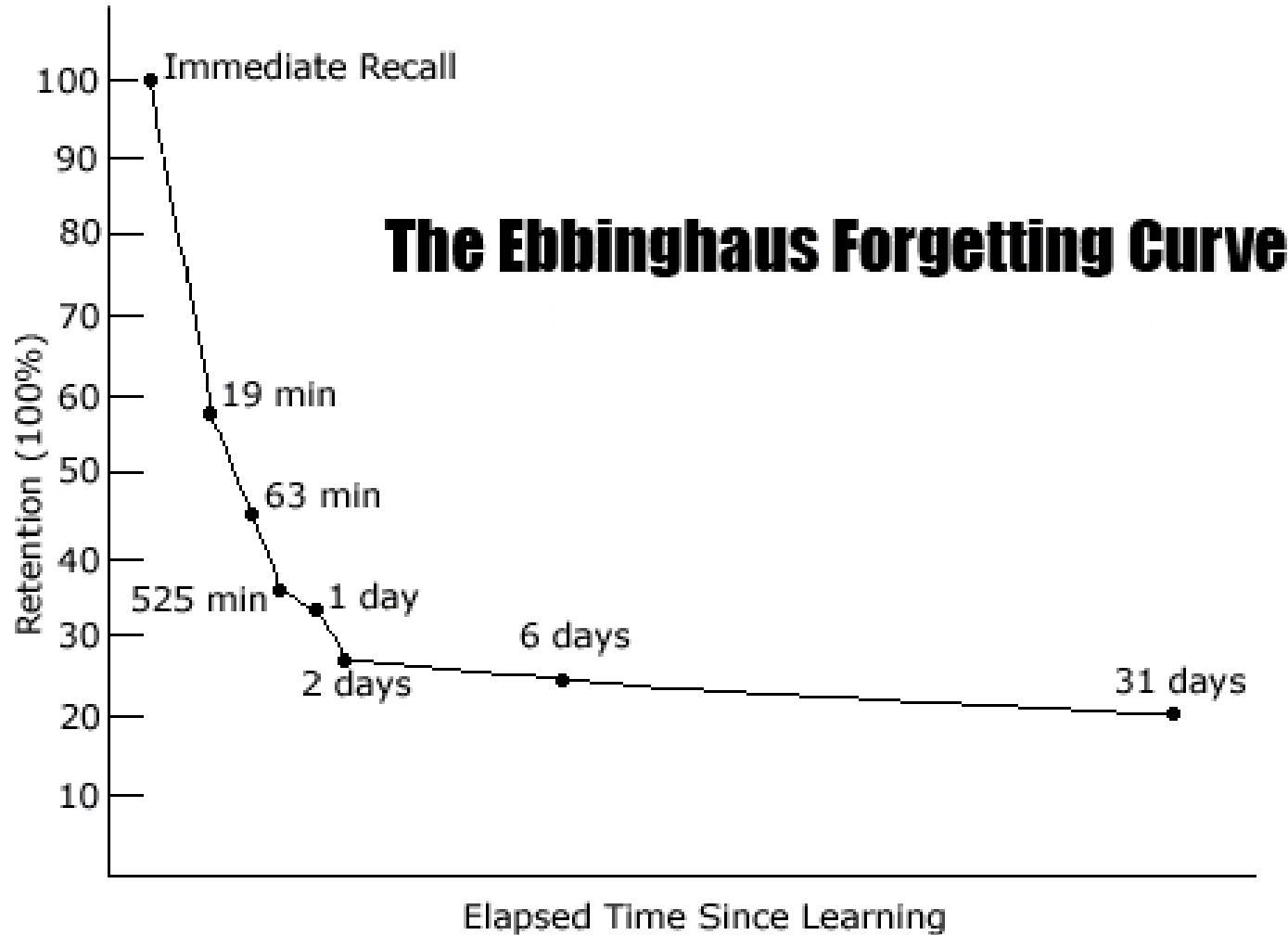
# Memory for Repeated Events

- Research on children's memories of repeated (i.e., reoccurring) events showing that young children struggle to remember specific features of multiple events (e.g., Powell & Thompson, 1997).
- Similarly, research with adults indicates that when repeated events follow a similar "script", adults are incapable of remembering specific details of each event (Hudson, 1986).

## II. Storage: We can't always remember what we saw

- Information is stored in memory
- Information is organised and related to pre-existing concepts
- Memories are “tagged”
- What you do with the material and how you think about it affects later recall

# Our memories change over time





# III. Retrieval

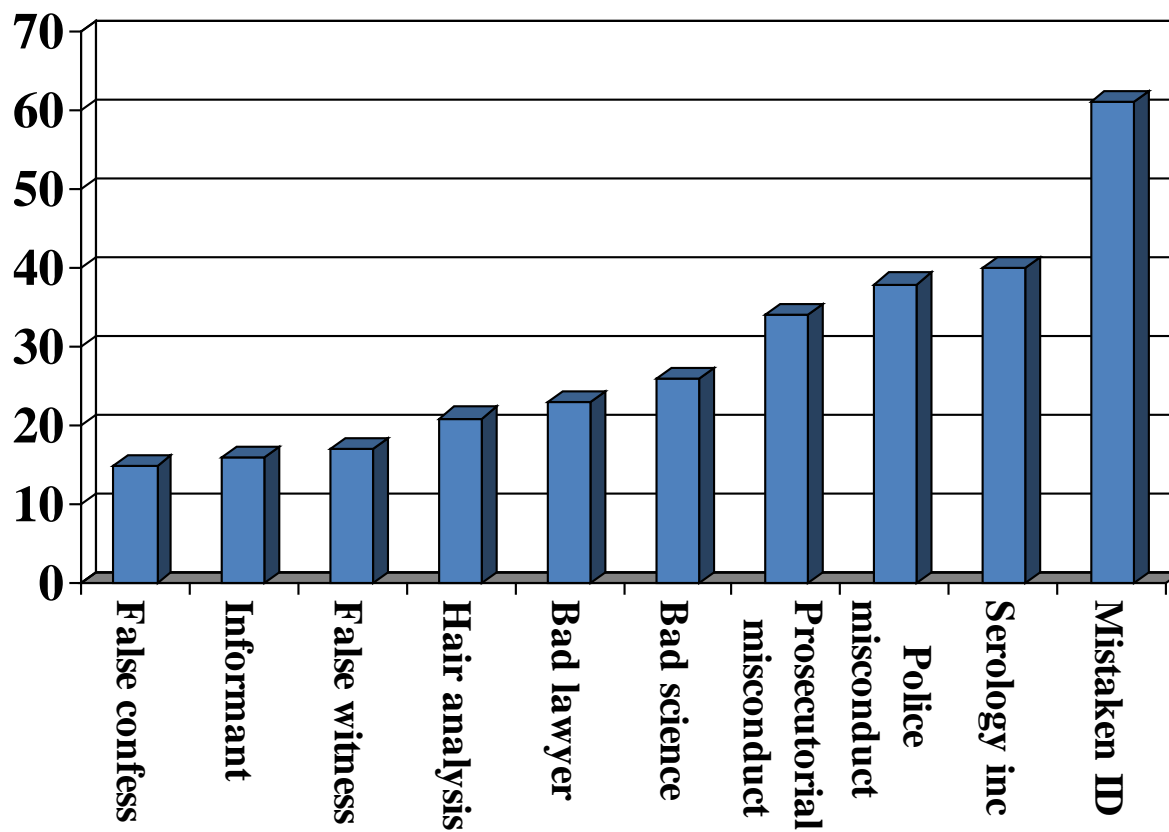
- Memories are accessed via the tags they are encoded with
- Memories can be altered through the process of recall

# RETRIEVAL: The way that witnesses are questioned can affect memory

- Eyewitnesses are questioned by police and lawyers, view mugshots and lineups, and may be asked to create a facial composite
- May be soon after the crime or perhaps months later
- Police procedures can influence retrieval

# The most common factors leading to wrongful conviction

Based on first 70 DNA exoneration cases



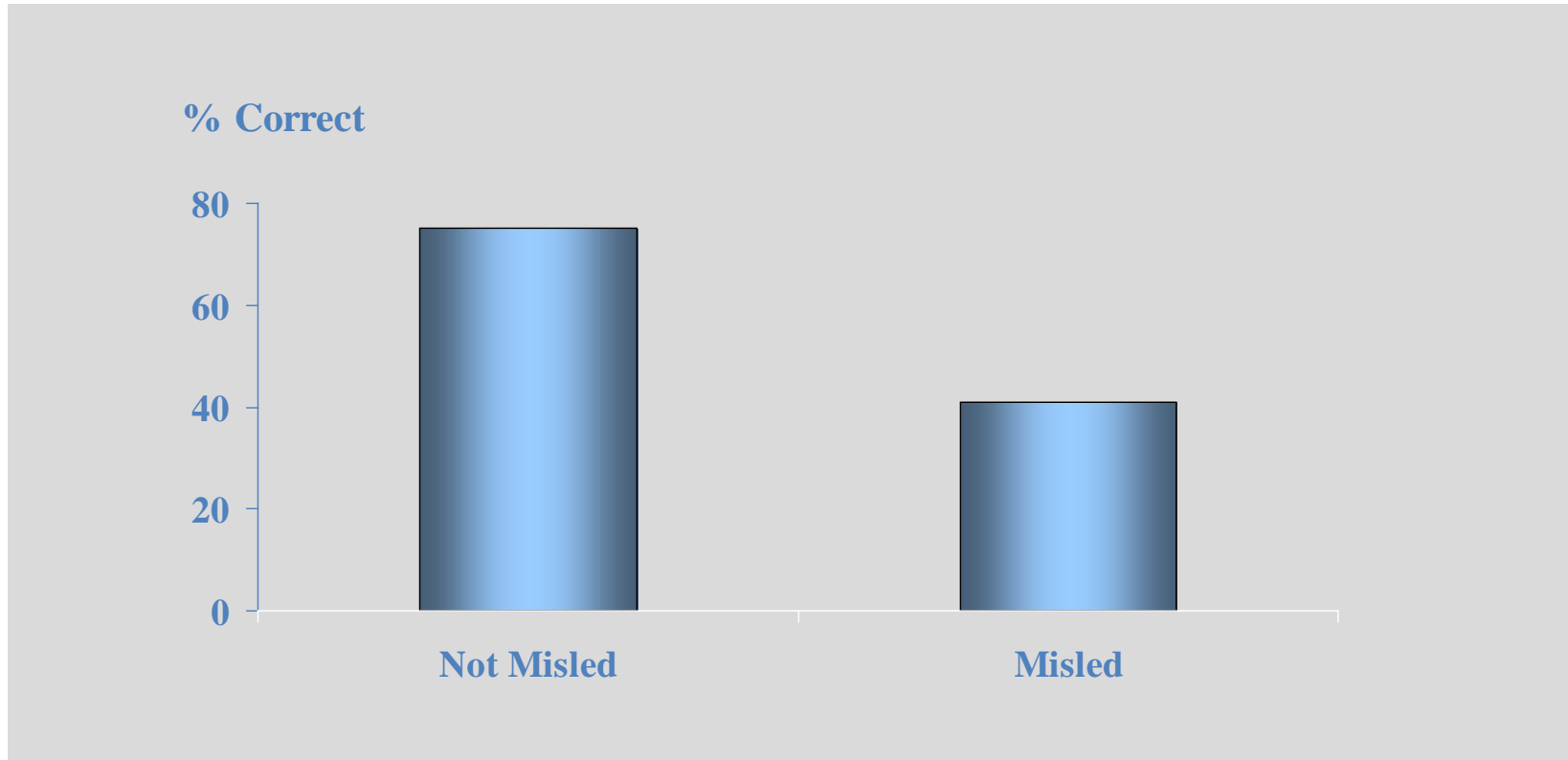
# Line-up Presentation

- Sequential line-ups are thought to be better than simultaneous line-ups because witnesses use absolute judgments instead of relative judgments
- **Relative judgment:** Comparing lineup members to one another and choosing the one who looks most like culprit
- **Absolute judgment:** Each member of the lineup is compared to the witness's memory

# Post-Event Information

- Questioning techniques used by the police can affect eyewitness accuracy
- *Misinformation effect*: Exposure to incorrect information about an event after it has occurred often causes people to incorporate this misinformation into their memories

# Misinformation Effect: Research (Loftus, 1975)

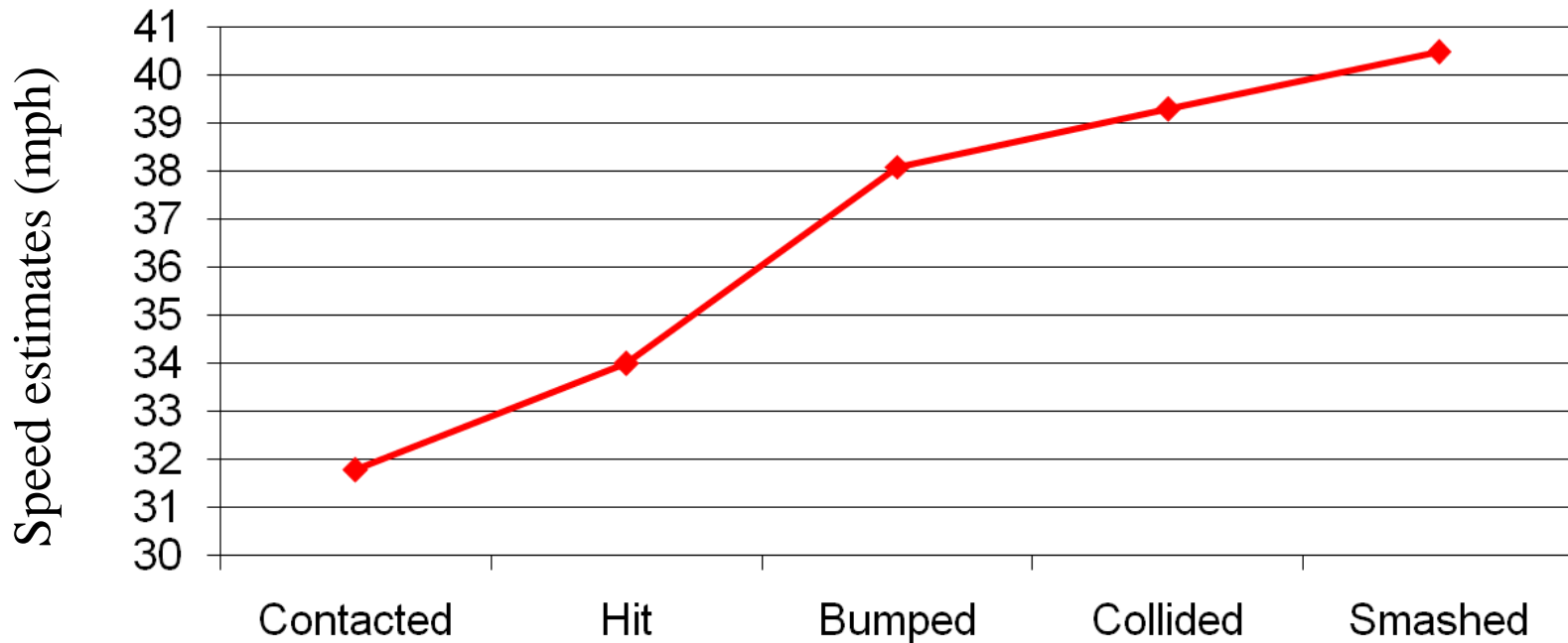


When Ps were later tested on their memories for the event. Those exposed to the false information now believed that the *Give Way* sign was in fact part of the original accident scene.

# Leading Questions

- Participants watch a film of a traffic accident (Loftus & Palmer, 1974)
- Participants asked “How fast were the cars going when they *smashed* into each other” gave higher speed estimates than those asked, “How fast were the cars going when they *hit* each other?”
- A week later, Ps in the *smashed* condition were more than twice as likely to recall broken glass when in fact there was none

# When Small Words Matter





# Post-Event Misinformation

- Research shows that leading or suggestive questions have a very powerful influence on our memory
- And the change is probably permanent – it may be impossible to undo the damage later
- Some other sources of post-event information may be even more persuasive (Paterson & Kemp, 2006a)

# Co-Witness Discussion

- Eyewitness Survey (Paterson & Kemp, 2006b)
  - 86% of witnesses report discussing the event with a co-witness
  - The most frequently stated reason for discussing the event with a co-witness was “providing information”

# Co-Witness Discussion

- Participants watch a video
- Do not know there are two slightly different versions
- Discuss what they remember with a co-witness
- One week later they individually recall what they saw
- Responses show memory conformity
- Warnings are not effective
- Participants are not able to guess whether they discussed with someone who saw same or different video



# False Memories

- We have seen that memory can be inaccurate and we can induce change in memory, but can we make people remember things that never happened?
- That is, can we create “false memories?”

# False Memory Research

- Loftus & Pickrell (1995):
  - » Will people accept suggestions for “rich false memories”?
  - » Gave students 4 short narratives of childhood experiences
  - » Told subjects: all 4 were provided by family members
  - » 3 provided by family, 1 completely false

# False Memory Research

- » “Lost for an extended time in a shopping mall at age 6 and rescued by an elderly person”
- » First checked if recalled: vague or no memories
- » After several suggestive interviews, 25% reported being lost in a mall and gave rich and vivid details

# But...

- Being lost in a mall as a kid is pretty common!
- Maybe they were lost in a shopping mall and now remembered
- Same technique used to create memories of:
  - » being hospitalised overnight
  - » having an accident at a family wedding.
  - » having nearly drowned but been rescued by a lifeguard
  - » being the victim of a vicious animal attack

# False Memory Research

- Participants were shown a fake print advertisement that described a visit to Disneyland and how they met and shook hands with Bugs Bunny (Braun et al, 2002).
- Later, 16% reported meeting and shaking hands with Bugs Bunny



# False Memory Research

- However, Bugs Bunny is a Warner Bros. cartoon and would not be featured at a Disney property!
- “The wascally Warner Bros. Wabbit would be awwested on sight”

# Do people recognize problems with eyewitness testimony?

- “I saw it with my own eyes!”
- Perceived accuracy vs. Actual accuracy
  - Jurors are most likely to believe confident witnesses, but confidence is only weakly related to accuracy.

# Confidence

The definition of confidence is..... being wrong loudly

- Sometimes very confident witnesses will make errors and those with low confidence will accurately recall an event

# Human memory

- So, human memory:
  - It is not a veridical record of events
  - It is vulnerable to distortion
  - Once altered, the original memory is either hard or impossible to restore
  - We must protect the integrity of this evidence

# What can be done?

## What judges and jurors must be aware of:

1. The reconstructive nature of memories: Do not expect your witness to provide a veridical account of the event – remember what they give you is their interpretation coloured by their motivations, expectations, needs etc and shaped by exposure to other sources of information and your questioning
2. It is important to question witnesses as soon after the event as possible.
3. Post-event information can affect the witness's recall
4. Similarities between two witnesses' accounts may reflect either the impact of co-witness contamination or two independent recollections of the same event.
5. Confidence is not always a good indicator of accuracy

# Ways to Catch a Liar

1. Observe their verbal and nonverbal behaviour
2. Analyse the content of what they say

# Verbal and Nonverbal Cues to Lying

Meta-analyses by Sporer & Schwandt (2006; 2007)

- Verbal cues:
  - Higher pitch of voice
  - Increased response latency
  - Increased errors in speech
  - Shorter length of description
- Nonverbal Cues:
  - Decreased nodding
  - Decreased foot and leg movements
  - Decreased hand movements

## 2. Analyse the content of what they say

- Criterion Based Content Analysis (CBCA)
- Based on the “*Undeutsch hypothesis*”:
  - A statement derived from memory of an actual experience differs in content and quality from a statement based on invention and fantasy (*Undeutsch, 1987*)
- Trained evaluators judge the presence or absence (*or strength*) of 19 criteria
- The presence of each criterion strengthens the hypothesis that the account is based on genuine experience
- But, absence of a criterion does not necessarily mean the statement is fabricated (*Vrij, 2005*)



# CBCA Criteria

- General Characteristics
  1. Logical structure
  2. Unstructured production
  3. Quantity of details
  
- Specific Contents
  4. Contextual embedding
  5. Descriptions of interactions
  6. Reproductions of conversation
  7. Unexpected complications during the incident
  8. Unusual details
  9. Superfluous details
  10. Accurately reported details misunderstood
  11. Related external associations
  12. Accounts of subjective mental state
  13. Attribution of perpetrator's mental state

# CBCA Criteria

- Motivation-Related Content
  - 14. Spontaneous corrections
  - 15. Admitting lack of memory
  - 16. Raising doubts about testimony
  - 17. Self-deprecation
  - 18. Pardoning the perpetrator
  
- Offence-Specific Elements
  - 19. Details characteristic of the offence

# SUMMARY

- Eyewitness testimony is commonly used as evidence in court and is one of the most persuasive forms of evidence for juries
- Many psychologists argue that eyewitness memory is not as reliable as the layperson may believe
- There are no perfect methods for deception detection. There is no Pinocchio's nose!