

## Eyewitness testimony

### Accuracy and fallibility

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### Eyewitness testimony – why talk about it?

▪ **The Innocence Project, 2016: 337 cases of DNA exonerated convicted offenders**

- The average sentence served has been 14 years.
- Two thirds of cases – wrongful eyewitness identification.

▪ **Wrongful convictions – why do they happen?**

- Police officers have great faith in eyewitness evidence (Kebbell and Milne, 1998).
- The overall belief that confidence leads to accuracy
  - The legal view: a witness confidence is an indicator of witness accuracy (Weber et al, 2004).
  - The psychological view: the overall correlation between confidence and accuracy is only 0.30 (Krug, 2007).

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### Eyewitness testimony – why talk about it?

▪ **What predicts the accuracy of the eyewitness description?**

- The longer the statement, the greater the eyewitness accuracy.
- Distance between the offender and the witness.
- The physical position.
- The feeling of threat experienced by the witness.
  - The bystander witness vs. the involved witness.
- The similarities between the offender and the suspect (e.g. the same race, gender, age).

▪ **The 10-12 second rule**

Eyewitness who identifies someone from a line-up quickly tend to be more accurate than the eyewitness who takes more time (Dunning and Perretta, 2002).

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## Eyewitness testimony – why talk about it?

- In legal cases memory still is the main or the only source of evidence.
- The law generally is unaware of the findings from the scientific study of memory.

### ▪ Key properties of human memory:

#### 1. Memory is a record of a person's experiences of reality.

An experience is a product of mind interacting with reality.

#### 2. Memories are samples of experience.

Memories for specific experiences are time-compressed summary representations that contain samples of an experience – they are not a complete record of an experience.

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## Eyewitness testimony – why talk about it?

### Key properties of human memory:

#### 3. Remembering is a constructive mental process.

Memories contain general knowledge of experiences and an understanding of the meaning of an experience. Thus, memory includes general autobiographical knowledge (education, occupation, friends, families, life experiences ...).

#### 4. memories are part of the present time.

Memories depend on present context in which they are recalled (emotions, beliefs, knowledge, social and cultural context).

Because of this properties memories may be inaccurate, especially with respect to details recalled. The gist of an event is less prone to inaccuracies.

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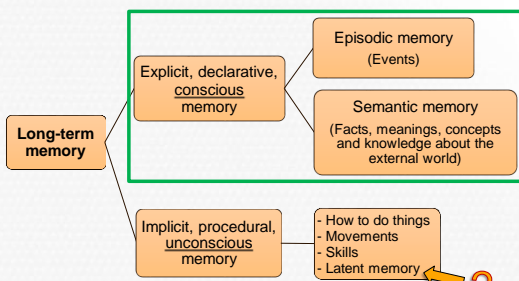
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## Eyewitness memory – explicit memory



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## Important discoveries; the forgetting curve.

In 1885, **Hermann Ebbinghaus** introduced the idea of the exponential nature of forgetting.

This curve shows how information is lost over time when there is no attempt to retain it.

Ebbinghaus studied the memorisation of nonsense syllables, such as "WID" and "ZOF" by repeatedly testing himself after various time periods and recording the results.

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## Important discoveries; Context-dependent memory

- Context-dependent memory - memory is improved when information available at encoding is also available at retrieval (Tulving & Thomson, 1973).

If you encode memories under a certain condition, you'll decode or recall it better under the same condition.

- The experiment: divers learn and recall word lists in two separate environments; under water and on dry land.

Results: memory for word lists learned under water was better when recall sessions occurred under water as well. The same happened for words learned and recalled on land (Godden and Baddeley, 1975).

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## Important discoveries; Memories repressed

- In Freud's theory of "repression" the mind automatically banishes traumatic events from memory to prevent overwhelming anxiety.

- The unpleasant experience is forgotten but not forgiven. It lurks beneath consciousness and allegedly causes mental and physical problems.

- Freud's repression theory has never been verified by scientific proof.

### Today's research shows that:

- Most people do not forget traumatic experiences unless they are very young or unconscious at the time of the experience.
- It is common to consciously repress unpleasant experiences, even sexual abuse, and to spontaneously remember such events long afterward.

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## Important discoveries; the constructive nature of memory

- A memory is constructive when a person gives opinion about what had happened.
  - Experiences, knowledge, and expectations affects memory recall.
- The "War of the Ghosts.": participants were told to remember the story at extended intervals numerous times.
  - Findings:
    - At longer intervals between reading and remembering, participants were less accurate and forgot much of the information.
    - Where the elements of the story failed to fit into the schemata of the listener, these elements were omitted from the recollection, or transformed into more familiar forms.
    - Changing order of events.

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## Important discoveries; the constructive nature of memory - The War of the Ghosts

One night two young men from Egulac went down to the river to hunt seals, and while they were there it became foggy and calm. Then they heard war-cries, and they thought: "Maybe this is a war-party". They escaped to the shore, and hid behind a log. Now canoes came up, and they heard the noise of paddles, and saw one canoe coming up to them. There were five men in the canoe, and they said: "What do you think? We wish to take you along. We are going up the river to make war on the people". One of the young men said: "I have no arrows". "Arrows are in the canoe", they said. "I will not go along, I might be killed. My relatives do not know where I have gone. But you", he said, turning to the other, "may go with them." So one of the young men went, but the other returned home. And the warriors went on up the river to a town on the other side of Kalama. The people came down to the water, and they began to fight, and many were killed. But presently the young man heard one of the warriors say: "Quick, let us go home: that Indian has been hit". Now he thought: "Oh, they are ghosts". He did not feel sick, but they said he had been shot. So the canoes went back to Egulac, and the young man went ashore to his house, and made a fire. And he told everybody and said: "Behold I accompanied the ghosts, and we went to fight. Many of our fellows were killed, and many of those who attacked us were killed. They said I was hit, and I did not feel sick". He told it all, and then he became quiet. When the sun rose he fell down. Something black came out of his mouth. His face became contorted. The people jumped up and cried. He was dead.

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## Important discoveries; the constructive nature of memory - The War of the Ghosts

Reproduction after several months:

### The War of this Ghosts

Two Indians were out fishing for seals in the Bay of Manpapan, when along came five other Indians in a war-canoe. They were going fighting. "Come with us," said the five to the two, "and fight." "I cannot come," was the answer of the one, "for I have an old mother at home who is dependent upon me." The other also said he could not come, because he had no arms. "That is no difficulty" the others replied, "for we have plenty in the canoe with us"; so he got into the canoe and went with them. In a fight soon afterwards this Indian received a mortal wound. Finding that his hour was come, he cried out that he was about to die. "Nonsense," said one of the others, "you will not die." But he did.

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## Important discoveries; the constructive nature of memory – a cognitive schema

- A schema is the word to describe a mental framework in which you would file all your knowledge about certain objects, situations, groups of people and even yourself.
- An example:
  - An unknown room where you have never been before is shortly recognized as a kitchen.
  - Why? We visually scan the places and in there are elements present that are typical components of almost every kitchen: a sink, cup, table, kitchen furniture ...

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## Important discoveries; the constructive nature of memory

- Memories are constructed they are not like recorded copies of reality.
- People can construct their memories when they encode them and/or when they recall them.
- Constructive processing: in the retrieval of memories these are altered and revised by existing information, or influenced by newer information.
- Because of constructive processing it is impossible to know what part of your memory, if any part of it, is the exact truth.

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## Important discoveries; the constructive nature of memory

- Past experience and what you learn from it play a significant role in shaping your perceptions and your current experience.
- Our memories are affected by biases, motivations, and especially by our emotions. All of these things are rooted in culture.
  - **Rosy retrospection** - the remembering of the past as having been better than it really was.
  - **Confirmation bias** - the tendency to search for, interpret, focus on and remember information in a way that confirms one's preconceptions.

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## An unreliability of the testimony; flashbulb memories

### Characteristics of flashbulb memories:

- A highly detailed,
- Exceptionally vivid (e.g. colours, smells),
- People are highly confident in their memories
- They appear in circumstances in which surprising and emotionally arousing news was perceived.
- Nevertheless, these memories are subject to distortion and change, the details can be forgotten.
- People remember with almost perceptual clarity details of the context in which they first heard about the news, such as what they were doing, with whom they were with and where they were.

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## An unreliability of the testimony; weapon focus effect

- A witness will focus more closely on the weapon than on the person holding the weapon.
- This therefore affects the reliability of the eyewitness account, as the witness will have paid less attention to other details of the crime scene.
- Why the presence of a weapon will divert the witnesses' attention?
  - The witness will feel anxious at the threat of injury or unusualness of the situation.

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## An unreliability of the testimony; weapon focus effect

- The consequence: eyewitness memory would be worse for weapon crimes compared to non-weapon crimes.
  - There is a small but reliable effect suggesting that weapon presence impairs actual eyewitness memory (Fawcett et al., 2013).

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## Two main sources of memory deformations; misattribution of memory

The misinformation effect happens when our memory recall becomes less accurate because of post-event information.

▪ **Misattribution of memory** involves source details retained in memory but erroneously attributing a recollection or idea to the wrong source (Schacter & Dodson, 2001).

▪ Types of memory misattribution:

1. *Source confusion*: an individual misattributes a source of a memory.
2. *False memories*: a person's identity and relationships are centred around a memory of an experience that did not actually take place.
3. *Cryptomnesia*: unconscious influence of memory that causes memory recollections that are wrongfully attributed as novel.

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## Two main sources of memory deformations; suggestibility

The process of memory distortion as the result of deliberate or unintentional suggestion.

- False, but plausible, information is given and memory is altered.
- Someone purposefully feeds false information to change your memories.
- Accepting false information as fact in order to fill in the gaps in our memory
- Believing inaccurate facts to make up for loss memory.

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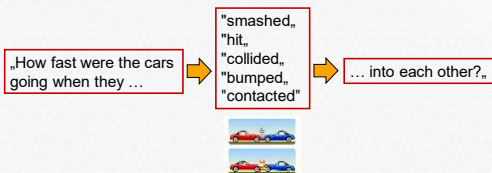
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## Two main sources of memory deformations; suggestibility

Loftus and Palmer (1974) performed an experiment:

- Students watched a video of a car accident. Then they were split into five groups, each group was asked a different question.
- The different version used a different word in the place of "smashed", which were "smashed", "hit", "collided", "bumped", and "contacted".



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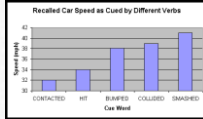
## Two main sources of memory deformations; suggestibility

### Results:

The different wording suggested to the students how fast the cars were going, this altered their memories.

„How fast were the cars going when they ...“

Answers:	Speed (km/h)
"smashed"	66
"hit"	62
"collided"	61
"bumped"	54
"contacted"	51



... into each other?„

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## Conclusion

- Memory recall provided by the witness is not as reliable as it is often believed among police officers, lawyers, prosecutors, jurors, and judges.
- Most professionals mentioned above are not aware of findings presented.
- The Police should continue to search for evidence even if they have witnesses account available.
- If we want to find the truth than we should accept the finding that normally, there is no easy and quick way to make a justifiable court decisions.
  - It may be even worse: to many times we might find ourselves on the road with dead-end.

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Thank you for your attention.

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