The effects of delay on remembering and forgetting traumatic and non-traumatic events.

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October 2015
1. The organization of autobiographical memory.

2. Forgetting, source confusion and childhood memories.


4. Repression, betrayal trauma, mundane explanations of forgetting, and memory recovery techniques.

5. Conclusion.
1. The organization of autobiographical memory
Organization of memory

- Autobiographical knowledge exists at three levels:
  - Lifetime periods
  - General events
  - Event specific knowledge (ESK)
  - Errors most likely at the last level.

Conway & Pleydell-Pearce
Organization of memory

• Remembering is *constructive* at *encoding* (we incorporate past experiences and expectations into what we encode of an event).
Organization of memory

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The Rubin vase
Organization of memory

• Remembering is *reconstructive* at retrieval (we incorporate new experiences and bring our own beliefs to bear at the time of recall).

“How fast were the cars going when the cars smashed into/hit/collided with/bumped/contacted each other?”

Those in the “smashed into” condition gave higher estimates of speed and reported non-existent broken glass at the scene.

Loftus & Palmer (1974)
The risk of ‘false’ memories

• Laboratory research has shown that suggestive interviewing techniques can lead individuals to come to misremember a variety of childhood events, including those involving traumatic elements. For example:

  • Becoming lost in a shopping mall (Loftus & Pickrell, 1995; but see Pezdek, Finger & Hodge, 1997);

  • Being attacked by an animal (Porter, Yuille & Lehman, 1999).
2. Forgetting, source confusion and childhood memories.
Despite decades of research about the malleability of memory, the **myth** that it operates like a video camera is still common (e.g., Simons & Chabris, 2011).

There is evidence that **certain** information is retained accurately for many years.

Referred to as the **permastore** – **BUT** only occurs for semantic events that are **overlearned** like foreign languages you learnt at school (Bahrick, 1984), or in the small number of people with Highly Superior Autobiographical Memory (HSAM; Parker, Cahill & McGaugh, 2006).

**HOWEVER.** Most forensically relevant events are not **overlearned** in this manner.
Time and memory

- In fact, most information is forgotten early on, after which the absolute amount of forgetting is small.

Figure from Rubin & Wenzel (1996, p. 736)
Time and memory

• The more *central* a detail of an event is, the more likely it will be available for recall at a later date.

• More *peripheral* details are more likely to become unavailable over time, or lost to recall.

• But what counts as *central* and *peripheral* is subjective and difficult to define.

Read & Connolly (2007)
Source confusion

• Source memory refers to knowledge about the origin of a memory – did you perform an event or watch someone else do it? Did you experience the event, or merely read about it?

• There is some evidence that source memory errors can sometimes be reduced by asking people to focus carefully on the details of what they can recall (e.g., how vivid it is, how strongly they reacted at the time).

British Psychological Society (2010)
Recall of childhood events by adults

- **Childhood amnesia**
- Events from before three to four years of age are unlikely to be remembered in a form accessible in adulthood (no exact cut-off; Bauer & Larkina, 2014).
- **Some** evidence that events from as young as 18 months can be recalled in a very rudimentary form (Usher & Neisser, 1993)

*Figure 1. The distribution of autobiographical memories from early childhood aggregated over available studies.*

*figure from Rubin, 2000*
Recall of childhood events by adults

• Over and above childhood amnesia - as **adults** we remember very little from before the age of 7 and what we do remember tends to be qualitatively different from our other memories.

• Rare for children (aged 5-6) to make references to temporal attributes of events (time, date, duration, sequence of events).

• Adult accounts of childhood containing such details “exceed the limits of what a child would be capable of at the time the event was encoded” (Strange & Hayne, 2013, p. 441).

*Wells, Morrison & Conway, 2014; Strange & Hayne, 2013*
General principles

• Memory is constructive and reconstructive and the *details* of events are the most susceptible to forgetting or change, although people can also falsely remember “rich” autobiographical events.

• Most forgetting occurs soon after an event is experienced, and the extent of forgetting is influenced by a variety of factors (e.g., aspects that are perceived as central versus peripheral).

• As adults we recall little from before the age of three to four years of age. Later memories, from five to six years of age, are not as detailed as the memories we have as adults, and rarely make reference to times, dates, sequences of events and so on.
• The effects of arousal on memory have been studied in laboratory experiments mainly to help understand how it might impact eyewitness testimony.
• For example: the *Weapon Focus* effect.
• Deffenbacher et al.’s (2004) meta-analysis revealed that heightened anxiety and stress had generally negative effects on witness memory (e.g., poorer identification of perpetrators, fewer details of crime scenes).
• For example, Morgan et al. (2013) found that memories for stressful events were vulnerable to modification by exposure to misinformation.
• However, this finding is not conclusive.
• For example, McKinnon et al. (2014) study of passengers (incl. the first author of the paper) on a plane that nearly had to ditch into the sea.
• Most details remembered fairly well.
Exercise: Where were you on ... ?

7th July 2005?

11th March 2011?

7th January 2015
Exercise: Where were you on ... ?

7th July 2005?

11th March 2011?

7th January 2015

Terrorist attacks in London.

Earthquake and subsequent tsunami in north eastern Japan

Attacks on the offices of Charlie Hebdo
Flashbulb memories

• Vivid, long-lasting autobiographical events for important, dramatic or surprising public events (e.g., where were you when you heard the news about 9/11?)

• Are memories for these kinds of events different from memories of non-flashbulb events?

• **Yes** – a special neural mechanism (Brown & Kulik, 1977)

• **No** – depend on factors involved in the formation of any new memory (Finkenauer et al., 1988)
• Consistency of memories of 9/11 was fairly high, even after long delays (Kvavilashvili et al., 2009).
• Memories for these flashbulb-type events were no more accurate or consistent than memories for non-flashbulb events, people simply perceived that they were (Talarico & Rubin, 2003).
• Subject to distortion, just like other memories – having been asked a misleading question, 44% of participants claimed to have seen a film of the moment that the car carrying Princess Diana crashed in Paris (Ost, Vrij, Costall & Bull, 2002).
The Post-Traumatic Stress Disorder (PTSD) literature is complex with ongoing debates about its prevalence, diagnosis and treatment.

Involvement in a traumatic event does not necessarily mean someone will develop PTSD.

Likewise, the absence of a PTSD diagnosis does not mean that someone is not traumatized.

Research suggests that the victim’s memory for the traumatic event may be organized around key ‘hotspots’ – typically the worst moments for the person during the trauma (Holmes, Grey & Young, 2005).

British Psychological Society (2010)
• These hotspots may form the basis of ‘flashbacks’ or involuntarily retrieved memories of the traumatic event.

• Also recall that what is central or peripheral about an event is likely to be subjective and vary from person to person.

• It is important to note that ‘flashbacks’ or involuntary memories can also contain inaccuracies and relate to events that were not directly witnessed (McNally, 2003).
• The clinical and laboratory literatures do not produce conclusive findings (likely due to differences in methodology, personal meaning of the events and so on).

• So what is the answer? Is traumatic memory “special”? Do we need different theories to account for the way that traumatic events are remembered (or not remembered)?

  (Shobe & Kihlstrom, 1997)

• The next section focuses on one contentious debate – whether we repress or dissociate memories of traumatic events.
4. Repression, betrayal trauma, mundane explanations for non-remembering, and memory recovery techniques.
Repression

• Repression – also known as traumatic amnesia, dissociative amnesia and traumatic dissociative amnesia.

• Some argue that this is commonly encountered when dealing with memories of traumatic events, such that trauma survivors are unable to recall the traumatic events. For example:

• Spiegel (1997): “the nature of traumatic dissociative amnesia is such that it is not subject to the same rules of ordinary forgetting; it is more, rather than less, common after repeated episodes; involves strong affect; and is resistant to retrieval through salient cues.”
• However, this view is very controversial.
• There is little evidence that it occurs (although it is impossible to prove a negative).
• Studies of survivors of repeated or one-off traumatic events typically show that people in fact have trouble forgetting those events.
• Early studies that were interpreted as evidence of repression / traumatic amnesia were either methodologically flawed, or had been misunderstood and misinterpreted (McNally, 2005).
Freyd (1994) suggests that abused children develop a coping mechanism to deal specifically with the experience of being abused.

The logic of the theory ...

Child relies on caregiver for food, shelter etc.

If caregiver is abusing child then child’s natural reaction would be to withdraw from that relationship.

However, this would mean the child would also lose the food, shelter etc.
• To cope with this paradox, Freyd argues, the child learns to forget the traumatic experiences are occurring (refers to ‘knowledge isolation’).
• ... in order to maintain the link with the caregiver
• Lacks convincing evidence to support it as yet – an abused child does not necessarily need to forget that abuse is happening – they just need to not talk about it (McNally, 2007)
• Although some evidence that closer relationship to abuser does seem to predict longer disclosure times (Foynes, Freyd, & DePrince, 2009)
• McNally (2012) argues that what looks like repression, dissociative amnesia or knowledge isolation in betrayal trauma theory can in fact be explained by established cognitive psychological theories of memory.

• If this is the case, then there is no need to propose “special” forgetting mechanisms like repression or dissociative amnesia.
Are “special” forgetting mechanisms needed?

- Confusing repression / dissociative amnesia with other phenomena, for example:
  - Confusing *posttraumatic forgetfulness* with an inability to remember the trauma itself
  - Confusing *impaired encoding* with amnesia for the trauma
  - Confusing *organic amnesia* for repression of trauma
  - Confusing *nondisclosure* with repression of trauma
  - Confusing *childhood amnesia* with repression of trauma
  - Confusing *not thinking about abuse* with repression of trauma

McNally (2012)
• What are the problems in assuming that people are unable to remember their traumatic experiences?
• It might lead investigators to assume that the ‘memories’ must be ‘in there’ somewhere waiting to be unearthed.
• May sometimes use ‘memory recovery techniques’ to access the ‘repressed’ memory.
Memory recovery techniques refer to a whole variety of inappropriate techniques were sometimes used in therapy to ‘assist’ people recall events from their childhood.

Research shows that such techniques (hypnosis, guided imagery, use of photographs, age regression etc.) run serious risks of creating false memories of events that did not occur.

These techniques should be avoided at all costs.

see Lynn, Krackow, Loftus, Locke & Lilienfeld (2015)
5. Conclusion: Is memory for traumatic events “special”?
• The literature is inconclusive about whether trauma enhances memory, or has a uniformly negative effect on recall.
• No strong evidence that people ‘repress’ traumatic events (i.e., are unable to remember them).
• Of course, people may find it extremely difficult to disclose, or talk about memory for traumatic events, but that is not the same as saying they do not remember them.
• Thus the best guidance on interviewing victims of trauma will largely mirror that for interviewing any kind of witness – open, non-leading questions that allow the witness to recall things in their own way.


References


