

CHILD MEMORY, TRAUMATIC MEMORY and the CHILD WITNESS

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INTERPRETING THE RESEARCH

- . The complications of memory study
- . Test conditions and questions don't always match real life situations and motivations
- . Divergent interests

- . Although broad rules can be proposed for different ages and conditions, reliability depends on the individual case

REFERENCES

1. Memory and Suggestibility in the Forensic Interview (Eisen, Quas and Goodman, 2002)
2. Stress, Trauma and Children's Memory Development (Howe, Goodman and Cicchetti, 2008)

3. Children as Victims, Witnesses, and

Offenders (Bottoms, Najdowski and
Goodman, 2009)

MEMORY PROCESS

- MEMORY COMPONENTS

- Encoding

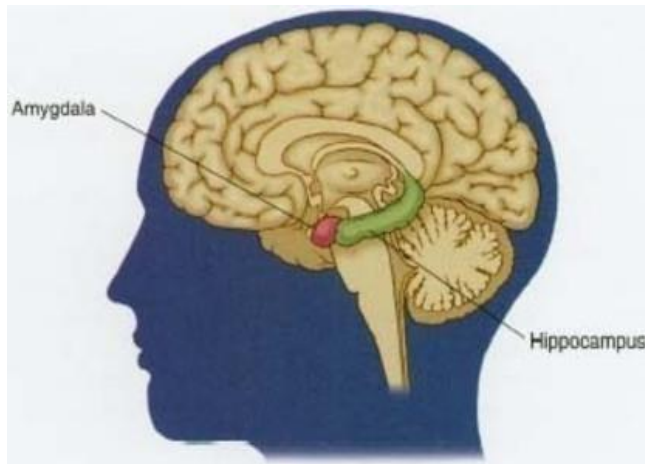
- Perception → Construct
- Child age and knowledge

- Storage

- Combination, sorting, comparison in the hippocampus
- Short term, long term and working memory

– Retrieval

- Reconstruction from associations and neural networks that are frontal and temporal



TYPES of MEMORY



- TYPES OF MEMORY

– Explicit / Declarative / Conscious •
Episodic—events

- Semantic—facts
- Intentional, whether learned or recalled
- Organized and encoded by hippocampus and medial temporal

– Implicit / Contextual / Unconscious

- Procedural—riding a bike, driving to work, tying shoes, etc • Encoded and stored in motor control and brain stem

– Conditioned responses—eg, fear of certain people

– Autobiographical—the continuous sense of self over time



DISSOCIATION

- Dissociation is a breakdown in memory, consciousness and sense of self provoked by extreme fear, pain or psychological distress (Bremner, 2008)
- Dissociation can produce lapses in autobiographical and declarative memory, possibly due to breaks at any point in the memory sequence
- Verification and acceptance—
cf. hallucinations

THE DEVELOPMENT OF MEMORY

- There are different developmental paths for explicit and implicit memory in infants.
 - Implicit memory is controlled by a memory system in the brain that is present from very early on, and depends on the early maturation of striatum, cerebellum, and brain stem, which are all involved in implicit learning and memory.
(Schacter & Moscovitch, 1984)
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THE DEVELOPMENT OF MEMORY

- Development of explicit memory depends on a later developing memory system in the brain that reaches maturity between 8 and 10 months of age. Explicit memory depends heavily on structures in the medial temporal lobe, including the hippocampus. (Richmond & Nelson, 2007)
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THE DEVELOPMENT OF MEMORY

CHILDHOOD AMNESIA

- “Infantile amnesia” is the tendency to have few autobiographical memories from below the age of 2-4
- Autobiographical memories can only begin to form after infants have developed a sense of self between 21-24 months to whom events having personal significance can occur
- The development of a cognitive self provides a new framework from which memories can be organized

DEVELOPMENT AND MEMORY

- Children develop long term autobiographical memory around 2-3 years of age (Bruce et al, 2005; Eacott & Crawley, 1998)
 - Placing events in context – Sense of self
- It is not accurate to assume children don't have memory based upon how much adults don't remember about being children
- Children around two can recall events and persons a year earlier...but they won't recall them as adults
- Early memory is clearly evident from the first few months, but it is not explicit / declarative memory (Eacott & Crawley, 1998)

THE DEVELOPMENT OF MEMORY

- Younger children (under the age of 5) are more dependent than older children or adults on using the visuospatial sketchpad to support immediate memory for visual material.

- . Preschool aged children identify visual features of pictures in order to remember them, a process that is shorter term and uncategorized
- . Consequently their memories are impressionistic, visual, and lack organization

THE DEVELOPMENT OF MEMORY

- Older children adopt a strategy of verbally recoding pictures where possible and also use the phonological loop to mediate performance of the “visual” memory task. (Jack & Hayne, 2007).
- At the age of seven, children begin to use a subvocal rehearsal process to maximize retention in the phonological store. As development continues, nonauditory memory material is recoded into a phonological code suitable for the phonological loop when possible. (Gathercole, 1998)

THE DEVELOPMENT OF MEMORY



- Central executive processes increase efficiency in preschool children which by school age is operational and still advancing
- In children from 2-4, the memory storage capacity limitation constrains complex comprehension processes. As the child grows older however, less processing is necessary which opens more storage space for memory. (Eacott & Crawley, 1998)

THE DEVELOPMENT OF MEMORY

PRESCHOOL CHILDREN

- Knowledge itself will not alter retention performance, rather how well that knowledge is structured will alter performance. Better retention was shown with information that had greater cohesion.
- Familiarity and repetition of an experience can also influence the organization of information in storage for preschoolers and older children.
- Young children who experienced an event twice recalled the event better 3 months later than did children who only experienced it once and showed equally good recall at 3 months compared to recall at 2 weeks after experiences.



THE DEVELOPMENT OF MEMORY

SCHOOL AGE CHILDREN

- The greater the background knowledge about the to- be-encoded information, the better that the information is remembered.
- Because older children have more knowledge than younger children, older children perform better than

younger children in most memory tasks.

- When familiarity and meaningfulness of material were equated across age, developmental differences in memory performance was no longer a factor.

PTSD and MEMORY

- Relying on clinical observations, it has been recognized for more than a century that "when people become too upset by their emotions, memories cannot be transformed into a neutral narrative" (Janet, 1919). The ensuing terror "results in a phobia of the memory that prevents the integration (synthesis) of the

traumatic events and splits the traumatic memories from ordinary consciousness," leaving them to be organized as visual perceptions, somatic preoccupations and

behavioral reenactments (Janet, 1894, as quoted by van der Kolk, 1997)

PTSD and MEMORY

- . The longitudinal study of the psychological

and physical health of 200 combat troops in

World War II illustrates how adults process

traumatic events (Lee and cohorts as quoted by van der Kolk, 1997).

- . 45 years later, those who did not have PTSD had considerably altered their original accounts.
- . In contrast, time had not modified the memories of those who had developed PTSD, who recalled their experiences with extreme vividness. (Quoted by van der Kolk, 1997)



PTSD and MEMORY

- Individuals with PTSD were found to have 12% smaller left hippocampal volume and reduced blood flow to the right (Bremner et al., 1997; Bremner, 2003)
- Stress reduces size and functionality of the hippocampus, probably through the sensitivity of early brain development to stress hormones
- This damage can reduce memory effectiveness for certain types of memory

PTSD and MEMORY

- However, PTSD also generally improves the recollection of

children for traumatic and emotionally salient events (Howe et al, 1994)

- And increased levels of emotional stress may enhance memory for the central traumatic event (Howe, 1998 and 2000)

- While decreasing the attention and memory of peripheral information through

a hyperfocused attention

(Christianson, 1992; Goodman et al, 1991)

EARLY STRESS and MEMORY

- Original ACE study found a 4.4 fold increase in autobiographical

memory deficits for individuals with 4 or more childhood adverse experiences

- Stress can negatively affect explicit and declarative memory as well, under certain conditions—eg, ongoing stress and anxiety

PTSD and MEMORY

- Overall, “research does not support the presence of memory for trauma recall deficits of explicit / declarative memory in

maltreated children, and in fact provides some support for memory enhancement among those with PTSD” (Toth and Valentino, 2008)

FALSE MEMORIES and SUGGESTIBILITY

- FALSE MEMORIES—Recollection of facts or events that never actually happened
 - Intentional allegations—rare, and usually with motive
 - Unintentional—also rare, and may involve previous abuse history and impaired reality testing

- SUGGESTIBILITY—The alteration of memories due to external influence
 - Interview techniques—intentional or unintentional – Repetitive occurrences are confused or combined

CHILDHOOD MEMORY: RELIABILITY AND SUGGESTION

RESEARCH:

– 4-6 year olds go to the doctor for full

physicals and blood draws with genital

exam. Memories were reliable and resistant

to suggestion (Goodman et al, 1991;
Saywitz et al, 1991)

– Reliability regarding genital
exam was highest

– Not spontaneously reported
until asked

CHILDHOOD MEMORY: ACCURACY AND DETAILS

RESEARCH:

- 189 children 3-17 yo with history
of abuse were interviewed after a
genital exam with

overall 70% accuracy in details
(Eisen et al, 2002)

- Accuracy generally not affected by history of abuse, severity of psychopathology or dissociative traits
 - Older age alone predicted greater accuracy
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CHILDHOOD MEMORY: RELIABILITY AND SUGGESTION RESEARCH:

- Children 3-13 yo asked about cystourethrogram at ages 2-6 yo less likely to recall, and the younger the less they recalled (Quas et al, 1999)

- Reliability decreased and suggestibility increased with decreasing age at time of examination
 - More suggestible when questioned by adult than child suggesting need to please or power difference
 - Children 3-18 yo recalled a painful lumbar puncture one week afterwards. High accuracy and more detail with age (Chen et al, 2000)
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FALSE MEMORIES

- TheMcMartinPreschoolCase
 - – Original disclosure by 2 year old child to mother

- . – Eventual allegation that 350 children had been molested by the owner and her son
- . – All charges eventually were dropped after two hung juries
- Suggestive Interview Techniques and Hysteria – Letters to parents
– Multiple suggestive and coercive interviews

FALSE MEMORIES

- “False memory syndrome” (FMS) describes a condition in which a person's identity and relationships are affected by

memories that are factually incorrect but that they strongly believe.

- Peter Freyd coined the term after he was accused of sexually abusing his daughter, who later became a leading researcher in sexual trauma
- Not recognized in DSM or ICD, and not an actual syndrome, but very well promoted

FALSE MEMORIES

- While less than 2% of contested custody

cases involve sexual abuse, false

allegations may be as high as 35% in this

specific context (Benedek and Schetky, 1985; Jones and Seig, 1988)

- The perfect storm of incentives:
 - Conflicted caretakers
 - Adversarial legal proceeding
 - Positive and negative consequences – Coaching

RECOVERED MEMORIES

- Respondents to anonymous surveys who

acknowledge abuse admit that only about 10% of

the disclosed abuse was ever reported to

authorities (Martin et al., 1993; Russell, 1983; Smith et al., 2000)

- . Only 2% of the women in population surveys report having remembered abuse with the help of a therapist (Wilsnack et al., 2002)

- . Therefore the likelihood of recovered memories

secondary to therapeutic suggestion is small

(Geraerts et al., 2009)

ALLEGATIONS and SUBSTANTIATION

- 576 cases of sexual abuse allegations were examined , in which 47% were determined to be “unfounded” by legal and child protective services (Jones & McGraw, 1987)
- Based upon researchers review of all evidence, only 8% were judged to be actually false, almost a six fold error rate
- 92% judged to have actually occurred, but only half with

sufficient evidence to be
prosecuted

DISCLOSURE RESISTANCE

- 129 adult women with
childhood sexual

abuse history documented in
hospital

records seventeen years earlier

(Williams, 1994)

- One in three failed to report the
documented abuse event in free
recall

- 12% denied the event altogether when asked directly

DISCLOSURE RESISTANCE

- Similar study for court documented sexual abuse after a 20 year lapse showed similar rates of memory failure or resistance (Widom and Morris 1997)

- But over 2/3 of the men with similar sexual abuse histories in that same study failed to report it. (Widom and Morris 1997)

DISCLOSURE RESISTANCE

- Similar prospective study showed 18% subsequent denial rate of childhood sexual abuse by adolescents (Goodman et al, 2003)
- However, of those who did correctly recall their abuse history, 72% of the details were accurately reported—such as perpetrator's name (Goodman et al, 2003)

DISCLOSURE RESISTANCE

- Similar prospective studies for physical abuse revealed that 40% of both men and

women failed to report it
retrospectively

(Widom and Shepard, 1996)

- In contrast, and in the same studies, almost all participants reported moderate

aggression like corporal punishment (Widom & Shepard, 1996; Greenhoot, McCloskey, Glisky, 2005)

TRAUMA REPORTS IN DELINQUENTS:

THE YDDC EXPERIENCE

- . More than 90% of adolescents incarcerated in New Mexico

juvenile justice facilities
experienced one or more kinds of
abuse, and most experienced > 5
childhood traumas

- . Fewer than half disclose their
abuse or trauma when directly
asked during the admission
evaluation
- . More disclose with careful
investigation and oblique
questioning
- . Even more disclose in the first six
months in care

MEMORY AND FORGETTING

GENERAL RULES OF DISCLOSURE

- . Victims less than seven at the time were somewhat less likely to recall the incident years later (Goodman et al, 2003)
- . Victimization by relatives or caretakers was less likely to be recalled subsequently (Goodman et al, 2003)
- . Children who received maternal support after the initial event were more likely to correctly recall the incident later (Goodman et al, 2003)
- . Insecure attachments are negatively related to memory performance in both children and adults (Alexander et al, 2002; Goodman, 2005)

MEMORIES OF TRAUMA

THE OVERALL CONCLUSION:

- “The general picture that emerges from the literature is that the core of both non-abusive childhood traumas and child maltreatment tends to be remembered even after delays extending into adulthood, unless the events were experienced during the first 2 to 3 years of life.”

(Greenhoot & Bunnell, 2009)

FACTORS INFLUENCING DISCLOSURE AND ACCURACY

CONTEXTUAL AND FAMILIAL

- . Parental acceptance and support
- . Preservation of family/caretaker integrity
- . Family or social resistance or acceptance INTRINSIC TO THE CHILD
- . Distinguishing abuse from family norms
- . Age and mental status at time of incident
- . Fear of adults, lawyers, judges, and psychologists; fear of disapproval,

disappointment and blame; fear of the memories themselves

CONCLUSIONS

- False allegations are rare and occur in certain limited circumstances with high incentives, coaching and intense conflict
- Suggestibility is more common and is almost always the fault of adult motivations or behaviors
- A very small proportion of actual child abuse is reported, a small percent of that is investigated, and a small percent of that is prosecuted
- Children are easy to confuse and intimidate
- The vulnerability and fear of children bears on the quality of their testimony
- The characteristics of child memory require special consideration

- Most testimony problems are less about truth than about legal process itself—from investigation to courtroom

END