

# Understanding How Trauma Impacts Behavior and Memory: Implications for Victim Interviewing



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# Learning Objectives

1. Explore the accuracy and resilience of memory.
2. Explain how behavior and memory processes can be impacted by trauma.
3. Describe how memory **retrieval** and **disclosure** can be facilitated during victim interviews.
4. Examine research identifying best practices for interviewing victims and suspects.

# Polling Question

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Have you already had training on trauma and the effects on victim behaviors and memories?

**Yes**

**No**

**Maybe**

# Importance of Victim Interview

- Purpose of interview is to help victims (a) retrieve memories, and (b) share them.
- Investigator documents information and evaluates in context of entire investigation.
- Not unlike a **crime scene...**



# Traditional Approach: What *Doesn't* Work



# Respond in the Chat

What does “trauma informed interviewing” mean to you?

**What techniques, strategies and approaches, would you include in that description ?**

# “Trauma Informed” Interviewing

- Establish safety, trust, rapport, comfort
- Encourage disclosure, as much as possible
- Use non-leading, open-ended prompts
- Encourage narrative, active generation
- Allow pauses, silence to gather thoughts
- Not rushing, interrupting responses
- Focus on thoughts, feelings in experience
- Express patience, empathy, understanding

# “Trauma Informed” Interviewing

- No need for sequential, chronological order
- Advise not to guess, say “I don’t know”
- Avoid “why” questions
- May recall more information in the future

# Part I: Resilience of Memory

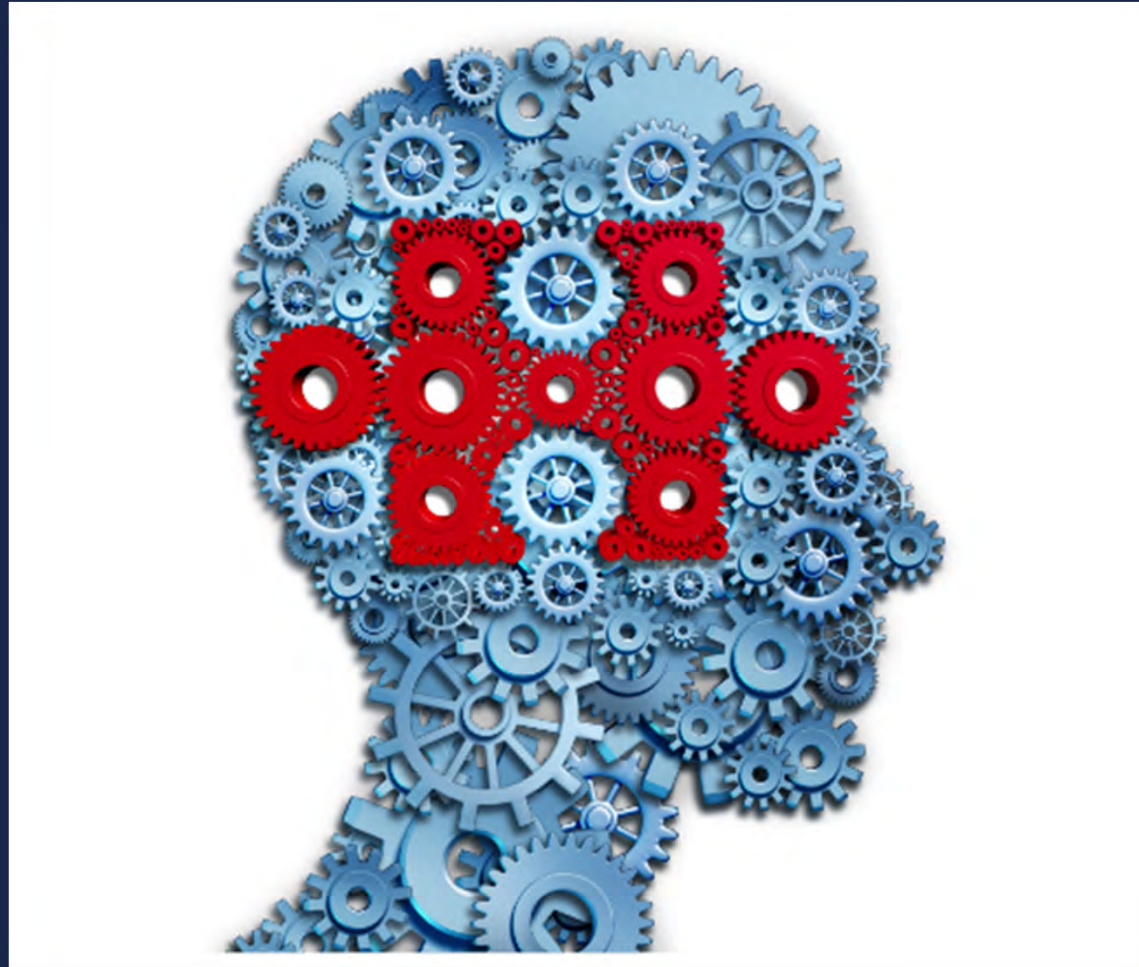
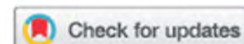


Photo Credit: wildpixel from Getty Images

REVIEW ARTICLE



## Is the study of memory unduly preoccupied with its sins?

Alan D. Baddeley

Department of Psychology, University of York, York, United Kingdom

### ABSTRACT

A broad functional approach is taken to the analysis of human memory. The overall importance of episodic memory, the capacity to remember specific events, is illustrated by the devastating effect that loss of this aspect of memory has on the capacity to cope in the case of densely amnesic patients. Recent applied research has however focussed heavily on factors compromising the reliability of eyewitness testimony in the forensic field and on the creation of false memories. While acknowledging the progress made on this issue, it presents two dangers. The first is practical, the danger of generalising too readily from laboratory-influenced simulations that differ in important ways from the context to which they are applied. This suggests a need for fewer but more realistically representative studies. The second is a broad theoretical issue, that of extending the findings from this important but limited applied area, within which precise detail may be crucial, to the whole of memory, consequently failing to appreciate its many strengths.

### ARTICLE HISTORY

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### KEYWORDS

Amnesia; false memory;  
eyewitness testimony;  
everyday memory; retrieval

A healthy **30-year old** adult attends an audio-guided museum tour as part of a memory experiment. Memory for the tour is tested using free recall (i.e., the person says everything they can remember about the event) **48 hours later.**

**What proportion of freely recalled details would be accurate after 48 hours?**

Diamond, N.B., Armson, M.J. & Levine, B. (2020). The truth is out there: Accuracy in recall of verifiable real-world events. *Psychological Science*, 31 (12), 1544-1556 (quote is on p. 1552).

# 30-year old, 48 hours later

- What proportion of these freely recalled details would be accurate after 48 hours?

0-10%

40-50%

80-90%

10-20%

50-60%

90-100%

20-30%

60-70%

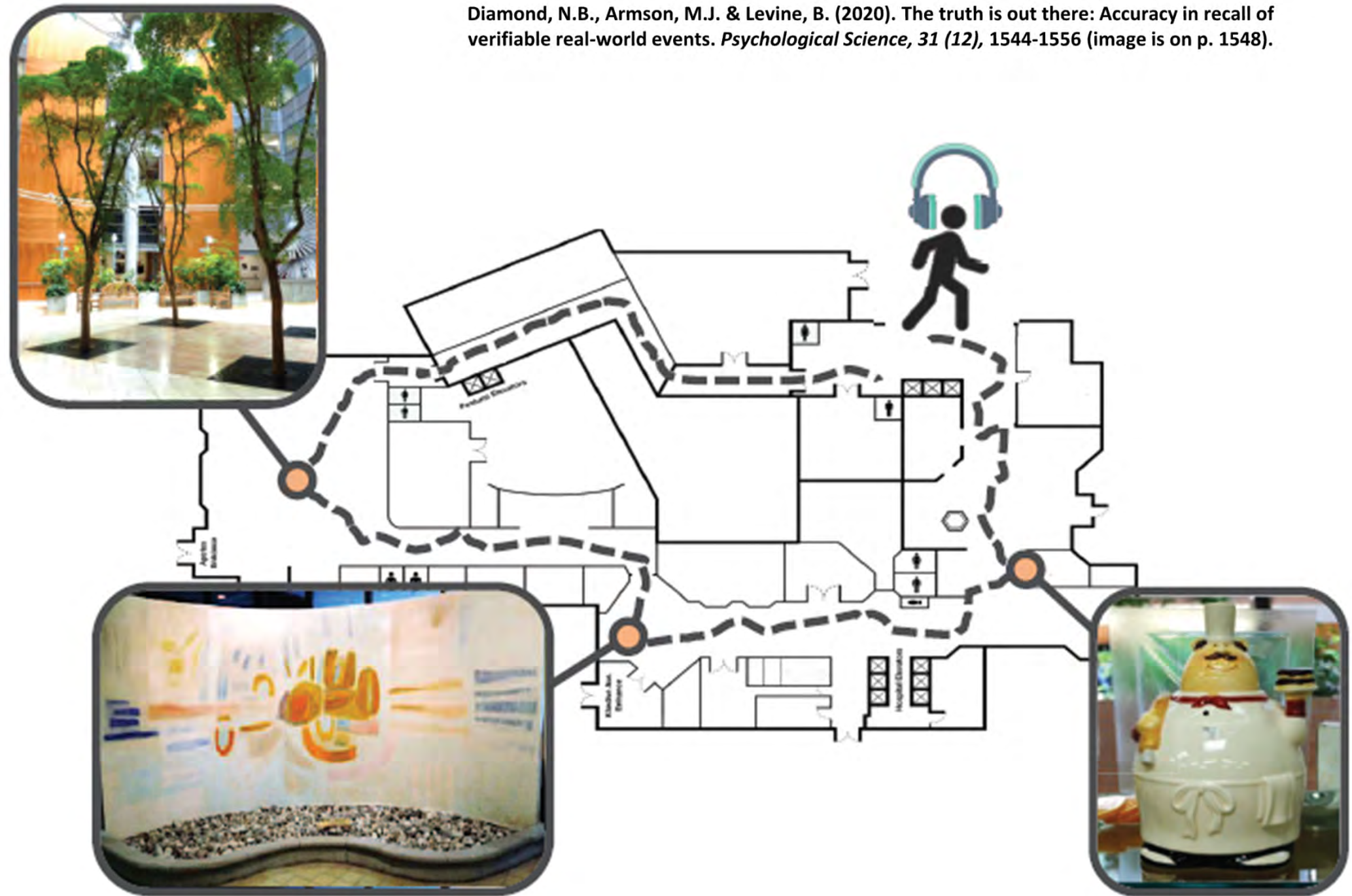
30-40%

70-80%

# Estimates of Accuracy

- 418 researchers and academics
  - 68 studying memory
  - 350 in other fields
- Estimated **30-40%** accuracy
  - Higher for 30-year old, and 48 hours later
  - In other words ,thought 60-70% would be wrong
  - No difference for memory researchers, others

Diamond, N.B., Armson, M.J. & Levine, B. (2020). The truth is out there: Accuracy in recall of verifiable real-world events. *Psychological Science*, 31 (12), 1544-1556 (image is on p. 1548).



Int – event – accurate

Int – event – accurate

Int – event – accurate

“...I was told to look at the piano and then walk further and look at the market that was

Int – perceptual – inaccurate<sup>3</sup>

Int – event – accurate

Int – perceptual – accurate

going on at the left... I looked around the gift shop and then on the shelf at the back

Int – perceptual – accurate

Int – perceptual – accurate

Int – event – accurate

left – not the very last one, but the second or third last, was a cookie jar or a ceramic

Int – perceptual – accurate

Int – perceptual – accurate x3

Int – perceptual – accurate

figure of a, uh, large chef with a hat and an apron, both white, holding a cake I believe

Int – perceptual – inaccurate<sup>4</sup>

Int – event – accurate

Ext - other

with a cake lift in the other hand...I walked down the hallway...I don't remember this

Int – thought – unconfirmable

chunk of the tour. I was still thinking about the Andy Warhol portraits”

# Polling Question

- How many details do you think people recalled 48 hours after the hospital tour?

**0-10**

**40-50**

**80-90**

**10-20**

**50-60**

**90-100**

**20-30**

**60-70**

**30-40**

**70-80**

# Accuracy of Recall

- Number of details recalled, on average:
  - 80 for younger people (19-35)
  - 52 for older people (65-75)
  - Many recalled more than 100
- Accuracy of recall, on average:
  - **93-95%** across age groups

“Memory for remote (days to years old) real-world episodes is more accurate than expected.”

Diamond, N.B., Armson, M.J. & Levine, B. (2020). The truth is out there: Accuracy in recall of verifiable real-world events. *Psychological Science*, 31 (12), 1544-1556 (quote is on p. 1552).

# Memory Errors

- At least one error in most people's recollections
- But errors were typically not essential details (e.g., dates and specific locations of objects)

# “Grain Size” of Memories

1. Surface information (verbatim)
2. Central / perceptual features (“gist”)
3. Judgments / inferences from knowledge base

# “Grain Size” of Memories

1. Surface information
2. Semantic content (“gist”)
3. Judgments or inferences from knowledge base



Photo Credit: Wikilimages from pixabay

# “Satisficing” Model

- Use cognitive monitoring to decide whether to report an item (or not)
- And if so, what level of detail (grain size)
- **To maintain accuracy**



Photo Credit: Jacob Lund



Photo Credit: A and N Photography

# Part II: Interviewing Research



Photo Credit: Atstock Productions from Getty Images

# Rapport

“A positive and productive affect between people that facilitates mutuality of attention and harmony”

Bernieri, F.J. & Gillis, J.S. (2001). Judging rapport: Employing Brunswik's Lens Model to study interpersonal sensitivity. In J.A. Hall & F.J. Bernieri (Eds.), *Interpersonal Sensitivity: Theory and Measurement* (pp. 67–88). Mahwah, NJ: Erlbaum (p. 69).

# Rapport

Communicate respect    Personalizing    Address concerns

Acknowledge autonomy    Humanizing    Instill calm

Show real interest    Attentiveness    Establish common ground

Express genuine empathy    Friendliness    Permit "I don't know"

Avoid judgment    Openness    Collaborative,  
not  
confrontational

Drawing out    Explain the process

# Elements of Rapport

1. Positivity
  - Pleasant, encouraging, smiling, avoid judgments
2. Mutual attention
  - Involvement, immediacy, active listening
3. Coordination
  - Reciprocal responses, matching, “in sync”

# Rapport Works!

- Cognitive Interviewing (Fisher & Geiselman)
  - Elicits 35-50% more information than typical police interviews, rapport is key element
- Holmberg & Christianson (2002)
  - 83 sexual offenders more likely to give full confessions with “empathic and humanitarian” approach, not “judgmental and dominant”

# Rapport Works!

- Kelly et al. (2015)
  - Suspect interviews with “rapport and relationship tactics,” greater cooperation, more confessions
- Alison et al (2013, 2014)
  - 418 interviews with 29 terrorism suspects in UK
  - Investigators with “conversational rapport and adaptative interpersonal skills,” reduced resistance and increased information provided

# Elements of Good Interview

- No matter who is being interviewed!
  - Establish rapport
  - Clear description of rules, expectations
  - Start the conversation, and then LISTEN
  - Open-ended questioning style
  - Encourage future disclosures

# Conceptual Priming

- Certain concepts increase disclosure:
  - **Self-worth:** Positive values, traits, experiences
  - **Autonomy:** Options, words like “choice,” “free”
  - **Attachment security:** Thinking of loved ones
  - **Openness:** Room, objects, symbols

# Part III: Trauma and the Brain



# What is Trauma?

“Traumatic events are shocking and emotionally overwhelming situations that may involve actual or threatened death, serious injury, or threat to physical integrity.”

- International Society for Traumatic Stress Studies

# What is Trauma?

- Traumatic events often include actual or perceived loss of control (helplessness)
  - Used to only have experiential definition
  - Now have neuroscience to explain what happens
  - However still subjective event, varies by person

# What Else is Going On?

- Dynamics of sexual assault / partner violence
  - **Internal Influence:** Victims may feel ashamed...
  - **External Influence:** Victims may feel pressure...
  - **System Influence:** Victims may not feel supported...
  - **Socio-cultural Influence:** Victims may be reluctant...

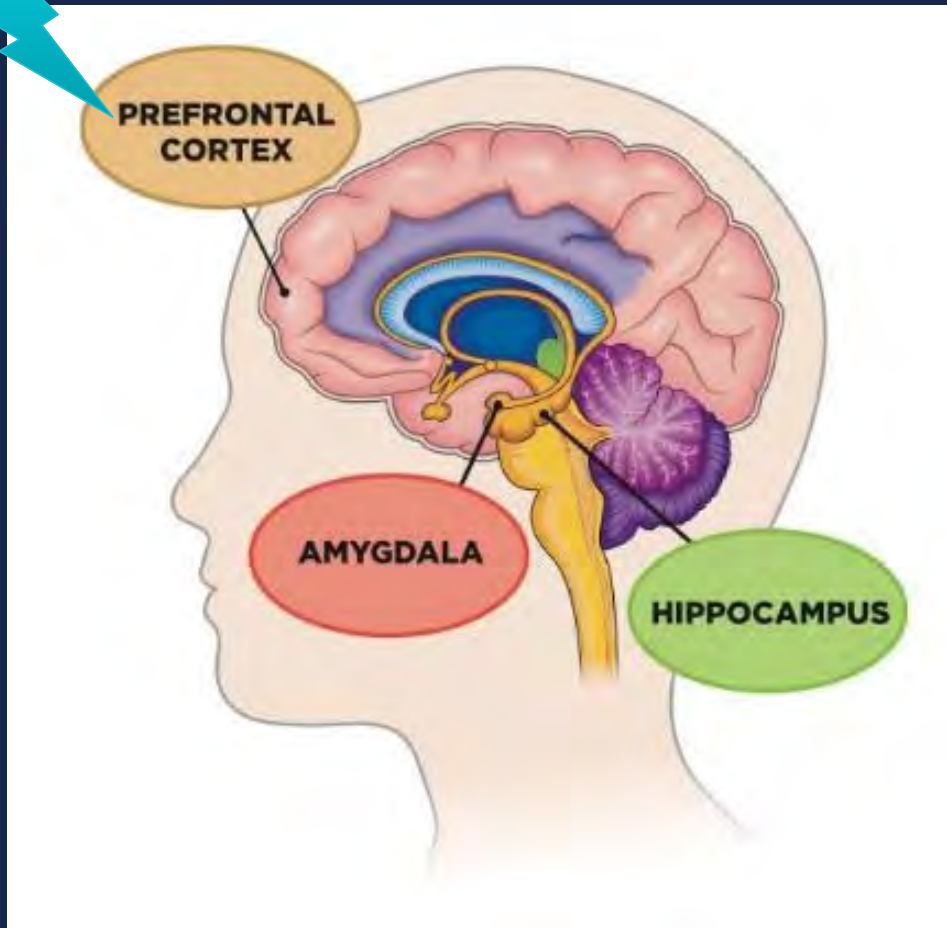


Photo Credit: Life's Random Bits



Photo Credit: REACHOUT.COM

# Prefrontal Cortex

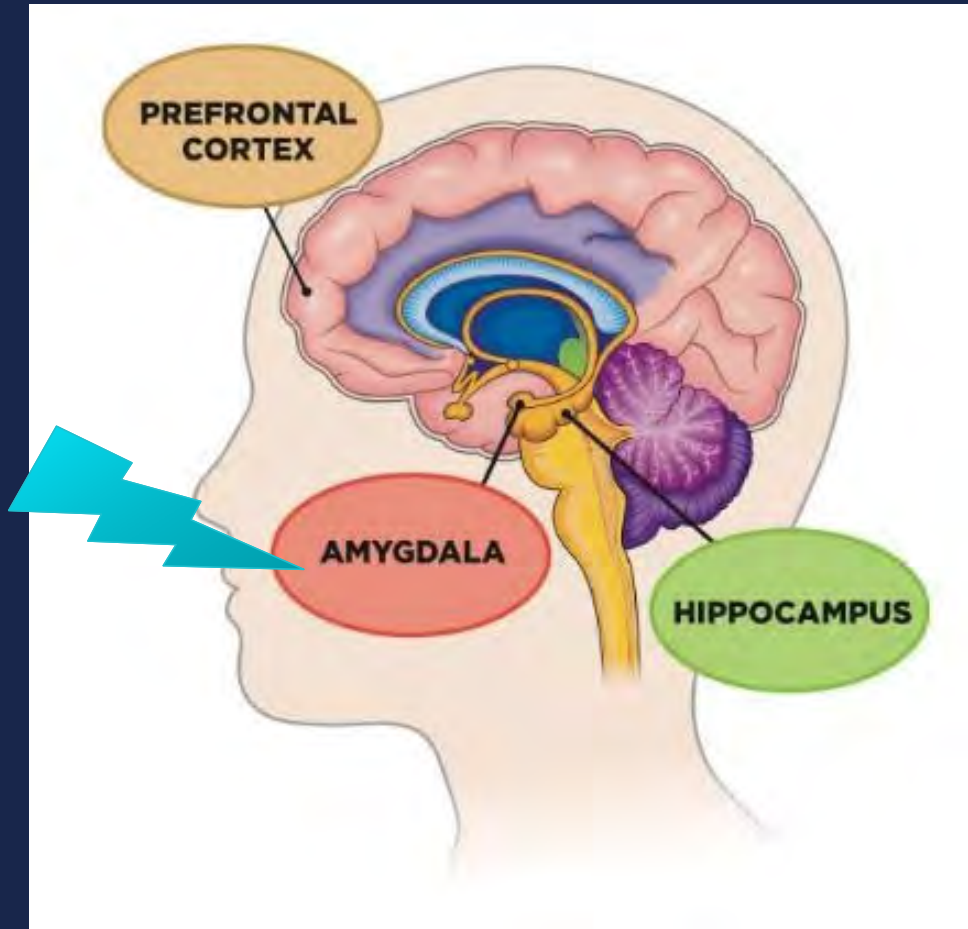


- Logical thinking and planning
- Controlling attention
- Integrating memories into "stories"

***Impaired during stress  
or trauma***

<https://medium.com/@rohanpoosala/build-that-prefrontal-lobe-up-c72434186dfd> "Build that Prefrontal Lobe up", Neuro4Kidz

# Defense Circuitry

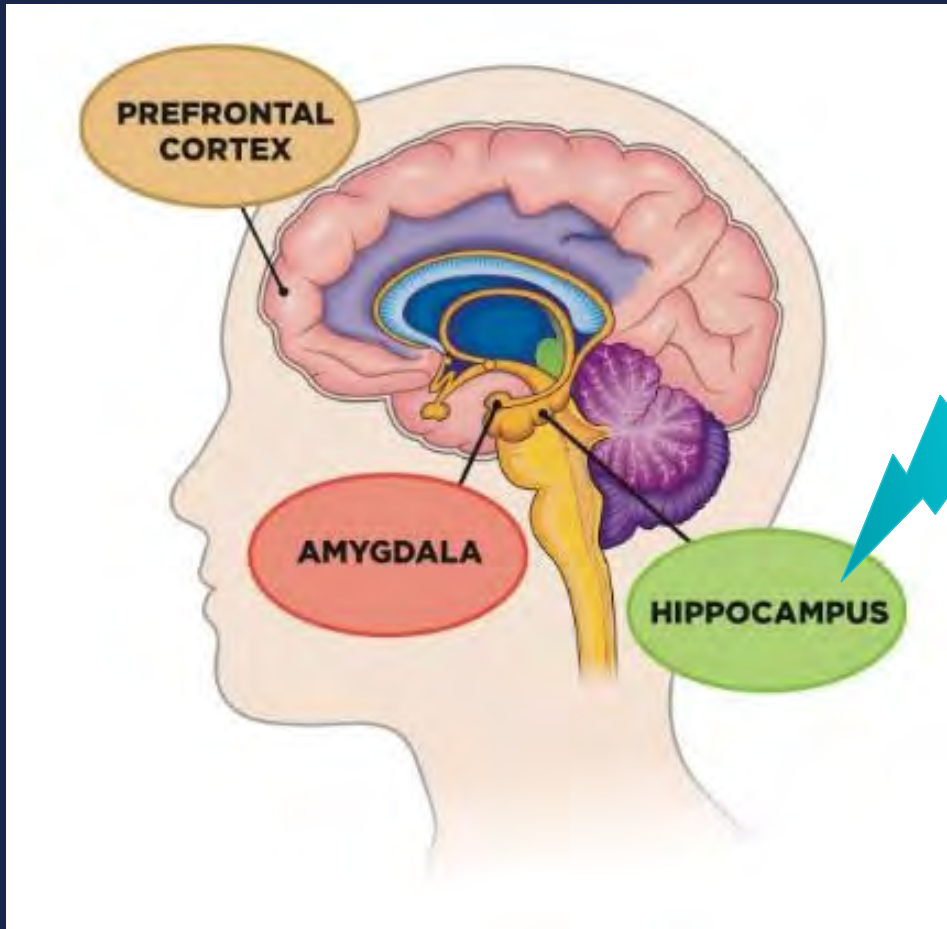


- Monitors for threat
- Activates survival responses
- Mostly automatic

***Takes control when prefrontal cortex is impaired***

<https://medium.com/@rohanpoosala/build-that-prefrontal-lobe-up-c72434186dfd> "Build that Prefrontal Lobe up", Neuro4Kidz

# Hippocampus



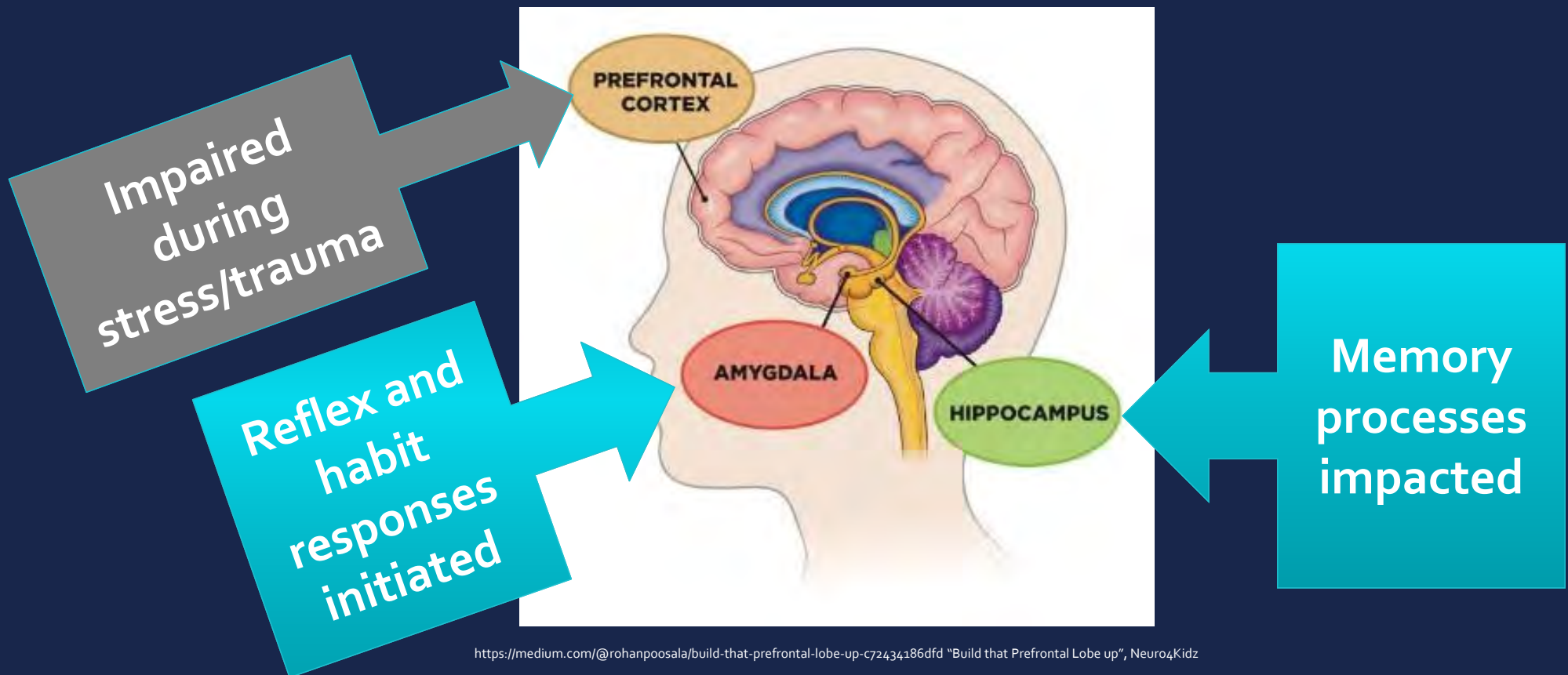
- Where memories of experiences and their details are processed
- Encodes memory data with context and time

***Can produce "flashbulb memories" of event***

<https://medium.com/@rohanpoosala/build-that-prefrontal-lobe-up-c72434186dfd> "Build that Prefrontal Lobe up", Neuro4Kidz

# Summary

During a traumatic event: Rational part of the brain is impaired; Memory processes are significantly impacted; Reflex and habit responses are automatically initiated.



# Possible Reflex Responses

- **Brief freeze response:** Threat is detected, movement stops, brain quickly assesses options
- **Tonic immobility:** Body goes rigid, not able to move or speak
- **Collapsed immobility:** Body goes limp, may faint or pass out
- **Dissociation:** Disconnection from physical and emotional experience, may be on “autopilot”

# Possible Reflex Responses

*Don't Label or  
Diagnose – Just  
Document*



Image: <https://fr.depositphotos.com/stock-photos/embossed-question-mark.html>

# What Can This Look Like?



# What Can This Look Like?



# Habit Responses

- **Social conditioning:** Including how girls/women respond differently than boys/men
- **Learned responses:** Including responses to dominance/aggression and past abuse

Automatic responses do not  
“go away”

# “Reflexes and Habits”

*Not “Fight  
or Flight”*



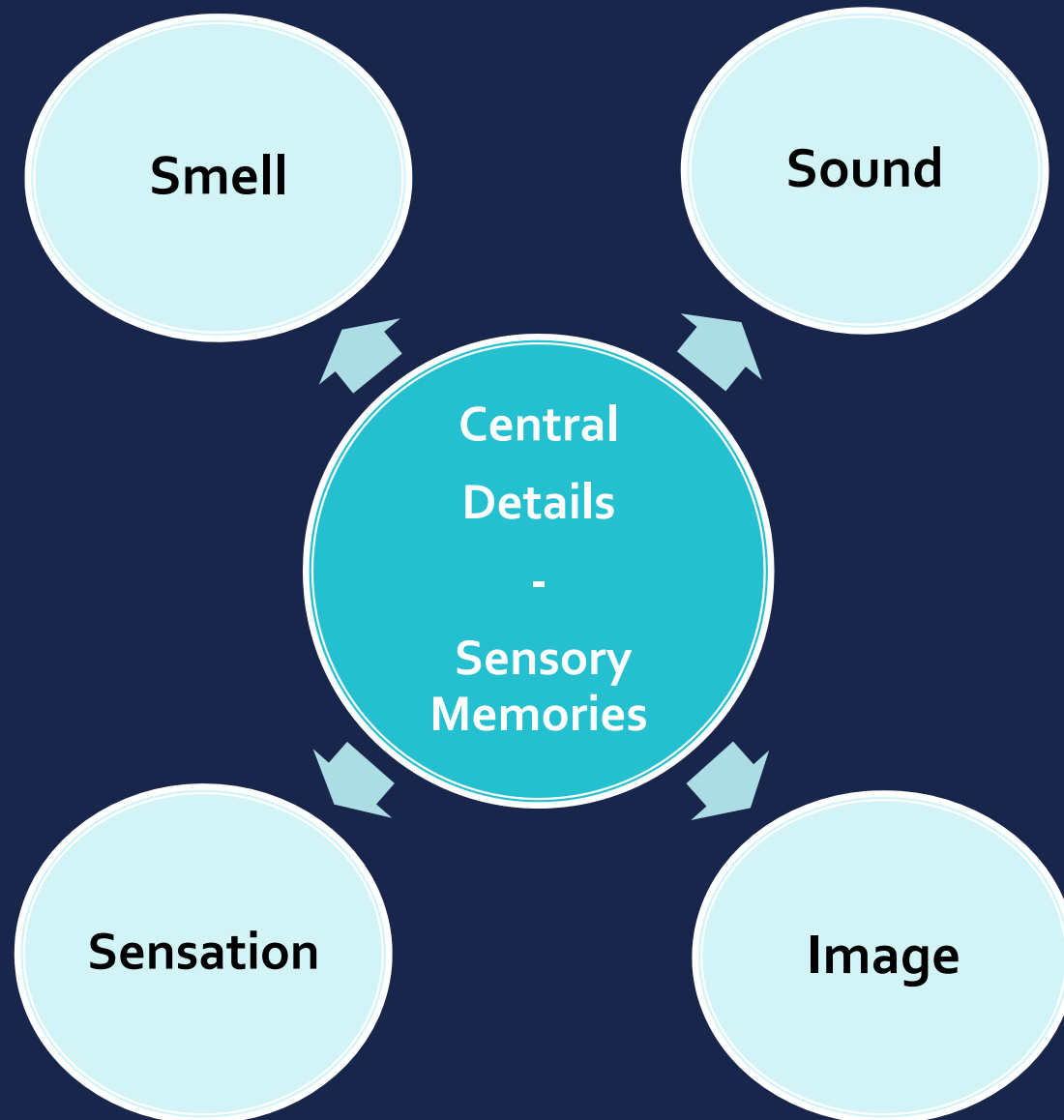
Image: <https://fr.depositphotos.com/stock-photos/embossed-question-mark.html>

# Memory: Central vs. Peripheral Details

- **Central details:** Parts of experience given attention / emotional significance by the brain
- **Peripheral details:** Parts of experiences that receive little or no attention by the brain



# Central Details: Often Sensory Memories



# Impact of Alcohol or Drugs



# Alcohol and Memory

- At higher levels of intoxication, may prevent storage of most or all details of experience
- But central details that DO get into long-term memory storage can be very accurate

# Example: Bringing Together Trauma Impacts on Behavior and Memory

Kellie Balentine via TMX.news

The  
Guardian



# Example: Bringing Together Trauma Impacts on Behavior and Memory



# Example: Bringing Together Trauma Impacts on Behavior and Memory



# Example: Bringing Together Trauma Impacts on Behavior and Memory

- Automatic **reflex** responses?
- Responses based in **habit** or **learning**?
- Simplistic **language** (words or phrases)?

# Example: Bringing Together Trauma Impacts on Behavior and Memory

- What would her narrative sound like?
- What details could she provide?

# Example: Bringing Together Trauma Impacts on Behavior and Memory

- Would we question her story?

# Summary: Theory to Practice

- How can understanding the neurobiology of trauma improve our interviewing skills?
  - More realistic expectations
  - More perceptive listening
  - More effective information-gathering

**Support Memory Retrieval and Disclosure**

# Takeaways: **Memory**

- Recalled memories are typically accurate
  - Some things impair memory encoding
  - But these factors don't typically affect accuracy
  - If detail DOES get encoded , it is likely accurate
  - We maintain accuracy over time by deciding whether to report detail, and adjusting "grain size"
- Interviews can facilitate accurate recall by encouraging free-flowing, narrative responses without interference (e.g., leading questions)

# Takeaways: Trauma

- Stress and trauma affect brains and behaviors
  - Responses best summarized as “reflexes and habits”
  - Understanding helps set realistic expectations
  - Listen and document, don’t label or diagnose
- Interviews can facilitate accurate recall by focusing on central details, not peripheral
  - These will often be sensory and emotional details

# Takeaways: **Interviewing**

- Traditional strategies are often ineffective
- Research documents effectiveness of many techniques often described as “trauma-informed”
  - Rapport, autonomy, open-ended prompts, etc.
- Same techniques work for suspects AND victims



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