

# Attention & Memory (Pt.2)



PSYCH 1101

DAY 15

PROF. DAVID PIZARRO | CORNELLPSYCH.NET

# Prelim 1 Exam Results

- Mean score = 37.4 (83%) SD = 4.6
- Top score 45/45 (23 of you)
- Hardest question (55% correct):

You are walking by a dog park and are observing dogs playing on the green grass. As you reflect on what you're seeing, you wonder why you don't perceive random patches of fur and color blended together in arbitrary combinations. You've stumbled on a problem in perception—that of how we link together features and see unified objects. This is known as:

- A. The conjunction problem
- B. The binding problem**
- C. Gestalt perception
- D. Accommodation

# Which Penny Is Correct?



(a)



(b)



(c)



(d)



(e)



(f)



(g)



(h)



(i)



(j)

# Which Penny Is Correct?



(a)



(b)



(c)



(d)



(e)



(f)



(g)



(h)



(i)



(j)

# Sensory Memory → Short-Term Memory

- Information that we attend to in *sensory memory* passes into *short-term memory*
- Long-term memory seems to have no limit, but short-term memory has a limited storage capacity

We Don't Attend To Most  
Things

# Change Blindness



[HTTPS://WWW.YOUTUBE.COM/WATCH?V=VBPG\\_OBGTWG](https://www.youtube.com/watch?v=VBPG_OBGTWG)

# Limited Storage Capacity: The “Magic Number” 7 (+/- 2)

(Miller, 1956)

- Short-term memory is constrained
- But 7 +/- 2 What?
- “Chunks” of information
  - DRAMAMINE
  - DRA MA MINE
  - DRAMA MINE

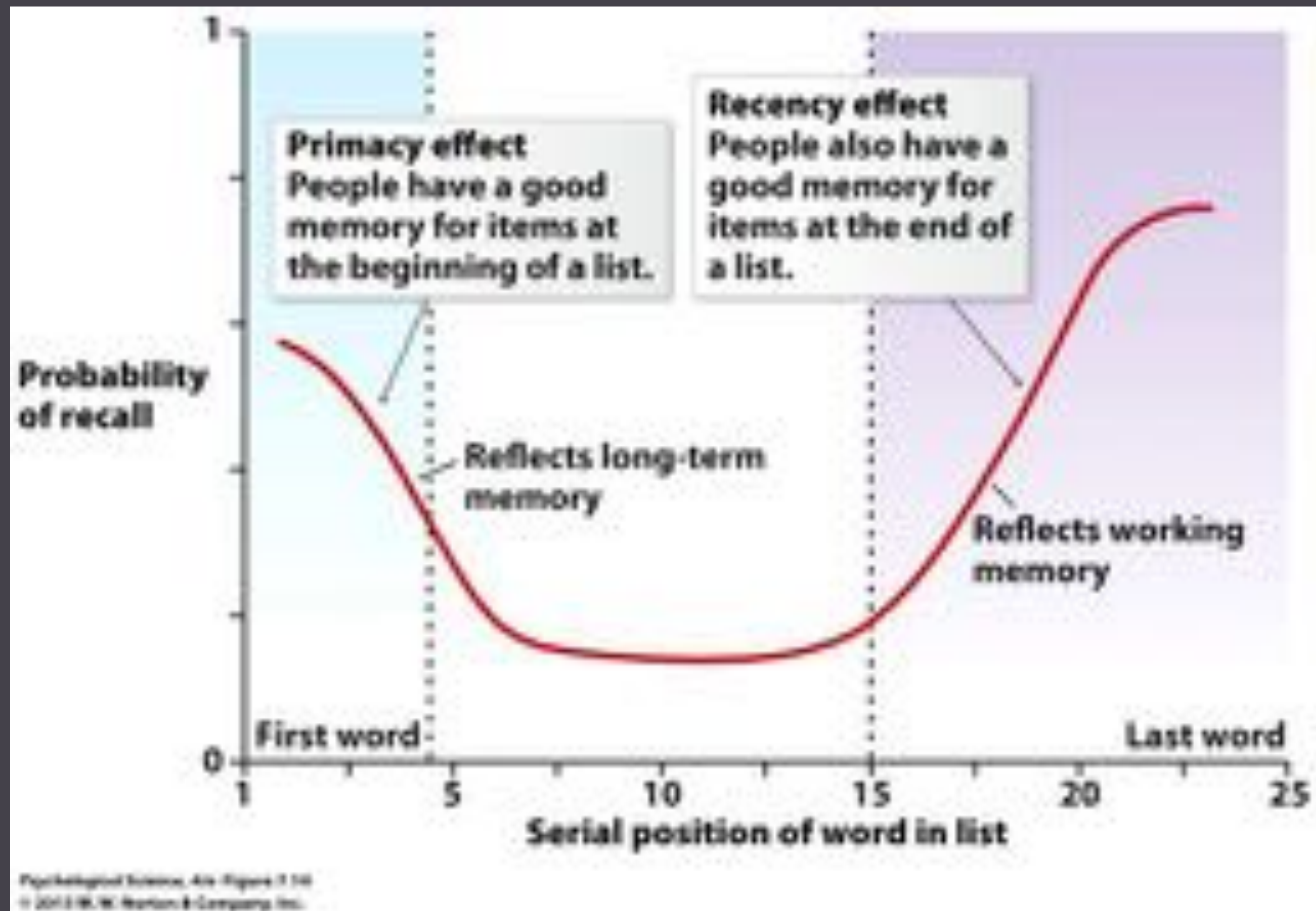


# Stages Of Memory

- Sensory Memory (like a “buffer”)
- Short-term Memory (like RAM)
- Long-term Memory (kind-of permanent storage)
  - Episodic (what happens)
  - Semantic (e.g., facts)

# How To Get Something Into Long Term Memory

- Rehearsal (without rehearsal it might last 15-20 seconds)
- serial position effect



# How To Get Something Into Long Term Memory

- Rehearsal
  - serial position effect
- Mnemonic Strategies
  - Rhymes
  - Acronyms (e.g., Kings Play Chess on Fine Grain Sand)
  - Method of Loci (associating items with physical locations)

# Context Can Be Used To Aid Memory

## ARTICLE

*Nature Neuroscience* **6**, 90 - 95 (2002)  
Published online: 16 December 2002; | doi:10.1038/nn988

### **Routes to remembering: the brains behind superior memory**

Eleanor A. Maguire<sup>1</sup>, Elizabeth R. Valentine<sup>2</sup>, John M. Wilding<sup>2</sup> & Narinder Kapur<sup>3</sup>

<sup>1</sup> Wellcome Department of Imaging Neuroscience, Institute of Neurology, University College London, 12 Queen Square, London WC1N 3BG, UK

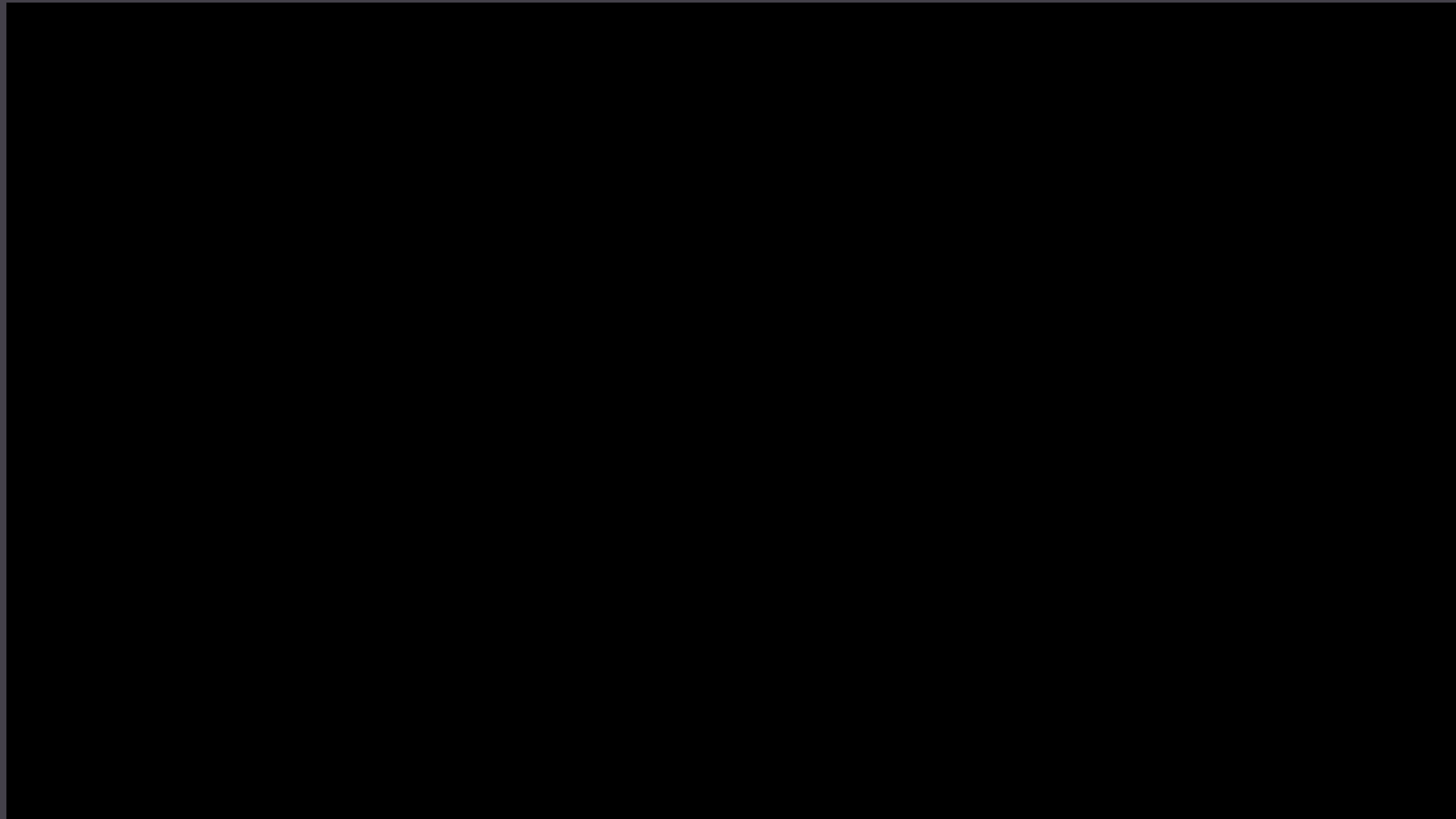
<sup>2</sup> Department of Psychology, Royal Holloway, University of London, Egham, Surrey TW20 0EX, UK

<sup>3</sup> Department of Clinical Neuropsychology, Wessex Neurological Centre, Southampton General Hospital and Department of Psychology University of Southampton, Southampton SO16 6YD, UK

Correspondence should be addressed to Eleanor A. Maguire [e.maguire@fil.ion.ucl.ac.uk](mailto:e.maguire@fil.ion.ucl.ac.uk)

**Why do some people have superior memory capabilities? We addressed this age-old question by examining individuals renowned for outstanding memory feats in forums such as the World Memory Championships. Using neuropsychological measures, as well as structural and functional brain imaging, we found that superior memory was not driven by exceptional intellectual ability or structural brain differences. Rather, we found that superior memorizers used a spatial learning strategy, engaging brain regions such as the hippocampus that are critical for memory and for spatial memory in particular. These results illustrate how functional neuroimaging might prove valuable in delineating the neural substrates of mnemonic techniques, which could broaden the scope for memory improvement in the general population and the memory-impaired.**

# Jonas Von Essen: World Memory Champion



[HTTPS://WWW.YOUTUBE.COM/WATCH?V=HFQBVMZ-JM4](https://www.youtube.com/watch?v=HFQBVMZ-JM4)