**Working Model of memory - empirical evidence for different components**

**Study:**  **Paulesu et al.** **(1993)**

*Method:* Participants were asked either to memorise a series of letters or to rehearse the sounds of the letters in their heads. At the same time, the blood flow was monitored using a PET scan (positron emission tomography).

*Result:* Each type of task produced a very different pattern of blood flow in the brain. The sound rehearsal increased blood flow in Broca’s area of the brain, while the letter-memory task was associated with another part of the brain.

*Conclusion*: It appears that this feature has two components, one which stores sounds and one which involves mental rehearsal.

Evidence for which part of WMM? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Study: Logie et al. (1989)**

*Method*: Participants played a computer game. Performance on the computer game involved manual responses, using a joystick, and the processing of verbal elements. Participants were required to play the game and at the same time carry out either a visuospatial distractor test or a verbal memory distractor test.

*Results:* The visuospatial distractor test impaired performance on perceptual-motor aspects of game performance, while the verbal memory distractor test disrupted performance on the verbal elements of the game.

*Conclusion*: The study demonstrates the existence of separate visual and sound-based components of working memory. It also shows how these components have a limited capacity and can only cope with a certain amount of processing at any one time.

Evidence for which part of WMM? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Study: Robbins et al (1996)**

*Method*: Researchers investigated participant’s ability to memorise chess board positions. 20 male chess players were asked to memorise the board positions of 16 chess pieces from actual chess games. They were shown the board position for 10 seconds, and then asked to recreate the positions from memory. In three of the conditions participants had to recreate the position while doing another task at the same time. 1- Articulatory suppression condition – had to repeat the word “the” .2 – visuospatial blocking conditions, participants had to press numbers on a calculator with their non- preferred hand. 3- Central executive condition, pts had to say out loud random letters in time with a beat. There was also a control condition. Participants were scored on how many chess pieces they placed on the board correctly.

*Results*: It was found that the articulatory suppression task had no effect on performance. However both the visuospatial and central executive blocking conditions seriously affected performance.

*Conclusions*: The components of working memory investigated are quite separate, and the component responsible for visual information has a limited capacity. There is one organising component that is of crucial importance and has a limited capacity.

Evidence for which part of WMM? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_