

MEMORY: WMM

Outline and evaluate the working memory model

The working memory model proposed by **Baddeley & Hitch (1974)** was an alternative to the multi-store model of memory. It was developed to challenge the concept of having single unitary stores in memory. It was initially made up of three components; central executive, phonological loop and a visuo-spatial sketchpad. After criticism about its lack of explanation of how information is transferred, they added the episodic buffer in the year 2000. The central executive is involved in problem solving/decision-making and controls our attention. It also allocates new information to the appropriate sub-system ('slave system'). It has a limited capacity and plays a role in planning and synthesising information to and from the LTM. The phonological loop deals with speech-based/ verbal information and consists of two parts; the phonological store (responsible for holding small pieces of information in STM) and the articulatory control loop (which acts as an internal rehearsal loop). The visuo-spatial sketchpad deals with visual or spatial information helping to briefly store mental images or navigation based information. All components have limited capacity as STM has been shown to hold about 7 ± 2 items (**Miller, 1956**). The episodic buffer was added to explain how memories are integrated or manipulated to and from LTM, particularly those emotionally significant events (episodic).

One strength of the working memory model is there is **supporting evidence** from lab studies such as **Baddeley et al (1975)** who investigated word length and the structure of STM, particularly testing the phonological loop. They found that when prevented from recall, words can only be held for a limited time in the phonological store. This shows that the articulatory control (repetition) is a separate part of STM. One problem with lab based evidence is it lacks ecological validity and may not reflect how human memory works in situations in real life. In addition, **Shallice and Warrington (1970)** reported that a brain-damaged patient K.F could recall visual information immediately after its presentation but struggled with verbal information. This supports the working memory model's claim that separate short-term stores manage phonological (verbal) and visual memories. However, evidence from small sample sizes or case studies with brain-damaged patients raise issues with **generalisation**. Also unlike the multi-store model of memory this model provides an explanation for parallel/ dual processing.

One weakness of the working memory model is the **lack of evidence** for the existence of the central executive as a separate component. This may be due to an inability to test this component experimentally, as is so easily done with the visuo-spatial sketchpad and the phonological loop. The information we attend to could go directly to the 'slave-system' which processes it. A further problem with the working memory model is that it does not explain how emotional and motivational factors influence how working memory is used. For example, **Damasio (1994)** identified brain-damaged patients whose working memory is apparently intact but still cannot function normally. Despite the limitations the working memory model is accepted as the most credible explanation for how information is processed actively in STM.