

This in the short-term  
memory model  
originally



This article first speaks of Baddeley and Hitch's three-component model of working memory and how certain phenomena are not properly documented by their original model. The article outlined these issues and presented a fourth model to be added to support the original model. The episodic buffer was said proposition. The article a good job highlighting the original's strengths, such as the phonetical loop, while also going into why we need the addition of the new fourth component. The first part of the article goes into the working memory model and why it was initially proposed to begin with. Baddeley and Hitch saw errors in the short-term memory model originally typified by Arkinson and Shiffrin.

They saw issues concerning long-term memory and how in patients with poor short-term memories, it was still normal. Thus, they proposed their three-part model comprised of the central executive and its two slave systems. Their models' best component was the phonological loop. This is mostly related to short-term memory and recalling information, such as sequences. The issues that were found in the working memory model were tested with prose recall, rehearsal, and conscious awareness.

In the prose recall test, which is a test relied upon in many clinical tests, patients are using chunking methods to remember 15-20 ideal units. Testing on patients show that chunking may be relying on long-term memory as well as short-term. Even in patients with memory issues, their ability for immediate recall exceeds that ability that the phonetical loop can provide. They seem to activate their long-term memory temporarily, as preserved immediate recall seems to require some memory or the proper functioning of the central executive system. Subvocal rehearsal is a skill we have as

children and perform unconsciously when attempting to recall a sequence.

The phonological loop assumes storage and rehearsal are separate but when not allowed to utilize rehearsal on a test, their results suffer a great deal.

The testing so far has shown that the visual and verbal slave systems in the working memory model does account for a lot of data, evidence from patients with short-term memory issues, suggest that they still utilize an area of their mind that recalls on their long-term memories. This is where the episodic buffer comes in to fill the gap left in the original working memory

model. The episodic buffer is controlled by the central executive and serves as an interface between systems that allows the working memory to retrieve information from long-term memory. While being like Tulving's episodic memory model, the episodic buffer can still be utilized by patients with impaired amnesia. The buffer is however limited in its capacity to remember, as its multi-dimensional code cannot access every part of memory. This changes the model of working memory to a multi-component one that does not solely rely on activated consciousness.

It is not without flaws, as it is hard to separate from other systems. It can be hard to draw the line between the other slave systems and even harder to do so when compared to episodic long-term memory. To see the difference at all, extensive neuroimaging and tests have to be ran on those rare patients with severe memory disabilities. Much more testing needs to be done on memory before the buffer is perfected, but for now, it remains a vital addition to the working memory model. I found this article to be very well written.

I found the addition to be huge in the working memory field, as it explains so much about our working memories' connection to our long-term memory. After seeing the abilities of the episodic buffer, I cannot imagine a working memory model without it. The multi-connection models make so much sense, as I never assumed memory was so cut and clear. With how much more we need to learn, it is impossible to not find flaws, but discoveries like this are huge steps in the right direction.