

# Psychology Homework

## Question 1

With temporal duration the material held in the STM is relatively short-lived. Baddely and Hitch (1974) suggested that information may survive in the phonological loop for two seconds. Atkinson & Shiffrin (1968) believed it may last a little longer, although only a matter of a few seconds.

Many psychologists believe that memories in the LTM are permanent, and the work of Penfield (1969), and studies of memories recovered through hypnosis would appear to support this idea. However this evidence was shown to be unreliable when examined more critically. Even so it is apparent that LTM is durable and that some memories last a lifetime.

With storage capacity Miller (1956) proposed that STM was capable of storing 7 plus or minus 2 items or chunks of information at a time.

Baddely and Hitch (1974) suggested that the Phonological Loop is capable of holding the amount of material that can be remembered within a two second time span: that capacity is time limited, rather than space limited as suggested by Miller. The capacity of LTM is generally considered to be infinite.

With the forgetting mechanism Broadbent (1958) suggested that trace decay was the primary cause of forgetting from the STM. Atkinson & Shiffrin (1968) although recognize the role of trace decay in forgetting, suggested that, due to the limited capacity of the STM, displacement was also an important factor.

Keppel and Underwood (1962) found that interference may have an affect on forgetting from the STM. However it is generally accepted that trace decay and displacement are the most important explanations of STM forgetting. With LTM the interference theory centers around the notion that forgetting occurs when existing memory is disrupted by newly learned information, or when the learning of new material is interfered with by material pre-existing in memory. However, the dominant approach to forgetting from LTM is 'Cue Dependant' forgetting. This assumes that memories are rendered inaccessible due to the lack of appropriate cues.

## Question 2

A procedure that has been used to investigate the capacity of short term memory was Glanzer and Cunitz (1966) experiment. This was where subject's were gathered and each subject was presented with 15 words. They had been previously told that they would have to try to remember as many letters as they could. They gave 30 seconds for some of the group to learn the letters, and found that this was where the group had recalled the majority they had done during the test. Where when the subjects were given 10 seconds of learning time, there was a poorer recall of later items. The results for the 30 seconds of learning time showed a rough approximation of the capacity of the short term memory, and helped approximate that short term memory has a maximum capacity of around  $7 \pm 2$  items.

### Question 3

Working Memory consists of numerous features, but mainly is that it describes short term memory, telling us what the information means, by processing it. Baddeley showed that participants could do different tasks at the same time, which in the case that he was studying, learning digits and verbal reasoning, and therefore he came to the conclusion that short term memory is more complex than the two stage model.

He also stated that it was made out of three parts:

- **the phonological loop**

The phonological loop is where a limited amount of auditory or speech-based information is maintained and manipulated. It has two inter-connected sub-components: (1) a *passive phonological store*, and (2) an *articulatory rehearsal process*.

Auditorily presented verbal information gains direct access to the passive store, which retains information in a phonological (sound-based) form. Information in the store is subject to both decay over time (it will remain in the store for only 1.5 to 2 seconds) and to interference from new information. Loss of verbal information from the phonological store can be prevented by means of saying something over and over in your head, and with continuing rehearsal the contents of the store could be retained permanently. The articulatory rehearsal process is the part of working memory that you would use when attempting to remember a telephone number that someone has given you whilst you hunt for a pen and paper to write it down. Information in the phonological loop is held in a *temporal* and *serial* fashion (i.e., the information that goes in first comes out first).

- **the visuo-spatial sketchpad**

The visuospatial sketch pad is where a limited amount of spatially and/or visually represented information is maintained and manipulated. It is similar in some ways to the articulatory loop, for example, it has the ability to *rehearse* information. It can loosely be thought of as an 'inner eye'.

- **the central executive**

The central executive can be seen as a supervisory system. It allocates attention to incoming stimuli and directs the operation of the other components of working memory. In some ways it is the most important component of working memory, since it is used when dealing with any task of a cognitively demanding nature.