

# EMOTIONAL MEMORY FOR TEXT AND IMAGES OVER 24 HOURS

STUDENT NUMBER: 203051921 WORD COUNT 722

## Introduction

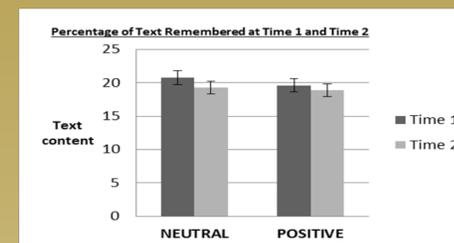
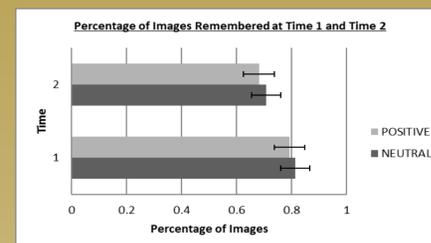
Understanding of emotional consolidation following sleep may have important implications for psychiatric illness such as post-traumatic stress disorder and depression. Emotional memories are formed when events occur in our lives that provoke emotional responses. These types of memory often feel different to the individual from other memories, being described as particularly vivid, and provoking emotional responses when recollected. It is now well established that sleep plays an important role in supporting the storage of emotional memories (Kensinger, 2009; Buchanan, 2007; Stickgold, 2005). Previous studies have shown that a piece of emotive information is more likely to be remembered following a period of sleep if the person is emotionally aroused when they view the information. Our research aimed to find out if positive emotion is also a predictive factor when remembering emotional stimuli following sleep.

## Methods

We explored this using text and image training and testing followed by a twenty four hour period before re-testing. This allowed us to measure, in terms of diminished forgetting, emotional memory consolidation. We were also able to collect data, from questionnaires on our participant's mood and sleep. This gave us a rich data set to explore and gain further evidence.

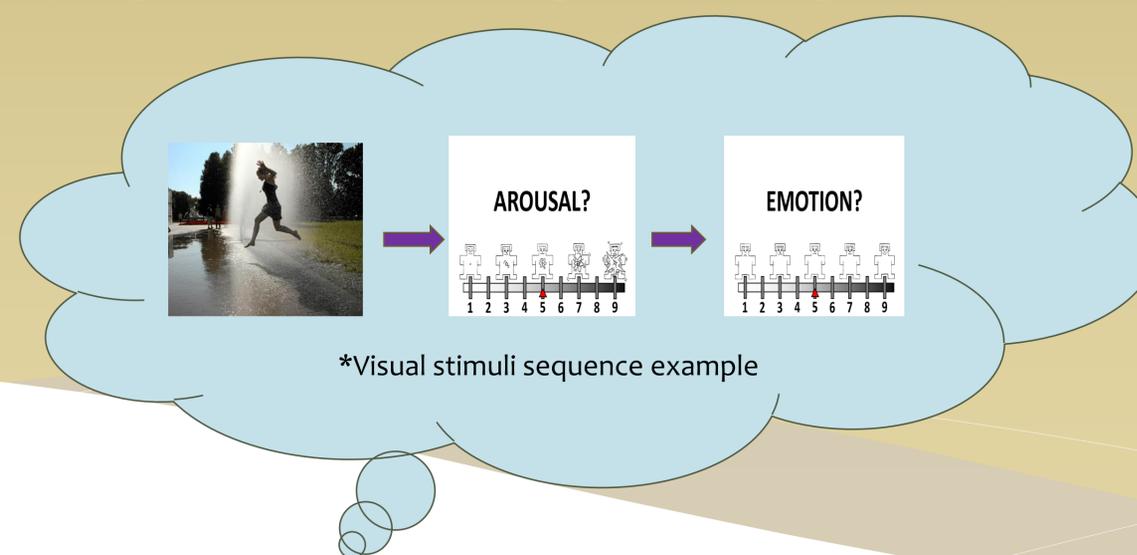
Questionnaires were administered before and during the experiment to establish our participants sleep, mood and motivation levels. Our participants were required to observe neutral or positive images and read neutral or positive texts for the testing phase. Participants then took part in training and testing for both stimuli on the first day. They were then re-tested on the second day following a 24 hour break in which the participant had a night of sleep.

The image testing component required participants to rate their arousal and emotion followed by confidence rating during testing. Photos used in the image task were taken from the Nencki Affective Picture System (NAPS). The text training element of the experiment involved giving participants two short stories and asking them to memorise them in as much detail as possible. The two stories ('the hospital visit' and 'the date') were given to participants to memorise.



## Results

Diminished memory for the positive and neutral texts and images was analysed. Initial analysis of the questionnaire data showed that our participants had attained average sleep and that the group were in the range of a normal healthy young adult population with no current mental illness or medication. The main findings of the study showed no significant difference between forgetting of positive images in relation to forgetting of neutral images over a 24 hour period. This result means a rejection of our hypothesis that our participants will show less forgetting of positive images and texts than neutral images and texts. The correlations conducted on the sleep rating and visual data show that the high rated sleepers forgot less of the positive images.



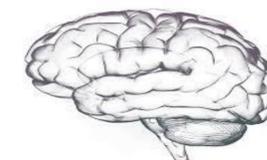
## Conclusion

In conclusion the research findings have emphasized the complexity of our subject. Research into emotion consolidation and sleep is still an emerging area. Our study aimed to build upon previous research through identifying a lack of evidence around positive emotion consolidation. The main findings of a non-statistical difference between remembering of neutral and positive image and text stimuli though disappointing may point to alternative research and approaches. For example various adaptations and additions to the experiment such as the addition of negative stimuli and the adaption of measures could be added for future work.

It appears that the outcome of this experiment fall in line with much of the prevailing knowledge accumulated through previous research. The results may be seen to offer support of the ongoing work into the arousal response as a key indicator of what is preferentially consolidated in terms of emotion. However the continuing lack of evidence and understanding around positive emotion consolidation poses interesting questions for a different approach to this emotion and its implications on wellbeing for future research.

## Bibliography

- Kensinger, E. (2009). Remembering the Details: Effects of Emotion. *Emotion Review*, 1(2), 99-113.  
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 Stickgold, R. (2005). Sleep-dependent memory consolidation. *Nature*, 437(7063), 1272-1278.



UNIVERSITY  
of York