The Role of Emotional Stimuli in Human Memory Reconsolidation

Research suggests that reactivating or retrieving a memory will return it to a labile state from which it can be changed, a phenomenon referred to as memory reconsolidation. A recent study by Finn and Roediger (in press) demonstrated that emotional visual images presented after reactivation of recently learned material could enhance later retention of that material. Such findings have implications for the reconsolidation process, as they indicate that human memory can be changed after retrieval. The present series of studies extended the Finn and Roediger findings by testing whether auditory and positively valenced stimuli would produce similar memory enhancement when presented after retrieval. Participants learned and were tested on Swahili-English word pairs. During an initial test an emotional stimulus, a neutral stimulus, or no stimulus immediately followed the retrieval of each word pair. While negative pictures successfully enhanced later retention of word pairs when presented after retrieval, positive pictures and positive and negative sounds both failed to produce a significant enhancement. Results suggested that the valence and strength of a post-retrieval manipulation influenced whether a memory could be enhanced through retrieval. Findings may help shed light on how human memory reconsolidation works and interacts with emotion, information that may be important for improving learning situations like the classroom.