Past research has demonstrated that both emotion and the presence of social content can influence memory. Emotional enhancements in memory have been demonstrated to be correlated with heighten amygdala activation during encoding. It is argued that amygdala activation automatically facilitates the memory trace formation for the emotional items, a role of the neighboring hippocampus in the medial temporal lobe. Correlations between amygdala activation and activation of areas in the visual cortex are also predictive of emotional memory enhancements and is argued to result in superior memory for visual details of emotional materials. Enhanced memory for pictures of social content are argued to stem from elaborative processing of social stimuli, related to the activation of the fusiform face area and prefrontal areas involved in controlled attention. Our study investigated if these two common stimulus variables (emotion and social content) would display interactive effects in free recall performance. We created a 2x3 repeated measures design, where 33 participants encoded six blocks of 24 pictures, with each block containing four social and four non-social pictures of each valence (negative, neutral and positive). The emotional picture sets were higher in arousal than the neutral pictures sets, although they excluded the most highly arousing images of nudity, sexual conduct, bodily mutilation, and severe injury. Each block began and ended with three 'buffers' to help account for the influences of recency and primacy effects in free recall. Additionally, immediately after encoding each block, participants completed a 1-minute Brown-Peterson task before providing free recall of the pictures of each block. In this task, we presented a three-digit number to each participant and they were instructed to count backward by three. The task serves to occupy immediate short-term memory and has been shown to eliminate recency effects in free recall.

On average, each participant was able to recall roughly six pictures per block, which aligns with prior research regarding the capacity of short-term memory (Miller's magic number of 7 plus or minus two). As expected, the analyses revealed main effects of social content and emotion, with greater recall for social pictures versus non-social pictures, and greater recall for emotional pictures than neutral pictures. Additionally, participants recalled more negative pictures than positive pictures. This finding is also well aligned with prior findings of enhanced memory for negative versus positive stimuli in young adults. However, the interaction effect revealed that the influence of content was valence-specific, and the pattern of effects across and within valence provides insight into the origin of the reported superior memory for negative pictures. Accordingly, there was no effect of content for negative or neutral pictures, with negative pictures of both content types more frequently recalled than neutral pictures of both content types. In contrast, for positive pictures, there was a greater recall for social than non-social pictures, and only the social pictures showed a recall enhancement over neutral. Therefore, only negative pictures showed a recall advantage for non-social content, whereas both positive and negative showed a recall advantage for social content that did not differ between the two emotional valences. Therefore, our findings suggest that memory for social content is enhanced only if it is emotional. This suggests that, in the limited capacity system of short-term memory, strong automatic emotional effects may supersede weaker social effects driven by controlled processing systems. Our results are also aligned with the concept of 'weapon focus' since negative non-social content is also associated with enhanced memory. This concept forwards that negative objects, like weapons, capture our attention, which leads to enhanced memory trace formation and superior memory for visual details. Our results suggest that this attentional capture does not extend to positive items, a finding in past research as well. Together, the enhanced memory for negative stimuli of both social and non-social content results in superior memory over positive stimuli, which is only enhanced for pictures of social content.