

Examining the effects of acute stress on memory in eyewitness settings

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Summary

Understanding how acute stress affects eyewitness memory performance is critical for legal settings. Though this topic has been studied for decennia, several gaps in knowledge still remain. The overarching aim of this thesis was to combine the distinct theoretical and methodological strengths of the eyewitness and fundamental memory fields to enhance understanding of this topic. Across one exploratory survey and three laboratory experiments, I examined the effects of acute stress on both encoding and retrieval memory performance.

First, I asked current memory experts ($n = 73$) and laypeople ($n = 109$) to provide their level of agreement on several statements regarding the stress-memory relationship (**Chapter 2**). Results showed that a large proportion of both eyewitness and fundamental memory researchers agreed that retrieval stress impairs memory performance. However, most fundamental memory experts also agreed that encoding stress enhances memory, whereas most eyewitness experts disagreed with this statement. Additionally, laypeople differed from experts on some factors and endorsed some ideas that are not supported by empirical research, for example, that trained professionals such as police are less affected by stress and that stress causes repressed memories.

Next, I presented two experiments ($N = 240$) investigating acute encoding and retrieval stress on face recognition memory (**Chapter 3**). Across experiments, the stress manipulation successfully raised participants' subjective negative affect, blood pressure, and cortisol levels (Experiment 3). However, results from both experiments showed no statistically significant effects of acute stress on memory performance. Specifically, in Experiment 2, no statistically significant differences in face recognition performance between groups emerged either for encoding or retrieval stress. In Experiment 3, acute encoding stress neither affected face recognition nor an added assessment of word recognition.

Turning to retrieval stress, my final experiment ($N = 177$) examined the effects of retrieval stress on recognition and free recall performance and investigated an arousal reappraisal intervention to mitigate potential negative effects of stress on memory (**Chapter 4**). Though the stress manipulation was again confirmed, results showed no effects of retrieval stress on either type of memory performance and no effect of the intervention on memory performance, affect, task demands, or coping resources.

As discussed in the final chapter (**Chapter 5**), findings from this thesis highlight the lack of consensus between experts regarding the stress-memory relationship and raise questions about the generalizability and reliability of past findings. Additionally, the results emphasize the ongoing need for methodologically-sound research on this topic, ideally through experiments combining the distinct strengths of the eyewitness and fundamental memory fields.