"Was I Really That Upset?": The Role of Affective Working Memory in Cognitive Reappraisal

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Introduction

- **Cognitive reappraisal** is an effective emotion regulation strategy involving the reframing or taking a new perspective on the way one thinks about a situation to improve one's emotional response.[1] For example, interpreting your friend being rude to you as them having a bad day, rather than them disliking you.
- Since cognitive reappraisal involves changing one's emotional response, this process may utilize **affective working memory**, the system responsible for the active maintenance and modification of affective feeling states, specifically.[2]
- Prior research suggests that these two abilities may share an underlying mechanism. When participants completed a concurrent cognitive reappraisal task, they showed decreased performance on an affective working memory task, but not a visual working memory task.[2]
- **Research Question: Will individual differences in cognitive reappraisal ability be positively correlated with affective working memory ability?**

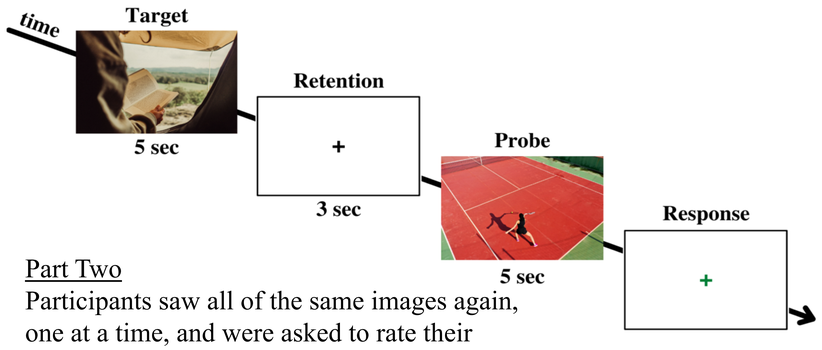
Method

Undergraduates ($N = 57$) completed two parts of an affect maintenance task and a cognitive reappraisal task, followed by rumination, anxiety, and emotion regulation self-report surveys.

Affect Maintenance Task

Part One

Participants were shown 40 trials of pairs of emotional images, displayed one after the other with a retention interval in between, and asked to rate if the second image was higher or lower in emotional intensity than the first.



Part Two

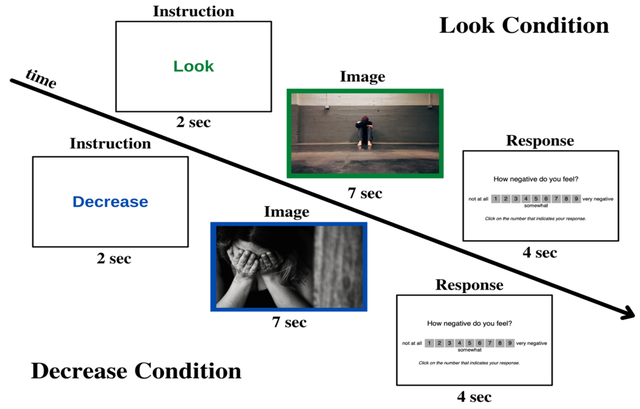
Participants saw all of the same images again, one at a time, and were asked to rate their emotional intensity from "not intense" to "extremely intense." A trial was scored as correct if the image chosen as having higher emotional intensity relative to its pair during part one also received a higher individual emotional intensity rating in part two. ***Affect maintenance ability*** was calculated as the percentage of correct trials.

Method Continued

Cognitive Reappraisal Task

Participants were shown negative images preceded by the instruction "look" or "decrease."

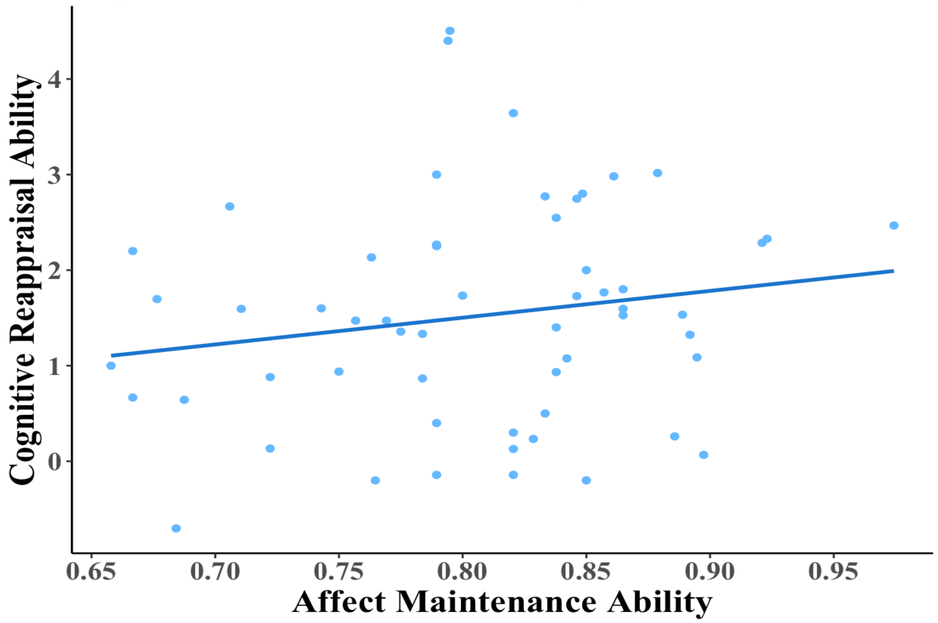
- In the ***look condition***, participants were instructed to simply look at the image and feel as they naturally would.
- In the ***decrease condition***, participants were instructed to try to decrease how negative the image made them feel. Then, they were asked how negative they feel on a scale from "not at all" to "very negative."



Negative affect for the look condition (15 trials) and the decrease condition (15 trials) were averaged separately. ***Cognitive reappraisal ability*** was calculated as the difference between the two averages.

Results

- The mean score was 0.81 ($SD = 0.07$, range = 0.66 – 0.97) on the affect maintenance task and 1.52 ($SD = 1.14$, range = -0.70 – 4.50) on the cognitive reappraisal task.
- A Pearson correlation showed that there was no statistically significant correlation between performance on the two tasks ($r(55) = .18$, $p = .191$).



- There were no statistically significant correlations between any of the self-report measures and the two main tasks ($rs < .20$, $ps > .230$).

Discussion

Conclusion

Contrary to our hypothesis, we found no statistically significant relationship between individual differences in cognitive reappraisal ability and affective working memory ability. We also found no evidence of a relationship between these two abilities and rumination or depression.

Limitations and Future Directions

- The cognitive reappraisal task administered here may have been susceptible to experimental demand and social desirability effects. However, many studies have documented that self-reported decreases in negative affect on these tasks are correlated with decreased activation in the amygdala, which is not as susceptible to these effects.[3]
- This study should be replicated using a sample size of approximately 240 participants in order to determine the statistical reliability of the small but not significant correlation found.
- Future work should directly compare a task that measures non-affective working memory with one that measures affective working memory, and the relationship of these tasks with cognitive reappraisal.
- Future work should investigate whether there is a relationship between affective working memory and other types of emotion regulation strategies.

References and Acknowledgments

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