The Effect of Emotion Regulation on the Forgetting of Negative Social Feedback in College Students

Yanjun Yang *

School of Educational Science, Shanxi Normal University, Shanxi, 030000, China

* Corresponding Author Email: 2154010548@sxnu.edu.cn

Abstract. With the rapid development of the Internet, negative social feedback such as cyberbullying has become increasingly prevalent, posing serious challenges to individuals' emotional well-being. This study investigates whether emotion regulation strategies can effectively mitigate the impact of negative feedback and promote forgetting of such information. Using a combination of questionnaires and controlled experimental procedures, college students were exposed to negative social feedback from both strangers and acquaintances. The study examined how cognitive reappraisal and distraction affected the memory retention of negative feedback over time. Data were collected using E-Prime 2.0 and analyzed through repeated measures ANOVA in SPSS. Results demonstrated that both cognitive reappraisal and distraction significantly weakened memory for negative social feedback, particularly in delayed recall, with reappraisal showing the most durable effects. These findings offer new insights into the role of emotional regulation in managing harmful online experiences and have important implications for mental health interventions.

Keywords: Emotion Regulation, Negative Social Feedback, Memory Forgetting.

1. Introduction

In the age of the Internet, the threshold for human communication is constantly lowering. While it is easier for people to connect with each other, the negative social feedback people receive is also increasing precipitously, such as verbal violence from strangers. Therefore, how to correctly regulate our emotions and avoid or minimize the impact of negative social feedback on people so as to promote the development of our mental health in a positive direction is a problem to be solved.

In the face of negative events in life, people tend to adopt some adjustment strategies to adjust their emotions and cognition. For example, people can alleviate their negative emotions by changing their perceptions, opinions, or attitudes about an event and reinterpreting negative events, a strategy that focuses on moderating cognitive evaluations is known as 'cognitive reassessment' [1]. In addition to cognitive reappraisal, distraction is also a common and effective emotion regulation strategy in people's daily lives. Especially in high-intensity negative situations, distraction strategies show unique advantages [2]. Social feedback refers to the comments about our personality and behaviour in our daily lives [3], such as social media users who like or comment on my posts or videos. Social feedback can have a great impact on people's emotions, such as negative social feedback from friends [4]. However, people are not helpless in the face of these negative evaluations. For example, cognitive reappraisal is in which people alleviate their negative emotions by changing their original views and attitudes towards an event [1], and the second is a distraction, in which people regulate their emotions by diverting their attention from the negative evaluation they are currently facing to something completely unrelated [4].

There are two research questions in the paper's research. How well do people remember negative social feedback after emotional regulation? Negative social feedback from acquaintances and strangers: how much do people forget?

2. Research Methods (Quantitative Research)

2.1. Research Subjects and Specific Quantitative Research Methods Selected

The study was conducted among all university students enrolled in the Faculty of Educational Sciences. The subjects completed the corresponding program experiments designed by eprime2.0 within the corresponding time through the experimental instructions, filled in the corresponding scales, and finally analyzed the data through SPSS to verify the experimental results.

2.2. Scale Description

2.2.1. Questionnaire 1

The "Emotion Regulation Task Guidance Compliance Questionnaire" has been adopted and adapted. The questionnaire consists of 4 items, each with a score of 9 points, with higher scores indicating better completion of the task.

2.2.2. Questionnaire 2

An online positive feedback questionnaire developed by Valkenburg et al. was used and adapted to measure the recognition of negative social feedback by acquaintances and strangers in the social process of college students. The questionnaire's social feedback identification with individuals is measured by two items: "How much do you agree with the negative social feedback A that strangers give you?" ", "How much do you identify with the negative social feedback A that an acquaintance gives you?" According to the level of agreement, the items that participants can answer will be ranked from low to high, from 1 to 9.

The homogeneity reliability coefficient for item 1 is 0.72 and the homogeneity reliability coefficient for item 2 is 0.87

2.3. Pre-survey

A small pre-survey will be conducted prior to the formal survey, the main purpose of which is to test the content, structure and language of the questions to ensure that the questionnaire captures the required data effectively and to check for ambiguities or difficulties in response. In this survey, 50 samples were selected for testing in a convenient sampling manner, and 36 samples were recovered, with a recovery rate of 72%, and the problems of the questionnaire were examined through this pre-survey.

2.4. Formal Experiments

The study was conducted on all university students in the Faculty of Educational Sciences. The pre-survey was conducted by convenient sampling, and the formal experiment was conducted by cluster sampling. two random classes of 50 students per class were selected by cluster sampling. The subjects completed the corresponding program experiments designed by eprime2.0 within the corresponding time through the experimental instructions, filled in the corresponding scales, and finally analyzed the data through SPSS to verify the experimental results.

The experiment was divided into 5 phases: preparation, baseline task, emotion regulation task, immediate posterior side, and the last step delayed posttest. E-Prime 2.0 was used to write and run the programs required for the experiment.

2.4.1. Preparation

When the participant signs up for the experiment, he or she will be told by the main test that the main content of the experiment is the "first impression evaluation". They were asked to write a first impression of the person behind each name they saw in the questionnaire provided by the examiner, and the evaluation words were the words provided by the examiner. At the end of the experiment, the questionnaire was collected, and all valid responses were paired with words that formed the name-personality adjective

2.4.2. Baseline task phase

The subject will perform the task of self-matching of personality adjectives: the subject will receive the personality adjective-name matching of the classmates in the class and the classmates in the unfamiliar class at the same time, that is, in the eyes of xxx, he thinks you xx (adjective). According to the degree of agreement between these evaluations and their own satisfaction, the participants need to score from 1 to 9 (1 is the smallest, 9 is the largest) and press the corresponding number on the keyboard in front of the computer to answer, and wait x seconds after answering to continue the next answer to the name-personality adjective pairing.

2.4.3. Emotion Regulation Stage

One week after the end of the above experiment, the participants will be guided by the main test to perform an emotion regulation task: the participants will be matched with personality adjectives and names in a random order from their own class and another unfamiliar classmate. However, before each pair, an additional task type (watch, re-evaluate, and distract) is displayed independently to determine the level of compatibility of the pairing. When shown as viewing, the participant's task is the same as 2.3.2, and the participant is rated from 1 to 9 according to the degree of conformity with the personality adjective. When it is displayed as a re-evaluation, the negative evaluation is reinterpreted. Imagine that she/he must not know me well enough to make this assessment; If he/she had known me well, he or she wouldn't have thought so. When it appears as a distraction, shift your attention to neutral events that are not related to the negative evaluation, and imagine what to do after class, what to eat for dinner, and so on.

2.4.4. Immediate and time-lapse memory

After the completion of each of the above experimental procedures, participants are asked to withdraw from the experimental program and immediately complete the questionnaire that is distributed. The content of the questionnaire is the name of each student in order of student number from the same class to the different class, and the participants are asked to recall the personality adjective corresponding to the name in the experiment and how positive/negative the adjective is. After completing the questionnaire on the same day in experiment 2, participants were asked to fill out the same questionnaire again one day after the end of the experiment.

2.5. Statistical Methods

Experimental data were statistically performed using IBM SPSS Statistics 27 using repeated measures ANOVA and the level of significance was set at $\alpha=0.05$.

3. Results

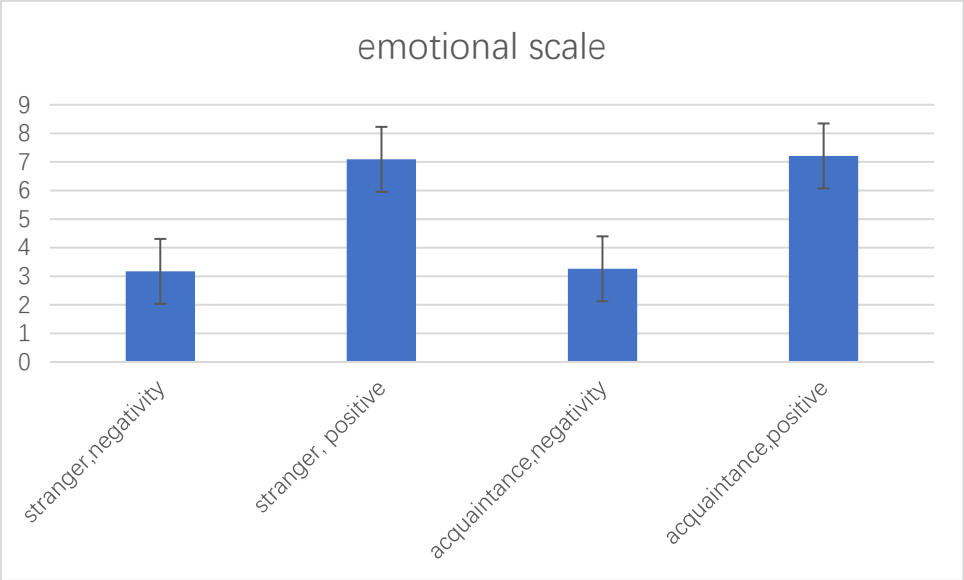

Figure 1. Before measurement

Pretest In the baseline task, college students who participated in the experiment were asked to rate the evaluations of strangers and classmates, and to make preliminary measurements of their emotional state based on these feedbacks. The results showed that the scores of the positive evaluation were significantly higher than those of the negative evaluation ($P < 0.01$), indicating that positive feedback was more likely to be accepted and recognized at the baseline state of emotion, which may be related to the positive impact of positive information on mood. At the same time, the evaluation score of classmates was significantly higher than that of strangers ($P < 0.05$), indicating that familiarity played an important role in the acceptance of social feedback. Classmates are more familiar with everyday interactions, so evaluations are more likely to trigger positive associations and higher ratings. These baseline data showed that different social relationships (classmates and strangers) and different emotional valences (positive and negative) had a significant impact on the formation of initial impressions, laying the theoretical foundation for subsequent experimental design. At the same time, the comparison of baseline data provides a reference point for the study of the impact of emotion regulation strategies on negative feedback memory and provides a reliable benchmark for analyzing the effects of emotion regulation strategies. The results of the baseline task in Figure 1 show that both positive feedback and familiarity have an important impact on social evaluation. Significant differences in baseline data support the classification and comparative analysis of different emotion regulation strategies in subsequent studies. This also suggests that the influence of social relationships and differences in feedback effectiveness need to be considered in emotion regulation experiments.

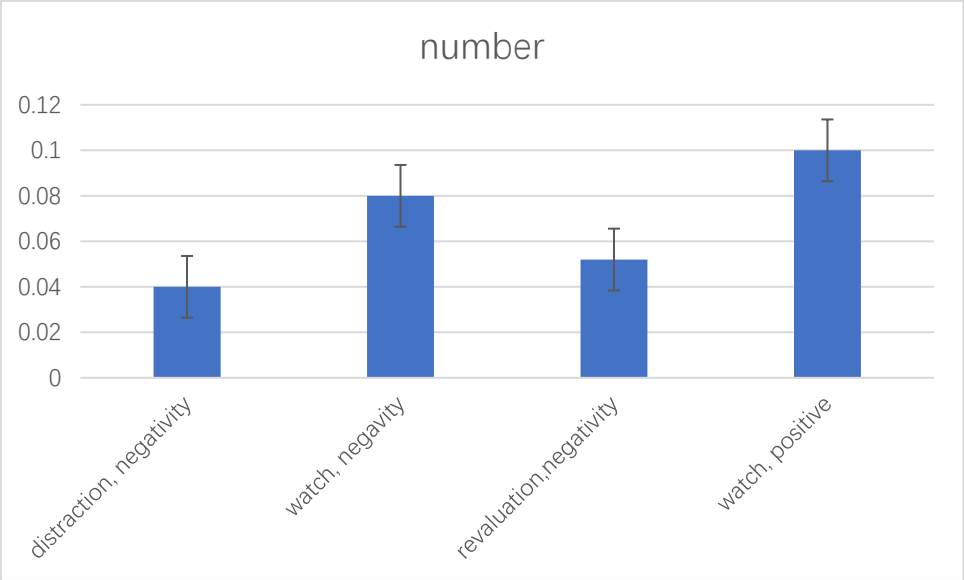

Figure 2. Immediate post-test of titer accuracy

The experimental data of the immediate post-test showed that there were significant differences in the valence accuracy of negative evaluations under different emotion regulation strategies. Specifically, the valence accuracy of negative evaluations was significantly higher than that of other accommodation strategies ($p < 0.01$) in the "watching" condition, suggesting that exposure to negative feedback alone would enhance memory retention. In contrast, cognitive reappraisal and distraction strategies significantly reduced the persistence of memory in response to negative feedback ($P < 0.05$). The results showed that emotion regulation strategies had a significant effect on the immediate intervention of negative memory. Theoretically, cognitive reappraisal reduces the intensity of negative emotions by altering the cognitive interpretation of negative feedback (e.g., believing that the evaluator lacks sufficient information), thereby impairing memory formation. The distraction strategy reduces the depth of processing of negative information by diverting attention to irrelevant neutral events. These two strategies contrast sharply with the "watching" strategy, showing the importance of modulation strategies in immediate memory interventions. There was no significant difference in the valence accuracy of positive evaluation among all emotion regulation strategies, indicating that emotion regulation mainly had a significant impact on negative feedback. This may be due to the fact that positive feedback itself does not trigger strong mood swings, so it is not easy to have a reinforcing effect on memory even under viewing conditions.

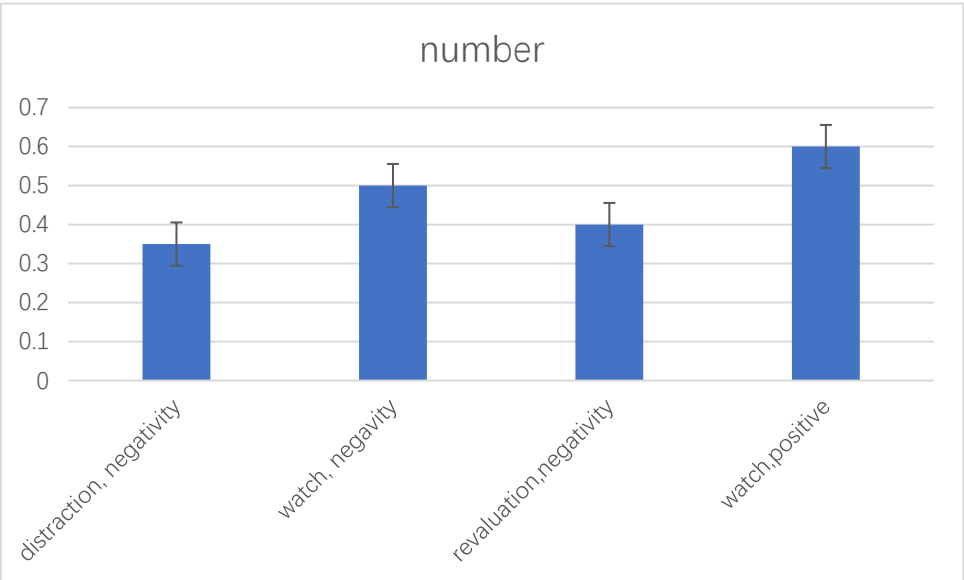

Figure 3. Delayed post-test of potency accuracy

Delayed posttest of valence accuracy in the delayed posttest phase, the study further explored the impact of emotion regulation strategies on negative social feedback forgetting. The experimental results showed that the valence of the negative evaluation was significantly reduced under the cognitive reevaluation and distraction strategies in the test after one day of delay, and this trend was more obvious than that of the immediate posttest ($P < 0.05$). Among them, the effect of cognitive evaluation strategy is particularly significant, indicating that reinterpreting negative evaluation can effectively reduce its impact on long-term memory. In contrast, the valence accuracy of the negative evaluation remained high under the "viewing" condition, suggesting that exposure to negative feedback alone would enhance the long-term memory of the information. This result supports the "emotion-enhancing memory hypothesis", which states that negative emotions promote memory consolidation, especially in the absence of emotion-regulating interventions. The delayed post-test results further demonstrate the long-term mechanism of action of emotion modulation strategies. Cognitive reappraisal hinders the process of memory consolidation by reducing the emotional intensity of negative feedback. Distraction strategies further weaken memory retrieval by reducing the allocation of attentional resources to negative information. Compared with the immediate posttest, the delay effect of the distraction strategy is slightly lower than that of cognitive reevaluation, which may be due to the distraction strategy short-term memory encoding is slightly more affected, while cognitive reappraisal affects both the encoding and retrieval processes.

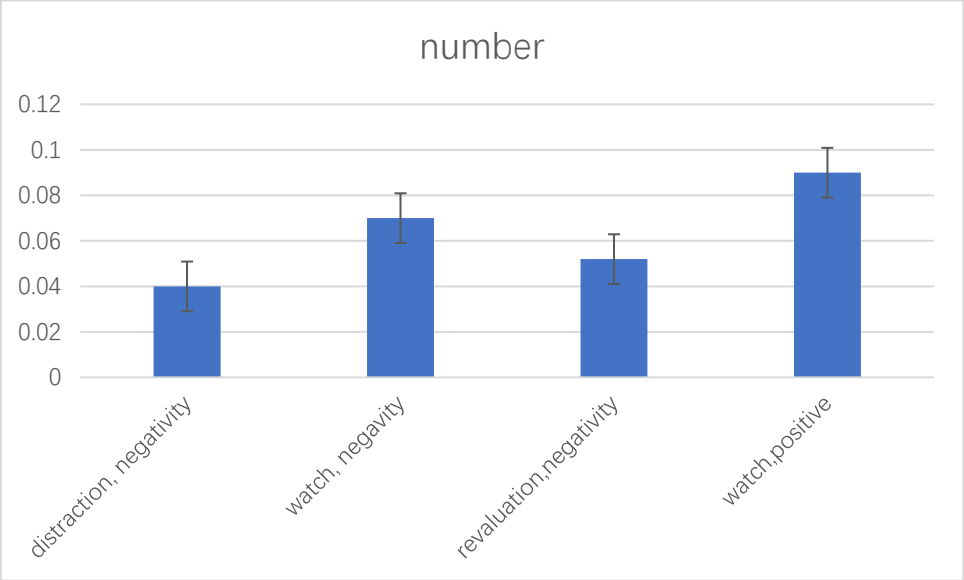

Figure 4. Instant post-test of word accuracy

The real-time post-test data showed that different emotion regulation strategies had a significant impact on the accuracy of word memory. Specifically, for negative words, the correctness rate of viewing conditions was significantly higher than that of cognitive reappraisal and distraction strategies ($p < 0.01$), indicating that direct exposure to negative feedback enhanced the memory of negative words. This may be due to the fact that negative words often elicit a strong emotional response, which facilitates memory encoding and retrieval. In contrast, the correct rate of negative words decreased significantly under the conditions of cognitive reappraisal and distraction ($P < 0.05$). These results indicate that emotion regulation strategies can effectively weaken the memory of detailed information in negative feedback, and this effect is closely related to the regulation mechanism of emotion on memory. Specifically, cognitive reappraisal reduces the reinforcing effect of negative information by changing the participants' emotional experience of negative words. The distraction strategy reduces the depth of processing of negative information through distraction. For positive words, there was no significant difference in the accuracy of memory among the emotion regulation strategies, suggesting that the memory of positive information may not depend on the emotion regulation process. This may be because positive words themselves do not significantly interfere with emotions and are, therefore, not susceptible to regulatory strategies.

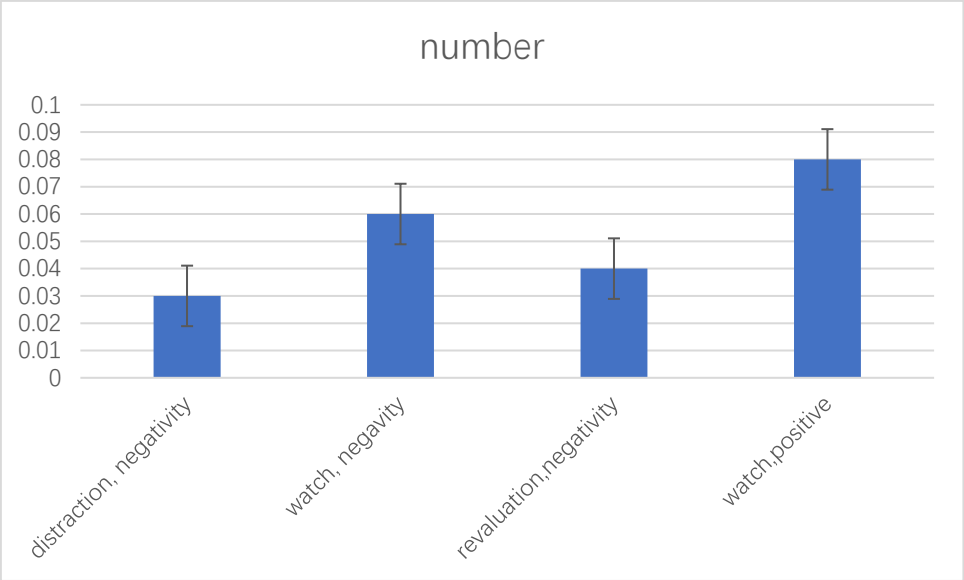

Figure 5. Word accuracy delay post-test

In the delayed post-test, the experimental results further show that the memory-weakening effect of emotion regulation strategies on negative words is persistent. Specifically, compared with the immediate posttest, the correct rate of negative words in the cognitive reappraisal and distraction conditions was further reduced, and the difference was significant compared with the "viewing" condition ($P < 0.05$). In particular, the effect of cognitive reappraisal is the most significant, indicating that the strategy of reinterpreting negative feedback has obvious advantages in weakening long-term negative memory. Under the "viewing" condition, the accuracy of negative words remained relatively high, which was consistent with the immediate post-test results and supported the hypothesis that negative feedback enhances long-term memory. In addition, although the effect of the distraction strategy on negative word memory is stronger, its effect is attenuated in the delayed posttest, which may be related to the greater effect of the distraction strategy on short-term memory. For positive words, there was still no significant change in the memory accuracy of the delayed post-test, indicating that the memory stability of positive information was high and it was not easily disturbed by emotion regulation strategies.

4. Discussion

This study found that emotion regulation strategies, especially cognitive reappraisal and distraction strategies, have a significant effect on promoting negative social feedback forgetting. In the immediate posttest, cognitive reappraisal and distraction strategies significantly reduced the memory persistence of negative social feedback, and the valence of correctness and the correct recall of negative words decreased significantly compared with the "viewing" condition of negative feedback alone. In addition, the weakening effect of these two strategies was further demonstrated in the delayed posttest, especially the cognitive reassessment showed a more durable memory intervention effect. Compared with positive social feedback, the memory of negative feedback was more significantly affected by the moderating strategy, indicating that the negative information has a stronger emotional influence and is, therefore, more likely to be intervened by emotional regulation strategies in memory. The results also showed that there was no significant difference in the memory of positive feedback between different emotion regulation strategies, which may be due to the lower intensity and more stable emotion triggered by positive feedback. In conclusion, this study experimentally validated the role of emotion regulation strategies in weakening the persistence of negative memories, emphasizing cognitive reappraisal and distraction the practical value of effective emotion regulation. This finding provides a new perspective for understanding the forgetting

mechanism of negative social feedback and provides a theoretical basis for the application of psychotherapy and emotion management strategies.

Emotion regulation strategies may promote the forgetting of negative information by reducing the persistent effects of negative emotions, thereby weakening the consolidation of negative social feedback in memory. The role of this mechanism can be explained in two ways. First, cognitive reappraisal is a strategy to reinterpret negative feedback, which weakens the emotional reinforcement effect of negative information by reducing the intensity of negative emotion. The study found that when participants believed that the negative evaluation was due to the evaluator's lack of understanding of themselves, their emotional response was significantly weakened, and the persistence of negative feedback memory decreased. Secondly, the distraction strategy effectively reduces the deep processing of negative feedback information in the memory encoding process by shifting attention to irrelevant neutral events (such as trivial matters in life). This distraction effect reduces the reinforcing effect of negative emotions on memory, thereby weakening the memory retrieval of negative social feedback. In addition, studies have shown that the weakening effect of negative memory is more pronounced in the delayed posttest, which may be due to the long-term effect of emotion regulation on the memory consolidation process. In contrast, positive feedback memories are less sensitive to emotion regulation strategies, probably because positive information itself does not elicit an excessively strong emotional response and does not significantly interfere with memory consolidation. In summary, this study supports the hypothesis that emotion regulation strategies promote negative feedback forgetting by intervening in emotional intensity and attention allocation, and provides theoretical support for the mechanism of negative memory intervention.

This study has made important contributions to the field of emotion regulation and memory, revealing the potential of emotion regulation strategies to manage negative social feedback memories in the Internet age. Firstly, this study expands the application range of emotion regulation strategies in-memory processing and confirms that cognitive reappraisal and distraction strategies can effectively weaken the memory persistence of negative information. This finding provides a new theoretical framework for the study of the interaction between emotion regulation and memory and deepens the understanding of how emotion regulation affects memory mechanisms. Secondly, the results highlight the sensitivity of negative information memory to emotion regulation, especially in the negative social feedback context, and the impact of emotion regulation strategies on negative memory is particularly significant. This finding provides additional clarification into the mechanism of emotionally reinforcing memory. In addition, this study verified the long-term effects of emotion modulation strategies in a delayed posttest, showing that emotion regulation can not only affect short-term memory but also achieve long-term memory intervention by weakening the effect of emotion on memory consolidation. This result has important application potential, providing an operational intervention for the processing of negative social feedback in memory. Finally, this study reveals that in the era of information overload and the widespread use of social media, emotion regulation strategies can be used as a tool to manage the psychological effects of negative social evaluations, thereby improving individuals' mental health and social adaptability.

In the final outlook section of the study, recommendations for future research are presented and the limitations of this study are summarized. The representativeness of the study sample may be limited to the university population, and future studies may consider more diverse samples. During the experimental design process, the cultural adaptability of the negative feedback materials needs to be further verified. Research Directions In the future, the effects of different types of negative feedback on forgetting can be explored, and the role of different emotion regulation strategies (such as cognitive reappraisal and emotional inhibition) in forgetting can be further studied. In addition, the applicability of emotion regulation strategies across different cultures and age groups can be examined.

5. Conclusion

This study found that emotion regulation strategies, especially cognitive reappraisal and distraction strategies, have a significant effect on promoting negative social feedback forgetting. In the immediate posttest, cognitive reappraisal and distraction strategies significantly reduced the memory persistence of negative social feedback, and the valence of correctness and the correct recall of negative words decreased significantly compared with the "viewing" condition of negative feedback alone. In addition, the weakening effect of these two strategies was further demonstrated in the delayed posttest, especially the cognitive reassessment showed a more durable memory intervention effect. Compared with positive social feedback, the memory of negative feedback was more significantly affected by the moderating strategy, indicating that the negative information has a stronger emotional influence and is, therefore, more likely to be intervened by emotional regulation strategies in memory. The results also showed that there was no significant difference in the memory of positive feedback between different emotion regulation strategies, which may be due to the lower intensity and more stable emotion triggered by positive feedback. In conclusion, this study experimentally validated the role of emotion regulation strategies in weakening the persistence of negative memories, emphasizing cognitive reappraisal and distraction the practical value of effective emotion regulation. This finding provides a new perspective for understanding the forgetting mechanism of negative social feedback and provides a theoretical basis for the application of psychotherapy and emotion management strategies.

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